# **Transmittal Page**

Product	Title	Part Number
WorkCentre Pro 423/428	Service Manual	708P86749
Status		Date
Intial Issue		March 2002

# WorkCentre Pro 423/428

Service Manual



# THE DOCUMENT COMPANY **XEROX**

# WorkCentre Pro 423/428 Service Manual

#### Issued: March 2002

- This service manual covers the following Revision and Modification Information: models: Electrostatic Copier manufactured
  - by FUJI XEROX Co., Ltd
  - WorkCentre Pro 423/428
- Related: ٠

#### Confidentiality:

- This service manual is issued intending use by maintenance service personnel authorized by Xerox. Copying, transferring or leasing this manual without prior consent by Xerox is prohibited.
- Whenever a page is superseded by a • replacement page containing changes or modifications, remove and destroy the superseded page.
- Be careful of handling to avoid missing • or damaging the manual.

Important changes including revisions of spare part numbers and adjustment specifications must immediately be reflected on the respective pages of this service manual upon reception of such information.

When design changes or revisions relating

to this service manual occur, the technical

information or service bulletin may be issued

as supplementary information until such changes have been accomodated in the

updated version of this service manual.

Edited by: XEROX - GKLS [XEROX], [The Document Company] are registered trademarks

CAUTION

PRINTED IN GREAT BRITAIN

# **Revision Control List**

Product:	Title:	Part Number:	Revision:
WorkCentre Pro 423/428	WorkService Manual	708P86749	March 2002

#### Documentation available:

Hard Copy708P86749PDF version on CD-ROM708P86750

All pages in this manual are revision 03/02

## INTRODUCTION

- Scope of this Document
- How to Use this Manual
- Terms and Symbols
- Abbreviations
- Safety Information
- Translation of Warnings
- SECTION 1 SERVICE CALL PROCEDURES
- SECTION 2 TROUBLESHOOTING
- SECTION 3 IMAGE QUALITY TROUBLESHOOTING
- SECTION 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT
- SECTION 5 PARTS LIST
- SECTION 6 GENERAL PROCEDURES
- SECTION 7 ELECTRICAL WIRING DIAGRAMS
- SECTION 8 ACCESSORIES
- SECTION 9 BSD (BLOCK SCHEMATIC DIAGRAM)

INTRODUCTION

## Contents

1	Scope of this Document	2
2	How to Use this Manual	2
2.1	Organisation of this Manual	2
2.2 3	Revision Information Terms and Symbols	2 3
4	Abbreviations	4
5	Safety Information	5
6	Translation of Warnings	7

#### 1 Scope of this Document

This document is intended to serve as the standard service manual for the WorkCentre Pro 423/428.

#### Publication Comment Sheet

If you have any comments, or wish to make any suggestions, please complete the Publication Comment Sheet (PCS) at the back of this manual.

#### 2 How to Use this Manual

This manual covers the standard service procedures for the WorkCentre Pro 423/428. Follow the instructions in Section 1 Service Call Procedure when visiting customer locations on service calls.

#### 2.1 Organisation of this Manual

#### • Hardware

This manual summarises all technical information on the WorkCentre Pro 423/428.

Sections

This manual consists of nine Sections:

#### Section 1 - Service Call Procedure

This Section describes the general procedures and service practices to be utilised when servicing the WorkCentre Pro 423/428.

#### Section 2 - Troubleshooting

This Section describes the troubleshooting procedures, except for image quality troubleshooting.

#### Section 3 - Image Quality Troubleshooting

This Section describes the image quality troubleshooting procedures.

#### Section 4 - Disassembly and Assembly Procedures, Adjustment

This Section describes procedures for the disassembly, assembly, adjustment, and replacement of components.

#### Section 5 - Parts List

This Section contains lists of parts, spared and otherwise.

#### Section 6 - General

This Section provides the general information:

#### Section 7 - Electrical Wiring Diagrams

This Section provides the information related to electrical wiring:

#### Section 8 - Accessories

This Section provides information related to specific accessories & options.

#### Section 9 - BSD

This Section contains the BSD (Block Schematic Diagram) drawings.

Revisions for this manual will be promulgated as described below and associated information will be sent to all customer engineers. This manual should be kept up-to-date at all times by replacing superseded pages/old information with new pages/information.

#### **Revision Procedure**

- When the entire manual is revised, the publication number on the cover sheet will be changed from Revision 1 to Revision 2, Revision 3, etc.
- When this manual is partially revised, revisions will be sequentially indicated as Revision A, Revision B, Revision C, etc. All revised pages will be marked accordingly with "Revision A', "Revision B", "Revision C", and so on.

#### **Revision Sidebar**

When any paragraph, table, or figure has been added or amended, a revision sidebar will be added to indicate where the revision was made.

### Example

If the same page is changed again due to a subsequent revision, revision sidebars associated with the previous revision(s) will be deleted.

#### 3 Terms and Symbols

Specific terms and symbols used in any particular section are described in the Preface for that section.

The following terms and symbols are used throughout this manual:

#### Warnings, Cautions and Notes

- Translated versions of all warnings are in Translation of Warnings.
- Une version localisée de toutes les notes Danger se trouve dans la section"Translation of Warnings".
- Una versione tradotta di tutti questi avvisi si trova in Traduzione degli avvisi.
- Eine Übersetzung aller Warnmeldungen wird mit dem Text "Übersetzung von Warnhinweisen" geliefert.
- Hay una versión traducida de todos los avisos en la traducción de avisos.

#### WARNING

# A warning is used whenever an operating or maintenance procedure, practice condition or statement, if not strictly observed, could result in personal injury.

#### CAUTION

A caution is used whenever an operation or maintenance procedure, practice, condition or statement, if not strictly observed, could result in damage to the equipment.

NOTE: A note is used where it is essential to highlight a procedure, practice, condition or statement.



Used to alert you to a procedure which, if not strictly observed, could result in damage to the printer or equipment.



Used when work procedures and rules are emphasised.



Used when other explanations are given.



Used to explain the purpose of an adjustment.

REP:Indicates reference to the appropriate repair procedure.ADJ:Indicates reference to the appropriate adjustment procedure.PL:Indicates reference to the appropriate parts list.ASSY:Abbreviation of "Assembly".

#### WARNING

Disconnect the power cord from the outlet while performing any tasks that do not need the electricity on. Contact with electricity can cause death or injury. Contact with moving parts can cause serious injury.

#### WARNING

Do not work in a confined space. 1m (39 inches) is required to allow safe live working. Move the machine if necessary to achieve this.

The following are examples of the terminology and symbols that are used in this manual for an electrostatic damage caution and a laser radiation warning.



#### Figure 1. ESD caution symbol.

CAUTION

Certain components in this product are susceptible to damage from electrostatic discharge. Observe all ESD procedures to avoid component damage.



# Invisible laser radiation

Figure 2. Laser radiation warning symbol.

#### WARNING

Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. This machine is certified to comply with laser product performance standards set by the US department of health and human services as a class 1 product. This means that it is a laser product that does not emit dangerous laser radiation during any mode of customer operation. During servicing, the laser beam could cause eye damage if looked at directly. The service procedures must be followed exactly as written without change.

#### 4 Abbreviations

This manual contains abbreviations that are specific to this manual, as well as general abbreviations, which include:

ADC	Automatic Density Control	AG	Analogue Ground
AUX.	Auxiliary	B/W	Black and White
BCR	Bias Charge Roll	BTR	Bias Transfer Roll
BUR	Back Up Roll	CART.	Cartridge
CCW	Counter Clock Wise	CL.	Clutch
CLN	Cleaning (or Cleaner)	CLK	Clock
CR	Charge Roll	CRU	Customer Replaceable Unit
CRUM	CRU Monitor	CW	Clock Wise
DB	Developing Bias	DTS	Detack Saw
EP	Electrophotography	FDR	Feeder
FG	Frame Ground	FRU	Field Replaceable Unit
Hex	Hexadecimal	I/F	Interface
IBT	Intermediate Belt Transfer	ID	Image Density (or Identification)
L/H	Left Hand	L/P	Low Paper
LD	Laser Diode	LEF	Long Edge Feed
MSI	Multi Sheet Inserter	N/F	Normal Force
N/P	No Paper	NVM	Non Volatile Memory
O/H	Option Hinge	OPC	Organic Photo Conductor
P/H	Paper Handling	PCDC	Pixel Count Dispense Control
Pixel	Picture Cell	PPM	Prints Per Minute
PV	Print Volume	PWB	Printed Wiring Board
R/H	Right Hand	REGI.	Registration
ROS	Raster Output Scanner	RTN	Return
SEF	Short Edge Feed	SG	Signal Ground
SNR	Sensor	SOL.	Solenoid
SOS	Start Of Scan	SPI	Scans Per Inch
SYNC.	Synchronous	T/A	Take Away
тс	Toner Concentration	TEMP.	Temperature
TR	Transfer	TRANS.	Transport
WDD	Wide Range Dynamic Damper	XERO.	Xerographic
YMCBk	Yellow, Magenta, Cyan, Black		

#### 5 Safety Information

#### CAUTION

During normal operation, this machine produces ozone gas. The amount of ozone produced does not present a hazard to the operator. However, it is advisable that the machine be operated in a well-ventilated area.

NOTE: The product contains a dry imager cartridge that is recyclable. Under various states and local laws, it may be illegal to dispose of the cartridge into the municipal waste. Check with the local waste officials for details on recycling options or the proper disposal procedures.

#### Safety Icons

The following safety icons are displayed on the machine:

In Figure 1, an arrow points to the location to install, gain access to, or to release an object.



#### Figure 1 Location Arrow Symbol

Figure 2, indicates hot surfaces. Take care when servicing the machine.



#### Figure 2 Hot Surface Symbol

In Figure 3 the label indicates potentially lethal voltages. Take care when servicing the machine when the power cord is connected.



Figure 3 Potentially Lethal Voltage Symbol

#### 03/02

6 Health and Safety Incident Reporting

#### 6

NOTE: If sending a fax, please also send the original via internal mail.

#### Responsibilities for resolution:

- 1. Business Groups/Product Design Teams responsible for the product involved in the incident shall:
  - a) Manage field bulletins, customer correspondence, product recalls, safety retrofits.
  - b) Fund all field retrofits.
- 2. Field Service Operations shall:
  - c) Preserve the Xerox product involved and the scene of the incident inclusive of any associated equipment located in the vicinity of the incident.
  - d) Return any affected equipment/part(s) to the location designated by EH&S and/or the Business Division.
  - e) Implement all safety retrofits.
- 3. EH&S shall:
  - f) Manage and report all incident investigation activities.
  - g) Review and approve proposed product corrective actions and retrofits, if necessary.
  - h) Manage all communications and correspondence with government agencies.
  - i) Define actions to correct confirmed incidents.

#### VI. Appendices

The Health and Safety Incident Report involving a Xerox Product (Form # EH&S-700) is available at the end of this Service Manual.

#### Xerox Corporation and subsidiaries world-wide.

Health and Safety Incident Reporting

products (equipment and materials) at customer locations.

III. Objective

Scope

Summary

6

Ι.

П.

To enable prompt resolution of health and safety incidents involving Xerox products and to ensure Xerox regulatory compliance.

This standard defines requirements for notification of health and safety incidents involving Xerox

#### IV. Definitions

#### Incident:

An event or condition occurring in a customer account that has resulted in injury, illness or property damage. Examples of incidents include machine fires, smoke generation, physical injury to an operator or service representative. Alleged events and product conditions are included in this definition.

#### V. Requirements

#### Initial Report:

- 1. Xerox organisations shall establish a process for individuals to report product incidents to EH&S within 24 hours of becoming aware of the event.
- 2. The information to be provided at the time of reporting is contained in Appendix A (Health and Safety Incident Report involving a Xerox product).
- 3. The initial notification may be made by any of the following methods:
  - For incidents in North America and Developing Markets West (Brazil, Mexico, Latin American North and Latin American South):
  - Phone\* EH&S at: 1-800-828-6571.
  - Electronic mail EH&S at: Doris.Bush@usa.xerox.com.
  - Fax EH&S at: 1-716-422-7734 [intelnet 8\*222 7734].
  - For incidents in Europe and Developing Markets East (Middle East, Africa, India, China and Hong Kong):
  - Phone\* EH&S at: +44 (0) 1707 35343.
  - Electronic mail EH&S at: Elaine.Grange@GBR.xerox.com.
  - Fax EH&S at: +44 (0) 1707 353914 [intelnet 8\*668 3914].

\*Initial notification made by phone must be followed within 24 hours by a completed incident report and sent to the indicated electronic mail address or fax number.

#### 7 Translation of Warnings

Chapter 1 - Service Call Procedures.

#### WARNING

A warning is used whenever an operating or maintenance procedure, practice condition or statement, if not strictly observed, could result in personal injury.

#### DANGER

Une note Danger est utilisée chaque fois qu'une procédure d'utilisation ou de maintenance, une pratique, condition ou proposition peut provoquer des blessures si elle n'est pas strictement respectée.

#### ATTENZIONE

Un avviso come questo viene usato ogni qualvolta la mancata osservanza di una procedura di funzionamento o manutenzione, di una certa condizione o avvertimento potrebbe provocare ferite personali.

#### VORSICHT

Warnhinweise dieser Art gelten für Anweisungen und Situationen (im Normalbetrieb oder bei der Wartung), bei deren Nichtbeachtung oder Auftreten Verletzungsgefahr besteht.

#### AVISO

Se usa un aviso siempre que se observa un procedimiento de funcionamiento o mantenimiento, condición o declaración de práctica, que pueden ocasionar daños personales si no se respetan estrictamente.

#### WARNING

Switch off the power to the machine and disconnect the power cord from the outlet while performing any tasks that do not need the electricity on. Contact with electricity can cause death or injury. Contact with moving parts can cause serious injury.

#### DANGER

Couper l'alimentation de la machine et débrancher le cordon de la prise pour effectuer toute tâche qui ne requiert pas de tension électrique. L'électricité peut causer des blessures ou la mort. Les pièces en mouvement peuvent provoquer de graves blessures.

#### ATTENZIONE

Spegnere la macchina e staccare il cavo di alimentazione dalla presa durante l'esecuzione delle operazioni che non richiedono che la macchina sia collegata alla corrente elettrica. L'eventuale contatto con l'elettricità può provocare la morte o ferite gravi. L'eventuale contatto con parti in movimento può provocare ferite gravi.

#### VORSICHT

Bei Arbeiten, bei denen kein Strom erforderlich ist, das Gerät ausschalten und den Netzstecker abziehen. Beim Umgang mit elektrischen Geräten ist äußerste Vorsicht

#### AVISO

Apague la máquina y desconecte el cable de potencia de la red antes de realizar tareas que no requieran el uso de electricidad. El contacto con la corriente eléctrica puede ocasionar muerte o heridas. El contacto con piezas en movimiento puede ocasionar serios daños.

#### WARNING

Do not work in a confined space. 1m (39 inches) is required to allow safe live working. Move the machine if necessary to achieve this.

#### DANGER

Ne pas travailler dans un espace limité. Un espace libre de 1m (39 pouces) est requis pour permettre l'intervention en toute sécurité. Déplacer la machine si nécessaire pour assurer l'espace minimum.

#### ATTENZIONE

Non lavorare in uno spazio ristretto. È necessario almeno un metro per la sicurezza del lavoro. Se necessario, spostare la macchina per ottenere questo.

#### VORSICHT

Für ausreichend Platz beim Arbeiten sorgen. Um ein sicheres Arbeiten zu gewährleisten, wird ein Arbeitsbereich von 1m (39 Zoll) vorgeschrieben. Im Notfall das Gerät entsprechend umstellen.

#### AVISO

No trabaje en un espacio limitado. Se requiere 1m (39 pulgadas) para que pueda trabajar sin peligro. Si es necesario, mueva la máquina para lograr esto.

#### WARNING

Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. This machine is certified to comply with laser product performance standards set by the US department of health and human services as a class 1 product. This means that it is a laser product that does not emit dangerous laser radiation during any mode of customer operation. During servicing, the laser beam could cause eye damage if looked at directly. The service procedures must be followed exactly as written without change.

#### DANGER

L'exécution de procédures ou l'utilisation de commandes ou de réglages autres que ceux spécifiés dans cette publication peut entraîner une exposition dangereuse aux rayons laser. Cette machine est certifiée conforme aux normes définies par les organismes gouvernementaux des États-Unis pour les produits laser de classe 1. Elle n'émet pas de rayonnement dangereux pendant le fonctionnement en mode client. Au cours des interventions, le faisceau laser peut causer de graves lésions aux yeux s'il est regardé

03/02

8

directement. Les procédures d'entretien doivent être rigoureusement suivies comme indiqué dans la documentation.

#### ATTENZIONE

L'uso di controlli o regolazioni o procedure diverse da quelle indicate in questo manuale possono provocare esposizione a radiazioni pericolose. Questa macchina, classificata come un prodotto di classe 1 relativamente all'emissione di raggi laser, è certificata conforme agli standard fissati dall'US department of health and human services (Ministero della Sanità USA). Ciò significa che questo prodotto non emette raggi laser pericolosi durante il suo normale funzionamento. Durante la manutenzione, il raggio laser potrebbe provocare danni alla vista se osservato direttamente. Le procedure di servizio devono essere strettamente osservate, senza alcuna deviazione.

#### VORSICHT

Das nicht den Vorschriften entsprechende Bedienen des Geräts, Ausführen von Wartungsarbeiten oder Ändern bestimmter Geräteeinstellungen kann zum Kontakt mit gefährlicher Laserstrahlung führen. Dieses Gerät wird als Gerät der Laserklasse 1 (CDRH Geräteklasse 1, IEC 825 Klasse 1) eingestuft. Produkte dieser Klasse geben im Normalbetrieb keine gefährliche Laserstrahlung ab. Bei Wartungsarbeiten kann die direkte Ansicht der Laserstrahlung zu ernsthaften Langzeitschäden der Augen führen. Alle Wartungsarbeiten müssen unbedingt den Vorschriften entsprechend ausgeführt werden.

#### AVISO

El uso de controles o de ajustes, o la realización de procedimientos que no sean aquellos especificados en este manual, puede resultar en exposición peligrosa a la radiación. Esta máquina ha sido certificada y cumple con los estándares de funcionamiento de los productos láser, establecidos por el Departamento de Salud y Servicios Humanos de los Estado Unidos, como un producto de la Clase 1. Esto significa que es un producto láser que no emite radiación láser peligrosa durante ninguno de sus modos de funcionamiento del operador. Durante el servicio, el rayo láser podría ocasionar daños a la vista si se observa directamente. Los procedimientos de servicio deben seguirse exactamente como están escritos, sin ningún cambio.

Chapter 2 – Troubleshooting.

#### WARNING

Switch off the machine and disconnect the power cord.

#### DANGER

Isoler la machine et débrancher le cordon d'alimentation.

#### ATTENZIONE

Spegnere la macchina e staccare il cavo di alimentazione.

#### VORSICHT

Das Gerät ausschalten und den Netzstecker aus der Stromquelle entfernen.

#### AVISO

Apague la máquina y desconecte el cable de potencia.

#### WARNING

Switch off the power to the machine and disconnect the power cord from the outlet while performing any tasks that do not need the electricity on. Contact with electricity can cause death or injury.

#### DANGER

Couper l'alimentation de la machine et débrancher le cordon de la prise pour effectuer toute tâche qui ne requiert pas de tension électrique. L'électricité peut causer des blessures ou la mort.

#### ATTENZIONE

Spegnere la macchina e staccare il cavo di alimentazione dalla presa durante l'esecuzione delle operazioni che non richiedono che la macchina sia collegata alla corrente elettrica. L'eventuale contatto con l'elettricità può provocare la morte o ferite gravi.

#### VORSICHT

Bei Arbeiten, bei denen kein Strom erforderlich ist, das Gerät ausschalten und den Netzstecker abziehen. Beim Umgang mit elektrischen Geräten ist äußerste Vorsicht geboten, da dies zu ernsthaften Verletzungen oder Stromschlägen führen kann.

#### AVISO

Apague la máquina y desconecte el cable de potencia de la red antes de realizar tareas que no requieran el uso de electricidad. El contacto con la corriente eléctrica puede ocasionar muerte o daños.

#### WARNING

Follow the service procedure exactly as written. Use of controls or adjustments other than those specified in this manual, may result in an exposure to invisible laser radiation. During servicing, the invisible laser radiation can cause eve damage if looked at directly.

#### DANGER

Les procédures d'entretien doivent être rigoureusement suivies comme indiqué dans la documentation. L'utilisation de commandes ou de réglages autres que ceux spécifiés dans cette publication peut entraîner une exposition aux rayons laser invisibles. Au cours des interventions, le faisceau laser invisible peut causer de graves lésions aux yeux s'il est regardé directement.

#### ATTENZIONE

Osservare strettamente le procedure di servizio. L'uso di controlli o regolazioni o procedure diverse da quelle indicate in questo manuale possono provocare esposizione a radiazioni laser invisibili. Durante la manutenzione, il raggio laser potrebbe provocare danni alla vista se osservato direttamente.

#### VORSICHT

Alle Wartungsmaßnahmen den Vorschriften entsprechend ausführen. Das nicht den Vorschriften entsprechende Bedienen der Geräts oder Ändern bestimmter Geräteeinstellungen kann zum Kontakt mit (unsichtbarer) Laserstrahlung führen. (Unsichtbare) Laserstrahlung kann beim direkter Ansicht zu ernsthaften Langzeitschäden der Augen führen.

#### **AVISO**

Siga el procedimiento de servicio exactamente como se describe. El uso de controles o ajustes que no sean aquellos especificados en este manual puede resultar en exposición a radiación invisible de láser. Durante el servicio, la radiación invisible de láser puede ocasionar daños a la vista, si se mira directamente.



DANGER

AVOID DIRECT EXPOSURE TO BEAM

DANGER



\_\_\_\_

#### PERICOLO

Evitare l'esposizione diretta ai raggi Radiazione laser invisibile.

#### ACHTUNG

Direkten kontakt mit laserstrahl vermeiden Unsichtbare Laserstrahlung

#### PELIGRO

Evite exposición directa al rayo.

Radiación invisible de láser

#### WARNING

Switch off the machine and disconnect the power cord.

#### DANGER

Isoler la machine et débrancher le cordon d'alimentation.

#### ATTENZIONE

Spegnere la macchina e staccare il cavo di alimentazione.

### VORSICHT

Das Gerät ausschalten und den Netzstecker aus der Stromquelle entfernen.

#### **AVISO**

Apague la máquina y desconecte el cable de potencia.

Chapter 3 - Image Quality Troubleshooting.

#### WARNING

Switch off the power to the machine and disconnect the power cord from the outlet while performing any tasks that do not need the electricity on. Contact with electricity can cause death or injury.

#### DANGER

Couper l'alimentation de la machine et débrancher le cordon de la prise pour effectuer toute tâche qui ne requiert pas de tension électrique. L'électricité peut causer des blessures ou la mort.

#### ATTENZIONE

Spegnere la macchina e staccare il cavo di alimentazione dalla presa durante l'esecuzione delle operazioni che non richiedono che la macchina sia collegata alla corrente elettrica. L'eventuale contatto con l'elettricità può provocare la morte o ferite gravi.

#### VORSICHT

Bei Arbeiten, bei denen kein Strom erforderlich ist, das Gerät ausschalten und den Netzstecker abziehen. Beim Umgang mit elektrischen Geräten ist äußerste Vorsicht geboten, da dies zu ernsthaften Verletzungen oder Stromschlägen führen kann.

#### AVISO

Apague la máquina y desconecte el cable de potencia de la red antes de realizar tareas que no requieran el uso de electricidad. El contacto con la corriente eléctrica puede ocasionar muerte o daños.

#### WARNING

Follow the service procedure exactly as written. Use of controls or adjustments other than those specified in this manual, may result in an exposure to invisible laser radiation. During servicing, the invisible laser radiation can cause eye damage if looked at directly.

#### DANGER

Les procédures d'entretien doivent être rigoureusement suivies comme indiqué dans la documentation. L'utilisation de commandes ou de réglages autres que ceux spécifiés dans cette publication peut entraîner une exposition aux rayons laser invisibles. Au cours des interventions, le faisceau laser invisible peut causer de graves lésions aux yeux s'il est regardé directement.

#### ATTENZIONE

Osservare strettamente le procedure di servizio. L'uso di controlli o regolazioni o procedure diverse da quelle indicate in questo manuale possono provocare esposizione a radiazioni laser invisibili. Durante la manutenzione, il raggio laser potrebbe provocare danni alla vista se osservato direttamente.

VORSICHT

#### 7 Translation of Warnings

Alle Wartungsmaßnahmen den Vorschriften entsprechend ausführen. Das nicht den Vorschriften entsprechende Bedienen der Geräts oder Ändern bestimmter Geräteeinstellungen kann zum Kontakt mit (unsichtbarer) Laserstrahlung führen. (Unsichtbare) Laserstrahlung kann beim direkter Ansicht zu ernsthaften Langzeitschäden der Augen führen.

#### AVISO

Siga el procedimiento de servicio exactamente como se describe. El uso de controles o ajustes que no sean aquellos especificados en este manual puede resultar en exposición a radiación invisible de láser. Durante el servicio, la radiación invisible de láser puede ocasionar daños a la vista, si se mira directamente.



## Invisible laser radiation

#### DANGER

Éviter l'exposition directe au faisceau

Rayonnement laser invisible

03/02

10

#### PERICOLO

Evitare l'esposizione diretta ai raggi

Radiazione laser invisibile.

#### ACHTUNG

Direkten kontakt mit laserstrahl vermeiden

**Unsichtbare Laserstrahlung** 

#### PELIGRO

Evite exposición directa al rayo.

Radiación invisible de láser

WARNING

Some of the Image Quality correction activities can involve exposure to laser radiation. This is indicated by the laser warning symbol in the text. Where this is seen, observe the laser precautions.

#### DANGER

Certaines activités correctives de qualité image peuvent entraîner une exposition aux rayons laser. Chaque fois que le symbole de sécurité laser apparaît dans le texte, prendre les précautions nécessaires.

#### ATTENZIONE

Alcune attività di correzione della qualità immagine possono comportare l'esposizione a raggi laser. Questa situazione è indicata nel testo dall'apposito simbolo di pericolo laser. In presenza di tale simbolo, osservare le specifiche relative precauzioni.

#### VORSICHT

Einige Maßnahmen zur Verbesserung der Bildqualität können u.U. zum Kontakt mit Laserstrahlung führen. Auf diese Gefahrenquelle wird mit dem Symbol ACHTUNG Laserstrahlung hingewiesen. Nach Auffinden einer solchen Gefahrenquelle unbedingt alle Lasersicherheitsregeln befolgen.

#### AVISO

Algunas de las actividades de corrección de calidad de imagen pueden incluir exposición a la radiación del láser. Esto es indicado en el texto por medio del símbolo de aviso de láser. Siga las precauciones contra el láser cuando vea este símbolo. Chapter 4 - Dissasembly and Assembly Procedures, Adjustments.

#### WARNING

Switch off the machine and disconnect the power cord.

#### DANGER

Isoler la machine et débrancher le cordon d'alimentation.

#### ATTENZIONE

Spegnere la macchina e staccare il cavo di alimentazione.

#### VORSICHT

Das Gerät ausschalten und den Netzstecker aus der Stromquelle entfernen.

#### AVISO

Apague la máquina y desconecte el cable de potencia.

#### WARNING

After switching off the machine the fuser surfaces are still hot. Allow to cool, or avoid contact while working near the fuser.

#### DANGER

Après coupure de l'alimentation de la machine, les surfaces du four sont toujours chaudes. Les laisser refroidir, ou éviter de toucher les surfaces en travaillant près du four.

#### ATTENZIONE

Dopo aver spento la macchina, le superfici del fusore sono ancora calde. Attendere che si raffreddino o evitare di toccarle mentre si lavora nell'area del fusore.

#### VORSICHT

Die Fixieranlage erst nach ausreichender Abkühlzeit handhaben oder genügend Sicherheitsabstand zu der noch heißen Fixieranlage bewahren.

#### AVISO

Las superficies del fusor estarán calientes aun despues de haber apagado la máquina. Permita que se enfrien o evite el contacto cuando trabaje cerca de la superficie del fusor.

#### WARNING

The weight of the DADF assembly is 8.6 kg (18.6 lb). Use great care when lifting.

#### DANGER

Le chargeur de documents pèse 8,6 kg (18,6 lb). Faire très attention en le soulevant.

#### **ATTENZIONE**

7 Translation of Warnings INTRODUCTION 03/02 12

Il complessivo DADF pesa 8,6 Kg. Fare molta attenzione quando lo si solleva.

#### VORSICHT

Das Gewicht des Duplex-Vorlageneinzugs (DVE) beträgt 8,6 kg (18,6 Pfund). Vorsicht beim Anheben.

#### AVISO

El peso del conjunto del ADOD es de 8.6 kg (18.6 lb). Tenga mucho cuidado al levantarlo.

#### WARNING

The weight of the Finisher assembly is 16 kg (35.3 lb). Use great care when lifting.

#### DANGER

Le module de finition pèse 16 kg (35,3 lb). Faire très attention en le soulevant.

#### ATTENZIONE

Il complessivo finitore pesa 16 Kg. Fare molta attenzione quando lo si solleva.

#### VORSICHT

Das Gewicht der Finisher-Anlage beträgt 16 kg (35,3 Pfund). Vorsicht beim Anheben.

#### AVISO

El peso del conjunto de la acabadora es de 16 kg (35.3 lb). Tenga mucho cuidado al levantarla.

Chapter 6 - General

#### WARNING

The weight of the IOT assembly is 46 kg (101 lb). Two persons will be required to lift this assembly. Use great care when lifting.

#### DANGER

L'IOT pèse 46 kg (101 lb). Deux personnes sont requises pour soulever ce module. Faire très attention en le soulevant.

#### ATTENZIONE

Il complessivo IOT pesa 46 Kg. Sono necessarie due persone per alzarlo. Fare molta attenzione quando lo si solleva.

#### VORSICHT

Das Gewicht der IOT-Anlage beträgt 46 kg (101 Pfund). Vorsicht beim Anheben.

#### AVISO

El peso del conjunto IOT es de 46 kg (101 lb). Se requieren dos personas para levantar este conjunto. Tenga mucho cuidado al levantarlo.

#### WARNING

The weight of the IIT assembly is 24 kg (53 lb). Two persons will be required to lift this assembly. Use great care when lifting.

#### DANGER

L'IIT pèse 24 kg (53 lb). Deux personnes sont requises pour soulever ce module. Faire très attention en le soulevant.

#### ATTENZIONE

Il complessivo IIT pesa 24 Kg. Sono necessarie due persone per alzarlo. Fare molta attenzione quando lo si solleva.

#### VORSICHT

Das Gewicht der IIT-Anlage beträgt 24 kg (53 Pfund). Zum Anheben dieser Anlage sind mindestens zwei Personen erforderlich. Vorsicht beim Anheben.

#### AVISO

El peso del conjunto IIT (Terminal de entrada de imagen) es de 24 kg (53 lb). Se requieren dos personas para levantar este conjunto. Tenga mucho cuidado al levantarlo.

Chapter 8 – Accessories

#### WARNING

Switch off the machine and disconnect the power cord.

#### DANGER

Isoler la machine et débrancher le cordon d'alimentation.

#### ATTENZIONE

Spegnere la macchina e staccare il cavo di alimentazione.

#### VORSICHT

Das Gerät ausschalten und den Netzstecker aus der Stromquelle entfernen.

#### AVISO

Apague la máquina y desconecte el cable de potencia.

#### WARNING

The weight of the DADF assembly is 8.6 kg (18.6 lb). Use great care when lifting.

#### DANGER

Le chargeur de documents pèse 8,6 kg (18,6 lb). Faire très attention en le soulevant.

#### ATTENZIONE

Il complessivo DADF pesa 8,6 Kg. Fare molta attenzione quando lo si solleva.

#### VORSICHT

Das Gewicht des Duplex-Vorlageneinzugs (DVE) beträgt 8,6 kg (18,6 Pfund). Vorsicht beim Anheben.

### AVISO

El peso del conjunto del ADOD es de 8.6 kg (18.6 lb). Tenga mucho cuidado al levantarlo.

# CHAPTER 1 SERVICE CALL PROCEDURE

# Contents

1.1	Trimming	3
1	.1.1 Trimming Procedure	3
1	.1.2 Consumables and consumable parts	3
1	.1.3 Trimming Check List	4

# Contents CHAPTER 1 SERVICE CALL PROCEDURE

# CHAPTER 1 SERVICE CALL PROCEDURE 1.1 Trimming

## 1.1 Trimming

Perform trimming on WorkCentre Pro 423/428 at eachservice call. This helps to maintain optimum machine performance.

## 1.1.1 Trimming Procedure

## 1. Pre-work check

- Make several copies of the test chart (499T247) and check the copy quality.
- Make a black copy (Chain: 23, Function: 11) and a blank copy (Chain: 23, Function: 10) in Diagnostic. (C/E) mode. Black copy: Check for no darkness irregularity or fusing fault. Blank copy: Check for no drum scratch or smearing.

## 2. Machine internal cleaning

• Wipe off toner and paper dust from the paper path. (Clean the operating section especially well.)

## 3. IIT cleaning

- Clean the platen glass (front surface) and platen cushion with a lint-free cloth.
- Clean the reflector, platen glass (back surface), mirror, and lens with a lintfree cloth.

## 4. DADF cleaning

• Clean the Pickup Roll, Separation Roll, and Platen Glass with a damp cloth.

- 5. Check the history of periodic replacement parts (consumable parts) and replace necessary parts.
  - The history can be checked in Diagnostic. (C/E) mode.
- 6. Safety check
  - Check the power plug for secure connection and the power cord and plug for no damage.

## 7. Post-work check

- Check the mechanical operations.
- Check the copy quality.
- Check the counters.

## 1.1.2 Consumables and consumable parts

For consumables and consumable parts, check the history of copying and feeding at trimming and replace necessary items. The history can be checked in Diag. (C/E) mode. (See Chapter 2, "Diagnostic Mode.")

<Drum Unit>

Consumables	Replacement interval	Remarks	
Drum Unit	24K prints	A message is displayed when	
		replacement is due	

<main unit=""></main>		
Consumable parts	Replacement interval	Remarks
Tray 1 (Feed Roll)	600K feed	After replacement, clear the Tray 1 feed
		counter. (Chain:30 Function:6)
Tray 1 (Retard Roll)	600K feed	After replacement, clear the Tray 1 feed
		counter. (Chain:30 Function:6)
Tray 2 (Feed Roll)	600K feed	After replacement, clear the Tray 2 feed
		counter. (Chain:30 Function:7)
Tray 2 (Retard Roll)	600K feed	After replacement, clear the Tray 2 feed
		counter. (Chain:30 Function:7)
Tray 3 (Feed Roll)	600K feed	After replacement, clear the Tray 3 feed
		counter. (Chain:30 Function:8)
Tray 3 (Retard Roll)	600K feed	After replacement, clear the Tray 3 feed
		counter. (Chain:30 Function:8)
Tray 4 (Feed Roll)	600K feed	After replacement, clear the Tray 4 feed
		counter. (Chain:30 Function:9)
Tray 4 (Retard Roll)	600K feed	After replacement, clear the Tray 4 feed
		counter. (Chain:30 Function:9)
MSI (Feed Roll)	600K feed	After replacement, clear the MSI feed
		counter. (Chain:30 Function:12)
MSI (Retard Roll)	600K feed	After replacement, clear the MSI feed
		counter. (Chain:30 Function:12)
Fuser Assy	200K copying	
BTR	200K copying	

## <DADF>

Consumable parts	Replacing interval	Remarks
Pickup Roll	90K feed	Number of sheets scanned by DADF
		(Chain:30 Function:3)
Feed Roll	90K feed	Number of sheets scanned by DADF
		(Chain:30 Function:3
Separation pad	90K feed	Number of sheets scanned by DADF
		(Chain:30 Function:3)

R	er	na	rks	

1.1 Trimming CHAPTER 1 SERVICE CALL PROCEDURE

## 1.1.3 Trimming Check List

a)..... Check and if necessary, clean, replace, adjust, and refill.

b)..... Always check and clean.

c)..... Always replace at the specified interval.

No.	Work	Every	90K	200K	Disassembly &	Description
1	Pre-work check (Test chart copying)	(b)			Assembly No.	<ul> <li>Make several sample copies of the test chart (4</li> <li>Make black and blank copies in Diagnostic. (C/</li> <li>Check the black copy for no darkness irregula for no drum scratch or background.</li> <li>Check the paper feed and mechanical operation</li> </ul>
2	Machine internal cleaning (Paper path cleaning)	(a)				<ul> <li>Wipe off toner and paper dust from the paper p</li> <li>Clean the operating section especially well.</li> </ul>
3.1	Optical section internal cleaning (Platen glass front surface and platen cushion cleaning)	(b)				<ul> <li>Clean with a lint-free cloth.</li> <li>Clean the platen cushion with a damp cloth.</li> </ul>
3.2	Optical section internal cleaning (Reflector, Platen glass back surface, and mirror lens cleaning)	(a)				Clean with a lint-free cloth.
4.1	DADF cleaning (Platen cleaning)	(b)				Clean with a damp cloth.
4.2	DADF cleaning (Feed Roll cleaning or replacement)	(a)	(c)		10.5.2	Clean with a damp cloth.
4.3	DADF cleaning (Pickup Roll cleaning or replacement)	(a)	(c)		10.5.1	Clean with a damp cloth.
5.1	Tray 1, 2, 3, and 4 (Feed Roll cleaning)	(a)				Clean with a damp cloth.
5.2	Tray 1, 2, 3, and 4 (Retard Roll cleaning)	(a)				Clean with a damp cloth.
6	BTR replacement			(C)		Replace the BTR.
7	Fuser Assy replacement			(c)	6.1.1	Replace the Fuser Assembly.
8.1	MSI (Feed Roll cleaning)	(a)				Clean with a wet cloth.
8.2	MSI (Retard Roll cleaning)	(a)				Clean with a wet cloth.
9	Safety check	(b)				<ul> <li>Check that the power cord is plugged in secure</li> <li>Check that the power cord is not cracked or its</li> <li>Check that an extension cable of an inadequate used for the power cord.</li> <li>Check that no other cords are connected to the</li> </ul>
10	Post-work check	(b)				<ul> <li>Make black and blank copies of the test chart quality satisfies the standards.</li> <li>Check the paper feed, mechanical operations, history log and service report.</li> </ul>

# CHAPTER 1 SERVICE CALL PROCEDURE 1.1 Trimming

499□247) and check the copy quality. /E) mode.
arity or fusing fault and the blank copy
ons.
bath.
ely. s conductor is not exposed. te capacity or a market table tap is not
e same outlet.
t (4990247) and check that the copy
s, and counters and create a machine

**CHAPTER 2 TROUBLESHOOTING** 

## Contents

2.1	Preface2
2.2	Level 1 Troubleshooting
2.3	Level 2 Troubleshooting4
2.3.1	Status Code Lists4
2.3.1.1	Types of Status Code4
2.3.1.2	A List of IIT/IOT Status Codes4
2.3.1.3	ESS/Fax Status Codes11
2.3.1.4	V Code List11
2.3.1.5	K Code List24
2.3.1.6	D Code List
2.3.1.7	Corrective Action for X Codes
2.3.1.8	Corrective Action for X Codes Flow Chart
2.3.1.9	Activity Report in User Mode35
2.3.1.10	Activity report in Diag C/E Mode35
2.3.1.11	Protocol Monitor
2.3.1.12	X Codes List46
2.3.1.13	Printer/ESS Codes List55
2.3.1.14	Internal Codes List67
2.3.2	Troubleshooting in ISDN Communication75
2.3.2.1	ISDN Line Basic Troubleshooting Flow
2.3.2.2	ISDN Basic Sequences
2.3.2.3	G4 Fax Protocol Monitor82
2.3.2.4	D Channel Troubleshooting85
2.3.2.5	B Channel Troubleshooting93
2.3.2.6	ISDN Fax Installation Notes
2.3.2.7	Explanation of Common Terms101
2.3.2.8	Installation Notes
2.3.2.9	Cases of Parameter Setting Error or Mismatch105
2.3.3	Super G3 Fax106
2.3.3.1	Super G3 Fax Introduction106
2.3.3.2	V.8 CM/JM Signal107
2.3.3.3	V.8 Operation for Auto Transmission108
2.3.3.4	V.8 Operation for Manual Transmission
2.3.3.5	Troubleshooting of Super G3 Fax109

2.3.4	Ilt/IOT Status Code FIP	110
2.3.5	Other Fault FIP	131
2.3.6	General Purpose FIP	137
2.4	How to Use the Diagnostic (C/E) Mode	140
2.4.1	Entering the Diagnostic (C/E Mode)	140
2.4.2	Exiting the Diagnostic (C/E Mode)	140
2.4.3	Entering the Chain Function	140
2.4.4	Changing the Chain Function	140
2.4.5	Memory Read/Write	140
2.4.6	Memory Clear	140
2.4.7	ASCII Code	141
2.4.8	Self-Diagnosis	142
2.4.9	Chain Function Codes	147
2.4.9.1	Output Check Chain Function Code List	147
2.4.9.2	Input Check Chain Function Code List	149
2.4.9.3	NVM Settings	150
2.4.9.4	Test Print	156
2.4.9.5	Billing/EPSV	158
2.4.9.6	Custom Presets	160
2.4.9.7	HFSI Counter/CRUM	168
2.4.9.8	Fault History/Counter	169
2.4.9.9	Mode Set	171
2.4.9.10	Automatic Diagnostic	178
2.4.9.11	Signal Send test	180
2.4.9.12	Fax System Data	184

# WorkCentre Pro 423/428

2-1

03/02

Contents 1 CHAPTER 2 TROUBLESHOOTING

# 2.1 Preface

## How to Troubleshoot

## Level 1 Troubleshooting

Level 1 Troubleshooting (Level1 FIP) is the first step to diagnosis of a problem. Level 1 FIP asks you whether or not any status code and other problematic symptoms exist, guiding you to Level 2 Troubleshooting or BSD to resolve the problem.

## Level 2 Troubleshooting

Level 2 Troubleshooting is a diagnostic procedure for isolating one problem by problematic symptoms such as Status Codes, etc. Performing a FIP or an appropriate procedure in the check list enables you to discover causes of a problem in a short period of time.

## Status Code

When a Status Code alerts you to a machine failure, perform appropriate troubleshooting items, referring to the list of Status Codes listing presumable problem causes and corrective actions.

## Diagnostic (C/E) Mode

This shows purposes of and usage of diagnostic functions and how to read diag data.

How to Proceed Troubleshooting and Cautions

- Make sure you perform the following procedure when turning off the Circuit Breaker on the machine with the Fax.
- 1. When the Document in Memory lamp lights, check that document is stored in Memory Receive. When the machine has document in Memory Receive, outut the document by following the message on display. When there are no documents in store, output Pending Jobs Report and check the contents.
- 2. Press the Check button to confirm that there is no data under transmission or waiting for transmission.
- Firstly perform Level 1 FIP to isolate a problem.

Secondly, proceed to an appropriate Level 2 Troubleshooting (or Image Quality Troubleshooting in Section 3) to resolve the problem. To find causes of the problem using a FIP or Check procedure, thoroughly read instructions and follow the procedure properly. When two or more causes may exist, they cannot be identified at once, so a same FIP should sometimes be repeated. In this case, pay attention to different judgments made in the process of the same FIP.

When taking voltage measurements or performing operation tests of electric appliances, cheat their Interlock Switches.

When replacing PWBs, check connectors on them for proper connections before replacements.

When it is impossible to resolve problems with the Fax, contact the national • Technical Specialists and the local support centre.

|--|

The following terminology	and sentences are used throughout the troubleshooting sec
Terminology	Description
Status Code	Codes (A to X) displayed on the Control Panel when the machine detects failures are called Status Codes.
Enter Diag(C/E) Mode.	Press the Start button while pressing "0" key on the keypad for three or more seconds.
Exit Diag(C/E) Mode.	Press the Start button while pressing "0" key on the keypad. Press the Restart button on the Chain-Function display.
Check for a short circuit	Turn off the Main Power Switch and measure resistance between the wire and the frame using the ohm range of a tester. (Since a short circuit may exist inside the PWB or component, measure the resistance maintaining the wire connected to the connector.)
Check for an open wire or poor contact.	Turn off the Main Power Switch. Check continuity and connection of the wire and check the connector for a poor connection due to contamination by dirt, etc using the ohm range of a tester.
Is voltage +3.3VDC? Is voltage 0VDC? (at +3.3VDC measurement)	Check to see if the voltage is between +3.0 and +3.7VDC. Check to see if the voltage is between 0 and +0.5VDC.
Is voltage +5VDC? Is voltage 0VDC? (at +5VDC measurement)	Check to see if the voltage is between +4.5 and +5.3VDC. Check to see if the voltage is between 0 and +1VDC.
Is voltage +24VDC? Is voltage 0VDC? (at +24VDC measurement)	Check to see if the voltage is between +22.0 and +25.7VDC. Check to see if the voltage is between 0 and +3.0VDC.
Enter Diag Code[X-XX]	Enter the input/output test mode using the procedure specified in "2.X How to Use Diag (C/E) Mode", then enter Chain/Function codes [X-XX] for an input/output component to be checked.
Excute Diag Code[X-XX]	Enter the input/output test mode using the procedure specified in "2.X How to Use Diag (C/E) Mode", then enter Chain/Function codes [X-XX] for an input/output component to be checked. Press the Start button.
PL 4.2	Refer to PL4.2 in Chapter 5, Parts List.
Replace parts in order	When it is impossible to analyze further causes of a problem, replace parts in order. Replacement parts are listed in the order of higher replacement frequency or higher possibility of being a problem cause.

# CHAPTER 2 TROUBLESHOOTING 2.1 Preface

#### 2.2 Level 1 Troubleshooting

## Level 1 FIP

Ask the operator about symptoms. Was the procedure performed correctly? Υ Ν Take action for wrong operation/consumables-related problems. Print out pending jobs. Turn Main Power Switch off then on. Is display on Operation Panel correct? Υ Υ Ν Perform AC Power FIP. Is IIT/IOT Status Code displayed? Υ Ν Enter Diagnostic Mode and run Self Test. Is Self Diagnostics activated? Υ Ν Perform Power Supply FIP. Make a copy in the problem mode. Status Code displayed? Ν Is the operation failure unique to IIT/IOT? Υ N Is it an image quality problem? Υ Ν Perform an appropriate troubleshooting using corrective actions for other FIPs or BSDs, Chapter 9. Or Try communication with NSC. Are communications conducted normally? Ν Have you made communications tests with NSC twice? Υ Ν Take corrective action for X Code. Try communications with problem remote terminal. Are communications conducted normally? Y Ν Take corrective action for X Code. End of work. В С D E А

С D Е В Try communications with problem remote terminal. Are communications conducted normally? Ν Take corrective action for X Code. End of work. Select an appropriate image quality problem item from the table of contents for Chapter 3 and take action. Is there excessive noise from the rear gear train? Ν Take an appropriate corrective action referring to IIT/IOT Status Code List. Lubricate with lubricant (PL 14.1, Item 3) Take an appropriate action referring to Status Code List. Take an appropriate corrective action referring to IIT/IOT Status Code List.

А

2.2 Level 1 Troubleshooting **CHAPTER 2 TROUBLESHOOTING** 

#### Level 2 Troubleshooting 2.3

#### 2.3.1 Status Code Lists

# 2.3.1.1 Types of Status Codes

- An-nn: indicates DADF Document Jam, Misfeed, and Interlock Open
- Cn-nn: indicates IOT/DUPLEX misfeeds  $\bullet$
- Dn-nn: indicates a system error is detected as a result of Self Diagnostic.
- En-nn: indicates Jams in IOT/DUPLEX Paper Path and Interlock Open
- Fn-nn: Jams in FINISHER and Interlock Open
- Hn-nn: indicates IOT copying/printing are possible but that accessory equipment/features  $\bullet$ cannot be used.
- Jn-nn: alerts the operator to "Replacement or Refill of Consumables"
- Kn-nn: indicates "Wrong Operation" by the operator when the fax is used.  $\bullet$
- Ln-nn: indicates related products (accessories) are not installed
- Un-nn: indicates IOT System Error is detected and that copying/printing are impossible. ۲
- UE-nn: EPSV-related interface error status
- Vn-nn: Fax system error status
- Xn-nn: indicates a fax communication failure is detected. lacksquare
- ChainXX-LinkXX: ESS-related fault detection status ۲

2.3.1.2	A List	of IIT/IOT	Status	Codes
---------	--------	------------	--------	-------

Status Code	Status	Description	Corrective Action	Ref. BSD
U0-01 (4001)	DCSYS Software failure	Undefined interrupt such as Break command and 0 subtraction	Power OFF/ON	3.1C
U0-02 (4002)	DCSYS Software failure	MC status transition failure	Power OFF/ON	3.1C
U0-03 (40A0)	DCSYS Software failure	Main Box(MCU) communications failure between tasks	Power OFF/ON	3.1C
U0-04 (4004)	DCSYS Software failure	Wrong job starting parameter	Power OFF/ON	3.1C
U0-05 (4005)	DCSYS Software failure	Job control failure	Power OFF/ON	3.1C
U0-06 (4006)	DCSYS Software failure	Paper at regi section. Don't start Printing(blank purge)	Power OFF/ON	3.1C
U0-07 (4007)	DCSYS Software failure	Main Motor keeps on being energized	Power OFF/ON	3.1C
U0-08 (4008)	DCSYS Software failure	Parameter failure for stopping jobs	Power OFF/ON	3.1C
U0-09 (4009)	DCSYS Software failure	Unable to stop the job (Aborted)	Power OFF/ON	3.1C
U1-1 (4111)	MAIN MOTOR failure	M/C Clock Fail	POWER OFF/ON	4.1
U1-2 (4112)	FAN failure	FUSER FAN failure	POWER OFF/ON	10.1
U1-3 (4113)	FAN failure	LVPS FAN failure	POWER OFF/ON	1.2
U2-1 (4421)	Carriage failure	IIT REGI SENSOR has kept actuated.	POWER OFF/ON	6.2
U2-2 (4112)	Carriage failure	IIT REGI SENSOR has not been actuated.	POWER OFF/ON	6.2
U2-3 (4113)	Carriage failure	A difference of 10 pulses or more in Motor pulse between Scan and Return Carriages	POWER OFF/ON	6.2

# **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

(nnnn) indiantes en internal ande corresponding to Status ande
Status Code	Status	Description	Corrective Action	Ref. BSD
U3-1 (4131)	ROS failure	ROS CONTROL ASIC failure	POWER OFF/ON	6.3
U3-2 (4132)	ROS failure	Abnormal power adjustment value to laser diode when Laser Diode Power adjustment is permitted	POWER OFF/ON	6.3
U3-3 (4133)	ROS failure	Abnormal power adjustment value to the laser diode when the diode is forced to go on	POWER OFF/ON	6.3
U3-4 (4134)	ROS failure	Abnormal power adjustment value to the laser diode at SOS sample hold	POWER OFF/ON	6.3
U3-5 (4135)	ROS failure	ROS not ready within 20 seconds of warm-up	POWER OFF/ON	6.3
U3-6 (4136)	ROS failure	Abnormal SOS interval after ROS gets ready	POWER OFF/ON	6.3
U4-1 (4141)	FUSER failure	FUSER ON TIME Fail Warm-up has not completed in 60 sec.	POWER OFF/ON	10.2
U4-2 (4142)	FUSER failure	OVER HEAT Fail 230 deg C or more detected continuously in more than 500 msec.	POWER OFF/ON Clear NVM	10.2
U4-3 (4143)	FUSER failure	An open circuit of Fuser Thermistor has been detected.	POWER OFF/ON	10.2
U4-4 (4144)	FUSER failure	LOW TEMPERATURE Fail 122 deg C or less detected continuously in more than 500 msec.	POWER OFF/ON	10.2
U4-5 (4145)	FUSER failure	Fuser lamp lit for 10 or more continuous seconds in standby state	POWER OFF/ON	10.2
U4-6 (4146)	FUSER failure	Temperature rise not over 5 degrees continuous three times in 5 seconds during warm-up	POWER OFF/ON	10.2

Status Code	Status	Description	Corrective Action	Ref. BSD
U6-01 (4061)	Memory error at Power ON	MCU/SW PWB Memory Error	POWER OFF/ON	3.1C
U6-02 (4062)	Memory error at Power ON	MCU/SW PWB Memory Error	POWER OFF/ON	3.1C
U6-03 (4063)	Memory error at Power ON	MCU/SW PWB Memory Error	POWER OFF/ON	3.1C
U6-04 (4064)	Memory error at Power ON	MCU/SW PWB Memory Error	POWER OFF/ON	3.1C
U6-41 (4461)	Memory error at Power ON	IIT/IPS PWB ROM CHECK SUM Error	POWER OFF/ON	3.1A
U6-42 (4462)	Memory error at Power ON	IIT/IPS PWB RAM R/W Error	POWER OFF/ON	3.1A
U6-43 (4463)	Memory error at Power ON	EEPROM data damaged	POWER OFF/ON Initialize NVM	3.1A, 3.1C
U6-44 (4464)	Memory error at Power ON	EEPROM R/W Error	POWER OFF/ON Initialize NVM	3.1A, 3.3
U6-05 (4065)	Memory error at Power ON	Illegal CPM data	Replace MCU/SW PWB	3.1C
U6-82 (4862)	Memory error at Power ON	Switcher D-PORT RAM R/W Error	Replace MCU/SW PWB	3.1A
U6-95 (4965)	Memory error at Power ON	Wrong electronic billing counter value	Rewrite NVM.	3.1A,3. 1C,3.3
U7-01 (4071)	Inter-system Communication Fail	Initial communication check error between MF system and MCU/SW	POWER OFF/ON Check connectors.	19.2
U7-02 (4072)	Inter-system Communication Fail	Framing/Overrun/Parity error between MF SYS and MCU/SW.	POWER OFF/ON	19.2
U7-03 (4073)	Inter-system Communication Fail	BCC error between MF SYS and MCU/SW.	POWER OFF/ON	19.2
U7-04 (4074 )	Inter-system Communication Fail	No Communication between MF SYS and MCU/SW.	POWER OFF/ON	19.2

Status Code	Status	Description	Corrective Action	Ref. BSD
U7-05 (4075)	Inter-system Communication Fail	Communication not established between MF system and MCU/SW	POWER OFF/ON	19.2
U7-31 (4371)	Inter-system Communication Fail	Initial communication check error between MCU/SW and PWB control panel	POWER OFF/ON Check connectors.	3.1B
U7-32 (4372)	Inter-system Communication Fail	Framing/Overrun/Parity error between MCU/SW PWB and CONTROL PANEL	POWER OFF/ON	3.1B
U7-33 (4373)	Inter-system Communication Fail	BCC error between MCU/SW PWB and CONTROL PANEL	POWER OFF/ON	3.1B
U7-34 (4374)	Inter-system Communication Fail	No Communication between MCU/SW PWB and CONTROL PANEL	POWER OFF/ON	3.1B
U7-35 (4375)	Inter-system Communication Fail	Communication not established between MCU/SW PWB and CONTROL PANEL	POWER OFF/ON Check connectors.	3.1B
U7-41 (4471)	Inter-system Communication Fail	Initial communication check error between MCU/SW PWB and IIT/IPS PWB	POWER OFF/ON Check connectors.	3.1A
U7-42 (4472)	Inter-system Communication Fail	Framing/Overrun/Parity error between MCU/SW PWB and IIT/IPS PWB	POWER OFF/ON	3.1A
U7-43 (4473)	Inter-system Communication Fail	BCC error between MCU/SW PWB and IIT/IPS PWB.	POWER OFF/ON Rewrite NVM.	3.1A
U7-44 (4474)	Inter-system Communication Fail	No Communication between MCU/SW PWB and IIT/IPS PWB	POWER OFF/ON Rewrite NVM.	3.1A
U7-45 (4475)	Inter-system Communication Fail	Communication not established between MCU/SW PWB and IIT/IPS PWB.	POWER OFF/ON Check connectors.	3.1A



Status Code	Status	Description	Corrective Action	Ref. BSD
U8-3 (4483)	LAMP/CCD Sensor failure	AGC FAIL	POWER OFF/ON	6.1B,6. 2
U8-4 (4484)	LAMP/CCD Sensor failure	AOC FAIL1	POWER OFF/ON	6.1B,6. 2
U8-5 (4485)	LAMP/CCD Sensor failure	AOC FAIL2	POWER OFF/ON	6.1B,6. 2
U8-6 (4486)	LAMP/CCD Sensor failure	Shading correction value reading failure	POWER OFF/ON	6.1B,6. 2
U9-1 (4810)	MCU/SW PWB failure	MCU/SW PWB connection failure	POWER OFF/ON	3.1C
U9-31 (4831)	MCU/SW PWB failure	MCU/SW PWB self- propelled synchronous signal 1 failure	POWER OFF/ON	3.1C
U9-32 (4832)	MCU/SW PWB failure	MCU/SW PWB self- propelled synchronous signal 2 failure	POWER OFF/ON	3.1C
U9-33 (4833)	MCU/SW PWB failure	MCU/SW PWB self- propelled synchronous signal 3 failure	POWER OFF/ON	3.1C
U9-41 (4841)	MCU/SW PWB failure	MCU/SW PWB⊡IOT synchro failure	POWER OFF/ON	3.1C
UE-01 (4901)	EPSV Interface Error	Login information mismatch	POWER OFF/ON	3.2A
UE-02 (4902)	EPSV Interface Error	Communication error between EPSV and related products.	POWER OFF/ON Check connectors.	3.2A
UE-10 (4910)	EPSV Interface Error	Unable to notify Fuji Xerox of a machine fault	Press arbitrary key.	3.2A
UE-11 (4911)	EPSV Interface Error	Unable to change Install data	Press arbitrary key.	3.2A
UE-12 (4912)	EPSV Interface Error	Unable to clear EPSV alert information	Press arbitrary key.	3.2A
UE-13 (4913)	EPSV Interface Error	Unable to request Fuji Xerox to recover the U product	Press arbitrary key.	3.2A
UE-14 (4914)	EPSV Interface Error	Unable to transmit NR data to Fuji Xerox	Press arbitrary key.	3.2A

Status Code	Status	Description	Corrective Action	Ref. BSD
UE-71 (4971)	EPSV Interface Error	Initial communication check error between MCU/SW PWB and EPSV	POWER OFF/ON Check connectors.	3.2A
UE-72 (4972)	EPSV Interface Error	Framing/Overrun/Parity error between MCU/SW PWB and EPSV	POWER OFF/ON	3.2A
UE-73 (4973)	EPSV Interface Error	BCC error between MCU/SW PWB and EPSV	POWER OFF/ON	3.2A
UE-74 (4974)	EPSV Interface Error	No Communication between MCU/SW PWB and EPSV	POWER OFF/ON	3.2A
UE-75 (4975)	EPSV Interface Error	Communication not established between MCU/SW PWB and EPSV	POWER OFF/ON Check connectors.	3.2A
H5-61 (4561)	Finisher Interface Error	Initial communication check error between MCU/SW PWB and FINISHER CONT PWB	POWER OFF/ON Check connectors.	3.1E
H5-62 (4562)	Finisher Interface Error	Framing/ Overrun/Parity error between MCU/SW PWB and FINISHER CONT PWB	POWER OFF/ON	3.1E
H5-63 (4563)	Finisher Interface Error	BCC error between MCU/SW PWB and FINISHER CONT PWB	POWER OFF/ON	3.1E
H5-64 (4564)	Finisher Interface Error	No Communication between MCU/SW PWB and FINISHER CONT PWB	POWER OFF/ON	3.1E
H5-65 (4565)	Finisher Interface Error	Communication not established between MCU/SW PWB and FINISHER CONT PWB	POWER OFF/ON Check connectors.	3.1E
H5-81 (4581)	Finisher Fault	COMPILE MOTOR Fail (COMPILE HP sensor not ON/OFF within specified time)	POWER OFF/ON	12.8
H5-82 (4582)	Finisher Fault	Stapler Motor Fail (Staple HP sensor not ON at stapling)	POWER OFF/ON	12.10

Status Code	Status	Description	Corrective Action	Ref. BSD
H5-83 (4583)	Finisher Fault	TRAY ELEVETOR Fail (UPPER LIMIT/NEAR FULL/STACK HIGHT not changing)	POWER OFF/ON	12.11
H5-84 (4584)	Finisher Fault	Stapler Unit fail	POWER OFF/ON	12.10
H6-63 (4663)	DADF PWB memory error	EEPROM data damaged	Initialize NVM. POWER OFF/ON	3.1D
H6-64 (4664)	DADF PWB memory error	EEPROM R/W Error	POWER OFF/ON Initialize NVM.	3.1D
H6-71 (4671)	DADF Interface Error	Initial communication check error between MCU/SW PWB and DADF PWB	POWER OFF/ON	3.1D
H6-72 (4672)	DADF Interface Error	Framing/ Overrun/Parity error between MCU/SW PWB and DADF PWB	POWER OFF/ON	3.1D
H6-73 (4673)	DADF Interface Error	BCC error between MCU/SW PWB and DADF PWB	POWER OFF/ON	3.1D
H6-74 (4674)	DADF Interface Error	No Communication between MCU/SW PWB and DADF PWB	POWER OFF/ON	3.1D
H6-75 (4675)	DADF Interface Error	Communication not established between MCU/SW PWB and DADF PWB	POWER OFF/ON Check connectors.	3.1D
H8-2 (4820)	Page Memory failure	PAGE MEMORY PWB connection failure	POWER OFF/ON Check connectors.	3.1C
H8-65 (4865)	Page Memory failure	(Standard) PAGE MEMORY PWB R/W Error	POWER OFF/ON	3.1C
H8-66 (4866)	Page Memory failure	(extensive) PAGE MEMORY PWB R/W Error	POWER OFF/ON	3.1C
H8-67 (4867)	Page Memory failure	PAGE MEMORY PWB R/W Error (The machine does not reach Ready status.	POWER OFF/ON	3.1C

Status Code	Status	Description	Corrective Action	Ref. BSD
H8-68 (4868)	Page Memory failure	PAGE MEMORY PWB R/W Error (Initialization error)	POWER OFF/ON	3.1C
HD-01 (4D01)	HDD Failure	Hard Disk NOT Ready	POWER OFF/ON	3.1C
HD-02 (4D02)	HDD Failure	Hard Disk Self Diag error	POWER OFF/ON	3.1C
HD-03 (4D03)	HDD Failure	Hard Disk commanc error	POWER OFF/ON	3.1C
HD-10 (4D04)	HDD Failure	Hard Disk format error	POWER OFF/ON Execute Chain 15-Function	3.1C
HD-11 (4D11)	HDD Failure	Short of effective space on hard disk	POWER OFF/ON	3.1C
HD-71 (4071)	Hard Disk Interface Error	Initial communication check error between MCU/SW PWB and I Hard Disk	POWER OFF/ON Check connectors.	3.1C
HD-72 (4072)	Hard Disk Interface Error	Framing/ Overrun/Parity error between MCU/SW PWB and I Hard Disk	POWER OFF/ON	3.1C
HD-73 (4073)	Hard Disk Interface Error	BCC error between MCU/SW PWB and I Hard Disk	POWER OFF/ON	3.1C
HD-74 (4074)	Hard Disk Interface Error	No Communication between MCU/SW PWB and I Hard Disk	POWER OFF/ON	3.1C
HD-75 (4075)	Hard Disk Interface Error	Communication not established between MCU/ SW PWB and I Hard Disk	POWER OFF/ON Check connectors.	3.1C
E1-1 (4E11)	JAM at REGI SNR	REGI SENSOR not OFF within specified time	Remove paper.	8.5
E1-2 (4E12)	JAM at REGI SNR	FUSER EXIT SENSOR not ON within specified time after REGI SENSOR OFF	Remove paper.	8.5,10. 3
E1-6 (4E14)	JAM at REGI SNR	Paper remaining on REGI SENSOR	Remove paper.	8.5

# 2-8 03/02

Status Code	Status	Description	Corrective Action	Ref. BSD
E3-1 (4E31)	JAM at FUSER	FUSER EXIT SENSOR not OFF within specified time	Remove paper.	10.3,10 .5
E3-6 (4E36)	JAM at FUSER	Paper remaining on FUSER EXIT SENSOR	Remove paper.	10.3
E5-1 (4E51)	IOT Interlock Open	RIGHT HAND COVER is open	Close the Cover.	1.7A
E5-2 (4E52)	IOT Interlock Open	FRONT COVER is open	Close the Cover.	1.7A
E6-1 (4E61)	CABINET Interlock Open	CABINET RIGHT HAND COVER is open	Close the Cover.	1.7B
E8-2 (4E82)	JAM at DUPLEX	DUPLEX SENSOR not ON within specified time	Remove paper.	10.4
C1-3 (4C13)	TRAY1 misfeed	REGI SENSOR not ON within specified time after feed start	Remove paper. Set TRAY1.	8.1,8.5
C2-2 (4C22)	TRAY2 misfeed	T/A ROLL2 SENSOR not ON within specified time after feed start	Remove paper. Set TRAY2.	8.1,8.3, 8.4
C2-3 (4C23)	TRAY2 misfeed	REGI SENSOR not ON within specified time after T/A ROLL2 SENSOR ON	Remove paper.	8.4,8.5
C3-1 (4C31)	TRAY3 misfeed	T/A ROLL3 SENSOR not ON within specified time after feed start	Remove paper. Set TRAY3.	8.1,8.4
C3-2 (4C32)	TRAY3 misfeed	T/A ROLL2 SENSOR not ON within specified time after T/A ROLL3 SENSOR ON	Remove paper.	8.3,8.4
C3-3 (4C33)	TRAY3 misfeed	REGI SENSOR not ON within specified time after T/A ROLL2 SENSOR ON	Remove paper.	8.3,8.4
C4-1 (4C41)	TRAY4 misfeed	T/A ROLL3 SENSOR not ON within specified time after feed start	Remove paper. Set TRAY4.	8.1,8.4
C4-2 (4C42)	TRAY4 misfeed	T/A ROLL2 SENSOR not ON within specified after T/A ROLL3 SENSOR ON	Remove paper.	8.3,8.4

Status Code	Status	Description	Corrective Action	Ref. BSD
C4-3 (4C43)	TRAY4 misfeed	REGI SENSOR not ON within specified after T/A ROLL2 SENSOR ON	Remove paper.	8.3,8.4
C6-1 (4C61)	DUPLEX misfeed	REGI SENSOR not ON within specified time after DUPLEX MOTOR ON	Remove paper.	10.4,10 .5,10,6
C8-2 (4C82)	Paper Remaining at Feed Section	Paper remaining on T/A ROLL2 SENSOR	Remove paper. Set TRAY2.	8.4
C8-3 (4C83)	Paper Remaining at Feed Section	Paper remaining on T/A ROLL3 SENSOR	Remove paper. Set TRAY3.	8.4
C8-6 (4C86)	Paper Remaining at Feed Section	Paper remaining on DUPLEX SENSOR	Remove paper.	10.4
C9-2 (4C92)	MSI misfeed	T/A ROLL2 SENSOR not ON within specified time after MSI CLUTCH ON	Load paper.	8.2,8.4
C9-3 (4C93)	MSI misfeed	REGI SENSOR not ON within specified time after T/A ROLL2 SENSOR ON	Remove paper.	8.4
A1-1 (4A11)	DADF document jam (intake section)	Document remaining on FEED IN SENSOR	Remove document.	5.1
A1-2 (4A12)	DADF document jam (intake section)	FEED IN SENSOR not ON within specified time after feed start	Remove document.	5.1
A1-3 (4A13)	DADF document jam (intake section)	FEED IN SENSOR not OFF within specified time after FEED IN SENSOR ON	Remove document.	5.1
A2-1 (4A21)	DADF document jam (regi sec)	Document remaining on REGI SENSOR or READ SENSOR	Remove document.	5.4
A2-2 (4A22)	DADF document jam (regi section)	REGI SENSOR or READ SENSOR not ON within specified time after FEED IN SENSOR ON	Remove document.	5.4

Status Code	Status	Description	Corrective Action	Ref. BSD
A2-3 (4A23)	DADF document jam (regi section)	REGI SENSOR or READ SENSOR not OFF within specified time after READ SENSOR ON	Remove document.	5.4
A2-4 (4A24)	DADF document jam (regi section)	EXIT/REVERSE SENSOR not ON within specified time after READ SENSOR ON	Remove document.	5.4
A3-1 (4A31)	DADF document jam (eject sec)	Document remaining on EXIT/REVERSE SENSOR	Remove document.	5.4
A3-2 (4A32)	DADF document jam (eject sec)	REGI SENSOR not ON within specified time after back-side feed start	Remove document.	5.4
A3-3 (4A33)	DADF document jam (eject sec)	EXIT/REVERSE SENSOR not OFF within specified time after READ SENSOR OFF	Remove document.	5.4
A5-1 (4A51)	DADF Interlock Open	DADF COVER is open	Close COVER.	1.7B
F4-11 (4F41)	JAM at Finisher IN SNR	IN SENSOR not OFF within specified time after IN SENSOR ON	Remove paper.	12.3,12 .5
F4-12 (4F42)	JAM at Finisher IN SNR	IN SENSOR not ON within specified time	Remove paper.	10.5,12 .5
F4-16 (4F44)	JAM at Finisher IN SNR	Paper remaining on IN SENSOR	Remove paper.	12.5
F4-21 (4F45)	JAM at Finisher REV SNR	REVERSE SENSOR not OFF within specified time after REVERSE SENSOR ON	Remove paper.	12.4,12 .5
F4-22 (4F46)	JAM at Finisher REV SNR	REVERSE SENSOR not ON within specified time	Remove paper.	12.3,12 .5
F4-26 (4F48)	JAM at Finisher REV SNR	Paper remaining on REVERSE SENSOR	Remove paper.	12.5
F4-31 (4F49)	JAM at Finisher TIMING SNR	TIMING SENSOR not OFF within specified time after TIMING SENSOR ON	Remove paper.	12.4,12 .6
F4-32 (4F4A)	JAM at Finisher TIMING SNR	TIMING SENSOR not ON within specified time	Remove paper.	12.4,12 .6

Status Code	Status	Description	Corrective Action	Ref. BSD
F4-36 (4F4C)	JAM at Finisher TIMING SNR	TIMING SENSOR Paper remaining on	Remove paper.	12.6
F4-41 (4F4D)	JAM at Finisher EXIT SNR	EXIT SENSOR ON even after paper ejection	Remove paper.	12.4,12 .7
F4-42 (4F4E)	JAM at Finisher EXIT SNR	EXIT SENSOR not ON within specified time	Remove paper.	12.4,12 .7
F4-46 (4F4F)	JAM at Finisher EXIT SNR	Paper remaining on EXIT SENSOR	Remove paper.	12.7
F7-1 (4F71)	FINISHER Interlock Open	COMPILER PATH COVER (top) or COMPILER PATH COVER (lower) is open	Close the COVER.	12.2
F7-2 (4F72)	FINISHER Interlock Open	STAPLER COVER is open at COMPILER	Close the Cover.	12.1
F7-3 (4F73)	FINISHER Interlock Open	COMPILER TOP COVER is open	Close the Cover.	12.2
F8-1 (4F81)	FINISHER Interlock Open	FIN□SHER Interlock is open	Close the Cover.	12.2
J1-2 (4B12)	No toner	There is no toner.	Replace Drum/ Cartridge, then POWER OFF/ON	9.2
J3-1 (4B31)	Drum/Cartridge installation defect	Drum/Cartridge installation defect	Extract and insert Drum/Cartridge	9.1
J6-1 (4B61)	CRU life	CRU End of life	Replace Drum/ Cartridge, then POWER OFF/ON	9.1
J8-1 (4B81)	CRUM Access Error	ID number mismatch	Replace Drum/ Cartridge, then POWER OFF/ON	9.1
J8-3 (4B83)	CRUM Access Error	Data read/write error	Replace Drum/ Cartridge, then POWER OFF/ON	9.1

# 2-10 03/02

Status Code	Status	Description	Corrective Action	Ref. BSD
J8-4 (4B84)	CRUM Access Error	ACK not received more than five times	Replace Drum/ Cartridge, then POWER OFF/ON	9.1
L6-1 (49A1)	No Related Product	Key counter not present	Set key counter.	3.2C

### WorkCentre Pro 423/428

V2-nn: Resident task error	
V4-nn: OS internal error	
V5-nn: Job error	

V6-nn: File, HDD, or image processing device error ۲

• V0-nn: Machine root device/system error or Boot/Initialize error

V7-nn: Communication error 

2.3.1.3 ESS/FAX Status Codes

• V1-nn: Device handler error

Types of Status Codes

•

•

- K0-n: Memory full/Wrong operation in dialing
- K6-n: Origination (Dial tone) failure
- K7:-n: Failure with the remote Fax terminal •
- K9-n: Origination (Dial tone) failure in using ISDN communications
- X0-n: File error/Job error/Interrupt error/Device failure with Fax in operation/Faulty I/F between CPUs
- X2-n: Error with G3FAX communication in progress
- X3-n: Error with G4FAX communication in progress, Error with ISDN communication in progress
- D1-n: Auto diagnostic error (A failure area can be isolated.)  $\bullet$
- D2-n: Auto diagnostic error (No failure area can be isolated.)

### 2.3.1.4 V Code List

V Code	Internal code	Description	Corrective Action
V0-00	F000	Main CPU exception processing error. Reset: Initial SSP	Replace M/F MAIN PWB.
V0-00	F004	Main CPU exception processing error Reset: Initial PC	Replace M/F MAIN PWB.
V0-00	F008	Main CPU exception processing error Bus error	Replace M/F MAIN PWB.
V0-00	F012	Main CPU exception processing error Address error	Replace M/F MAIN PWB.
V0-00	F016	Main CPU exception processing error Illegal instruction	Replace M/F MAIN PWB.
V0-00	F020	Main CPU exception processing error Division by 0	Replace M/F MAIN PWB.
V0-00	F024	Main CPU exception processing error CHK instruction	Replace M/F MAIN PWB.
V0-00	F028	Main CPU exception processing error TRAPV instruction	Replace M/F MAIN PWB.
V0-00	F032	Main CPU exception processing error Privilege violation	Replace M/F MAIN PWB.
V0-00	F036	Main CPU exception processing error Trace exception processing	Replace M/F MAIN PWB.
V0-00	F040	Main CPU exception processing error Unsupported instruction (line 1010 emulator)	Replace M/F MAIN PWB.
V0-00	F044	Main CPU exception processing error Unsupported instruction (line 1111 emulator)	Replace M/F MAIN PWB.

### 2-12 03/02

V Code	Internal code	Description	Corrective Action
V0-01	8310	Error detected by Main ROM check at system boot: ROM checksum not correct	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V0-02	8320	Error detected by SRAM read/write check at system boot	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V0-03	8321	Undefined command received by SRAM handler	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V0-03	8322	Error detected by SRAM handler: No memory space for allocation by SRAM allocation command	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V0-03	8323	Nonvol Data Initialization error at system boot	Check/replace MMB.
V0-04	8330	Error detected by DRAM Read/Write check at system boot	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.
V0-05	8331	Undefined command received by DRAM handler	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.
V0-05	8332	Error detected by DRAM handler: No memory space for allocation by DRAM allocation command	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.
V0-05	8333	Error detected by DRAM handler: No memory space for allocation by L-MEM allocation command	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.
V0-06	8342	RTC and current date write failure	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.
V0-06	8343	Time read failure at clock initialization	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.
V0-07	8340	Wrong command to clock control function	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.
V0-07	8341	Wrong device channel instruction	Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB.

V Code	Internal code	Description	
V0-08	8351	EEPROM write error	C D M
 V0-09	8350	EEPROM registration error: Beyond EEPROM area	C D M
V0-11	8100	Panel Monitor Task attachment failure by Initialize Task at system boot	C N R N
V0-11	8102	Main Power Control Task attachment failure by Initialize Task at system boot	C № R
V0-11	8103	DC Monitor Task attachment failure by Initialize Task at system boot	C D a
V0-11	8104	Line Control Task attachment failure by Initialize Task at system boot	C N P H
V0-11	8105	Host Control Task attachment failure by Initialize Task at system boot	C H a
V0-11	8106	MMU Control Task attachment failure by Initialize Task at system boot	C № R
V0-11	8107	process Monitor Task attachment failure by Initialize Task at system boot	C № R
V0-11	8108	Timer Monitor Task attachment failure by Initialize Task at system boot	C M R

## **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

#### **Corrective Action**

Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and MMB(EEPROM).

Check/replace M/F MAIN PWB, DRAM, PAGE MEMORY, and /MB(EEPROM).

Check CONTROL PANEL and M/F MAIN PWB for connections. Replace CONTROL PANEL or M/F MAIN PWB , DRAM, PAGE MEMORYMMB.

Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.

Check/replace M/F MAIN PWB, DRAM, IIT, IOT, PAGE MEMORY, and MMB.

Check/replace M/F MAIN PWB, ICU, G4M, G4/ICM, Mother board, PAGE MEMORY, MMB, and ANDSET.

Check/replace M/F MAIN PWB, OST, Cables, PAGE MEMORY, and MMB.

Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.

Check M/F MAIN PWB, PAGE IEMORY, and MMB. Replace M/F MAIN PWB.

Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.

V Code	Internal code	Description	Corrective Action
V0-11	8109	Event issue failure by System Task at system boot	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V0-11	810A	Disk Task attachment failure by Initialize Task at system boot	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB .
V0-11	810B	Power Off Report Job attachment failure at system boot	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB .
V0-11	810C	Display Monitor Task attachment failure by Initialize Task at system boot	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB .
V0-11	810D	Failure of Job Contention information import into UI at initialization	
V0-12	8D10	nonvol data area write failure	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V0-12	8D11	mail box file pointer release failure	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V0-14	8460	Incorrect correspondence between option board and option slot or option recognition failure at system boot	Check correspondences between option boards and option slots. Check/replace motherboard, G4M, G4/ICM, and G3M.
V0-14	8461	Incorrect correspondence between option board and option slot (Four slots full)	Check correspondences between option boards and option slots. Check/replace motherboard, G4M, G4/ICM, and G4M.
V1-00	8300	Undefined device call	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V1-02	8360	VCEPDMA transfer underrun	Check/replace M/F MAIN PWB (VCEP).
V1-02	8361	DMA_CH1 handler open failure	Check/replace M/F MAIN PWB and MMB.
V1-02	8362	DMA_CH1 handler close failure	Check/replace M/F MAIN PWB and MMB.

V Code	Internal code	Description	Corrective Action
V1-02	8363	DMA_CH1 handler abort failure	Check/replace M/F MAIN PWB and MMB.
V1-03	8380	Illegal command parameter received by scmg handler	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V1-04	8390	Illegal command received by HANDSET handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-04	8391	Illegal event received by HANDSET handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-04	8392	Timeout detected by HANDSET handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-05	83A0	Illegal communication type received by Comm handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-05	83A1	Illegal event received by Comm handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-05	83A2	Illegal communication state received by Comm handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-05	83A3	Timeout detected by Comm handler. (event has not occurred)	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-05	83A4	Illegal communication mode received by Comm handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.

2-14	
03/02	

V Code	Internal code	Description	Corrective Action
V1-05	83A5	Illegal communication command received by Comm handler	Check/replace M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET.
V1-05	83A6	Protocol trace acquisition failure	Check/replace M/F MAIN PWB, G3M, G4M, and G4/ICM.
V1-05	83A7	Abnormal return value from DTMF checker	Check M/F MAIN PWB and MMB.
V1-05	83A8	Job type abnormal after DTMF procedure	Check M/F MAIN PWB and MMB. S/W bug in the process monitor.
V1-05	83A9	Abnormal return value from host DTMF related function	Check M/F MAIN PWB and MMB.
V1-06	83B0	Illegal channel number received by G3 module handler	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-06	83B1	No response from G3 at system boot	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-06	83B2	Command interface from M/F MAIN PWB to G3 is busy at system boot	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-06	83B3	Command interface from G3 to M/F MAIN PWB not active at system boot	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-06	83B4	Illegal interrupt detected by G3 module handler	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-06	83B5	Illegal command received by G3 module handler	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-06	83B6	Illegal ID received by G3 module handler	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-06	83B7	Idle notification not received from G3M	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.

V Code	Internal code	Description	Corrective Action
V1-07	83C0	Illegal channel number received by G3 channel handler	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-07	83C1	Illegal command received by G3 channel handler	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-07	83C2	G3 channel event posting failure	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V1-08	83D0	Illegal channel number received by PSTN handler	Check/replace M/F MAIN PWB, NCU, motherboard, PAGE MEMORY, and MMB.
V1-08	83D1	Illegal command received by PSTN handler	Check/replace M/F MAIN PWB, NCU, motherboard, PAGE MEMORY, and MMB.
V1-08	83D2	PSTN channel event posting failure	Check/replace M/F MAIN PWB, NCU, motherboard, PAGE MEMORY, and MMB.
V1-09	83E0	No response from G4 at system boot	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E1	Illegal channel number received by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E2	Illegal command received by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E3	Command interface from M/F MAIN PWB to G4 is busy	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E4	Illegal interrupt detected by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E5	Illegal ID received by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E6	Illegal reference number received by G4 module handler from G4 module	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.

V Code	Internal code	Description	Corrective Action
V1-09	83E7	Illegal response received by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E8	Non-installed mail received by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83E9	Data received by G4 module handler more than specified	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83EA	Illegal ID received by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83EB	Illegal PI received by G4 module handler	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V1-09	83EC	No periodic IDLE notice from G4 module	Replace G4M board.
V1-10	83F1	Illegal channel number received by G4 channel handler	Check/replace M/F MAIN PWB, G4M, G4/ICM, motherboard, PAGE MEMORY, and MMB.
V1-10	83F2	Illegal command received by G4 channel handler	Check/replace M/F MAIN PWB, G4M, G4/ICM, motherboard, PAGE MEMORY, and MMB.
V1-10	83F3	G4 channel event posting failure	Check/replace M/F MAIN PWB, G4M, G4/ICM, motherboard, PAGE MEMORY, and MMB.
V1-11	8401	Illegal channel number received by CSDN handler	Check/replace M/F MAIN PWB, motherboard, PAGE MEMORY, and MMB.
V1-11	8402	CSDN event posting failure	Check/replace M/F MAIN PWB, motherboard, PAGE MEMORY, and MMB.
V1-12	8420	Illegal command received by ICM handler	Check M/F MAIN PWB and G4/ICM board for connections. Replace M/F MAIN PWB or G4/ICM borad.
V1-12	8421	Command interface from M/F MAIN PWB to ICM is busy	Check M/F MAIN PWB and G4/ICM board for connections. Replace M/F MAIN PWB or G4/ICM borad.

V Code	Internal code	Description	
V1-12	8422	Illegal interrupt detected by ICM handler	C b∙ N
V1-12	8423	Timeout detected by ICM handler	C b∙ N
V1-12	8424	Response timeout detected by ICM handler	C b∙ N
V1-12	8425	Illegal ID received by ICM mail handler	C b N
V1-12	8430	Illegal command received by ISDN handler	C G M lir
V1-12	8431	Illegal channel number received by ISDN handler	C G M lir
V1-12	8432	ISDN event posting failure	C G M lir
V2-00	8110	Event issue failure by process Monitor Task	C Ⅳ Ⅳ
V2-00	8111	Print job error (Illegal parameter)	C P
V2-00	8112	Print job error (BM interface error)	C P
V2-00	8113	Power-off report creation failure	C P
V2-00	8114	Communication log file creation failure	C P
V2-00	8115	Exclusive control failure by Process Monitor Task	C P
V2-00	8117	File information read failure	C P

#### **Corrective Action**

Check M/F MAIN PWB and G4/ICM oard for connections. Replace //F MAIN PWB or G4/ICM borad.

Check M/F MAIN PWB and G4/ICM oard for connections. Replace I/F MAIN PWB or G4/ICM borad.

Check M/F MAIN PWB and G4/ICM oard for connections. Replace //F MAIN PWB or G4/ICM borad.

Check M/F MAIN PWB and G4/ICM oard for connections. Replace //F MAIN PWB or G4/ICM borad.

Check/replace M/F MAIN PWB, 64M, G4/ICM, motherboard, PAGE IEMORY, and MMB. Check the ne.

Check/replace M/F MAIN PWB, 64M, G4/ICM, motherboard, PAGE IEMORY, and MMB. Check the ne.

Check/replace M/F MAIN PWB, 64M, G4/ICM, motherboard, PAGE IEMORY, and MMB. Check the ne.

Check M/F Main PWB, PAGE IEMORY, and MMB. Replace M/F lain PWB.

Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.

2-16
03/02

V Code	Internal code	Description	Corrective Action
V2-00	8118	E-mail send log registration failure	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8120	Illegal event received by process Monitor Task	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8121	Start attempt by illegal process type	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8123	Job start failure by process Monitor Task	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8124	Unable to read job control ppb	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8125	No jcb corresponding to job	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8126	Data write abortion failure at occurrence of LargeMemoryFull	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8128	Job termination processing failure by process Monitor Task (can't STOP job due to js_ind_end/error())	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	8129	Event processing error in process Monitor Task job (JS_JOB_STATUS())	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	812E	Unable to go to next job (endcheck failure)	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	812F	Job transition processing failure (Failure in transition to batch transmission, 2- way, or forced polling mode or in remote maintenance report creation)	Check/replace M/F MAIN PWB.
V2-00	81B1	Stop processing failure (SS_REQ_STOP processing failure	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-00	81B2	Illegal event received by Process Monitor Task ( SS_MEMORY_FULL )	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.

V Code	Internal code	Description	
V2-00	81B3	Real-time processing error by Process Monitor Task ( midcheck failure)	C P
V2-00	81B4	Illegal event issued by Process Monitor Task ( SS_MEMORY_STATUS processing failure)	C P
V2-00	81B5	Illegal pid processed by Process Monitor Task ( SS_JOB_BLOCK processing failure)	C P
V2-00	81B6	Interrupt control failure ( SS_REQ_PAUSE processing failure)	C P
V2-00	81B7	Job status change processing error by user	C P
V2-00	81B8	Data write abortion failure at occurrence of LargeMemoryFull	C P
V2-00	81BE	Job start failure due to interface error between job and job scheduler Task (No ACK returned to job start command)	C P
V2-00	81BF	Job stop failure due to interface error between job and job scheduler Task (No COMP returned to job stop command)	C P
V2-01	8116	ppb creation failure at document resend processing	C P
V2-01	811A	RM job creation failure by System Monitor	C P

## **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

#### **Corrective Action**

Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.

V Code	Internal code	Description	Corrective Action
V2-01	8140	Illegal event received by Line Control Task	Check M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET. Replace communication board or M/F MAIN PWB.
V2-01	8141	Timeout detected by Line Control Task	Check M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET. Replace communication board or M/F MAIN PWB.
V2-01	8142	Illegal device number received by Line Control Task	Check M/F MAIN PWB, NCU, G4M, G4/ICM, motherboard, PAGE MEMORY, MMB, and HANDSET. Replace communication board or M/F MAIN PWB.
V2-02	8151	Failure in event posting to Process Monitor by Timer Monitor Task	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-02	8152	Wrong event to Timer Monitor Task	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-02	8153	Time internal difference initialization failure	Check/replace M/F MAIN PWB and MMB.
V2-02	8154	Time read failure	Check/replace M/F MAIN PWB and MMB.
V2-03	8190	a_post failure about memory remaining/full	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-03	8191	Release block number damaged	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V2-04	8131	Panel module startup failure due to system data error	Check/replace M/F MAIN PWB, PAGE MEMORY, MMB, and CONTROL PANEL, or clear memory.
V2-04	8132	Job registration table overflow in information area (jobmgr) for job control and management by panel	Check/replace M/F MAIN PWB, PAGE MEMORY, MMB, and CONTROL PANEL.

V Code	Internal code	Description	Corrective Action
V2-04	8133	Parity error in communication (UART0) between PANEL<->M/F MAIN PWB	S/W bug (Problem in M/F MAIN PWB program)
V2-04	8134	Overrun error detected during communication (UART0) between PANEL<- >M/F MAIN PWBS/W bug (Problem in M/F M PWB program)	
V2-04	8135	Framing error detected during communication (UART0) between PANEL<- >M/F MAIN PWB	
V2-04	8136	Break character detected during communication (UART0) between PANEL<- >M/F MAIN P WB	S/W bug (Problem in M/F MAIN PWB program)
V2-06	8160	WAKE_UP or other illegal event not permitted in sequence during host event processing, or illegal event parameter (wrong device number in host event parameters)	
V2-07	8600	OA interface board response timeout at system boot	Replace OA I/F or M/F MAIN M/F MAIN PWB. Internal sequence error.
V2-07	8601	No interrupt processing job for interrupt from OA interface board	Replace OA I/F board or M/F Main PWB. Internal sequence error.
V2-07	8602	Illegal event to OA interface board (Not within the ID range or with interrupt flag)	Replace OA I/F board or M/F MAIN PWB. Internal sequence error.
V2-07	8603	Illegal event from OA interface board (Continuation flag ON and no next mail)	Replace OA I/F board. Internal sequence error.

2-18
03/02

V Code	Internal code	Description	Corrective Action
V2-07	8604	WAKE_UP or other illegal event not permitted in sequence during OA board or main event processing	Replace OA I/F board or M/F MAIN PWB. Internal sequence error.
V2-07	8605	Illegal HRB in HRB processing by main OA software when HRB in the hrb_status "TERM_HRB" is connected from TERM link to Free link	Replace M/F MAIN PWB. Internal sequence error.
V2-08	8640	Timeout at X/P module system boot	Replace XP I/F board. Internal sequence error.
V2-08	8641	Illegal job-related interrupt from X/P board	Replace XP I/F board. Internal sequence error.
V2-08	8642	Illegal XP module event (Not within the ID range or with interrupt flag)	Replace XP I/F board. Internal sequence error.
V2-08	8643	Illegal X/P module event from XP I/F board (Continuation flag ON and no next mail)	Replace XP I/F board. Internal sequence error.
V2-08	8644	WAKE_UP or other illegal event not permitted in sequence during X/P module event processing	Replace XP I/F board. Internal sequence error.
V2-08	8645	Illegal HRB in HRB processing by X/P module when HRB in the hrb_status "TERM_HRB" is connected from TERM link to Free link	Replace XP I/F board. Internal sequence error.
V4-03	8001	Error detected by OS: TCB stack overflow	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8002	Error detected by OS: Wrong TCB address	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.

V Code	Internal code	Description	Corrective Action
V4-03	8003	Error detected by OS: Wrong TPCB address	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8004	Error detected by OS: Wrong task number	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8005	Error detected by OS: Wrong ECB address	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8006	Error detected by OS: Wrong PRM address	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8007	Error detected by OS: Wrong TMCB address	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8008	Error detected by OS: Specified TPCB address not found	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8009	Error detected by OS: Specified TCB address not found	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	800A	Error detected by OS: No TCB memory	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	800B	Error detected by OS: Specified task not active	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	800C	Error detected by OS: Inhibited event (0) detected	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	800D	Error detected by OS: Specified ECB address not found	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	800E	Error detected by OS: Received PRM too large to allocate	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.

V Code	Internal code	Description	Corrective Action
V4-03	800F	Error detected by OS: Syntax error	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8010	Error detected by OS: No TMCB memory	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8011	Error detected by OS: No ECB memory	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8012	Error detected by OS: No PRM memory	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8013	Error detected by OS: No NULL event in arguments of mwait_event function	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8021	Undefined interrupt detected by OS (Undefined int_emergency)	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V4-03	8022	Undefined interrupt detected by OS (Undefined int_jump)	Check M/F MAIN PWB, PAGE MEMORY, and MMB. Replace M/F MAIN PWB.
V5-00	8230	Illegal event received by Tel Job	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V5-04	8270	Event timeout in transfer job	Check Main CPU or replace M/F MAIN PWB.
V5-04	8271	Transfer job status abnormal	Check/replace M/F MAIN PWB.
V5-04	8272	Illegal event received by transfer job	Check/replace M/F MAIN PWB.
V6-06	8250	Notice event read failure by File job (deletion task)	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	8251	Invalid event notice to File job (deletion task)	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.

V Code	Internal code	Description	Corrective Action
V6-06	8252	a_post failure: Failed to notify the generation of a file deletion job, to notify the start of a file deletion job, or to request file deletion by a file close function	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	8253	a_post failure: Failed to stop warm/cold boot processing	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	8254	file job task generation failure	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	8255	a_post failure: Failed to assign deletion processing from read& flash to the file_job task	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	8257	a_post failure: Failed to assign file deletion processing to the file_job task	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	8258	a_post failure: Failed to assign page deletion processing to the file_job task	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	8259	Blank FCB not found by checking file directory table link information	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	825A	Not enough free space in SRAM for allocating each file area in SRAM Heap area. Not enough free space in DRAM for allocating each file area in DRAM area.	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	825B	Unable to restore file management information at original position	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V6-06	825C	File close processing executed twice	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.

# 2-20 03/02

V Code	Internal code	Description	Corrective Action
V6-06	825D	Invalid open type when file is closed	Check/replace M/F MAIN PWB, PAGE MEMORY, and MMB.
V7-00	8501	0FFh fetched	G3M S/W bug->Replace the software with the latest version. Replace the G3M board.
V7-00	8502	Undefined instruction executed.	G3M software bug $\rightarrow$ Replace the software with the latest version. Replace the G3M board.
V7-00	8503	Busy state not released within specified time by PUTCOM macro	M/F MAIN PWB or G3M software bug $\rightarrow$ Replace the software with the latest version. Replace the G3M or M/F MAIN PWB.
V7-00	8504	Undefined PID received	M/F MAIN PWB or G3M software bug $\rightarrow$ Replace the software with the latest version. Replace the G3M or M/F MAIN PWB.
V7-00	8505	Necessary PID not present or PI data not correct	M/F MAIN PWB or G3M software bug $\rightarrow$ Replace the software with the latest version. Replace the G3M or M/F MAIN PWB.
V7-00	8506	Unexpected CID received	M/F MAIN PWB or G3M software bug $\rightarrow$ Replace the software with the latest version. Replace the G3M or M/F MAIN PWB.
V7-00	8507	Command acquired by GETCOM macro not within specified time	M/F MAIN PWB or G3M software bug $\rightarrow$ Replace the software with the latest version. Replace G3M board. Replace the G3M or M/F MAIN PWB.
V7-00	8508	Stack overflow detected	G3M software bug -> Replace the software with the latest version. Replace G3M board.
V7-00	8509	Undefined job CID received	M/F MAIN PWB or G3M software bug $\rightarrow$ Replace the software with the latest version. Replace the G3M or M/F MAIN PWB.

V Code	Internal code	Description	
V7-00	850A	Failure to convert physical address into bank number	C s F
V7-00	850B	Undefined bank number specified by BANK macro	C S F
V7-00	850C	Jumped to zero address	C s F
V7-00	8510	Attachment error in G3 main task	N b tl C
V7-00	8511	Illegal status in procedural control section task	N b tl
V7-00	8512	Illegal event in procedural control section task	N b t C
V7-00	8514	Under-run or overrun at high speed	N b t C
V7-00	8515	SCM response command timeout	N b tl C
V7-00	8516	Unexpected command received from SCM	N b t C
V7-00	8517	Illegal PI received from SCM	N b tl C

# CHAPTER 2 TROUBLESHOOTING 2.3 Level 2 Troubleshooting

### **Corrective Action**

G3M software bug -> Replace the software with the latest version. Replace G3M board.
G3M software bug -> Replace the software with the latest version. Replace G3M board.
G3M software bug -> Replace the software with the latest version. Replace G3M board.
M/F MAIN PWB or G3M software oug $\rightarrow$ Replace the software with he latest version. Replace the G3M or M/F MAIN PWB.
M/F MAIN PWB or G3M software oug $\rightarrow$ Replace the software with he latest version. Replace the G3M or M/F MAIN PWB.
M/F MAIN PWB or G3M software oug $\rightarrow$ Replace the software with he latest version. Replace the G3M or M/F MAIN PWB.
M/F MAIN PWB or G3M software oug $\rightarrow$ Replace the software with he latest version. Replace the G3M or M/F MAIN PWB.
M/F MAIN PWB or G3M software oug → Replace the software with he latest version. Replace the G3M or M/F MAIN PWB.
M/F MAIN PWB or G3M software oug $\rightarrow$ Replace the software with he latest version. Replace the G3M or M/F MAIN PWB.
M/F MAIN PWB or G3M software oug $\rightarrow$ Replace the software with he latest version. Replace the G3M or M/F MAIN PWB.

V Code	Internal code	Description	Corrective Action
V7-00	8518	Abnormal DSR specified from SCMM/F MAIN PWB or G3M software bug $\rightarrow$ Replace the software the latest version. Replace the 	
V7-00	8540	Modem operation error	Replace G3M board.
V7-00	8541	FXOS post event error (Event read error)	Replace G3M board.
V7-00	8542	Illegal event parameter received by line monitor task	Replace G3M board.
V7-00	8560	Modem test error (Register)	Check/replace G3M board.
V7-00	8561	Modem test error (DSP)	Check/replace G3M board.
V7-00	8562	Modem test error (Checksum)	Check/replace G3M board.
V7-00	8564	Checksum error	Replace G3M Rom.
V7-00	8565	Work Ram error	Replace G3M board.
V7-00	8566	Dual Port Ram error	Replace G3M or M/F Main PWB.
V7-00	8567	Timer error	Replace G3M board.
V7-00	8568	No modem response	
V7-00	8571	TCB stack overflow	Check/replace G3M and M/F MAIN PWB.
V7-00	8572	TCB address not correct	Check/replace G3M and M/F MAIN PWB.
V7-00	8573	TPCB address not correct	Check/replace G3M and M/F MAIN PWB.
V7-00	8574	Task number not correct	Check/replace G3M and M/F MAIN PWB.
V7-00	8575	ECB address not correct	Check/replace G3M and M/F MAIN PWB.
V7-00	8576	PRM address not correct	Check/replace G3M and M/F MAIN PWB.
V7-00	8577	TMCB address not correct	Check/replace G3M and M/F MAIN PWB.
V7-00	8578	Specified TPCB address not found	Check/replace G3M and M/F MAIN PWB.
V7-00	8579	Specified TCB address not found	Check/replace G3M and M/F MAIN PWB.

V Code	Internal code	Description	Corrective Action
V7-00	857A	No TCB memory	Check/replace G3M and M/F MAIN PWB.
V7-00	857B	Specified TCB address not found	Check/replace G3M and M/F MAIN PWB.
V7-00	857C	Inhibited event (0) detected	Check/replace G3M and M/F MAIN PWB.
V7-00	857D	Specified ECB address not found	Check/replace G3M and M/F MAIN PWB.
V7-00	857E	Received PRM Failure	Check/replace G3M and M/F MAIN PWB.
V7-00	857F	Syntax error	Check/replace G3M and M/F MAIN PWB.
V7-00	8580	No TMCB memory	Check/replace G3M and M/F MAIN PWB.
V7-00	8581	No ECB memory	Check/replace G3M and M/F MAIN PWB.
V7-00	8582	No PRM memory	Check/replace G3M and M/F MAIN PWB.
V7-00	8583	No NULL event in arguments of mwait_event function	Check/replace G3M and M/F MAIN PWB.
V7-00	8584	CPU exception processing error: Bus error	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	8585	CPU exception processing error: Address error	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	8586	CPU exception processing error: Illegal instruction	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	8587	CPU exception processing error: division by 0	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	8588	CPU exception processing error. CHK instruction	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.

Corrective	Action
------------	--------

# 2-22 03/02

V Code	Internal code	Description	Corrective Action
V7-00	8589	CPU exception processing error. TRAPV instruction	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	858A	CPU exception processing error. Privilege violation	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	858B	CPU exception processing error. Trace exception processing	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	858C	CPU exception processing error. Uninstalled instruction (line 1010 emulator)	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	858D	CPU exception processing error. Uninstalled instruction (line 1111 emulator)	Check G3M and M/F MAIN PWB for connections. Check/replace G3M and M/F MAIN PWB.
V7-00	858F	Unable to interrupt from G3M to MF system	Check/replace G3M board.
V7-00	85E8	One-minute or longer 0 fail at G3 transmission (non- ECM)	Check/replace M/F MAIN PWB. Retry.
V7-00	85E9	Image buffer overflow at G3 reception (non-ECM)	Check/replace M/F MAIN PWB. Retry.
V7-03	89C0	G4M status transition error	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C1	G4M FIFO control handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C2	G4M page control handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C3	G4M transputer control handler abnormal (Opening)	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C4	G4M transputer control handler abnormal (Data)	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.

V Code	Internal code	Description	Corrective Action
V7-03	89C5	G4M wait queue control handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C6	G4M receive buffer control handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C7	G4M transmission data edit error	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C8	G4M data pointer control handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89C9	G4M logical channel control handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89CA	G4M PCIB control handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-03	89CB	Network abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board. Check network status.
V7-03	89D2	(G4) XID critical error	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board. Check network status.
V7-03	89D3	(G4) Data link critical error	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board. Check network status.
V7-07	8440	G4 data handler abnormal	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.
V7-07	8441	G4 data interface idle timeout	Check M/F MAIN PWB and G4M board for connections. Replace M/F MAIN PWB or G4M board.

V Code	Internal code	Description	Corrective Action
V7-07	8442	G3 data handler abnormal	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V7-07	8443	G3 data interface idle timeout	Check M/F MAIN PWB and G3M board for connections. Replace M/F MAIN PWB or G3M board.
V7-08	85E4	Event issue failure by codec	Check/replace M/F MAIN PWB. Retry.
V7-08	85E5	No response from codec to SCM	Check/replace M/F MAIN PWB. Retry.
V7-08	85E6	Codec device initialization failure	Check/replace M/F MAIN PWB. Retry.
V7-08	85E7	Error detected by codec DMA	Check/replace M/F MAIN PWB. Retry.
V7-08	85EA	Codec hang-up	Check/replace M/F MAIN PWB. Retry.

### 2-24 03/02

# 2.3.1.5 K Code List

K Code	Internal Code	Error Description	Corrective Action
K0-00	086E	Facility rejection (ISDN)	Check line contract.
K0-00	0878	QOS unavailable (ISDN)	Check line contract.
K0-00	0879	No contract for requested facility (ISDN)	Check line contract.
K0-00	087A	Transmission capacity not permitted (ISDN)	Check line contract.
K0-00	087B	Transmission capacity not permitted (ISDN)	Retry.
K0-00	087C	Other services or options unavailable (ISDN)	Check line contract.
K0-00	087D	Unprovided transmission capacity selected (ISDN)	Check line contract.
K0-00	087E	Unprovided channel types selected (ISDN)	Check line contract.
K0-00	087F	Unprovided facility requested (ISDN)	Check line contract.
K0-00	0880	Only limited digital info. forward capacity available (ISDN)	Check line contract.
K0-00	0881	Other services or options not provided (ISDN)	Check line contract.
K0-03	0860	Missing number (ISDN)	Retry.
K0-03	0861	No route to selected network (ISDN)	Retry.
K0-03	0862	No route remote terminal (ISDN)	Retry.
K0-03	0864	Not used (Termination at call-set channel) (ISDN)	Check network and line.
K0-03	0865	Not used (Normal disconnection) (ISDN)	Check network and line.
K0-03	086A	Subscriber No. of remote terminal changed (ISDN)	Check remote terminal.
K0-03	086B	Not used (Recovery of unselected user from disconnection) (ISDN)	Check network and line.

K Code	Internal Code	Error Description	
K0-03	086D	Invalid number format (incomplete number) (ISDN)	R
K0-03	086F	Not used (Response to status query)	С
K0-03	0875	Access info. abandoned (ISDN)	R
K0-03	0884	Selected Interrupt Call ID No. not used (ISDN)	R
K0-03	0885	Interrupt Call ID No. in use (ISDN)	R
K0-03	0886	No interrupt call (ISDN)	R
K0-03	0887	Selected interrupt call disconnection recovered (ISDN)	R
K0-03	0888	Mismatched terminal properties (ISDN)	С
K0-03	0889	Invalid relay network selected (ISDN)	R
K0-05	0020	Memory full (insufficient job memory capacity or too many relay broadcast send destinations)	D M
K0-05	0021	Line overflow (job lines exceeded 65535 in number) ERR_LINEOVER	U
K0-05	0022	Max. number of jobs exceeded ERR_PAGEOVER	U
K0-05	0023	Memory full is detected without storing one page in memory. (insufficient job memory capacity or too many relay broadcast send destinations) ERR_MFULL_NOPAGE	D C D
K0-05	0024	Work memory overflowed while storing.	T lo

Corrective Action
Retry.
Check network and line.
Retry.
Check remote terminal.
Retry.
Delete files. Check/replace M/F MAIN PWB and DRAM.
User interruption
User interruption
Delete files. Check/replace M/F MAIN PWB and DRAM.
Try operation again after selecting lower image quality.

K Code	Internal Code	Error Description	Corrective Action
K0-05	0025	Work memory overflowed without completing a page while storing	Try operation again after selecting lower image quality.
K0-05	0026	Work memory overflowed while sending.	Delete files. Retry.
K0-05	0027	Work memory overflowed while receiving	Delete files. Retry.
K0-05	0227	Send job detected Memory full. (insufficient job memory capacity)	Delete files. Recover residual memory capacity.
K0-05	0254	No operator interruption with communication size fall back alarm	Operating error
K0-05	0255	No operator interruption with communication resolution fall back alarm	Operating error
K0-05	0272	Forward job is aborted due to memory full.	Check memory capacity.
K0-05	02A4	Work memory overflowed when M/C was communicating	Delete files. Retry.
K0-07	0258	Unlimited loop detected at remote multi-relay send.	Operating error
K0-08	02F0	Memory full when response file closed.	Delete files and restore the rest of memory.
K5-03	00A1	Job activated with activating requirements unsatisfied	Check local functions-activating requirements. Activate again.
K5-03	00A2	No resource could be secured.	Check operating requirements.
K5-03	00A4	Request issued when LAN Message display conditions are not satisfied	Check LAN Message display conditions.
K5-03	00A5	Selected functions are restrained by system data.Check system data restrain functions.	
K5-04	00A0	Wrong job-requesting parameter	Check host's job-requesting parameter

K Code	Internal Code	Error Description	Corrective Action
K5-05	00A3	Host-activated job terminated by stop command from panel	Normal processing
K5-06	0270	Job timeout because host disk did not execute next processing or issue command within specified time	Check host connection or status.
K5-07	0256	Abnormal return value of host DTMF related function	Check/replace M/F MAIN PWB and MMB.
K5-08	0028	Work memory overflowed while sending to host.	Delete files. Retry.
K5-08	0029	Work memory overflowed while receiving from host.	Delete files. Retry.
K5-08	0257	Buffer became full for host DTMF.	Check host.
K5-08	0275	Work memory overflowed while sending to host.	Delete files. Retry.
K5-09	002A	Non-rotatable document detected despite rotation instruction ERR_ROT_NG	Remove rotation instruction and try again
K5-20	0620	Other error (At job Template polling lock response, Job Template detail information response, Job Template information update end request, and channel abort request)	Stop command from client or unclassified error
K5-21	0621	Updating Job Template (At Job Template polling lock response)	Operator waits until the end of Job Template update.
K5-22	0622	Unable to connect Job Template pool server (At request for the end of Job Template information update)	Check connection to network. (Perform a ping test between the Job Template pool server and M/C. Check the Job Template pool server address set in P-ESS.)

### WorkCentre Pro 423/428

2-26
03/02

K Code	ode Internal Error Description Code		Corrective Action	
K5-22	0623	Unable to log in to Job Template pool server (At request for the end of Job Template information update)	Check login account for matching (settings of the Job Template pool server and P-ESS).	
K5-22	0624	Specified path not found in Job Template pool server (At request for the end of Job Template information update)	Check specified path for matching (settings of the Job Template pool server and P-ESS).	
K5-22	0625	Error at file read from Job Template pool server (At request for the end of Job Template information update)	Check pool directory and Job Template file access privilege.	
K5-23	0626	Error at Job Template file accumulation on P-ESS local HDD (At request for the end of Job Template information update)	Initialize or replace HDD.	
K5-23	0627	File system full at Job Template file accumulation on P-ESS local HDD (At request for the end of Job Template information update)	Check P-ESS print queue status. Initialize or replace HDD.	
K5-23	0629	End of transfer job due to P- ESS internal HDD read error. Issued by P-ESS formatter during internal transfer. (At request for	Check P-ESS print queue status. Initialize or replace HDD.	

channel abortion)

K Code	Internal Code	Error Description	
K5-23	062C	End of transfer job due to P- ESS internal HDD write error (temporary file for work). Issued by P-ESS redirector during network transfer. (At request for channel abortion)	C
K5-24	0628	Job Template syntax error. Issued by P-ESS JT monitor before internal transfer. (At Job Template detail information response or request for Job Template information update)	C
K5-24	062A	End of transfer job due to Job Template syntax error. Issued by P-ESS formatter during internal transfer. (At request for channel abortion)	C
K5-24	062B	End of transfer job due to Job Template syntax error. Issued by P-ESS redirector during network transfer. (At request for channel abortion)	С
K5-25	062D	End of transfer job due to repository connection failure. Issued by P-ESS redirector during network transfer. (At request for channel abortion)	C (I re C T
K5-25	062E	End of transfer job due to repository login failure. Issued by P-ESS redirector during network transfer. (At request for channel abortion)	C (៖ ៣

# CHAPTER 2 TROUBLESHOOTING 2.3 Level 2 Troubleshooting

#### **Corrective Action**

Check P-ESS print queue status. Initialize or replace HDD.

Check JobTemplate contents.

Check JobTemplate contents.

Check JobTemplate contents.

Check connection to network. (Perform a ping test between repository M/C and machine.) Check repository name in Job Template.

Check login account for matching (settings of the repository M/C and machine).

K Code	Internal Code	Error Description	Corrective Action
K5-25	062F	End of transfer job due to specified path finding failure in repository. Issued by P- ESS redirector during network transfer. (At request for channel abortion)	Check matching (DocumentPath between repository M/C and Job Template).
K5-25	0630	End of transfer job due to repository write error. Issued by P-ESS redirector during network transfer. (At request for channel abortion)	Check DocumentPath access privilege for repository M/C. Check access privilege for file in DocumentPath.
K5-25	0631	End of transfer job due to full repository. Issued by P-ESS redirector during network transfer. (At request for channel abortion)	Check remaining capacity in repository M/C disk.
K5-25	0632	Unable to secure P-ESS transfer channel (Response at start of job activation)	Retry after job with reserved transfer channel.
K5-25	0633	P-ESS fault (Response at start of job activation)	Replace P-ESS/P-ESS board.
K6-02	056F	Line current can't be detected.	Check switchboard. Connect line properly. Check/replace NCU.
K6-03	056D	Remote terminal did not answer after dialing.	Check remote terminal. Check telephone number. Connect tel line correctly. Check/replace M/F MAIN PWB(modem) and NCU.
K6-03	0867	No response was made by the called user. (ISDN)	Retry.
K6-04	0545	No dial tone could be detected before dialing. DT1 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-04	0546	Second dial tone couldn't be detected before dialing. DT2 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

K Code	Internal Code	Error Description	Corrective Action
K6-04	0547	Third dial tone couldn't be detected before dialing. DT3 can't be detected.Connect line properly. Change line setting. Check/replace MAIN 	
K6-04	0548	Ring back tone couldn't be detected before dialing.Connect line properly. Cha setting. Check/replace MA (modem) and NCU.	
K6-04	0573	No dial tone could be detected before dialing. (PBX) DT can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-04	0574	Ring back tone couldn't be detected before dialing. (PBX) RBT can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	054D	No dial tone could be detected during dialing ( = ). DT1 can't be detected. This can occur when external line is used by pressing 0 on PBX.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	054E	Second dial tone couldn't be detected during dialing ( = ). DT2 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	054F	Third dial tone couldn't be detected during dialing ( = ). DT3 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	0550	Ring back tone couldn't be detected during dialing ( = ). RBT can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	0555	No dial tone could be detected during dialing ( == ). DT1 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	0556	Second dial tone couldn't be detected during dialing ( == ). DT2 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	0557	Third dial tone couldn't be detected during dialing ( == ). DT3 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

2-28	
03/02	

K Code	Internal Code	Error Description	Corrective Action
K6-05	0558	Ring back tone couldn't be detected during dialing ( == ). RBT can't be detected.Connect line properly. Chang setting. Check/replace MAIN 	
K6-05	055D	No dial tone could be detected during dialing ( === ). DT1 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	055E	Second dial tone couldn't be detected during dialing ( === ). DT2 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	055F	Third dial tone couldn't be detected during dialing ( === ). DT3 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-05	0560	Ring back tone couldn't be detected during dialing ( === ). RBT can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-06	0565	No dial tone could be detected after dialing. DT1 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-06	0566	Second dial tone couldn't be detected after dialing. DT2 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-06	0567	Third dial tone couldn't be detected after dialing. DT3 can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-06	0568	Ring back tone couldn't be detected after dialing. RBT can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-06	0577	No dial tone could be detected after dialing. (PBX) DT can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-06	0578	Ring back tone couldn't be detected after dialing. (PBX) RBT can't be detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	027A	Abortion of transfer job for immediate host transmission due to no response from remote terminal	Check busy state or remote terminal's number. Check switchboard. Connect line correctly. Check line settings.

K Code	Internal Code	Error Description	
K6-07	0519	Busy tone detected after transition to protocol phase in origination by fast protocol 2.	L
K6-07	0549	Busy tone was detected before dialing. BT1 detected.	0 7 0 0
K6-07	054A	Busy tone was detected before dialing. BT2 detected.	
K6-07	054B	Congestion tone was detected before dialing. Switchboard is busy. CT1 detected.	0 7 0 1
K6-07	054C	Congestion tone was detected before dialing. CT2 detected.	0 7 0 0
K6-07	0551	Busy tone was detected during dialing ( = ). BT1 detected.	0 7 0
K6-07	0552	Busy tone was detected during dialing ( = ). BT2 detected.	0 7 0
K6-07	0553	Congestion tone was detected during dialing ( = ) . CT1 detected.	
K6-07	0554	Congestion tone was detected during dialing ( = ) . CT2 detected.	
K6-07	0559	Busy tone was detected during dialing ( == ) . BT1 detected.	

## **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

#### **Corrective Action**

ine is busy. Try again.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

K Code	Internal Code	Error Description	Corrective Action
K6-07	055A	Busy tone was detected during dialing ( == ) .Check switchboard. Connect li properly. Change line setting.BT2 detected.Check/replace MAIN (modem) NCU.	
K6-07	055B	Congestion tone was detected during dialing ( == ). CT1 detected. Check switchboard. Connect properly. Change line setting. Check/replace MAIN (modern NCU.	
K6-07	055C	Congestion tone was detected during dialing ( == ). CT2 detected.	Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0561	Busy tone was detected during dialing ( === ). BT1 detected.	Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0562	Busy tone was detected during dialing ( === ). BT2 detected.	Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0563	Congestion tone was detected during dialing ( === ). CT1 detected.	Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0564	Congestion tone was detected during dialing ( === ). CT2 detected.	Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0569	Busy tone was detected after dialing. BT1 detected.	Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	056A	Busy tone was detected after dialing. BT2 detected.	Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

K Code	Internal Code	Error Description	
K6-07	056B	Congestion tone was detected after dialing. CT1 detected.	0 7 0 1
K6-07	056C	Congestion tone was detected after dialing. CT2 detected.	0 F 0 1
K6-07	0575	Busy tone was detected before dialing. ( PBX ) BT detected.	( (
K6-07	0576	Congestion tone was detected before dialing. (PBX) CT detected.	( 5 (
K6-07	0579	Busy tone was detected after dialing. (PBX) BT detected.	( 5 (
K6-07	057A	Congestion tone was detected after dialing. (PBX) CT detected.	( 5 (
K6-07	057C	BT (Busy Tone) was detected during calling an answer telephone (of not- built-in type). Remote terminal released the line.	(
K6-07	057E	Dial tone was detected after detection of RBT (Ring back tone) after dialing. DT1 detected.	( (
K6-07	057F	Dial tone was detected after detection of RBT (Ring back tone) after dialing. DT2 detected.	( (
K6-07	0580	Dial tone was detected after detection of RBT (Ring back tone) after dialing. DT3 detected.	( (

### **Corrective Action**

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check switchboard. Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Check remote terminal. Change line setting. Check/replace MAIN (modem) and NCU.

Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

# 2-30 03/02

K Code	Internal Code	Error Description Corrective Action	
K6-07	0581	Ring back tone was detected after detection of RBT (Ring back tone) after dialing. RBT detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0582	Busy tone was detected after detection of RBT (Ring back tone) after dialing. BT1 detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0583	Busy tone was detected after detection of RBT (Ring back tone) after dialing. BT2 detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0584	Congestion tone was detected after detection of RBT (Ring back tone) after dialing. CT1 detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0585	Congestion tone was detected after detection of RBT (Ring back tone) after dialing. CT2 detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0586	Dial tone was detected after detection of RBT (Ring back tone) after dialing. (PBX) DT detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0587	Ring back tone was detected after detection of RBT (Ring back tone) after dialing. ( PBX) RBT detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0588	Busy tone was detected after detection of RBT (Ring back tone) after dialing. (PBX) BT detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.
K6-07	0589	Congestion tone was detected after detection of RBT (Ring back tone) after dialing. (PBX) CT1 detected.	Connect line properly. Change line setting. Check/replace MAIN (modem) and NCU.

K Code	Internal Code	Error Description	
K6-07	0863	Channel unacceptable(ISDN)	F
K6-07	0866	Called user busy (ISDN)	F
K6-07	0868	No response from called user (ISDN)	F
K6-07	0870	Normal, unspecified. (ISDN)	F
K6-07	0871	No available channel or line (ISDN)	F
K6-07	0876	Requested line/channel not available. (ISDN)	F
K6-07	0877	Other resource-unavailable class (ISDN)	F
K6-07	0873	Temporary failure (ISDN)	F
K6-08	056E	Hook-off detected by auto dial function	) ( 1
K7-00	022E	Password check error. Mailbox number error. No reserved document for polling.	E
K7-01	0221	Remote terminal unable to send.	( 
K7-03	0062	Illegal dial data	F
K7-03	0222	Remote terminal unable to receive.	(
K7-03	0228	Remote terminal lacks relay broadcast ability, also when E-mail destination or F-code registration destination (only if prohibition is enabled in FCODE_RELAY_PROHIBIT system data) or non- registered destination is specified	(
K7-03	0229	Remote terminal lacks remote sort copy ability	(

Corrective Action
Retry.
Dperational error. Retry. Check/replace HANDSET and NCU.
Enter correct password. Enter valid mailbox number. Reserve polling document.
Check the remote terminal/line. //F Check/replace MAIN PWB.
Re-enter dial again. Check/replace
Check the remote terminal.
Check the remote terminal.
DRECK THE REMOTE TERMINAL.

K Code	Internal Code	Error Description	Corrective Action
K7-03	022A	Remote terminal lacks remote mailbox ability (FX- type mailbox)	Check the remote terminal.
K7-03	022B	Remote terminal lacks F code communication ability	Check the remote terminal.
K7-03	0253	Remote terminal lacks file forwarding ability.	Check the remote terminal.
K7-03	053D	DIS was not received after voice request from remote terminal was not realized while transmitting.	Check the remote terminal/line.
K7-03	0540	Auto dial was activated, but no dial data existed.	Redial. Check/replace M/F MAIN PWB and MMB.
K7-03	0541	Some of dial data is illegal.	Redial. Check/replace M/F MAIN PWB and MMB.
K7-03	0570	Illegal command (ID) or incorrect command was received.	Check/replace M/F MAIN PWB and MMB.
K7-03	0571	Illegal parameter (PI) was received.	Check/replace M/F MAIN PWB and MMB.
K7-03	0572	No extension line existed, but a call was directed to an extension.	Check/replace M/F MAIN PWB and MMB.
K7-06	053B	Remote terminal was not in Closed Network Mode.	Check the remote terminal/line.
K7-07	053F	DCN received.	Retry. Check the remote terminal/line.
K7-07	0968	(G4) session abort was received.	Check the remote terminal.
K8-01	00B3	"FAILURE" DSN received	None
K8-02	027B	E-mail received data containing data of format not supported by PESS	Check the remote terminal.
K8-02	027C	E-mail received data containing data of format not supported by MF-SYS	Check the remote terminal.

K Code	Internal Code	Error Description	Corrective Action
K8-03	00B2	End of job by request from client	Normal end
K8-03	0601	End of transfer job due to error from PESS	Check/replace PESS.
K8-04	00A6	Request received when mode write conditions are not satisfied ERR_OA_MODEWRITE	Normal processing
K8-04	00A7	Request received when mode read conditions are not satisfied ERR_OA_MODEREAD	Normal processing
K8-04	00A8	Request received from host in auto dial restricted state	Release restriction. Retry.
K8-04	00A9	Job activated when activation conditions are not satisfied after DTMF	Check activation conditions and try again.
K8-04	00AA	Job stop request received before transfer job	Normal processing
K8-04	00AB	Mailbox number outside range	Check specified mailbox number.
K8-04	00AC	Mailbox number or password format error	Check specified mailbox number and password.
K8-04	00AD	Mailbox not open	Check specified mailbox number.
K8-04	00AE	Mailbox password abnormal	Check specified mailbox password.
K8-04	00AF	Mailbox file abnormal	Check/replace M/F MAIN PWB and MMB. Check mailbox parameters.
K8-04	00B0	Nonvolatile information read failure	Check/replace M/F MAIN PWB and MMB.
K8-04	00B1	Unable to delete mailbox document	Check activation conditions and try again.
K9-01	0869	Communication rejected (ISDN)	Check the remote terminal.
K9-01	086C	Remote terminal out of order (ISDN)	Check the remote terminal.
K9-01	0872	Network failure (ISDN)	Retry.

# 2-32 03/02

# 2.3.1.6 D Code List

D Code	Internal Code	Error Description	Corrective Action
D1-35	3106	M/F MAIN PWB parts are not good (especially when limited to G3M0) G3M0_ERROR	Replace M/F MAIN PWB.
D1-36	3107	G3M1 parts are not good. G3M1_ERROR	Replace G3M1 board.
D1-37	3108	G3M2 parts are not good. G3M2_ERROR	Replace G3M2.
D1-40	3100	M/F MAIN PWB parts are not good. PWBA_M/F MAIN ERROR	Replace M/F MAIN PWB.
D1-41	3101	MMB parts are not good. MMB_ERROR	Replace MMB board.
D1-42	3102	OM parts are not good. OM_ERROR	Replace OPTION MEMORY board.
D1-43	3103	OPTION MOTHER board part are not good. OPMOT_ERROR	Replace OPTION MOTHER board.
D1-44	3104	M/F MAIN PWB parts are not good. (especially when limited to BP-F) VCEM0_ERROR	Replace M/F MAIN PWB.
D1-46	310C	OAM parts are not good. OAM_ERROR	Replace OAM board.
D1-47	310D	PANEL parts are not good. PANEL_ERROR	Replace CONTROL PANEL.
D1-48	310E	Hard Disk related parts are not good. (HD_ERROR)	Replace HDIF board or HDD.
D1-76	3109	G4M0 parts are not good. G4M0_ERROR	Replace G4M0 board.
D1-77	310A	G4M1 parts are not good. G4M1_ERROR	Replace G4M1 board.
D1-86	310B	ICM parts are not good. ICM_ERROR	Replace G4/ICM board.
D2-20	3120	Unsuccessful in G3M0&ICM Loop Test G3M0_ICM_LOOP_ERROR	Check/replace M/F MAIN PWB, G4/ICM, and OPTION MOTHER board. Check connections.

K Code	Internal Code	Error Description	Corrective Action
K9-01	0874	Switchboard congestion (ISDN)	Retry.

D Code	Internal Code	Error Description	Corrective Action
D2-21	3121	Unsuccessful in G3M1&ICM Loop Test G3M1_ICM_LOOP_ERROR	Check/replace G3M1, G4/ICM, and OPTION MOTHER board. Check connections.
D2-22	3122	Unsuccessful in G3M2&ICM Loop Test G3M2_ICM_LOOP_ERROR	Check/replace G3M2, G4/ICM, and OPTION MOTHER board. Check connections.
D2-30	3123	Unsuccessful in G4M0&ICM Loop Test G4M0_ICM_LOOP_ERROR	Check/replace G4M0, G4/ICM, and OPTION MOTHER board. Check connections.
D2-31	3124	Unsuccessful in G4M1&ICM Loop Test G4M1_ICM_LOOP_ERROR	Check/replace G4M1, G4/ICM, and OPTION MOTHER board. Check connections.
D2-40	3125	Unsuccessful in G3M0&NCU Loop Test G3M0_NCU_LOOP_ERROR	Check/replace M/F MAIN PWB, NCU, and OPTION MOTHER board. Check connections.
D2-41	3126	Unsuccessful in G3M1&NCU Loop Test G3M1_NCU_LOOP_ERROR	Check/replace G3M1, NCU, and OPTION MOTHER board. Check connections.
D2-42	3127	Unsuccessful in G3M2&NCU Loop Test G3M2_NCU_LOOP_ERROR	Check/replace G3M2, NCU, and OPTION MOTHER board. Check connections.
D2-50	3129	Unsuccessful in G4M0&X21 Loop Test G4M0_X21_LOOP_ERROR	Check/replace G4M0 and OPTION MOTHER board. Check connections.
D2-51	3128	Unsuccessful in G4M1&X21 Loop Test G4M1_X21_LOOP_ERROR	Check/replace G4M1 and OPTION MOTHER board. Check connections.

## 2.3.1.7 Corrective Action for X Codes

At the occurrence of a problem with the machine, the machine is monitoring its status and will indicate the problem by X Code. When Self Diagnostic is activated on the Control Panel, hardware inside the machine will be diagnosed. If there is any problem with the machine, an error will be declared. However, when the problem is caused by the remote terminal or the telephone line or software, the machine will be diagnosed as normal.

When the line is not switched to the machine, no X Code will be displayed.

For problems that have little possibility of being repeated, Internal Codes corresponding to X Codes can be observed by outputting activity reports in the Diag(C/E) Mode.

To take a corrective action for a X Code problem, comprehend the status and frequency of the problem by the activity report. For a repeatable problem, grasp signal send/receive results by outputting the protocol monitor. This leads to operation efficiency.

Resolve a X Code problem by isolating problems due to the telephone line and its surroundings, the remote terminal, etc. following the flow chart at right.

Even if no X Code is displayed, make clear causes of a problem using the X Code and Internal Code List since an Internal Error Code corresponding to a X Code is sometimes displayed in the activity report.

## 2.3.1.8 Corrective Action for X Codes flow chart

No communications Is line switched to the machine? Υ Ν Check modular jacks at line connecting points and line connection. Are connections good? Ν Connect properly. When the problem is "data was not received," replace NCU PWB. X Code Display Set Line Monitor. Are communications successful? Υ Ν

Check Coupler modular jacks and line connection. Are connections good?

Ν Connect properly.

Enter Diag(C/E) Mode. Output Activity Report. Output Protocol Monitor Report.

Go to X Code List or Internal Code List.

Check the remote terminal.

### 2.3.1.9 Activity Report in User Mode

No	Doc No.	Receiver	Start Time	Durat	Pages	Mode	Contents	Result	
1 2 3 4 5 6 7 8 9 10 11 12 13	0004 0012 0005 0001 0013 0014 0015 0016 0002 0003 0011 0012 0013	Remote ID xxsales office ECM xxbranch xxbranch xxbranch xxbranch xxbranch Remote center ECM G3 xxbranch Mr. Suzuki 012345 (F Code ex.)	1- 1;11:36AM 11:36AM 12:07PM 12:09PM 12:09PM 12:09PM 12:09PM 12:09PM 12:10PM 12:13PM 1- 2; 6:34PM 7:00PM	1'10" 10'15" 10'15" 10'15" 10'15" 10'15" 10'15" 10'15" 10'15" 10'15" 10'15" 10'15" 1'15"	999/999 1/ 1 1/ 10 1/ 1 1/	ECM ECM ECM ECM ECM ECM ECM G3 ECM	Multi-poll Relay broadcast Polling Relay broadcast Mail Box(confidential) Multi-poll Mail box Relay broadcast inst Multi-poll Mail box Remote service Mail box Polling M.B. Relay B. inst	good good K7-07 good Suspend Delete doc Delete doc K6-06 Suspend good good	
"R	"Receive"								

1	No	Doc No.	Receiver	Start Time	Durat.	Pages	Mode	Contents	Result
	1 2 3 4	0100 0101 0102 0103	remote name remote name remote name ECM 012345 (F Code ex.)	1-24; 6:34PM 1-29; 6:34PM 6:50PM 6:50PM	2'05" 2'05" 2'05" 2'05"	9 90 900 9000	ECM ECM ECM ECM	Confidential	good good K7-01 K7-02

Only one remote office is recorded in the following priority order:

Short dialing	Origination: Remote party name > Remote office name > Remote ID > Tel number > Comm mode
	Termination: Remote party name > Remote ID > Communication mode
Full dialing	Origination: Remote office name > Remote ID > Telephone number > Communication mode
	Termination: Remote office name > Remote ID > Communication mode
Email address	Remote party name> Email address

Only one mode is recorded from four kinds (G3, G4, EMC, and SG3). Communication result

Communication result	Description
Good	Print or box accumulation is complete after error-free transmission and reception.
Send Complete	Transmission to PESS is complete but arrival at the remote party is not sure.
Busy	The redial count has exceeded the limit.
Auto Resend	The call is ended automatically. (The resend count has not exceeded the limit.)
Wait for Print	Printing is not complete after reception, excluding box accumulation.
<b>Document Deleted</b>	The document was received normally but deleted before printing or fetch.
Suspended	The operator suspended the call from the panel.
Print Suspended	The operator suspended a print instruction by a box command.
Check Remote	Communication failed due to an error at the remote party or network.
Party	
Send Again	The resend count has exceeded the limit.
Receive Again	An error occurred during reception.
KX-XX/VX-XX	An error code occurred.
Check Cable	The line is not connected.

#### Activity Report in Diag(C/E) Mode 2.3.1.10

#### "Send"

		Receiver	Start Time	required)	Pages	Mode	Contents	Activity Result
1 2 3	004 012 014	Remote ID G3 Remote center	1- 1;11:36AM 7:40PM 8:50PM	1'10" 10'15" 5'10"	999/999 1/ 10	24 34 24 34	Multi-poll M.B Relay B.inst Remote service 0501	0000-000000 FFFE-000000

#### 'Receive'

No	Doc No.	Receiver	Start Time	Durat.	Pages	Mode	Contents	Result
1	0100	remote name	1-24; 6:34PM	2'05"	9	30 38	Mail Box(confiden.)	0000-000000
2	0101	remote name	1-29; 6:34PM	2'05"	90	24 34		FFFE-000000
3	0102	remote name	6:50PM	2'05"	900	30 38		086D-02001C
4	0103	remote name	6:50PM	2'05"	9000	24 34		022F-C01

### Mode Displays

Type code	Meaning	Type code	Meaning
20	Outside line 0	40	Communication by G3M0
21	Extension 0	41	Communication by G3M1
22	Outside line 1	42	Communication by G3M2
23	Extension 1	48	Communication by G4M0
24	Outside line 2	49	
25	Extension 2	4A	Communication by G4M1
28	ISDN0	4B	
29	ISDN1		-
38	For G4M0 communication	-	-
39	For G4M1 communication		

#### **Normal Combinations of Modes**

Combination	Meaning
20 40(22 41/24 42)	G3 Outside line
21 40(23 41/25 42)	G3 Extension
28 40(28 41/28 42/29 40/29 41/29 42)	ISDN-G3
38 48(39 4A)	ISDN-G4
00 80	Communication by Nic card

#### **Protocol Monitor** 2.3.1.11

### **Outline Format**

	Report common
	Standard local office
Communication re	esult information
ROM version, star	rt address
TRACE: ***	
LAPTIME CH LOCAL R	EMOTE FIF
12'34"56 01 TCR>	09E00000540100C0010B
	: Trace data

In the G3 Mode, a command indicating additional information is shown between < and -.

< [additional information] -

Example:

< @- , < # -

Definition of additional information

Additional Info. Command	Send	
-	Normal signal	Nor
@	Undefined	Unc
X	Undefined	CRO
#	Undefined	Unc
!	Undefined	Car Pau pixe
=	Undefined	An i pau pixe
/	Undefined	Unc
*	Undefined	Unc
+	Undefined	Unc
:	Undefined	Unc
Α	Undefined	Unc
В	Undefined	Unc
С	Undefined	Unc
D	Undefined	Unc
E	Undefined	Unc
F	Undefined	Unc

Receive		
mal signal		
lefined		
C error detected		
lefined		
rier puts a 1-sec.		
se during receiving		
els		
instantaneous		
se during receiving		
els		
lefined		

### Names & Description of G3 Signals Recorded

Signal	Description
CED	Called terminal ID signal
CNG	Distinction signal for receiving terminal
CI	Call signal tone
ANSam	Variable response tone
СМ	Calling menu signal
JM	Common menu signal
CJ	CM termination signal
NSF	Non-standard function
CSI	Called terminal ID
DIS	Digital ID signal
NSC	Non-standard function command
CIG	Calling terminal ID
DTC	Digital transmission command
SEP	Selected palling
PSA	Palling sub address
PWD	Password
NSS	Non-standard function setup
TSI	Transmitter terminal ID
DCS	Digital command signal
SUB	Sub address
SID	Sender ID
TCF	Training check
CFR	Receive ready check
FTT	Training failure
СТС	Correction continued (ECM)
CTR	Correction continue response(ECM)[Response to CTC]
NSSX	Non-standard function setup (FX)
TCFX	Training check (FX)
PIX	Pixel information
TRN	Training
CPIX	Pixel information (ECM)
EOM	End of message
EOP	End of procedure
EOS	
MCF	Message confirmation
MPS	Multi-pages signal
PIN	Procedure interrupt not permitted
PIP	Procedure interrupt permitted
PRI-EOM	Procedure interrupt EOM

Signal	Description
PRI-MPS	Procedure interrupt MPS
PRI-EOP	Procedure interrupt EOP
RTN	Retraining not permitted
RTP	Retraining permitted
EOR. EOM	End of re-send/End of message(ECM)
EOR. EOP	End of re-send/End of Procedure(ECM)
EOR. MPS	End of re-send/Multi-pages signal(ECM)
EOR.NULL	End of re-send/Partial page border(ECM)
EOR.PEOM	End of re-send/Procedure interrupt EOM(ECM)
EOR.PEOP	End of re-send/Procedure interrupt EOP(ECM)
EOR.PMPS	End of re-send/Procedure interrupt MPS(ECM)
ERR	End of re-send response(ECM)[Response to EOR]
PPR	Partial page request(ECM)
PPS. EOM	Partial page signal/End of message(ECM)
PPS. EOP	Partial page signal/End of procedure(ECM)
PPS. MPS	Partial page signal/Multi-pages signal(ECM)
PPS. NULL	Partial page signal/Partial page border(ECM)
PPS. PEOM	Partial page signal/Procedure interrupt EOM(ECM)
PPS. PEOP	Partial page signal/Procedure interrupt EOP(ECM)
PPS. PMPS	Partial page signal/Procedure interrupt MPS(ECM)
RNR	Receive not ready(ECM)
RR	Receive ready(ECM)
EOMX	End of message(Xerox)
EOR.EOMX	End of re-send/End of message(Xerox,ECM)
EOR.MPSX	End of re-send/Multi-pages signal(Xerox,ECM)
EOR.PEOX	End of re-send/Procedure interrupt EOM(Xerox,ECM)
EOR.PMPX	End of re-send/ Procedure interrupt MPS(Xerox, ECM)
MPSX	Multi-pages signal(Xerox)
PPS. EOMX	Partial page signal/End of message(Xerox,ECM)
PPS. MPSX	Partial page signal/Multi-pages signal(Xerox,ECM)
PPS. PEOX	Partial page signal/Procedure interrupt EOM(Xerox,ECM)
PPS. PMPX	Partial page signal/Procedure interrupt MPS(Xerox,ECM)
PRI-MPSX	Multi-pages signal MPS(Xerox)
PRI-EOMX	Procedure interrupt EOM(Xerox)
CRP	Command re-send
DCN	Disconnect command
FNV	Invalid field signal
???	Undefined signal
RM.DATA	
RM.RRM	
RM.SRM	

Signal	Description
RM.SRR	
[Note1]	Supplementary information 1
[Note2]	Supplementary information 2
[Note3]	Supplementary information 3
[Error]	Error/emergency occurrence
[event]	Event information
[V34Ph2]	Line Probing
[V34Ph3]	Equalizer Training
[V34Ph4]	Parameter replacement
[DIAL]	Dial information
[TELCNT]	Line connection(on calls)
[TXCNT]	Line connection(at auto calls)
[RXCNT]	Line connection(on receiving calls)
[DISCNT]	Line disconnection
TRCINFO	Tracing information
[G3mCom]	G3Module command
[ScmCom]	System command
AlmAInd	Alarm abandon indication
AlmARes	Alarm abandon response
AlmSInd	Alarm start indication
AlmSRes	Alarm start response
CalEInd	Call end indication
CallStts	Call status
CmIOReq	CML OFF request
DialCon	Dial confirmation
DialReq	Dial request
HkOffDt	Hook-off detection
HkOnDt	Hook-on detection
LnHAInd	Line hold abandon indication
LnHdInd	Line hold indication
LnHdRes	Line hold response
MemRCon	Memory read confirmation
MemRReq	Memory read request
SttsInd	Communication Status indication
SttsReq	Communication Status request
TnDBInd	Tone detection B indication
TnDBRes	Tone detection B response
TnDRes	Tone detection response
TnDtInd	Tone detection indication
TnSBCon	Tone send B confirmation
TnSBReq	Tone send B request

Signal	
TnSConf	Tone send confirmation
TnSReq	Tone send request
TrcCon	Trace confirmation
TrcReq	Trace request
SlpReq	Sleep transition reques
SlpCon	Sleep transition confirm
ExCaReq	Extension capability inf
ExCaRes	Extension capability inf
ExCaCon	Extension capability inf
ExCaInd	Extension capability inf

Description
t
ation
ormation request
ormation response
ormation confirmation
ormation indication

Names & Description of	G3/G4 Common	<b>Signals Recorded</b>
------------------------	--------------	-------------------------

Signal	Description
RstReq	Restart request
RstCon	Restart confirm
WrSysP	Notification on System parameter
WrSCon	System parameter received
DgWkReq	Request for working Self Diag
DgWkCon	Self Diag worked confirm
DiagReq	Order of Self Diag
DiagCon	Self Diag results
DgSIReq	Request for stopping self diag
DgSICon	Self Diag stopped confirm
Alive	MC is alove
Error	Error information
CallReq	Request for line connection
CallCon	Line Connection confirm
CallInd	Line Connection indication
CallRes	Line Connection response
DiscReq	Request for line disconnection
DiscCon	Line Disconnected confirm
DiscInd	Line Disconnected indication
DiscRes	Line Disconnection response
SeOpReq	Request for session open
SeOpCon	Session Open confirm
SeCIReq	Request for session close
SeCICon	Session closed confirm
SeCIInd	Session closed indication
SeCIRes	Session Close response
CapaReq	Request for exchanging capacity information
CapaCon	Capacity Information Exchange confirm
CapaInd	Capacity Information Exchange indication
CapaRes	Capacity Information Exchange response
PagSReq	Request for starting page send
PagSInd	Page Receive indication
PagEReq	Request for end of page send
PagECon	End of Page Send confirm
PagEInd	End of Page Receive indication
PagERes	Page Receive End response
DocEReq	Request for end of document send
DocECon	End of Document Sent confirm
DocEInd	End of Document Receive indication

Signal	Description	
DocERes	Document Receive End response	
AbtReq	Request for aborting session	
AbtCon	Session Abort confirm	
AbtInd	Session Abort indication	
AbtRes	Session Abort response	
Unknown	Undefined	

### Names & Description of G4 Signals Recorded

Signal	Description	
SABM	Transfer to Non-Syncro. & Balance Mode(Mod8)	
SABME	Transfer to Non-Syncro. & Balance Mode Extension(Mod128)	
DISC	Disconnection command	
UA	Unalloted numbers system confirm response	
DM	Disconnection mode response	
FRMR	Frame reject response	
I	Information command	
RR	Receive ready command/Response	
RNR	Receive not ready command /Response	
REJ	Reject command/Response	
XID	Exchange ID command/Response	
N2TOUT	Max. # of send attempts N2 Over	
T3TOUT	T3 Timer timeout	
Dev Dead	Device is dead. (No response from device)	
Overrun	Number of overrun errors	
Nonoctet	Number of Nonoctet line up frame receive	
Abort Sq	Number of Abort sequence receive	
CRC Err	Number of CRC errors	
Long Frm	Longer-than-spec frame	
Discard	Frame to be discarded	
Underrun	Number of underrun	
CR	Call request	
CN	Connect	
CA	Call acceptance	
CC	Connection complete	
CQ	Connection recover request	
CI	Cancellation (Disconnection) instruction	
CF	Recovery confirm	
SQ	Restart request	
SI	Restart instruction	
SF	Restart confirm	
DT	Data	
RR	Receive ready	
RNR	Receive not ready	
RQ	Reset request	
RI	Reset instruction	
RF	Reset confirm	
	Interrupt	
IF	Interrupt confirm	
DIG	Diagnostic	

GQ	Registration request
GF	Registration confirm
Unknown	Undefined
COMWTOUT	
T20TOUT	Restart time out
T21TOUT	CR (Call request) timeout
T22TOUT	RQ (Reset request) timeout
T23TOUT	CQ (Recover request) timeou
T25TOUT	
Lin Dead	Line is dead. (No response fr
DTErdy	DTE ready
DCErdy	DCE ready
DCEnot	DCE not ready
OffHook	CR (Call request)
Bell	Bell indicating arrival
DialST	Dial start
Dial	Dial No. send
ID/CPS	ID/Call Progress Signal recei
DATArdy	Data ready
OnHook	Disconnection request/Respo
DiscCon	Disconnection confirm
DiscInd	Disconnection instruction
TCR	Transport connection request
TCA	Transport connection accepta
TCC	Transport connection cut
TBR	Transport block reject
TDT	Transport data
Unknown	Undefined
T02TOUT	Awaiting TCR receive
T11TOUT	Awaiting TCA for TCR
Net Dead	Network is dead (No respons
CSS	Session start command
RSSP	Session start permitted respo
RSSN	Session start not permitted re
CSE	Session end command
RSEP	Session end permitted respon
CSA	Session abort command
RSAP	Session abort permitted resp
CSCC	Session change control comr
RSCCP	Session change control posit
RSUI	Session user information resp
ANYSS	Undefined session

ıt
om lower lavers)
ve
onse
t
ance
e from lower layers)
<b>,</b> ,
nse
esponse
020
onse
mand
ive response
oonse
CDS
---------
CDC
CDE
RDEP
CDCL
RDCLP
CDPB
RDPBP
RDPBN
CDUI
CDR
RDRP
CDD
RDDP
RDGR
ANYDD
PresD
DocuD
PageD
TextU
RstReq
RstCon
WrSysP
WrSCon
RdSysP
RdSCon
DgWKReq
DgWkCon
DiagReq
DiagCon
DgSIReq
DgSICon
Alive
Error
OpenReq
OpenCon
ClsReq
ClsCon
CallReq
CallCon
CallInd
CallRes

DiscReq	Request for line disconnection
DiscCon	Line Disconnected confirm
DiscInd	Line Disconnected indication
DiscRes	Line Disconnection response
LinkOk	For packet replacement
LinkNg	Fo packet replacement
SeOpReq	Request for session open
SeOpCon	Session Open confirm
SeOpInd	Session Open indication
SeOpRes	Session Open response
SeCIReq	Request for session close
SeCICon	Session closed confirm
SeCIInd	Session closed indication
SeCIRes	Session Close response
CapaReq	Request for exchanging capa
CapaCon	Capacity Information Exchange
CapaInd	Capacity Information Exchange
CapaRes	Capacity Information Exchange
PagSReq	Request for starting page sen
PagSInd	Page Receive indication
PagEReq	Request for end of page send
PagECon	End of Page Send confirm
PagEInd	End of Page Receive indication
PagERes	Page Receive End response
DocEReq	Request for end of document
DocECon	End of Document Sent confirm
DocEInd	End of Document Receive inc
DocERes	Document Receive End respo
ChgCReq	Request for transferring toker
ChgCCon	Token Transfer confirm
ChgClnd	Token Transfer indication
ChgCRes	Token Transfer response
AbtReq	Request for aborting session
AbtCon	Session Abort confirm
AbtInd	Session Abort indication
AbtRes	Session Abort response
FReq	Request for G4F code
Fcon	G4F code confirmation
FInd	G4F code indication
FRes	G4F code response
Unknown	Undefined

n
acity information
ge confirm
ge indication
ge response
าป
d
on
tsend
m
dication
onse
n

### Names & Description of ISDN Signals Recorded

Signal	Description	
SABME	Non-Syncro. & Balance Mode Extension setup	
DISC	Disconnection command	
UA	Unalloted numbers system confirm	
DM	Disconnection mode	
FRMR	Frame reject	
I	Information command	
RR	Receive ready command/Response	
RNR	Receive not ready command/Response	
REJ	Reject command/Response	
XID	Exchange ID command/Response	
UI	Unalloted numbers system information	
T200TOUT	T200 timeout	
T201TOUT	T201 timeout	
T202TOUT	T202 timeout	
L1NOTSEN	Layer1 send not completed	
L2NOTE	Layer2 Note	
INF00	INF00 signal	
INF01	INF01 signal	
INF02	INF02 signal	
INF03	INF03 signal	
INF04	INF04 signal	
INF0X	INF0X signal	
L1Deact	Layer 1 deactivation	
DchColl	D-channel collision	
L1Sync	Layer 1 synchronization	
L1Act	Layer 1 activation	
L1Lost	Layer 1 synchronization lost	
L1NOTE	Note	
ALERT	Call message	
CALLPROC	Call setup accepted message	
CONN	Connection message	
CONNACK	Connect Acknowledge message	
PROG	Progress message	
SETUP	Call Setup message	
RESUME	Resume message	
RESACK	Resume Acknowledge message	
RESREJ	Resume Reject message	
SUSPACK	Suspension Acknowledge message	
SUSPREJ	Suspension Reject message	
DISC	Disconnection message	

Signal	De	
RELEASE	Release message	
RELCOMP	Release Complete message	
INFO	Addition Information message	
NOTIFY	Notify message	
REST	Reset message	
RESTACK	Reset Acknowledge messag	
STATUS	Status Indication message	
STAENQ	Status Question message	
ERROR	Error information	
NULL	Domestic rule message type	
SETUPACK	Call setup confirmation mess	
USERINFO	User information message	
HOLD	Hold message	
SUSPEND	Suspend message	
HOLDACK	Hold acknowledgement mes	
HOLDREJ	Hold rejection message	
RETRIEVE	Retrieve message	
RETACK	Retrieve acknowledgement	
RETREJ	Retrieve rejection message	
DETACH	Detach message (channel d	
DETACK	Detach acknowledgement m	
SEGMENT	Segment message	
FACILITY	Facility message	
REGISTER	Register message	
CANACK	Cancel acknowledgement m	
FACACK	Facility acknowledgement m	
REGACK	Register acknowledgement	
CANREJ	Cancel rejection message	
FACREJ	Facility rejection message	
REGREJ	Register rejection message	
CONGEST	Congestion control message	
RstReq	Restart request	
RstCon	Restart confirm	
WrSysP	Write system parameter	
WrSCon	Write system parameter con	
RdSysP	Read system parameter	
RasCon	Read system parameter con	
	Request for working self diag	
DgwkCon	Self Diag worked confirm	
DiagReq	Order of self diag	
DiagCon	Self Diag confirm	

scription
е
e
message
sage
5
sage
nessage
essaye
essage
essage
nessage
lirm
firm
]

Signal	Description		
DgSIReq	Request for stopping self diag		
DgSICon	Self Diag stopped confirm		
Alive	MC is alive		
Error	Error information		
CallReq	Request for line connection		
CallCon	Line Connection confirm		
CallInd	Line Connection indication		
CallRes	Line Connection response		
DiscReq	Request for line disconnection		
DiscCon	Line Disconnected confirm		
DiscInd	Line Disconnected indication		
DiscRes	Line Disconnection response		
TrcReq	Trace request		
TrcCon	Trace confirmation		
SlpReq	Sleep request		
SlpCon	Sleep confirmation		
MRdWrReq	Memory read/write request		
MrdWrCon	Memory read/write confirmation		
ToneReq	Tone service request		
ToneCon	Tone service confirmation		
SusReq	Suspend request		
SusCon	Suspend confirmation		
ResReq	Restart request		
ResCon	Restart confirmation		
ModeChg	Mode change notice		
OnLine	Online notice		
OffLine	Offline notice		
State	Call State		

#### 2-4403/02





Frame name	FCF	Description	The DIS-decla
PWD	C1	Password. A password enters FIF. This may be sent only when /DIS bit 50 is 1	sent prior to D password is a
SEP	A1	Selective polling. A sub-address enters FI. The sub-address indicates a specific document	consisting of (
		number if used with PSA. This may be sent only when /DIS bit 47 is 1	<colour fax=""> /</colour>
PSA	61	Polling sub-address. A sub-address enters FIF. This may be sent only when /DIS bit 35 is 1	(compression)
SUB	C2/C3	Sub-address. The called party's sub-address enters FIF. This may be sent only when /DIS bit 49 is 1	Colour code sa
SID	A2/A3	Transmitter ID. The transmitter's ID (local office ID). This may be sent only when /DIS bit 50 is 1	1:1:1 means n machine is set

Frames (signals) sent from transmitter in F code communication (Frame names are printed in the protocol)

ared receiver capability determines frames (signals). Each frame in the table should be DCS. When sending a frame, set DCS bits 49 and 50, or DTC bits 35, 47 and 50 to 1. A 20-digit ASCII code consisting of 0 to 9, # and \*. A sub-address is a 20-digit ASCII code to 9.

colour document is read with a scanner of 200 dpi or higher resolution and an image its or more. CIELAB data (represented by L\*,a\*,b\*) is transmitted after encoding by JPAG or T.43. ECM is essential for G3. ampling of "L\*,a\*,b\* -> 4:1:1" from CIELAB data of a\* (+:red, -:green) and b\* (+:yellow,

to reduce a\* and b\* (colour component data) for L\* (brightness component data) to ¼. io sub-sampling (reduction). If only L\* is used and both a\* and b\* are set to 0, the to black and white fax mode.

#### Table 1

Description [DIS/DTC ->1:capable, 0->not capable, DCS-> 1:Signal send, 0:No signal send] Invalid field signal capability (Explanation omitted) F Code Multiple selection polling capability. Set DCS to 0. See Table 2 F code polling sub-address capability. Set DCS to 0. See Table 2 Colour fax T43 encoding capability. Select T43 or JPEG (bit 63) for encoding. Colour fax plain interleave. Valid only when bit 36 is 1. F code selective polling capability. Set DCS to 0. See Table 2 Bits 51 to 57 file transfer capability. (Explanation omitted) Bits 59 to 65 mixed mode. (Explanation omitted). Bits 66, 67 (Explanation Colour fax JPEG encoding capability. For 1, set bit 27 (ECM) also to 1 Colour fax full colour capability. Valid only when bit 68 is 1 Huffman code table indication. Valid only when bit 68 is 1. Set DIS to 0. compress rate depends on the code t, 12 bit pixel capability. Set 0 for 8 bits/pixel. Valid only when bit 68 is 1 Colour fax no sub sampling.  $(L^*,a^*,b^*->1:1:1)$ . Set 0 for 4:1:1. Colour fax non standard irradiation light. Set 0 for CIE standard Colour fax non standard gamut range. Set 0 for the standard range. Valid only HFX40-I hushing capability. (Explanation omitted) Bits 92 to 95 mixed raster content mode. (Explanation omitted) Colour fax 300 x 300 or 400 x 400 pixels per 25.4mm capability. Colour fax 100 x 100 pixels per 25.4mm capability. Binary file transfer capability. (Explanation omitted) Ifax routing address. When this address is used for DCS, bits 49 and 50 of other

X Code	Internal Code	Error Description	Corrective Action
X0-27	02A1	File Error. Time out occurred with Communication File access, or File Handler failed to return Error Code when an error 	
X0-27	02A2	File Error. Illegal data file that SendJob couldn't handle was accessed.	Check/replace M/F MAIN PWB,AM, and MMB.
X0-27	02A3	File Error. An attempt to close Comm. File was made under unknown status.	Check/replace M/F MAIN PWB,AM, and MMB.
X0-27	02D1	Forward job stopped due to file open error.	Check/replace M/F Main PWB.
X0-27	02D2	Forward job stopped due to file close error.	Check/replace M/F Main PWB.
X0-27	02D3	Forward job stopped due to file write error.	Check/replace M/F Main PWB.
X0-27	02D4	Forward job stopped due to file read error.	Check/replace M/F Main PWB.
X0-27	02D5	Forward job stopped due to wrong file status.	Check/replace M/F Main PWB.
X0-27	03D1	Illegal argument fdes was detected when File is open.	Check/replace M/F MAIN PWB and MMB.
X0-27	03D2	Illegal argument fdes was detected at Read/Write.	Check/replace M/F MAIN PWB and MMB.
X0-27	03D3	File Open Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03D4	Open processing of directory under write was executed.	Check/replace M/F MAIN PWB and MMB.
X0-27	03D7	Failure in deleting File during execution of File overwrite processing.	Check/replace M/F MAIN PWB and MMB.
X0-27	03D9	File to be opened doesn't exist.	Check/replace M/F MAIN PWB and MMB.
X0-27	03DC	Write open was attempted, but FCB couldn't be obtained. (FCB FULL)	Check/replace M/F MAIN PWB and MMB.

X Code	Internal Code	Error Description	Corrective Action
X0-27	03DD	Failure in writing Permission name	Check/replace M/F MAIN PWB and MMB.
X0-27	03DE	Failure in writing File name	Check/replace M/F MAIN PWB and MMB.
X0-27	03DF	Failure in writing comment (File info.).	Check/replace M/F MAIN PWB and MMB.
X0-27	03E1	Page Open Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03E2	Block Open Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03E3	Page Close Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03E4	Block Close Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03E5	Page Seek Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03E7	Page Link Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03E8	Page Rewind Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03E9	Page Windup Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03EA	Page Delete Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03EB	Block Delete Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03EC	Page/Block Data Read Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F0	Permission name Read Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F1	Permission name Write Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F2	Permission name Compare Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F3	Permission name Delete Error	Check/replace M/F MAIN PWB and MMB.

X Code	Internal Code	Error Description	Corrective Action
X0-27	03F4	File name Read Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F5	File name Write Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F6	File name Compare Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F7	File name Delete Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F8	Comment (File Info.) Read Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03F9	Comment (File Info.) Write Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03FA	Comment (File Info.) Compare Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03FB	Comment (File Info.) Delete Error	Check/replace M/F MAIN PWB and MMB.
X0-27	03FC	File String Area Check: NG	Check/replace M/F MAIN PWB and MMB.
X0-27	03FF	File Device Call Command: NG	Check/replace M/F MAIN PWB and MMB.
X0-27	0406	Page Management Info. Read Failure (Real time receive)	Check/replace M/F MAIN PWB and MMB.
X0-27	0407	Page Management Info. Write Failure (Real time receive)	Check/replace M/F MAIN PWB and MMB.
X0-27	0440	Vcep Write Post-processing Failure	Check/replace M/F MAIN PWB and MMB.
X0-27	0441	Header Print Area Write Failure	Check/replace M/F MAIN PWB and MMB.
X0-27	0442	Header Print Area Read Failure	Check/replace M/F MAIN PWB and MMB.
X0-27	0443	Data Write Processing: NG	Check/replace M/F MAIN PWB and MMB.
X0-27	0444	Data Read Processing: NG	Check/replace M/F MAIN PWB and MMB.
X0-27	0445	Data Seek Failure	

X Code	Internal Code	Error Description
X0-27	0446	File Data Area Overwrite Failure
X0-27	0447	Data Point Acquisition Failure
X0-27	0448	Page/Block Management Area Data Error Load-processing Failure
X0-29	0200	DC response timed out with stored job. ERR_STORE_DCTOUT
X0-29	0201	Stored job received Illegal Code by DC message. ERR_STORE_NGCODE
X0-29	0202	Stored job received Illegal parameter by DC message. ERR_STORE_NGPARAM
X0-29	0203	Stored job detected illegal sequence with DC. ERR_STORE_NGSEQ
X0-29	0204	Stored job received NG from DCIF Handler. ERR_STORE_DCIF
X0-29	0211	DC message Read Failure ERR_CP_DCREAD_NG
X0-29	0212	Wront DC Message ERR_CP_DCMSG_ILLEGAL
X0-29	0213	Wront DC Parameter ERR_CP_DCPRM_ILLEGAL
X0-29	0214	Wrong DC Sequence ERR_CP_DCSEQ_ILLEGAL

Corrective Action
Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

#### 2-48 03/02

X Code	Internal Code	Error Description	Corrective Action
X0-29	0216	DC-MF I/F Failure(DC-SYS communication disabled) ERR_CP_DCIF_NG	Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
X0-29	022C	Job Error. Wrong Communication Option Parameter	Check/replace M/F MAIN PWB, AM, MMB, Mother Board, G4M, G4/ICM, and NCU.
X0-29	022D	Job Error. Wrong Communication Data Parameter	Check/replace M/F MAIN PWB, AM, MMB, Mother Board, G4M, G4/ICM, and NCU.
X0-29	0230	Job Error. Tel Job attempted to open the line, but in vain.	Check/replace M/F MAIN PWB, AM, MMB, Mother Board, and HANDSET.
X0-29	0231	Job Error. Tel Job attempted to connect the line, but in vain.	Check/replace M/F MAIN PWB, AM, MMB, Mother Board, and HANDSET.
X0-29	0232	Job Error. Tel Job attempted to open Handset, but in vain.	Check/replace M/F MAIN PWB, AM, MMB, Mother Board, and HANDSET.
X0-29	0233	Job Error. Tel Job attempted to transmit dial to the line, but in vain.	Check/replace M/F MAIN PWB, AM, MMB, Mother Board, and HANDSET.
X0-29	0240	Report Job failed to produce report files, log files, etc.	Check/replace M/F MAIN PWB, MMB, and AM.
X0-29	0241	Report Job failed to open or close report files.	Check/replace M/F MAIN PWB, MMB, and AM.
X0-29	0260	ppb that manages Job can't be read.	Check/replace M/F MAIN PWB, MMB, and AM.
X0-29	0261	ppb that manages Job can't be released.	Check/replace M/F MAIN PWB, MMB, and AM.
X0-29	0280	DC I/F Failure ERR_PR_DCIF_NG	Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
X0-29	0281	ERR_PR_DCREAD_NG Parameters that don't exist were attempted to read (from DC).	

	r	
X Code	Internal Code	Error Description
X0-29	0282	ERR_PR_DCPRM_ILLEGAL DC message included invalid parameters.
X0-29	0287	ERR_PR_NO_PAPER No Paper is supplied or Tray is not installed at Receive Print/Report Print. (proxy document)
X0-29	0291	Job Error: Comm. Module lock failure in Diag Job.
X0-29	0294	Comm. Module time out in Diag Job (except in Self Diag).
X0-29	0295	Failed to lock OA module (ERR_DJ_OA_LOCK_UNABLE)
X0-29	0296	ERR_DJ_DCIF DC-MF I/F Failure (Data transmission to DC-SYS Failure)
X0-29	0297	ERR_DJ_DC_EVENTDC-SYS Event Failure (Undefined Event /Time out/Illegal parameter)
X0-29	0298	ERR_DJ_PWBA_NOT_EXIST MF-SYS related boards to be diagnosed were not installed.
X0-29	0299	Unsuccessful communication between DC-MF (ERR_DJ_DCSYS_NOT_EXIST)
X0-29	02E0	DC-MF I/F Failure (ERR_PT_DCIF_NG)
X0-29	02E1	DC Message Read Error (ERR_PT_DCREAD_NG)

### **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

### **Corrective Action**

Supply paper or install the tray.

Retry. Check M/F MAIN PWB and communication module.

Retry. Check M/F MAIN PWB and communication module.

Check OAM board connection. Replace OAM board.

Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

Re-enter. Check PWBA to be diagnosed for installation status.

Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

X Code	Internal Code	Error Description	Corrective Action
X0-29	02E2	DC Event Response Timeout (ERR_PT_DC_TIMEOUT)	Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
X0-29	02E3	Wrong DC Message (ERR_PT_DCMSG_ILLEGAL)	Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
X0-29	02E4	Wrong DC Parameter (ERR_PT_DCPRM_ILLEGAL)	Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
X0-32	0538	Modem CS didn't turn on in response to RS request during training at high speed.	Retry. Replace MAIN (Modem).
X0-33	0536	Modem CS failure to go ON for an RS request in command transmission	Retry. Replace MAIN (Modem).
X0-35	0060	When Line Task attempted to connect the line, the system was busy. (The line couldn't be connected.)	Check the line. Retry.
X0-35	0061	Collision between Line call and connect	Check the line. Retry.
X0-35	0542	Collision error between Line A (outside line) call and connect. (when 16 Hz signal reached )	Re-dial. Check/replace MAIN (Modem) and NCU.
X0-35	0543	Collision error between Line B (extension line) call and connect. (when 16 Hz signal reached)	Re-dial. Check/replace MAIN (Modem) and NCU.
X0-35	057D	During using a not-built-in type telephone using 4 wires, call request was made. (No notification of hook-off to SCM in a 4-wire system)	Stop using the telephone or re-dial. Check/replace MAIN, MMB, and NCU.
X0-36	0544	Collision error between Line A (external line) call and connect (when 1300 Hz signal reached)	Re-dial. Check/replace MAIN (Modem) and NCU.

X Code	Internal Code	Error Description	Corrective Action
X0-40	0537	Overrun	Retry. Replace MAIN (Modem).
X0-42	0535	DIS was received from the call terminal. DCS was received in spite of no receive capacity. Illegal command received.	Check the remote terminal/line.
X0-62	0350	Abort during BP-F coding. ERR_VCEM_ABORT	Replace M/F MAIN PWB.
X0-62	0351	Image Buffer Empty was detected during printing. ERR_VCEM_BFEMPTY	Replace M/F MAIN PWB.
X0-62	0352	Image Buffer Full was detected during scanning. ERR_VCEM_BFFULL	Replace M/F MAIN PWB.
X0-62	0353	IOT Page Seek signal is active a start of extension. ERR_VCEM_PSYNC	Operate again.
X0-62	0354	Failure in Image Buffer Clearance ERR_VCEM_MCLR	Operate again or replace M/F MAIN PWB.
X1-11	0259	The ISDN line is disconnected.	Connect the ISDN line.
X1-11	025A	Outside line 1 is disconnected.	Connect outside line 1.
X1-11	025B	Extension line 1 is disconnected.	Connect extension line 1.
X1-11	025C	Outside line 2 is disconnected.	Connect outside line 2.
X1-11	025D	Extension line 2 is disconnected.	Connect extension line 2.
X1-11	025E	Outside line 3 is disconnected.	Connect outside line 3.
X1-11	025F	Extension line 3 is disconnected.	Connect extension line 3.
X2-00	0510	T1 time out at send	Retry. Check the remote terminal/ line. Replace MAIN (Modem).
X2-01	0511	DCS / NSS re-send over	Retry. Check the remote terminal/ line. Replace MAIN (Modes).
X2-02	022F	Line was disconnected during communication. (The error occurs with ISDN only.)	Check the remote terminal/line.
X2-03	0220	Fall back error. Awaiting auto re- send	Check the remote terminal/line. Check/replace M/F MAIN PWB.

### 2-50 03/02

X Code	Internal Code	Error Description	Corrective Action
X2-03	0512	Fall back error.	Retry. Check the remote terminal/ line. Replace MAIN (Modem).
X2-04	0513	Post Message re-send over	Retry. Check the remote terminal/ line. Replace MAIN (Modem).
X2-05	0223	At G3 transmission, RTN was received.	Check the remote terminal/line. Speed down.
X2-05	0514	RTN / PIN receive	Retry. Check the line. Replace MAIN (Modem).
X2-06	0533	Operator no interruption (for RX /Voice reserve)□	Retry. Check the remote terminal/line.
X2-10	0515	T2 time out	Retry. Check the line. Replace MAIN (Modem).
X2-11	0516	T1 time out at receive	Retry. Check the line. Replace MAIN (Modem).
X2-12	0224	At G3 receive, RTN was transmitted.	Check the remote terminal/line. Speed down.
X2-12	0517	RTN / PIN transmission	Retry. Check the remote terminal/line. Replace MAIN (Modem).
X2-13	0518	T5 time out	Retry. Check the remote terminal/line. Replace MAIN (Modem).
X2-14	051E	T1 timeout on the transmission side in Super G3 (V.34) communication	Retry. Check the remote terminal/line. Replace MAIN (Modem).
X2-20	05E1	The correct line couldn't be detected within 1 min. after start of receiving G3 pixels.	Check/replace M/F MAIN PWB. Retry.
X2-21	05E2	In G3 pixels receive, when receiving 148mm, a more than 50%-decode error occurred.	Check/replace M/F MAIN PWB. Retry.
X2-22	05E3	During receiving G3 pixels, (Default) EOL couldn't be detected for 13sec.	Check/replace M/F MAIN PWB. Retry.
X2-23	051C	Carrier disconnected	Retry. Check the remote terminal/ line. Replace MAIN (Modem).

X Code	Internal Code	Error Description
X2-33	02C0	In Remove Maintenance, an illegal command was received from the remote terminal.
X2-34	02C4	Remote Maintenance request was received from the remote terminal, but this function was unavailable.
X2-35	02C5	Slave replied in NACK in response to Self Diag request.
X2-35	02C6	Slave replied in NACK in response to Memory Write request.
X2-35	02C7	Slave replied in NACK in response to Memory Read request.
X2-35	02C8	Slave replied in NACK in response to Data Loop back request.
X2-35	02C9	Slave replied in NACK in response to Report request.
X2-35	02CA	Slave replied in NACK in response to Result Notification request.
X2-35	02CB	Slave replied in NACK in response to Clear request.
X2-35	02CC	Slave replied in NACK in response to Reset request.
X2-40	051A	Sent CNG after transferring to protocol phase with fast protocol 2 calling->Time out.
X2-41	051B	Phase B flow control timer time out when receiving fast protocol 2.
X2-47	0539	Sending terminal did not release busy state in defined time while sending fast protocol 2.

### **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

#### **Corrective Action**

Check the remote terminal/line.

System data check. Check the remote terminal (HOST)/line.

Check the remote terminal.

Communication error. Tray operation again.

Tray operation again. Check the remote terminal/line. Replace MA IN (Modem).

Tray operation again. Check the remote terminal/line.

X Code	Internal Code	Error Description	Corrective Action
X2-60	0225	At ECM transmission, EOR-Q was transmitted.	Check the remote terminal/line. Check/replace M/F MAIN PWB.
X2-60	052E	EOR-Q transmission	Retry. Check the line. Replace MAIN (Modem).
X2-61	0226	At ECM receive, EOR-Q was received.	Check the remote terminal/line. Check/replace M/F MAIN PWB.
X2-61	0530	EOR receive	Retry. Check the remote terminal/ line. Replace MAIN (Modem).
X2-62	052F	In ECM, Illegal Frame was received.	Retry. Check the remote terminal/ line. Replace MAIN (Modem).
X2-63	0531	CTC / EOR re-send over	Retry. Check the remote terminal/ line. Replace MAIN (Modem).
X2-65	0534	In ECM, timeout between frames	Retry. Check the remote terminal/ line.
X2-66	053C	PIN receive (EOR exclusive)	Check the remote terminal/line.
X2-67	053A	The bust status of the receive terminal wasn't cleared within spec. time.	Retry. Check the remote terminal/ line.
X2-70	057B	DTMF I/F time out. The proper operation wasn't executed within spec. time.	Operate properly. Check/replace MAIN (Modem) and NCU.
X2-71	0251	Communication was stopped because Invalid Procedure signal had been received.	Confirm to the remote terminal. Check the line.
X2-72	0252	Communication was stopped because Command Reject signal had been received.	Confirm to the remote terminal. Check the line.
X2-73	0250	Communication was stopped by output of Command Reject signal.	Confirm to the remote terminal. Check the line.
X2-75	051D	V.8 error	Check the remote terminal/line.
X2-75	053E	HDLC frame send error	Retry. Replace MAIN (Modem).
X3-00	0919	(G4): Data link can't be set up.	Check the remote terminal/line. Check/replace G4M PWB.

X Code	Internal Code	Error Description	Corrective Action
X3-00	091A	(G4): Frame requiring response was transmitted N2 times, but no response was made.	Check the remote terminal/line. Check/replace G4M PWB.
X3-00	091B	(G4): Flag can't be received for 4 or more sec.	Check the remote terminal/line. Check/replace G4M PWB.
X3-10	0930	(G4): A Disconnection Request packet was received from the remote terminal.	Check the remote terminal.
X3-11	0932	(G4): At P-P connection, Facility Error was received.	Check the remote terminal.
X3-12	0931	(G4): At P-P connection, Remote Busy was received.	Check the remote terminal.
X3-12	0933	(G4): At P-P connection, Remote Error was made.	Check the remote terminal.
X3-12	0934	(G4): Data link failure	Check the remote terminal/line. Check/replace G4M PWB.
X3-12	0935	(G4): Network failure	Check the remote terminal.
X3-12	0936	(G4): An unexpected restart packet was received.	Check the remote terminal.
X3-12	0937	(G4): Data link connection is impossible.	Check the line. Check/replace G4M PWB.
X3-12	0938	(G4): Other network errors	Check the remote terminal/line. Check/replace G4M PWB.
X3-12	0939	(G4): Network-used timer time out	Check the remote terminal/line. Check/replace G4M PWB.
X3-20	0948	(G4): Transport-used timer time out	Check/replace G4M PWB.
X3-20	0949	(G4): TPDU Size Error	Check the remote terminal/line. Check/replace G4M PWB.
X3-20	094A	(G4): T0.1 timeout error	Check the remote terminal/line. Check/replace G4M PWB.
X3-20	094B	(G4): TPDU reception error	Check the remote terminal/line. Check/replace G4M PWB.
X3-20	094C	(G4)T.X1 timeout error	Check the remote terminal/line. Check/replace G4M PWB.

2-52
03/02

X Code	Internal Code	Error Description	Corrective Action
X3-30	0960	(G4): In session, an error with Date info. was found.	Check the remote terminal.
X3-30	0961	(G4): In session, an error with Document reference info. was found.	Check the remote terminal.
X3-30	0962	(G4): In session, an error with Check Point reference info. was found.	Check the remote terminal.
X3-30	0963	(G4): In session, an error with Session Service Function was found.	Check the remote terminal.
X3-30	0964	(G4): In session, an error is present with instruction of Relay boradcast, etc.	Check/replace M/F MAIN PWB and G4M PWB.
X3-30	0965	(G4): Session received an illegal event.	Check/replace M/F MAIN PWB and G4M PWB.
X3-30	0966	(G4): Session received an invalid data unit.	Check the remote terminal.
X3-30	0967	(G4): Session found lack of indispensable parameters.	Check the remote terminal.
X3-30	0969	(G4): An error is present with Session Complete Parameter.	Check the remote terminal. Check/replace M/F MAIN PWB and G4M PWB.
X3-35	0978	(G4): Presentation received an illegal event.	Check/replace G4M PWB.
X3-35	0979	(G4): Wrong Format was found with Presentation.	Check the remote terminal. Check/replace M/F MAIN PWB and G4M PWB.
X3-35	097A	(G4): The received presentation descriptor has no description of G4FAX or FDA.	Check the remote terminal.
X3-35	097B	(G4): Mismatched size was instructed to be received.	Check the remote terminal.
X3-35	097C	(G4): Mismatched compress mode was instructed to be received.	Check the remote terminal.
X3-35	097D	(G4): Mismatched density was instructed to be received.	Check the remote terminal.

X Code	Internal Code	Error Description	Corrective Action
X3-35	097E	(G4): Mismatched encoding was instructed to be received.	Check the remote terminal.
X3-35	097F	(G4): Mismatched slow scan option was instructed to be received.	Check the remote terminal.
X3-35	0980	(G4): Activity suspension was received from session. (CDR)	Check the remote terminal.
X3-35	0981	(G4): Activity discard was received from session. (CDD)	Check the remote terminal.
X3-35	0982	(G4): Connection error was received from session. (RSSN)	Check the remote terminal.
X3-40	0990	(G4): When G4 main is disconnected, data link release can't be recognized.	Check the line. Check/replace G4M PWB.
X3-60	0801	Layer 1 is not ready to work.	Check the line. Check/replace G4/ICM PWB.
X3-61	0820	DISC command received in multiframe setup and timer recovery state. Correnpondant to Toki ERR_DISC (0820)	Check network and line. Check/replace G4/ICM PWB.
X3-61	0821	DM (F=1) is received while waiting for link connection, re- connection.□Correnpondant to Toki EM_DATA_LINK ( 88C5 )	Check network and line. Check/replace G4/ICM PWB.
X3-61	0822	Failed to connect link. N.200 T.200 time out occurred while waiting for link connection, re- connection. Correspondant to Toki EM_DATA_LINK ( 88C5 )	Check network and line. Check/replace G4/ICM PWB.
X3-61	0846	Received link disconnection primitive.	Check the line. Check/replace G4/ICM PWB.
X3-61	0847	T.309 time out (Link reset error)	Check the line. Check/replace G4/ICM PWB.
X3-62	0802	Essential parameters (called number, high-order layer matching, and ICM port specification) not in call request command	Check/replace M/F MAIN PWB and G4/ICM.

X Code	Internal Code	Error Description	Corrective Action
X3-62	0803	High-order layer matching of call request command not provided for this service (Other than TEL and G2/G3/G4)	Check/replace M/F MAIN PWB and G4/ICM.
X3-62	0806	Not used (No error is registered at call control. Call reject)	Check/replace M/F MAIN PWB and G4/ICM.
X3-62	0894	Not defined (Special audible tone sent)	Check network and line.
X3-62	0895	Udefined. (Trunk prefix dialing error)	Check network and line.
X3-62	0896	Udefined. (Preemption)	Check network and line.
X3-62	0897	Udefined. (Line reservation for reusing preemption line)	Check network and line.
X3-62	0898	Udefined. (Subscriber not present)	Check network and line.
X3-62	0899	Udefined. (Fixed-frame mode connection service stopped)	Check network and line.
X3-62	089A	Udefined. (Fixed-frame mode connection not available)	Check network and line.
X3-62	089B	Udefined. (Priority call blocked)	Check network and line.
X3-62	089C	Udefined. (CUG internal call prohibited)	Check network and line.
X3-62	089D	Udefined. ( CUG internal termination prohibited)	Check network and line.
X3-62	089E	Udefined. (Mismatch of contract class with origination access information)	Check network and line.
X3-62	089F	Udefined. (Non-CUG user)	Check network and line.
X3-62	08A0	Udefined. (Non-registered CUG)	Check network and line.
X3-62	08A1	Udefined. (Passage of parameter not defined or provided)	Check network and line.
X3-62	08A2	Udefined. (Discard of message with unrecognizable parameter)	Check network and line.
X3-63	0840	T.313 time out (Reception of response-confirm message: time out.)	Check the line. Check/replace G4/ICM PWB.
X3-64	0841	Not used (Reception of Restart- confirm message: time out)	Check the line. Check/replace G4/ICM PWB.

X Code	Internal Code	Error Description	Corrective Action
X3-65	0842	Not used (Suspend acknowledgement message reception timeout)	Check the line. Check/replace G4/ICM PWB.
X3-65	084A	T.301 time out (Reception of response message: time out.)	Check the line. Check/replace G4/ICM PWB.
X3-65	084B	T.310 time out (Reception of calling/response message: time out)	Check the line. Check/replace G4/ICM PWB.
X3-66	0843	T.330 time out (Reception of response message: time out.)	Check the line. Check/replace G4/ICM PWB.
X3-67	0844	T.303 time out (Call setup message reception timeout)	Check the line. Check/replace G4/ICM PWB.
X3-68	0845	T.305 time out (Release message reception timeout)	Check the line. Check/replace G4/ICM PWB.
X3-68	0849	T.308 time out (Reception of release completion message: time out.)	Check the line. Check/replace G4/ICM PWB.
X3-69	0882	Invalid Call No. used. (ISDN)	Retry.
X3-69	0883	Invalid Channel No. used. (ISDN)	Retry.
X3-69	088A	Other invalid messages (ISDN)	Retry.
X3-70	088B	Lack of indispensable info. elements (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-70	088C	Message type undefined or unprovided. (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-70	088D	Mismatch of call status and message, or message type undefined or unprovided. (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-70	088E	Info. elements undefined (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-70	088F	Invalid contents of Info. elements (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-70	0890	Mismatch of call status and message (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-70	0891	Recover due to expired timer (ISDN)	System data check. Check/replace G4/ICM PWB.

2-54
03/02

X Code	Internal Code	Error Description	Corrective Action
X3-70	0892	Other wrong procedures (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-70	0893	Other interworking class (ISDN)	System data check. Check/replace G4/ICM PWB.
X3-73	0804	Call requests beyond available resources	System data check.
X3-73	0805	Call status mismatch detected	Check network and line. Check/replace G4/ICM PWB.
X3-73	0807	Not used (An error which could not be recognized by ICM occurred.)	Check the line. Check/replace G4/ICM PWB.
X3-74	0823	UA response is detected in TEI set state, multi-frame set state and time recover state. Equivalent to Toki EM_DATA_LINK ( 88C5 )	Check network and line. Check/replace G4/ICM PWB.
X3-74	0824	TEI control task received ID reject message which includes error Ai at waiting state. (equivalent to Toki EM_TEI_GET (88C3))	Check network and line. Check/replace G4/ICM PWB.
X3-74	0825	TEI control task received ID set message which includes the same value as the present TEI. equivalent Toki EM_TEI_GET (88C3)	Check network and line. Check/replace G4/ICM PWB.
X3-74	0826	TEI control task received TEI ID release message. equivalent to Toki EM_TEI_REL (88C4)	Check network and line. Check/replace G4/ICM PWB.
X3-74	0827	TEI control task sent ID request N202 times at waiting state, but failed because it could not receive ID set message. equivalent to Toki EM_TEI_GET (88C3)	Check network and line. Check/replace G4/ICM PWB.
X3-74	0828	CP68302 transmitter channel error. Detected error in TXE bit of SCCE register.	Check/replace G4/ICM PWB.

X Code	Internal Code	Error Description
X3-74	0829	In HDLC channel, incomplete buffer was received. Error detected in TXE bit of SCCE register.
X3-74	88C3	An illegal event was received.
X3-74	88C4	T.317 time out (Initialization procedure failure)
X3-75	0848	Received initialization message.
X4-43	0271	Forward job terminated due to illegal event from OA board.

### **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

#### **Corrective Action**

Check/replace G4/ICM PWB.

Replace G4/ICM PWB. Replace G4/ICM PWB ROM.

System error. Replace MAIN or G4/ICM PWB. Replace G4/ICM PWB ROM.

Check the line.

Check/replace G4/ICM PWB.

Check/replace OA board.

### 2.3.1.13 PRINTER ESS Codes List

Chain- Link	Description	LCD display	Job log	Corrective Action	Link 003-381
003- 352 (N7-11)	Data length error of status received from IOT	Ready to print			(N7-30)
003- 354 (N7-11)	Parity error during status reception from IOT	Ready to print (***-***)			003-382 (N7-30)
003- 355 (N7-11)	Framing error during status reception from IOT	Ready to print (***-***)			003-747
003- 356 (N7-11)	Overrun error during status reception from IOT	Ready to print (***-***)			003-946
003- 357 (N7-11)	Status reception from IOT suspended	Ready to print (***-***)			
003- 359 (N7-11)	Abnormal status (not existing in I/F) received from IOT	Ready to print (***-***)			003-947
003- 364 (N1-14)	DMA transfer error	Ready to print (***-***)		<ol> <li>Replace RAM.</li> <li>Execute DC355         <ul> <li>diagnosis. If the             problem persists,             replace HDD.</li> <li>Replace ESS</li> </ul> </li> </ol>	003-948
003- 366	Other error from JBIG	Ready to print		Replace ESS PWB.	
003-370 (N1-14)	Marker code detection error	Ready to print (***-***)		<ol> <li>Replace RAM.</li> <li>Execute DC355 diagnosis. If the problem persists, replace HDD.</li> <li>Replace ESS PWB.</li> </ol>	003-950
003-375 (N7-30)	DC_SYS_DOWN status received	Ready to print (***-***)			
003-376 (N7-30)	Command error status received	Ready to print (***-***)			003-953
003-377 (N7-30)	Essential sent command was rejected by IOT (COMMAND_REJECT status received)	Ready to print (***-***)			003-332
003-380 (N7-30)	Serial number write request to IOT not successful	Ready to print (***-***)			

Chain- Link	Description	LCD display	Job log	Corrective Action
003-381	Product number (model	Ready to print		
(N7-30)	code) write request to IOT not successful	(***-***)		
003-382 (N7-30)	CPM TYPE write request not successful	Ready to print (***-***)		
003-747	Specified print parameter abnormal	Eror resolved (***-***)	Print para- meter error	Change the parameter and reprint.
003-946	Tray1 Not In Position	<no job=""> Ready to print <with job=""> Push in tray1</with></no>		
003-947	Tray2 Not In Position	<no job=""> Ready to print <with job=""> Push in tray2</with></no>		
003-948	Tray3 Not In Position	<no job=""> Ready to print <with job=""> Push in tray3</with></no>		
003-949	Tray4 Not In Position	<no job=""> Ready to print <with job=""> Push in tray4</with></no>		
003-950	Tray 1 Empty	<no job=""> Ready to print <with job=""> Add paper tray1 xxxx</with></no>		
003-951	Tray 2 Empty	<no job=""> Ready to print <with job=""> Add paper tray2 xxxx</with></no>		
003-952	Tray 3 Empty	<no job=""> Ready to print <with job=""> Add paper tray3 xxxx</with></no>		

Soon

### 2-56 03/02

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD dis
003-953	Tray 4 Empty	<no job=""> Ready to print <with job=""> Add paper tray4 xxxx</with></no>			012-281 012-284		
003-954	Tray SMH Empty	<no job=""> Ready to print <with job=""> Add paper tray5</with></no>		Refer to General- purpose Sensor FIP and check Sensor.	012-941 012-942	Finisher Face Up Tray Full of Paper Stacker (FinisherFaceDownTray)	
003-958	SMH size not conforming	Check Tray5		Load correct paper.	012-943	Full of Paper	
003-959	Tray 1 size not conforming	Check Tray1 xxxx		Refer to General- purpose Sensor FIP	012-044		
003-960	Tray 2 size not conforming	Check Tray2 xxxx		Refer to General- purpose Sensor FIP and check Sensor.	012-945	error Staple Cartridge Near Empty	
003-961	Tray 3 size not conforming	Check Tray3 xxxx		Refer to General- purpose Sensor FIP and check Sensor.	012-946	Finisher pause	
003-962	Tray 4 size not conforming	Check Tray4 xxxx		Refer to General- purpose Sensor FIP	016-450	SMB host name duplicate	Duplicate S host names
003-965	ATS/APS No Paper	Check Tray N		and check Sensor. Refer to General-	016-452	IP address duplicate	Duplicate IF address
003-966	ATS/APS No Destination	XXXX		purpose Sensor FIP and check Sensor. Refer to General-	016-453	IP address acquisition from DHCP server not successful	Unable to g address
	Error			purpose Sensor FIP and check Sensor.	016-460	FULL status detected at HD access	FULL status detected at
003-985	Check SMH pause	Check Tray5 xxxx		Check the paper size, direction, and type and press the eiect key.			access
009-413	Toner Black Near Empty			-,,-			
009-428	Drum Cartridge Change						

display	Job log	Corrective Action
		Refer to the Stapler Finisher Install procedure (step 17) and check that the shipping screw has been removed.
ite SMB imes		Change the host name.
ite IP s		Change IP address.
to get IP s		Set the IP address (no acquisition from the DHCP server).
tatus ed at HD		

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD display	Job log	Corrective Action
016-702	Failed to compress even one page	Error resolved (***-***)	Print page buffer shortage	Increase the memory capacity, lower the resolution, or set print guarantee mode	016-726	Auto SW judgment failure	Error resolved (***-***)	Print language auto judgment error	Select the fixed Decomposer from the operator panel or by a command.
				(print guarantee mode for PLW only).	016-728	Containing Tag not installed by the image file library	Error resolved (***-***)	TIFF data not supported	None
				For PCL, set the "PCL heap memory to band buffer ratio"	016-729	Colours or pixels specified beyond the upper limit of effective range	Error resolved (***-***)	TIFF data size over	None
				to 1:2 or more.(See Chainlink 801-916 in	016-731	TIFF data interrupted or not complete	Error resolved (***-***)	Invalid TIFF data	None
016-705	No HD for security storage	Error resolved (***-***)	Security print	<o2ap>.) Check that HDD is mounted.</o2ap>	016-735	Attempted to output job template list during job template update	Error resolved (***-***)	Updating job template	None
			document registration error	In case of a mounting problem, check that the security print operation is correct.	016-736	Job template syntax error	Error resolved (***-***)	Job template syntax error	1. Set Oceans(FX_DCS_4 50/550) at the attribute (enum_DCS_DCSD
016-706	Termination of job - Users beyond the limit of confidential or proof printing	Error resolved (***-***)	Users beyond limit	Delete unnecessary documents or users and print again.					efinitionUsed) in the job template file. 2. Check that the
016-707	Proof printing not possible	Error resolved (***-***)	Sample printing error						host name set in the resources is
016-708	Termination of job - Pages beyond the limit (1000) of confidential or proof printing	Error resolved (***-***)	Pages beyond limit	Reduce the document to 1000 pages or less and print again.					registered in the DNS server. 3. Check that the DNS server exists.
016-716	TIFF spool file beyond disc capacity	Error resolved (***-***)	TIFF data beyond spool capacity	None	016-737	Failed to read from job template spool server	Error resolved (***-***)	Job template server read error	Check the right to read of the directory of the source server set in the resources.
016-719	Short of PCL decomposer memory (AP specification)	Error resolved (***-***)	Out of PCL Memory	Increase the PC memory capacity.	016-739	Specified path to job template spool server not found	Error resolved (***-***)	Job template server path	Set the resources of the storage path
016-720	PCL Command Error (AP specification)	Error resolved (***-***)	PCL Command Error	Cancel and execute the job again.				specification error	trom the client PC correctly using CentreWare correctly.

### 2-58 03/02

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD dis
016-740	Failed to log in to job template spool server	Error resolved (***-***)	Job template server login error	1. Set a login name and a password for the job template file	016-743	Job template spool server setting error	Error resolv (***-***)
				source. 2. Check that the server allows login from another	016-744	Job template spool server address not soluble	Error resolv (***-***)
				network-connected PC with the above account. 3. Set the login	016-745	Job template spool server address not soluble	Error resolv (***-***)
				name and password from a client PC using CentreWare.	016-746	Local machine IP address abnormal	Error resolv (***-***) Error resolv
016-741	Unable to connect job template spool server	Error resolved (***-***)	Job template server	1. Connect the network cable from		found full at access	(***-***)
			connection error	M/C correctly.	016-749	JCL command syntax error	Error resolv (***-***)
				that M/C can be seen from the	016-760	Decompose processing error	Error resolv (***-***)
				destination server.	016-761	FIFO EMPTY error	Error resolv (***-***)
				3. Perform a ping test from PSW to the destination server.			
				4. Check ftp connection from a client PC to the	016-762	Non-supported function (print language or utility) requested	Error resolv (***-***)
016-742	File system full at job template storing on local HD	Error resolved (***-***)	Short of hard disk	destination server. 1. Try again a little later because HDD	016-764	SMTP server connection error	Error resolv (***-***)
			area	may be full of scanned images.	016-765	SMTP server HD full	Error resolv
				2. Initialize the built- in HDD.			
				3. Replace HDD.			

play	Job log	Corrective Action
ved	Job template server setting error	
ved	Job template server address error	
ved	Job template server address error	
ved	Invalid IP address	
ved	Short of hard disk area	Create HDD space and print again.
ved	JCL command error	Correct the command.
ved	PostScript error	Resend the job.
ved	Image extension error	Print in speed priority mode. If the error persists, print in print guarantee mode.
ved	Print language not supported	Select the fixed Decomposer from the operator panel or by a command.
ved	SMTP server connection error	
ved	Short of hard disk area in SMTP server	

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD display	Job log	Corrective Action
016-766	SMTP server file system problem	Error resolved (***-***)	SMTP server file system error		016-781	Unable to connect server for file transfer by Scan to Server	Error resolved (***-***)	Server connection failure	1. Set the subnet mask and gateway of the main unit
016-767	Invalid E-mail destination address	Error resolved (***-***)	Invalid E- mail destination address						correctly. 2. Check by ping that M/C can be seen from the
016-768	Invalid source address	Error resolved (***-***)	Invalid source address						destination server. 3. Check ftp connection from a
016-769	SMTP server not supporting DSN	Error resolved (***-***)	No DSN support by SMTP		016 793				Win95 or UNIX machine to the destination server.
016-770	HD found short of space during job template	Error resolved (***-***)	server Short of hard disk	Not needed	010-762	10-702       Unable to log in to server for file transfer by Scan to Server         Server       Server         16-783       Specified path not found for	(***-***) Error resolved	error	<ul> <li>2. Set the attribute in</li> </ul>
016-771	Scan data repository address not soluble	Error resolved (***-***)	Scan data storage address error	Not needed					<ul><li>2. Set the attribute in</li><li>the job template file</li><li>correctly.</li><li>3. Set the same</li><li>account as the</li></ul>
016-772	Scan data repository address not soluble	Error resolved (***-***)	Scan data storage address error	Not needed	016-783			Server path	above from a client PC into the resources by CW. Set the attribute in
016-773	Local IP address error	Error resolved (***-***)	IP address error	Not needed		file transfer by Scan to Server	(***_***)	specification error	the job template file correctly.
016-774	HD found full during conversion from JBIG compressed image format into MH compressed format by S-Formatter	Error resolved (***-***)	Short of hard disk area	Not needed	016-784	Unable to write server for file transfer by Scan to Server	Error resolved (***-***)	Server write error	<ol> <li>Check the right to write the server directory.</li> <li>Create space on the server disk.</li> </ol>
016-775	HDD found short of space during image conversion by S-Formatter	Error resolved (***-***)	Short of hard disk area	Not needed	016-785	Server file system full during file transfer by Scan to Server	Error resolved (***-***)	Short of server hard disk area	1. Check the right to write the server directory
016-776	Error other than by HDD access during image conversion by S-Formatter	Error resolved (***-***)	Image conversion error	Not needed					2. Create space on the server disk.
016-777	HDD access error during image conversion by S- Formatter	Error resolved (***-***)	Hard disk error	Not needed					

### 2-60 03/02

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD display	Job log	Corrective Action
016-786	Unable to write temporary file onto HD by Scan to Server	Error resolved (***-***)	Short of hard disk area	<ol> <li>Try again a little later because HDD may be temporarily full of print jobs.</li> <li>Format HDD.</li> <li>Replace HDD.</li> </ol>	050-106 050-107	<ol> <li>Open the upper right unit and lower right cover and remove the jammed paper.</li> <li>Close the unit and cover.</li> <li>Adjust paper on the manual feed tray.</li> </ol>			
016-787 016-793	Job template syntax error in Scan to Server (Redirector detection): Invalid server IP address HD Full	Error resolved (***-***) Error resolved (***-***)	Invalid server IP address Short of bard disk	Check the attribute (string RepositoryName) in the job template file. Not needed	050-108	<ol> <li>Open the upper right unit and lower right cover and remove the jammed paper.</li> <li>Close the unit. Remove all paper from the manual feed tray and load</li> </ol>			
050-101	Paper jam		area		050-109	again.			
050-102	<ol> <li>Slide the upper right unit of the main unit and remove the jammed paper.</li> <li>Close the unit.</li> <li>Slide the upper right unit of the main unit, handle</li> <li>Lever 1 in the unit, and remove the jammed paper.</li> <li>Close the unit.</li> <li>Slide the upper right unit of the main unit and remove the jammed paper</li> </ol>					<ul> <li>of the main unit, handle</li> <li>Lever 1 in the unit, and</li> <li>remove the jammed paper.</li> <li>2. Close the unit.</li> <li>Slide the Finisher to the</li> <li>right.</li> <li>3. Open Cover 3 of the</li> <li>Finisher and remove the</li> <li>jammed paper.</li> <li>4. Close Cover 3.</li> <li>Return the Finisher to the</li> <li>original position.</li> </ul>			
	according to the label inside DADF unit. 2. Close the unit.				050-110	Slide the Finisher to the right. 1. Open Cover 3 of the			
050-104	<ol> <li>Slide the upper right unit of the main unit and remove the jammed paper.</li> <li>Close the unit.</li> <li>Pull out Paper tray 1 and remove the jammed paper.</li> </ol>					Finisher and remove the jammed paper. 2. Close Cover 3. Return the Finisher to the original position.			
050-105	<ol> <li>Push in the tray.</li> <li>Open the lower right cover of the main unit and remove the jammed paper.</li> <li>Close the cover.</li> </ol>								

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD display	Job log	<b>Corrective Action</b>
050-111	Slide the Finisher to the				081-701	Invalid Fax number	Error resolved	Fax number	
	right.					FAXC_EInvalidCallNo /	(***-***)	error	
	1. Slide the upper right unit					Argument Error			
	of the main unit, and				081-702	Invalid Fax communication	Error resolved	Fax	
	remove the jammed paper.					parameter	(***-***)	communicati	
	2. Close the unit.					FAXC_EInvalidParam /		on	
	Return the Finisher to the					Argument Error		parameter	
	original position.							error	
050-112	Slide the Finisher to the				081-703	MF-SYS memory full	Error resolved	MF module	
	right.					FAXC_EmemFull / Memory	(***-***)	memory	
	1. Open Cover 4 and 5 of					Error		shortage	
	the Finisher and remove the				081-704	Suspended by user	Error resolved	User	
	jammed paper.					FAXC_EReqStoppedByFU /	(***-***)	suspension	
	2. Close Cover 4 and 5.					State Error			
	Return the Finisher to the				081-705	Processing rejected due to	Error resolved	Request	
	original position.					MF-SYS error	(***-***)	rejection due	
050-113	Move the Finisher, open					FAXC_EReqAbortedByFU /		to MF	
	Cover 4 of the Finisher, and					Request Error		module error	
	remove the jammed paper.				081-706	MF API call error of	Error resolved	Unknown	
050-114	Slide the Finisher to the					unknown cause	(***-***)	error	
	right.					FAXC_ESysInErr / Internal			
	1. Open Cover 3 and 4 of					Erro			
	the Finisher and remove the				081-707	Error of unknown cause in	Error resolved	Unknown	
	jammed paper.					MF API	(***-***)	internal error	
	2. Close Cover 3 and 4.					FAXC_EUnknownErr /			
	Return the Finisher to the					Internal Error			
	original position.				081-708	Line disconnection from	Error resolved	Remote	
050-115	Slide the Finisher to the					remote station	(***-***)	disconnectio	
	right					FAXC_ERTDisconnectedLi		n	
	1. Open Cover 5 of the					ne / Remote Error			
	Finisher and remove the				081-709	Communication error of	Error resolved	Unknown	
	jammed paper.					unknown cause	(***-***)	communicati	
	2. Close Cover 5.					FAXC_ECommunErrToRT /		on error	
	Return the Finisher to the					Remote Error			
	original position.				081-710	Remote machine fault or	Error resolved	Remote	
081-311	Critical error in Fax	Ready to print				ISDN line error	(***-***)	machine/ISD	
(19-58)	controller	(***-***)				FAXC_ERTObstacleOrLine		N line fault	
	FAXC_ESysInFatalErr /					Err / Remote Error			
	Fatal Error								

### 2-62 03/02

Chain-	Description	LCD display	Job log	<b>Corrective Action</b>
081-711	Failed to reserve resources during confidential box operation FAXC_EMBResourceLack / Mailbox Error	Error resolved (***-***)	Resources shortage during confidential box	
081-712	Specified confidential box number outside range FAXC_EMBNotInScope / Mailbox Error	Error resolved (***-***)	Invalid confidential box number	
081-713	Confidential box number or password of invalid format FAXC_EMBInvalidFormat / Mailbox Error	Error resolved (***-***)	Invalid confidential box number/pas sword	
081-714	Specified confidential box number not registered FAXC_EMBNotExist / Mailbox Error	Error resolved (***-***)	Non- registered confidential box number	
081-715	Confidential box password mismatch FAXC_EMBInvalidPasswor d / Mailbox Error	Error resolved (***-***)	Illegal confidential box password	
081-716	Specified document not in confidential box FAXC_EMBDocNotFound / Mailbox Error	Error resolved (***-***)	Document not in confidential box	
081-717	Specified document in confidential box in use FAXC_EMBDocBusy / Mailbox Error	Error resolved (***-***)	Confidential box document in use	
081-718	Unable to fetch specified document from confidential box FAXC_EMBDocNotRetrieve d / Mailbox Error	Error resolved (***-***)	Confidential box document fetch error	
081-719	Unable to store document in specified confidential box FAXC_EMBDocNotStored / Mailbox Error	Error resolved (***-***)	Confidential box document storage error	

Chain- Link	Description	LCD display	Job log	Corrective Action
081-720	Error in communication with MF-SYS FAXC_ECommunErrToFU / Fatal Error	Error resolved (***-***)	MF module communicati on error	
081-721	Image data transfer aborted by task in P-ESS FAXC_EAbortByPRT / MF- API errors	Error resolved (***-***)	Image data transfer abortion	
081-722	MF-API internal processing error in image transfer (Mainly error in PfimgConvert()) FAXC_EOther / Others	Error resolved (***-***)	Image transfer error	
082-311 (N9-59)	Unsuccessful module diagnosis at QA I/F activation (DP-RAM contents check) FAXC_EDPRam / Fatal Error	Ready to print (***-***)		
103-320 (N6-19)	SEEPROM Fail	Ready to print (***-***)		<ol> <li>Extract and insert the ESS-installed standard ROM.</li> <li>Replace the ESS- installed standard ROM.</li> </ol>
103-332 (N6-17)	ESS standard ROM Error	Ready to print (***-***)		Replace ESS PWB.
103-333 (N1-13)	Sensor error	Ready to print (***-***)		Replace ESS PWB.
103-334 (N6-18)	Standard FontROM Error	Ready to print (***-***)		Replace Font ROM.
103-337 (N6-26) 103-339 (N6-42)	ESS standard RAM Error Faulty ROM DIMM installing from another model	Ready to print (***-***) Ready to print (***-***)		Replace ESS PWB(PL13.1). 1. Check ROM DIMM and install a correct one. 2.Replace ESS PWB(PL13.1).

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD display	Job log	Corrective Action
103-372 (N9-16)	IOT Controller software error	Ready to print (***-***)		<ol> <li>Reinstall the ESS software.</li> <li>Replace ESS PWB.</li> </ol>	116-318 (N6-11)	ESS ROM DIMM #2 Check Fail	Ready to print (***-***)		<ol> <li>Extract and insert the optional ROM DIMM.</li> <li>Replace the</li> </ol>
103-373 (N9-16)	IOT Manager software error	Ready to print (***-***)			116-320	STREAMZ critical error	Readv to print		optional ROM DIMM. 1.Reinstall the ESS
103-374 (N9-16)	IOT DeviceDriver software error	Ready to print (***-***)			(N9-40)		(***-***)		software. 2.Replace ESS
116-200 (N1-10)	Main PWBA IC fail	Ready to print (***-***)		Replace ESS PWB.	116-321	SysCon Error	Ready to print		PWB. 1. Reinstall the ESS
116-201 (N1-40)	HDD startup failure due to HDD fault	Ready to print (***-***)		1. Diagnose HDD. 2.Replace HDD. 3.Replace ESS	(N9-11)		(***-***)		software. 2.Replace ESS PWB.
116-206	Timer failure	Ready to print		PWB. Replace ESS PWB	116-323 (N6-24)	ESS NVRAM W/R Check	Ready to print		Replace ESS PWB.
(N1-15) 116-207	Ethornot Board Eail	(***_***)			116-324 (N9-10)	System error	Ready to print		Replace ESS PWB.
(N1-20)		(***-***)			116-325           Issert         (N2-10)	ESS FAN FAIL	Ready to print		1.Replace ESS Fan.
116-209 (N6-13)	ESS Font ROM DIMM #1 Check Fail	Ready to print (***-***)		1. Extract and insert the ESS Font ROM			(***-***)		2.Replace ESS PWB.
				the ESS Font ROM         116-326           DIMM #1.         116-326           2.Replace ESS Font         (N6-31)           ROM DIMM #1.         116-326	ESS ROM DIMM #1 Flash Fail	Ready to print (***-***)		1. Extract and insert the ESS ROM DIMM #1.	
116-314 (N6-15)	Ethernet Address Fail	Ready to print (***-***)		Replace ESS PWB.					2.Replace ESS ROM DIMM #1.
116-315 (N6-21)	ESS RAM DIMM #1 W/R Check Fail	Ready to print		1. Extract and insert the ESS RAM DIMM					3.Replace ESS PWB.
				<ul> <li>#1.</li> <li>2.Replace ESS RAM</li> <li>DIMM #1.</li> <li>3.Replace ESS</li> <li>PWB.</li> </ul>	116-327 (N6-32)	ESS ROM DIMM #2 Flash Fail	Ready to print (***-***)		<ol> <li>Extract and insert the ESS ROM DIMM #2.</li> <li>Replace ESS ROM DIMM #2.</li> </ol>
116-317 (N6-10)	ESS ROM DIMM #1 Check Fail	Ready to print (***-***)		<ol> <li>Extract and insert the standard ROM DIMM.</li> <li>Replace standard ROM DIMM.</li> <li>Replace ESS</li> </ol>	116-328 (N6-25)	L2 Cache Fail	Ready to print (***-***)		1.Replace ESS PWB.

### 2-64 03/02

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD display	Job log	Corrective Action
116-332 (N6-51)	Invalid Log control information	Ready to print (***-***)		1.Remove HDD, turn the power ON/OFF,	116-345 (N1-60)	Token Ring Control IC access error	Ready to print (***-***)		
				then reinstall HDD and power ON. 2 Execute HDD Diag	116-346 (N9-53)	Critical error detected by Formatter	Ready to print (***-***)		1.Power OFF/ON 2.Replace ESS PWB.
				(DC355). 3.Replace ESS	116-347 (N1-30)	LocalTalk board failure	Ready to print (***-***)		
116-333 (N9-42)	LocalTalk related system call error	Ready to print (***-***)		PWB. 1.Reinstall the ESS software.	116-348 (N9-54)	Critical error detected by Redirector	Ready to print (***-***)		1.Power OFF/ON 2.Replace ESS PWB.
				2.Replace ESS PWB.	116-349 (N9-26)	Pfile function call error by SIF	Ready to print (***-***)		Replace ESS PWB.
116-334 (N6-30)	ESS Standard ROM Flash Fail	Ready to print (***-***)			116-350 (N9-43)	AppleTalk general critical error	Ready to print (***-***)		1.Reinstall the ESS software.
116-335 (N1-41)	HD fault detected by MFIO	Ready to print (***-***)		1.HDD Format 2.Replace HDD.					2.Replace ESS PWB.
				3.Replace P-ESS Board.	Replace P-ESS         116-351           ard.         (N9-41)	EtherTalk related critical error	Ready to print (***-***)		1. Reinstall the ESS software.
116-336 (N1-41)	HD fault detected by Redirector	Ready to print (***-***)		1.HDD Format 2.Replace HDD.				2.Replace ESS PWB.	
116-337 (N1-41)	Job template storage error	Ready to print		3.Replace P-ESS Board. 1.HDD Format 2 Replace HDD	116-352 (N9-45)	NetWare related critical error	Ready to print (***-***)		<ol> <li>Reinstall the ESS software.</li> <li>Replace ESS PWB</li> </ol>
				3.Replace P-ESS Board.	116-353 (N9-44)	lpd related critical error	Ready to print (***-***)		1. Reinstall the ESS
116-340 (N6-50)	Short of page memory, input buffer, or work area.	Ready to print (***-***)		1. Add memory. 2. Extract the					2.Replace ESS PWB.
	Task activation failure due to Malloc error or other.			PostScript option.	116-355 (N9-48)	SNMP Agent related critical error	Ready to print (***-***)		1. Reinstall the ESS software.
116-341 (N6-40)	ROM DIMM version mismatch	Ready to print (***-***)							2. Replace ESS PWB.
116-342 (N9-49)	Critical error detected by JT monitor	Ready to print (***-***)		1.Power OFF/ON. 2.Replace ESS PWB.	116-356 (N9-60)	EWS related critical error	Ready to print (***-***)		<ol> <li>Reinstall the ESS software.</li> <li>Replace ESS</li> </ol>
116-343 (N9-50)	MF-SYS communication	Ready to print			116 257				PWB.
(N3-33) 116-344 (N9-51)	Critical error detected by JT monitor	Ready to print		1.Power OFF/ON.	(N9-20)	PS Fatal System error	(***-***)		PWB.
		( - )		PWB.					

Chain- Link	Description	LCD display	Job log	Corrective Action	Chain- Link	Description	LCD display	Job log	Corrective Action
116-358 (N9-46)	Acknowledgement-related critical error	Ready to print (***-***)		<ol> <li>Reinstall the ESS software.</li> <li>Replace ESS PWB.</li> </ol>	116-377 (N1-14) 116-378 (N9-75)	Video DMA Fail MCR(Mail Contents⊡Requester)	Ready to print (***-***) Ready to print (***-***)		Replace ESS PWB.
116-360 (N9-61)	SMB related critical error	Ready to print (***-***)		<ol> <li>Reinstall the ESS software.</li> <li>Replace ESS PWB.</li> </ol>	116-379 (N9-76) 116-386	critical error MCC(Mail Contents Creator) critical error	Ready to print (***-***)		
116-361 (N1-41)	SPL HDD critical error	Ready to print (***-***)		1.Execute HDD Diag (DC355). 2.Replace HDD.	(N6-47) 116-387 (N6-46)	data) and no IFAX ROM IFax option ON(system data) and no HD	(***-***) Ready to print (***-***)		
116-365 (N9-22)	SPL critical error	Ready to print		3.Replace ESS PWB. 1. Reinstall the ESS	116-390 (N6-41)	Version mismatch between standard ROM and NVM			Initialize NVM according to the LCD display.
116-366	Print Litility operation error	Ready to print		2.Replace ESS PWB. Replace ESS PWB	(N6-43) 116-392 (N6-44)	Inconsistent NV area version down			
(N9-71) 116-367 (N9-30)	Parallel-related general	(***-***) Ready to print		1.Reinstall the ESS	(N6-45) 116-394	Log area version changed			
	critical error	("""-"")		2.Replace ESS PWB.	(N6-52) 116-395 (N9-64)	USB related critical error	Ready to print		1. Reinstall the ESS
116-368 (N9-70)	DumpPrint critical error	Ready to print (***-***)		<ol> <li>Reinstall the ESS software.</li> <li>Replace ESS</li> </ol>					2.Replace ESS PWB.
116-370 (N9-72)	XJCL critical error	Ready to print (***-***)		PWB. 1. Reinstall the ESS software. 2.Replace ESS	(N9-65)	MailiO related critical error	(***-***)		1. Reinstall the ESS software. 2.Replace ESS PWB.
116-371 (N9-27)	PCL Decomposer Software Fail (AP specification)	Ready to print		PWB.	(N9-52)	error detected by MFIO	(***-***)		1.Power OFF/ON 2.Replace P-ESS PWB.
116-372 (N9-74)	P-Formatter critical error	Ready to print (***-***)		Replace ESS PWB.	116-398 (N9-63)	IPP related critical error	Ready to print (***-***)		1. Reinstall the ESS software. 2 Replace ESS
(N9-73)	AutoSVV critical error	Ready to print (***-***)		<ol> <li>Reinstall the ESS software.</li> <li>Replace ESS PWB.</li> </ol>	116-399 (N9-62)	JME related critical error	Ready to print (***-***)		PWB. 1. Reinstall the ESS software.
116-376 (N9-66)	Port 9100 Software Fail	Ready to print (***-***)							2.Replace ESS PWB.

Chain- Link	Description	LCD display	Job log	<b>Corrective Action</b>
116-701	Forced duplex printing		Duplex print failure due to memory shortage	Add memory or install HDD if no HD is available.
116-702	Print in substitute font		Substitute- font print	Not needed
116-703	Language interpretation processing error		PostScript language interpretatio n error	Correct job data.
116-720	PCL Memory Low, Page Simplified (AP specification)		PCL Memory Low, Page Simplified	Disable unnecessary ports. Adjust various buffer memory sizes. Add extension memory.
116-740	Numeric operations beyond limit in interpreter		Numeric operations error	<ol> <li>Update the print driver.</li> <li>Collect print data.</li> </ol>
116-741	Unable to register form data because of quantity limit		Form registration failure	Check the registered forms by the operator panel utility and delete unnecessary ones, or delete unnecessary forms by the print command.
116-780	Abnormal document attached to email to XXX		Attached document error	Not needed
116-790	Print with no Stapler		Release stapling	Not needed
116-799	Decode Error in MF-SYS		MF module decode error	

#### Internal Codes List 2.3.1.14

Internal Code	Error Description	Corrective Action
0273	Character print data (Character info.) error. ERRHOSTJ_CHARA_TYPE	Replace OA I/F board.
0274	Character print data (Character length) error. ERRHOSTJ_CHARA_LEN	Replace OA I/F board.
02A5	File error Attempting to send empty page	Check/replace M/F MAIN PWB, AM, and MMB.
035A	No blank channel available for BP-F device ( ERR_VCEM_NOCH )	System reset.
035B	Attempting to connect or release port in use by another job ( ERR_VSWSW_BUSY)	System reset.
05E0	JBIG/MMR decode error occurred with G3 module transmission.	Check the transmitter parameters. Check/replace M/F MAIN PWB. Retry.
09E0	JBIG/MMR decode error occurred with G4 module transmission.	Check the transmitter parameters. Check/replace M/F MAIN PWB. Retry.
8143	Line connection time out	Replace NCU PWB. Replace G4/ICM PWB/ROM. Replace G3M PWB/ROM. Replace G4M PWB/ROM.
8180	EM_PNLIF_ABNORMAL PNL I/F DEVICE Handler received an illegal command.	
8181	EM_PNLIF_TxILLEGAL Faulty send status at the occurrence of PNL I/F send interrupt	
8182	EM_PNLIF_RxILLEGAL Faulty receive status at the occurrence of PNL I/F receive interrupt	
8183	EM_PNLIF_INTRILLEGAL An illegal interrupt occurred with PNL I/F.	Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.

Internal Code	Error Description	
8184	EM_PNLIF_CHANNEL PNL I/F logic channel failure: Selected channel doesn't exist, is already opened, isn't opened yet or is already closed.	
8185	EM_PNLIF_FRAMELONG Send/Receive Frame Length is over.	C C C P
8186	EM_PNLIF_NOFRAME Frame requested to read doesn't exist.	
8187	EM_PNLIF_RxFULL Receive Buffer full	
8188	User buffer full with received data. (Serial data receive buffer to Panel Monitor became full.)	
8189	Abnormal serial receive data sequence from PANEL	
818A	Failed to notify completion of serial data sending that is to panel.	
818B	Failed to notify completion of serial data receiving that is to panel.	
81C0	An error was detected in the semaphore controlling library.	C A
81D0	DC I/F Monitor received an illegal event. EM_DCIFM_ABNORMAL	
81D1	EM_DCIFM_FRAMELONG Receive frame length from DC SYS is over.	C № R
81D2	A message was sent from DC to the channel which is not open to MF. (EM_DCIFM_CHAN_CLOSE)	
81D3	A message with an unknown address was sent from DC. (EM_DCIFM_INVAILD_ADDR)	

Corrective Action
Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.
Check/replace M/F MAIN PWB, AM, and MMB.
Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

2-68
03/02

Internal Code	Error Description	Corrective Action
81D4	User buffer is full with data. (Serial data receive buffer to job or monitor became full)	
81D5	Abnormal sequence of received serial data from DC-SYS.	
81E0	Unable to get message sent from DC- SYS or to send message to panel (EM_DCM_MSG_IMP)	Check connections between UI- M/F MAIN PWB-MCU/SW PWB, and turn the power OFF/ON.
81E1	Invalid message contents (EM_DCM_MSG_AN)	
81E2	DC-SYS and UI-SYS communication timeout in initialize sequence (EM_DCM_TMOUT)	Check connections between UI- M/F MAIN PWB-MCU/SW PWB, and turn the power OFF/ON.
81E3	Failure in rd_event() inside DC monitor. (EM_DCM_EVREAD)	
81E4	Failure in a_post() inside DC monitor. (EM_DCM_EVPOST)	
81E5	Failure in booting up and opening DCIF monitor. (EM_DCM_DCIF_DWN)	
81E6	Unsuccessful message issue to DC-SYS in initialize sequence (EM_DCM_MSG_EXP)	
81E7	Error in system data read/write sequence with DC-SYS ( EM_DCM_SYSD )	
81E8	EM_DCM_DC_INIT During the initialization sequence, "Initialization Complete Instruction" informed of failure.	Execute diagnostic on DC-SYS system data read/write. If rebooting the system is unsuccessful, replace DC-SYS.
81E9	Unsuccessful management of error registration field by DC monitor ( EM_DCM_OTHERS)	
81EA	Time out while executing system data read/write sequence. (EM_DCM_TMOUT_CF)	Check the connection between MCU/SW PWB-M/F MAIN PWB or UI-M/F MAIN PWB connector, then reboot the M/C. If there are any system data with wrong value, clear them and reboot the M/C.

Internal Code	Error Description	
81EB	Time out while waiting for the response of status request from DC-SYS. (EM_DCM_TMOUT_STAT)	C F N
81EC	No response from DC-SYS after CUST_OUT (EM_DCM_TMOUT_CUSTOUT)	C F N
81ED	Delay in DC-SYS response to RM JOB activation request and beyond RM JOB end time	F
8200	STORE JOB Failure. Timeout when response from DC-SYS was awaited in Store job.	C F N
8210	COPY JOB Failure (Internal process error) EMG_CP_JOB_NG	C F F N F
8212	Event Failure (Illegal event received) EMG_CP_EVT_ILLEGAL	C C F
8213	Wrong Event Parameter EMG_CP_EVTPRM_ILLEGAL	C C F
8214	Wrong Event Sequence EMG_CP_EVTSEQ_ILLEGAL	C C C F
8215	Time out inside MF EMG_CP_MF_TIMEOUT	C C C F
8216	DC time out (no response) EMG_CP_DC_TIMEOUT	C N F

### **CHAPTER 2 TROUBLESHOOTING** 2.3 Level 2 Troubleshooting

#### **Corrective Action**

Check MCU/SW PWB-M/F MAIN PWB connector, then reboot the M/C.

Check MCU/SW PWB-M/F MAIN PWB connector, then reboot the M/C.

Reboot the M/C.

Check MCU/SW PWB-M/F MAIN PWB connector, then reboot the M/C. Operate again.

Check M/F MAIN PWB, MCU/SW PWB, and CONTROL PANEL for connections.

Replace M/F MAIN PWB, MCU/SW PWB, or CONTROL PANEL.

Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.

Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.

Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.

Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.

Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

Internal Code	Error Description	Corrective Action
8280	EMG_PR_MF_TIMEOUT No response from Scheduler	
8281	EMG_PR_PRM_ILLEGAL Regarding an event from Scheduler, an illegal parameter came.	
8282	EMG_PR_EVT_ILLEGAL An illegal event was received.	
8283	EMG_PR_EVTSEQ_ILLEGAL An illegal event was received in terms of sequence.	
8284	EMG_PR_FILE	
	A problem was detected with File Handler.	
8285	EMG_PR_DC_TIMEOUT During Print Job, no response was made by DC-SYS. (60 sec. timeout)	
8286	U Code was informed from DC-SYS during Print Job.	
8290	EMG_DJ_JPB Illegal Interface data with Job Scheduler	
8291	EMG_DJ_JOBMF-SYS Diag Job Fault (History Read Error)	
82A0	MF Event Response Timeout (EMG_PT_MF_TIMEOUT)	Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.
82A1	MF Event error (EMG_PT_EVT_ILLEGAL)	Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.
82A2	Wrong MF Event Parameter (EMG_PT_PRM_ILLEGAL)	Check M/F MAIN PWB and CONTROL PANEL for connections. Replace M/F MAIN PWB or CONTROL PANEL.
82C0	Invalid box number for box deletion and all document deletion	

Internal Code	Error Description	T
8364	TCB Error EM_DMA_TCB_ERROR	
8365	Interrupt Reason Unknown Error EM_DMA_INT_ZERO	(
8450	EM_DCIF_ABNORMAL DC I/F DEVICE Handler received an illegal command.	
8451	EM_DCIF_TxILLEGAL Abnormal send status at the occurrence of DC I/F send interrupt	
8452	EM_DCIF_RxILLEGAL Faulty receive status at the occurrence of DC I/F receive interrupt	
8453	EM_DCIF_INTRILLEGAL An illegal interrupt occurred with DC I/F.	(     
8454	EM_DCIF_CHANNEL DC I/F logic channel failure: Selected channel doesn't exist, is already opened, isn't opend yet, or is already closed.	
8455	EM_DCIF_FRAMELONG Send/Receive Frame Length is over.	
8456	EM_DCIF_NOFRAME Frame requested to read doesn't exist.	
8457	EM_DCIF_RxFULL Receive Buffer full	
8458	Failed to notify completion of serial data sending that is to DC-SYS.	
8459	Failed to notify completion of serial data receiving that is to DC-SYS.	
8471	BP-F Handler can't be opened. EMG_VCEM_OPEN	

Corrective Action
Check M/F MAIN PWB for connection. Replace M/F MAIN PWB.
Check M/F MAIN PWB for connection. Replace M/F MAIN PWB.
Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.
Check M/F MAIN PWB and MCU/SW PWB for connections. Replace M/F MAIN PWB or MCU/SW PWB.

2-70	
03/02	

Internal Code	Error Description	Corrective Action
8472	BP-F Handler was requested to close by any one else than the user. EMG_VCEM_CLOSE	
8473	At production of a report with image, Buffer full is detected. EMG_VCEM_MREPORT	Operate again, or replace M/F MAIN PWB.
8474	A glitch was detected with IOT Page Sync Signal. EMG_VCEM_PSYNC_GLITCH	Operate again.
8590	Undefined interrupt	Hardware problem. Check the G3M board connection. Check/replace the G3M board.
8591	Undefined trap instruction	Check the G3M board connection. Check/replace the G3M board.
8592	Watchdog timer timeout	Check the G3M board connection. Check/replace the G3M board.
8700	Failed to initialize IDE device (HDD) . EM_HD_IDE_DIAGERR	Check/replace M/F MAIN PWB and HDD.
8701	Fatal Error AMNF ( Address Mark Not Found ) TKONF ( Track 0 not found ) IDNF ( ID not found ) UNC ( Uncorrectable ECC error )	Replace M/F MAIN PWB PWBA .
8702	Failed to post event from user task to disk task EM_HD_FMT_ACK_NG	
8703	Failed to post event from disk task to panel task to notify completion of HDD initialization. EM_HD_FMT_NG	
8711	HDD media error. (Can not read/write, etc.) EM_HD_MEDIA_ERR	Register the defect blocks. Check/replace the media.
8712	HDD hardware error. (scsi controller defect) EM_HD_HW_ERR	Check the hardware. Replace HDD.
8714	READ command reexecution failure EM_HD_READ_RETRY	Check the hardware. Replace HDD.

Internal	Error Description	Corrective Action
Code	-	
8715	WRITE command reexecution failure EM_HD_WRITE_RETRY	Check the hardware. Replace HDD.
8716	TEST UNIT READY command reexecution failure EM_HD_READY_RETRY	Check the hardware. Replace HDD.
8717	FORMAT command reexecution failure EM_HD_CTL_RETRY	Check the hardware. Replace HDD.
8718	REZERO command reexecution failure EM_HD_MEDIA_RETRY	Check the hardware. Replace HDD.
8719	WRITE BUFFER/READ BUFFER command reexecution failure EM_HD_WRBUF_RETRY	Check the hardware. Replace HDD.
871A	START STOP command reexecution failure EM_HD_SSTOP_RETRY	Check the hardware. Replace HDD.
871B	READ CAPACITY command reexecution failure EM_HD_STATUS_RETRY	Check the hardware. Replace HDD.
871C	SEND DIAGNOSTIC command reexecution failure EM_HD_DIAG_RETRY	Check the hardware. Replace HDD.
87FF	HDD hardware fault (SCSI controller abnormal) or configuration error (Option memory not connected)	Check/replace the hardware. Check Option Memory connection. Replace HDD.
88C0	FXOS attachment error (Task generation failure)	Replace G4/ICM PWB. Replace G4/ICM PWB ROM.
88C1	FXOS post event error (Event posting failure)	Replace G4/ICM PWB. Replace G4/ICM PWB ROM.
88C2	FXOS read event error (Event read failure)	Replace G4/ICM PWB. Replace G4/ICM PWB ROM.
8B70	Other failure	Reset the system for automatic recovery. If the system does not recover, replace P-ESS.
8B71	JT monitor failure	Reset the system for automatic recovery. If the system does not recover, replace P-ESS.
8B72	JT monitor and MF-SYS communication error	Reset the system for automatic recovery. If the system does not recover, replace P-ESS.

Internal Code	Error Description	Corrective Action
8B73	MFIO Fail	Reset the system for automatic recovery. If the system does not recover, replace P-ESS.
8B74	MFIO-MF-SYS communication error	Reset the system for automatic recovery. If the system does not recover, replace P-ESS.
8B75	Formatter Fail	Reset the system for automatic recovery. If the system does not recover, replace P-ESS.
8B76	Redirector Fail	Reset the system for automatic recovery. If the system does not recover, replace P-ESS.
8C01	TCB Stack Overflow	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C02	TCB address is incorrect.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C03	TPCB address is incorrect.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C04	Task No. is incorrect.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C05	ECB address is incorrect.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C06	PRM address is incorrect.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C07	TMCB address is incorrect.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C08	Selected TPCB address can't be found.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C09	Selected TCB address can't be found.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C0A	Memory for TCB was deleted.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C0B	Selected TCB address can't be found.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C0C	An event(0) inhibited from use was detected.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.

Internal Code	Error Description	Corrective Action
8C0D	Selected ECB address can't be found.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C0E	The received PRM is illegal.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C0F	Syntax error	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C10	Memory for TMCB is deleted.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C11	Memory for ECB is deleted.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C12	Memory for PRM is deleted.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C20	CPU Exception Process Error Bus Error	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C21	CPU Exception Process Error Address Error	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C22	CPU Exception Process Error Illegal instructions	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C23	CPU Exception Process Error Divided by 0	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C24	CPU Exception Process Error CHK instructions	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C25	CPU Exception Process Error TRAPV instructions	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C26	CPU Exception Process Error Privilege violation	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C27	CPU Exception Process Error Trace Exception Process	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C28	CPU Exception Process Error Instructions that are not installed (line 1010 emulator)	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C29	CPU Exception Process Error Instructions that are not installed (line 1111 emulator)	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.

Corrective	Action
------------	--------

### 2-72 03/02

Internal Code	Error Description	Corrective Action
8C30	XX System, Recognition failure	Confirm XX-sys. Check CONTROL PANEL-MCU/SW PWB/M/F MAIN PWB connections. Check M/F Main PWB and ROM. Replace CONTROL PANEL.
8C31	Resource secure failure	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C32	Timer is already used.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C33	Timer Table error	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C34	Queuing Event mismatch	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C35	Queuing Event error	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C36	Queuing Event ID error	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C37	XX-Sys response wait timeout	Confirm XX-sys. Check CONTROL PANEL-MCU/SW PWB/M/F MAIN PWB connections. Check M/F Main PWB and ROM. Replace CONTROL PANEL.
8C40	Any other event than job-related ones was delivered.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C41	VDispNo. registered on Job Manager Table is incorrect.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C42	Incorrect argument	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C43	No more job-by-job PNLVAR can be obtained.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C44	Job-by-job PNLVAR can't be obtained due to an illegal argument.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C45	The job applicable doesn't exist on Job Manager Table.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C46	The job can't be registered.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C47	No buffer area for the job	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.

Internal Code	Error Description	Corrective Action
8C48	Job type can't be identified.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C49	Error in restarting a suspended job	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C4A	Error in requesting a job to stop	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C4B	There exists no job to be restarted resulting from clearance of interrupt.	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C50	LCD Y coordinate over	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C60	MF send error	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C61	MF receive error	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C62	MF receive buffer full	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C63	MF receive frame length is over.	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C64	MF Interface Frame doesn't exist.	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C65	MF Interface Frame length is over.	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.

Internal Code	Error Description	Corrective Action	Internal Code	Error Description	
8C66	MF Frame length is over.	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C75	No response is made after pnlif mon is attached (at M/C initialization).	C M C F
8C67	MF failure	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C76	An event parameter received from another task on MF-SYS is wrong. (System error)	C N C C
8C68	MF FF2	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C77	An undefined job status event was received from Job Scheduler.	C M C F
8C70	An unexpected message or data came from PANEL-SYS (due to S/W bug)	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C78	CONTROL PANEL response awaiting time out (at M/C initialization)	C N C F
8C71	TEL Job dial ring buffer full	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C79	Job Scheduler was requested to activate a job, and an error occurred. (S/W bug is a major cause)	C M C F
8C72	Failure in obtaining a message from PANEL-SYS (importMsg return value is incorrect.)	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C7A	Job Memory Register Process failure (due to S/W bug)	C N C F
8C73	Failure in sending a message to PANEL- SYS (exportMsg return value is incorrect.)	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C7B	Registered Job Memory Cancel Process failure (due to S/W bug)	C M C F C
8C74	Failure in attaching pnlif mon at M/C initialization	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.	8C7C	Excess message resend to panel	C N C F C

03/02

Corrective Action
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.

### 2-74 03/02

Internal Code	Error Description	Corrective Action
8C7F	Service function (sysPnI) parameter error (Software bug)	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C80	Initialization phase	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8C90	I/O Monitor	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8CA0	Display Monitor	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8CB0	M/F Monitor	Check CONTROL PANEL- MCU/SW PWB/M/F MAIN PWB connections. Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8CC0	CONTROL PANEL Monitor	Check M/F MAIN PWB and ROM. Replace CONTROL PANEL.
8D12	Page deletion table overflow	
8DC1	Timeout error (Command interrupt timeout, DMA interrupt timeout, or device ready timeout)	Operate again.
8DC2	Software error (Interface error, device- unexpected error, or error reported from DMA handler)	Operate again.
8DD0	Unable to post processing result notice event from disk task to user task EM_HD_SND_RSP_NG	S/W bug
8DD1	Unable to post task generation OK notice event from disk task to init task EM_HD_INIT_NG	S/W bug
8DD2	HDD not ready EM_HD_NOT_READY	Set HDD ready.
8DE0	DRAM error during file control information read	Check/replace the hardware.
8DE1	DRAM error during directory control information read	Check/replace the hardware.

Internal Code	Error Description	Corrective Action
8DE2	DRAM error during page control information read	Check/replace the hardware.
8DE3	DRAM error during block control information read	Check/replace the hardware.
8DE4	DRAM error during tag control information read	Check/replace the hardware.
9991	Forced machine reboot on job end instruction from EPSV	No action required.
9993	The unexpected "Instructions of completing initialization" was received from CONTROL PANEL. (action for H/W problems)	No action required.
9994	For reboot when CUST OUT occurred in installing BLT-PNL	No action required.
9995	Compel M/C to be rebooted when Billing Meter is connected. BILLING_IN	No action required.
9996	Compel M/C to be rebooted when Billing Meter is disconnected. BILLING_OUT	No action required.
9997	Compel M/C to be rebooted after Remote Maintenance is complete. RM_RESTART	No action required.
9998	Compel M/C to be rebooted after memory is cleared. MANUAL_RESTART	No action required.
9999	Compel M/C to be rebooted. MANUAL_RESET	No action required.
FFFE	Communication interrupted by operator	Normal (Recorded in communication log only)

#### 2.3.2 Troubleshooting in ISDN communication

ISDN is integrated from subscriber telephone, 64 Kbps circuit switched, and packet switched networks. In Japan, NTT is providing two services, NET-64 and NET-1500. The other Class-1 carriers (TTNet, etc.) are also providing services based on the same technical standard. (Some ISDN services outside Japan use different technical standards but appropriate conversion enables intercommunication. For example, the speed is 56 kbps in the U.S. mainland.

ISDN physically has several logical channels in one line. Three channels in total (one D channel and two B channels) are available from NET-64 and up to 24 channels from NET-1500. ISDN also supports various other configurations. If NET-1500 is connected to a G4 Fax (always through PBX), its service is almost the same as that of NET-64 (however, B channel may be one).

In ISDN communication, the D channel is used to originate, terminate, and clear calls in G4 Fax, G3 Fax, and call modes and the B channels are used to exchange information with remote terminals. Therefore, what is most important in troubleshooting is to locate a communication error in the D channel (or earlier physical fault) or B channels. An error code identifies the D or B channels.

The error status is checked on protocol monitors. The D-channel protocol monitor is ICM. The B-channel protocol monitors are Link Layer (Layer 2), Network Layer (Layer 3), Transport Layer (Layer 4), Session Layer (Layer 5), and Presentation Layer (Layer 6).

For troubleshooting, the error is located in the D or B channels with the displayed error code and the corresponding protocol monitor data is ejected for checking and analyzing signal exchange and contents. Then corrective and recovery actions are taken according to the results. Details of the signals are recorded in FIF.

Through ISDN, NTT is providing an increasing number of additional services. The representative additional services are dial-in, calling number indication (Number Display), facsimile communication network, Voice Forward Service. Even functions named subscriber telephone networks (analogue public line networks) provide services of different contents. Since an ISDN line with these additional services is subject to communication errors unique to these services, the client or carrier should check the contents of contract (dial 116 for NTT).

In ISDN communication outside Japan, incoming signals from overseas may be different from those explained here because the technical standards partially differ.

This troubleshooting section consists of:

- 1. ISDN Line Basic Troubleshooting Flow
- 2. ISDN Basic Sequences (D-channel and B-channel sequences)

3. D-channel Troubleshooting (Signal list, DISC/STATUS/SETUP signals, and reason display value)

4. B-channel Troubleshooting (Network, Session, and Presentation protocols)

Precautions on Parameter Settings and Cases of Problems

Subsections 3 and 4 explain fax troubleshooting about frequently used signals. For FIF of each signal, see "FIF of DISC signal" below. A signal explained in 3 or 4 may have FIF shorter (with only information elements necessary for communication) or longer (with information elements not explained here) than the one below.





WorkCentre Pro 423/428



2-76


2-78 03/02



-ilaa	Operator	
ation		
Þ	Termination notice	
:	i	
►	Call	
	Response	



1-	Appli- cation	Operator	

\_\_\_\_

2-80 03/02

B-channel sequence

Operator	Appli- cation	Presen- tation	Session	Trans- port	Net- work	Data- Link	Physi- cal	ISDN(BRI)	Physi- cal	Data- Link	Net- work	Trans- port	Session	Presentation
				<u> </u>	D-chanı	nel com	nmunica	ation (See the I	D-chann	el sequ	ience)			
	G4 Start				•	011111	]			•				
	L					•	J			011111				
						SAB								
					50	◄		I(SQ)						
								I(SF)			SF			
					CR			I(CR)			•			
					•			I(CC)			СС	]		
				TCR				I(DT(TCR))				-		
				•				I(DT(TCA))				тс		
		Pre.	cs -					I(DT(TDT(CSS)))						
			•					I(DT(TDT(RSSP)))					RSS	Pre.
		Pre.	CDC					I(DT(TDT(CDCL)))						
			•					I(DT(TDT(RDCLP))	)				RDC	Pre.
		Pre.D	CDS _					I(DT(TDT(CDS)))						
								I(DT(TDT(CDUI(Doc	uD))))					
		Page						I(DT(TDT(CDUI(Pag	eD))))					
														•



Operator	Appli- cation	Presen- tation	Session	Trans- port	Net- work	Data- Link	Physi- cal	ISDN net	Physi- cal	Data- Link	Net- work	Trans- port	Session	Presen- tation	Appli- cation	Operato
	*	Text.U						I(DT(TDT(CDUI(Textl	)))))					<b></b>		
		Text.U						I(DT(TDT(CDUI(Text	U))))					►		
		Text.U						I(DT(TDT(CDUI(Text	U))))					-→		
*			CDE					I(DT(TDT(CDE)))					→		!	
information number c	on packe	et. The s	] 					I(DT(TDT(RDEP)))					RDE	]		
depends information	on the on densi	ty of	CSE					I(DT(TDT(CSE)))					→			
	ment.		•					I(DT(TDT(RSEP)))					RSE			
					CQ			I(CF)								
						DIS										
						└── <b>└</b>				UA						
		<u>.</u>		C	)-chann	el comm	unicatic	on - disconnectio	n (See	the D-c	hannel s	sequenc	:e)	<u>                                      </u>		
									-			-	-			

### 2.3.2.3 G4 Fax Protocol Monitor

The samples below show ICM and G4M protocol monitor data in normal G communication. G4M has five monitors in total: Link, Network, Transport, Sessio Presentation. The samples show only communication data extracted from actual p monitor data with FIF partially omitted (...).

### G4M Data Link Layer Monitor

	TRACE : D	DATAL	INK			
∍4 Fax	LAPTIME	CH	LOCAL			REMOTE
on, and	0" 03		SABM	->		
locotocol	0" 04				<-	UA
	0" 04		Ι	->		
	0" 06				<-	Ι
	0" 07		Ι	->		
	0" 10				<-	Ι
	0" 12		Ι	->		
	0" 14				<-	Ι
	0" 17		Ι	->		
	0" 25				<-	Ι
	0" 32		Ι	->		
	0" 42				<-	Ι
	0" 52		Ι	->		
	0" 93		Ι	->		
	1" 16		Ι	->		
	1" 24				<-	Ι
	1" 26		Ι	->		
	1" 29				<-	Ι
	1" 30		Ι	->		
	1" 30			->		
	1" 32				<-	Ι
	1" 33		DISC	->		
	1" 34				<-	UA

						0 0.	-	,
ICM Monitor	:					0" 06		
LAPTIME	LOCAL			REMOTE	FIF	0" 07	 Ι	->
9' 40" 18	SETUP	->			08010105040288906C0C	0" 10		
9' 40" 33			<-	CALLPROC	08018102180189	0" 12	 Ι	->
9' 40" 99			<-	CONN	08018107	0" 14		
9' 40" 99	CONNACK	->			0801010F	0" 17	 Ι	->
9' 45" 66	DISC	->			0801014508028090	0" 25		
9' 45" 74			<-	RELEASE	0801814D960103823130	0" 32	 Ι	->
9' 45" 74	RELCOMP	->			0801015A	0" 42		
5' 56" 65			<-	SETUP	0801280504039090A2180189	0" 52	 Ι	->
5' 56" 72	RELCOMP	->			0801A8755A08028091	0" 93	 Ι	->
0' 40'' 47	SETUP	->			08010205040288901801836C	1" 16	 Ι	->
0' 40'' 62			<-	STATUS	0801827D080382E46C140101	1" 24		
0' 40" 69			<-	CALLPROC	0801820218018A	1" 26	 Ι	->
0' 41" 32			<-	CONN	08018207	1" 29		
0' 41" 33	CONNACK	->			0801020F	1" 30	 Ι	->
1' 05" 84	DISC	->			0801024508028090	1" 30		->
1' 05" 93			<-	RELEASE	0801824D960103823130	1" 32		
1' 05" 93	RELCOMP	->			0801025A	1" 33	 DISC	->
						1" 34		

# **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting

FIF

### G4M Network Layer Monitor

### G4M Transport Layer Monitor

TRACE : N	VETWO	RK					TRACE : 7	[RANS]	PORT		
LAPTIME	CH	LOC	AL		REMOTE	FIF	LAPTIME	CH	LOCAL		REMOTE
0" 01		SQ	->			1000FB0000	0" 09	01	TCR ->		
0" 03				<-	SF	1000FF	0" 12	01		<-	TCA
0" 03	01	CR	->			10010B07850529400642	0" 13	01	TDT ->		
0" 08	01			<-	CC	10010F07850529400642	0" 23	01		<-	TDT
0" 09	01	DT	->			100100	0" 27	01	TDT ->		
0" 12	01			<-	DT	100120	0" 40	01		<-	TDT
0" 12	01	DT	->			100122	0" 47	01	TDT ->		
0" 22	01			<-	DT	100142	0" 55	01	TDT ->		
0" 26	01	DT	->			100144	0" 65	01	TDT ->		
0" 40	01			<-	DT	100164	0" 74	01	TDT ->		
0" 47	01	DT	->			100166	1" 61	01		<-	TDT
0" 55	01	DT	->			100168	1" 62	01	TDT ->		
0" 64	01	DT	->			10016A	1" 66	01		<-	TDT
0" 74	01	DT	->			10016C					
0" 83	01	DT	->			10016E					
0" 91	01	DT	->			100160					
0" 95	01	DT	->			100162					
1" 16	01			<-	RR	1001C1					
1" 85	01			<-	DT	100146					
1" 86	01	DT	->			100184					
1" 90	01			<-	DT	100168					
1" 91	01	RR	->			1001A1					
1" 91	01	CQ	->			1001130000					
1" 93	01			<-	CF	101117					

FIF 09E00000540100C0010B 09D05401540000C0010B 02F080 02F080

# 2-84 03/02

1" 71 1" 76

TRACE : S	ESSIO	Ν				TRACE : P	RESEN	TATION			
LAPTIME	CH	LOCAL		REMOTE	FIF	LAPTIME	CH	LOCAL		REMOTE	F
0" 04	01	CSS ->			012A0A1838312D34343835	0" 00	01	PresD ->			I
0" 15	01		<-	RSSP	012A091838312D3D414243	0" 15	01		<-	PresD	A
0" 18	01	CDCL ->			12013CC198A48195800102	0" 24	01	PresD ->			ŀ
0" 32	01		<-	RDCLP	12013CC179A47780010281	0" 34	01		<-	PresD	ŀ
0" 37	01	CDS ->			29023834C16FA46D800102	0" 37	01	PresD ->			ŀ
0" 45	01	CDUI ->				0" 37	01	DocuD->			ŀ
0" 55	01	CDUI ->				0" 37	01	PageD ->			ŀ
0" 65	01	CDUI ->				0" 38	01	TextU ->			ŀ
0" 74	01	CDUI ->				0" 45	01	TextU ->			2
0" 82	01	CDUI ->				0" 55	01	TextU ->			(
0" 82	01	CDE ->			2A0131	0" 64	01	TextU ->			(
1" 70	01		<-	RDEP	2A0131	0" 74	01	TextU ->			(
1" 71	01	CSE ->			110101	0" 74	01	TextU ->			(
1" 76	01		<-	RSEP		0" 74	01	TextU ->			(

# **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting

FIF A406800102810100 A406800102810100 A48195800102810100A2... A477800102810100A25D... A46D800102810100A253... A203020100 A2160201023111A40880... A380 2480 048207D4 048207F5 048201D7 0000 0000

### 2.3.2.4 D Channel Troubleshooting

The D channel is used to originate, terminate, and clear calls. See the D-channel sequence for the normal procedure of the D channel.

If the network answers a call, the CALLPROC signal is recorded at REMOTE in the Dchannel protocol (ICM trace) data of the Transmission (Call) side. This indicates normal communication up to the switching system. If the remote terminal answers the call, the CONN signal is recorded. This starts communication through the B channels.

In D-channel troubleshooting, "reason for disconnection" is analyzed. The information element "reason for disconnection" is contained in the DISC, RELCOMP, STATUS, and PROG signals.

In the ICM trace data of a fax where several communication modules (G4M0, G4M1, G3M0, G3M1, and other), Layer-3 signals in communication by each module are recorded in the order of generation. "Call number" is a flag. "Call number" in FIF is analyzed and only the corresponding communication signals are picked up. "Call number" on the termination side looks the same in trace data but is actually different because its flag bit is 1. See the contents of each signal.

Signals used for D-channel communication (Layer-3 network of D channel)

"Type" meaning the information element "message type" is a unique value representing each signal.

Signal name	Meaning of signal	Туре	Description
ALERT	alerting	01	Notice to origination side when termination side is alerted
CALLPROC	call proceeding	02	Display of start on requested call setup
CONN	connect	07	Notice of acceptance on termination side
CONNACK	connect acknowledge	0F	Acknowledgement of response between terminal and network
PROG	progress	03	Network notice of interconnection and call progress
SETUP	setup	05	Call setup request
RES	resume	26	Request for resetting suspended call
RESACK	resume acknowledge	2E	Reestablishment notice of suspended call
RESREJ	resume reject	22	Call reestablishment failure notice
SUSP	suspend	25	Call suspend request
SUSPACK	suspend acknowledge	2D	Call suspend completion notice
SUSPREJ	suspend reject	21	Call suspend failure notice

Signal name	Meaning of signal	Туре	Description
USERINFO	user information	20	User-set unique information
DISC	disconnect	45	End-to-end connection recovery
			request or notice
REL	release	4D	Information channel and call
			number release request after
			information channel clearing
RELCOM	release complete	5A	Information channel and call
			number release notice
REST	restart	46	Channel or interface initialize
			request
RESTACK	restart acknowledge	4E	Initialize completion display
CONCON	congestion control	79	User information flow control
INFO	information	7B	Additional information to send
NOTIFY	notify	6E	Call information notice
STATUS	status	7D	Call status notice from terminal
			or network
STATUSENQ	status enqiry	75	Status display message request

DISC Signal Contents (Sample FIF below: 0801014508028090)

Information element	bit	Cont 8765	tents 4321	Des	cription (Fixed	unless described here)				
Protocol ID		lden 0000	tifier 1000	08h(fixed)						
Call No. -1	0	000	Call No. length	bits 4 to 1:	bits 4 to 1: Length (bytes) of Call numbe					
Call No. -2	F 0	Call N 00	No. value 0 0001	F (flag)	0 1	Call generation side Call destination side				
Messag e type		DISCo 0100	onnect 0101	DISC signa	l code: 45h					
Reason display -1	Identifier 0000 1000			Identifier of (fixed)	Identifier of information element "reason display": 08h (fixed)					
Reason display -2	Reason display length			Number of o (Reason dis	Number of octets in information element "reason display" (Reason display 3 or later)					
Reason display -3	10	000	Generatio n source 0000	Generatio n source *See the fig.	0000 0001 0010	Local terminal (User) Local private network Local domestic network				
				DEIOW	0011 0100 0101 0111 1010	Relay network Remote domestic network Remote private network Internal network Interworking network				
Reason display ₋₄	Reason display value 1 001 0000		Reason display value * The list at right gives extracted items. For details, see reason display Q931.	-000 0001 -001 0000 -001 0001 -001 0010 -101 1100 -101 1000	Missing (81h) Normal disconnection (90h) Called user busy (91h) No reponse from called user (92h) Invalid number format (9C)					



2-86 03/02

STATUS Signal Contents (Sample FIF below: 0801017D08028090140101)

Informatio n element	Conte bit 8765	ents 4321	Des	cription (Fixed	l unless described here)				
Protocol ID	lder 0000	ntifier 1000	08h(fixed)	08h(fixed)					
Call No. -1	0000	Call No. Length	bits 4 to 1:	bits 4 to 1: Length (bytes) of Call number 2					
Call No. -2	F Ca 0 v	all No. value	F (flag)	01	Call generation side Call destination side				
Message type	STA 0111	TUS 1101	STATUS sig	STATUS signal code 7Dh (fixed)					
Reason display -1	lder 0000	ntifier 1000	Identifier of (fixed)	Identifier of information element "reason display": 08h (fixed)					
Reason display	Reasor len	n display igth	Number of o (Reason dis	Number of octets in information element "reason display" (Reason display 3 or later)					
Reason display	1000	Generatio n source 0000		0000 0001 0010 0011 0100 0101 0111 1010	Local terminal (User) Local private network Local domestic network Relay network Remote domestic network Remote private network Internal network Interworking network				
Reason display -4	Reason 1 00	display value 1 0000	Reason display value * The list at right gives extracted items. For details, see reason display Q931.	-000 0001 -001 0000 -001 0001 -001 0010 -001 1100 -101 1000	Missing (81h) Normal disconnection (90h) Called user busy (91h) No reponse from called user (92h) Invalid number format (9C) Terminal attribute mismatch (D8h)				

Call status -1	Identifier 0001 0100		Identifier of	f information e	lement "call status": 14h (fixed)
Call status -2	Call status length 0000 0001		Number of status 3 or	octets in infor later)	mation element "call status" (Ca
Call status -3	00	Call status value	Call status value The list at right extracts frequently generated items.	00 0000 00 0001 00 0011 00 0100 00 0110 00 1010 00 1001 00 1010 00 1011 00 1100 01 0011	Idle Origination (Call) Origination accepted Alert notice Termination Alerting Response Response Termination accepted Communicating Disconnection request Disconnection notice Release request

# all

2-88 03/02

# SETUP Signal Contents(1/3) (Sample FIF below: 0801010504039090A2180183)

Information element	Contents bit 8765 4321			Description (Fix	ted unless described here)	
Protocol ID		Ide 000	entifier 0 1000	08h (fixed)		
Call No. -1	0	000	Call No. Length 0001	bits 4 to 1: Length (bytes) of Call number 2		
Call No. -2	F 0	Call 0	l No. value 00 0001	F (flag)	0 1	Call generation side Call destination side
Message type		SH 000	ETUP 0 0101	SETUP signal code 05h (fixed)		
Transmision capacity -1		Ide 000	ntifier 0 0100	Identifier of information element "transmission capacity": 04h (fixed)		
Transmision capacity -2	Transmission capacity length 0000 0011		sion capacity 0000 0011	Number of octets in information element "transmission capacity" (transmission capacity-3 or later		
Transmision capacity -3	10	0	Info. Trans. capa. 1 0000	Information transmission capacity	0 0000 0 1000 1 0000	Voice Unlimited digital 3.1KHz audio
Transmision capacity -4	Transfer mode 1001 0000		fer mode 1 0000	Information transfer by 64 kbps line switching		line switching
Transmision capacity -5	10	1	Layer 1 0 0010	Layer 1 protocol	0 0010 0 0011	μ-law (Japan and USA) A-law(Other than JP & USA) * Analogue signal conversion.
						Conversion for inter- communication is from $\mu$ -law into A-law. (By KDD in Japan)

Channel -1	Identifier 0001 1000		Identifier of information element "channel": 18h (fixed)			
Channel -2	Call status length 0000 0001		Number of octets in information element "channel" (channel-3 or later)			
Channel -3	1000	E 0	Ch 011	E: Channel change	0 1	Specified channel changeable
				Ch: Channel selection	000 001 010 011	No channel B1 channel B2 channel Arbitrary channel
	Information elements may be further added. If FIF is longer than this, see the information eleme later (SETUP-2/3 and 3/3).			y be further adde see the informati ).	d. ion elements on the	next page and

SETUP Signal Contents (2/3) (Sample FIF below: 6C0C008031..6D08805031..)

Information element	Cc bit 876	ontents 5 4321	Des	cription (Fixe	d unless described here)	
Orig. No1	Identifier 0110 1100		Identifier of information element "Origination number": 6ch (fixed)			
Orig. No2	Origination No.length 0000 1100		Number of number" (C	Number of octets in information element "Origination number" (Origination number 3 or later)		
Orig. No 3	Number plan 0000 0000					
Orig. No4	displa y	Network verification 0 0000	Display	100 101 110	Origi. No. display on terminating user side No origi. No. display on terminating	
			Network verification	0 0000 0 0001 0 0010 0 0011	User input (at origination) User input (at origination) User input (at origination) Network input (at origination)	
Orig. No5	Origination Number		Origination	number 30h t	to 39h(30h=0, 31h=1, 32h=2, 39h=9)	

Identifier Origin Identifier of information element 0110 1101 subaddress - 1 "Origin subaddress": 6Dh (fixed) Original subaddress Number of octets in information Origin element "Origin subaddress" subaddress – 2 length (Origin subaddress 3 or later) 0000 1000 Origin subtype address – 3 1000 0000 Original subaddress Formatt of origin subaddress: 50h Origin subaddress – 4 0101 0000 (fixed) Origin subaddress 30h to 39h (30h Origin Original subaddress 0011 0001 = 0, 31h = 1, 32h = 2... 39h = 9 subaddress - 5

- "Origin subaddress 4" continues for the number of digits of the registered origin subaddress.
- Information elements may be further added. •
- If FIF is longer than this, see the information elements on the next page and later (SETUP 3/3) ٠
- The above information may not exist.

. A telephone number registered at ISDN-ID enters here. . "Origination number 5" continues for the number of digits of the registered telephone number.

SETUP Signal Contents (3/3) (Sample FIF below:700A8031..7104805031..7C0290907D029184)

Information element	Contents bit 8765 4321	Description (Fixed unless described here)
Termination number -1	Identifier 0111 0000	Identifier of information element "Termination number": 70h (fixed)
Termination number -2	Termination No.length	Number of octets in information element "Termination number" (Termination number 3 or later)
Termination number -3	Number plan 1000 0000	
Termination number -5	Termination Number	Termination number 30h to 39h(30h=0, 31h=1, 32h=2,39h=9)"Termination number-5" continues for the number of dial digits.
Termination subaddress · 1	ldentifier 0111 0001	Identifier of information element "Termination subaddress)": 71h(fixed)
Termination subaddress -2	Termination subaddress length 0000 0100	Number of octets in information element "Termination subaddress)": Termination subaddress or later.
Termination subaddress -3	Type 1000 0000	
Termination subaddress -4	Termination subaddress length 0101 0000	Format of termination subaddress: 50h (fixed)
Termination subaddress -4	Termination subaddress length 0011 0001	Termination subaddress 30h to 38h(30h=0, 31h=1, 32h=2,39h=9)"Termination subaddress-4" continues for the number of dial digits.

LLC-1	ldentifier 0111 1100	Identifier of information element "Low Layer Compatibility (LLC)": 7Ch(fixed)			
LLC-2	LLC length 0000 0010	Number of c	Number of octets in information element "LLC" (LLC-3 or later)		
LLC-3	Transmissio n capability 1 0000	Transmissio n capability	0 0000 0 1000 1 0000	Voice Unlimited digital 3.1 Audio	
LLC-4	LLC characteristics 1001 0000				
HLC-1	ldentifier 0111 1101	Identifier of information element "High Layer Compatibility (HLC)": 7Dh (fixed)			
HLC-2	HLC length 0000 0010	Number of c later)	ctests in informa	tion elemetnt "HLC" (HLC-3 or	
HLC-3	HLC characteristics 1001 0001				
HLC-4	Extended HLC characteristics 1000 0100	Extended HLC characterist	<b>1000 0001</b> 1000 0100	TEL G2/G3 Fax G4 Fax	
	The above information element may not exist.				



### Reason display value (q.931)

The information element "Reason display" is used in DISC, STATUS, and other signals to indicate the reason for signal generation. D-channel disconnection can be determined also from "generation source" indicating the signal source (network or equipment).

"Display value" in the table is a hexadecimal value indicated in the FF of each signal. "Number" in the rightmost column of the table is a unique number (decimal) indicating the contents of each reason. This value is used to inquire the carrier (NTT or other) or other manufacturer.

List of reason display values in information element "Reason display"

Display value	Reason	Diagnostic information (May be added)	Number (decimal)
(hex)			
81	Missing	-	#1
82	No route to relay network	Relay network	#2
83	No route to relay network *(See supplemental explanation)	-	#3
86	Channel disabled	-	#6
87	Termination at preset channel	-	#7
90	Normal disconnection *	-	#16
91	Terminating user busy	-	#17
92	No response from terminating user (No ALERT or CONN) *	-	#18
93	No response from terminating user after alerting (ALERT received) *	-	#19
94	Subscriber not present (No wireless communication with remote mobile station)	-	#20
95	Communication rejected	-	#21
96	Remote subscriber number changed	New subscriber number	#22
9A	Non-selected user recovered from disconnection	-	#26
9B	Unable to activate terminating interface (Fault or power-off)	-	#27
9C	Termination number of invalid format or not complete (too short) *	-	#28
9D	Requested facility not available from network	Facility identifier	#29
9E	Response to status inquiry	-	#30
9F	Other normal class	-	#31
A2	No line or channel for use	-	#34
A6	Network fault	-	#38
A9	Temporary network fault (Connectable by redialling)	-	#41
AA	Switchboard congestion	-	#42

Display	Reason	Diagnostic information	Number
value		(May be added)	(decimal)
(hex) AB	Information elements partially discarded by network	Discarded information element identifier	#43
AC	Requested line or channel not available	-	#44
AF	Other resources unavailable class	-	#47
B1	Requested service quality (QOS) not available	-	#49
B2	Requested additional service not under contract	Facility identifier	#50
B9	Requested transmission capability not permitted by network	Attribute number or other	#57
BA	Requested transmission capability not available now	Attribute number or other	#58
BF	Other service unavailable class	-	#63
C1	Requested transmission capability not provided by network	Attribute number or other	#65
C2	Non-provided channel type specified	Channel type	#66
C5	Non-provided additional service requested	Facility identifier	#69
C6	Only limited digital information transfer capability available	-	#70
CF	Other service non-provided class	-	#79
D1	Invalid call number in use	-	#81
D2	Invalid channel number in use	Channel type	#82
D3	Specified suspended call ID number not in use	-	#83
D4	Suspended call ID number in use	-	#84
D5	Restart request for no suspended call in network	-	#85
D6	Suspended call already recovered from disconnection	Cause of disconnection	#86
D7	User not a member of group security (Closed Users Group)	-	#87
D8	Terminal attribute mismatch *	Mismatching parameter	#88
DB	Invalid relay network selected	-	#91
DF	Other invalid message class	-	#95
E0	Essential information element missing	Info. element identifier	#96
E1	Message type not defined or provided	Message type	#97
E2	Message not matching call status, defined, or provided	Message type	#98
E3	Information element not defined or provided	Info. element identifier	#99
E4	Invalid information element	Message type	#100

# WorkCentre Pro 423/428

Display	Reason	Diagnostic information	Number
value		(May be added)	(decimal)
(hex)			
E5	Message mismatching call status	Message type	#101
E6	Recovery by timer expiration *	Timer number	#102
EF	Other procedure error class	-	#111
FF	Other interworking class	-	#127

Classification) #1-31: Normal event, #34-47: Resources not available, #49-63:Service not available, #65-79: Service not provided, #81-95: Invalid message, #96-111: Procedure error, #127: interworking

### 2-92 03/02

### Supplementary Explanations about Reason Display Values

1. If G4 auto dialling fails to connect the remote terminal, the number may be redialled automatically. Depending on the reason display value, the redial conditions differ as follows:

1-1. Only if Reason #3 or #88 is returned after G4 auto dialling, the number is redialled in G3 mode.

1-2. If Reason 6, 16 to 19, 27, 31, 34, 41, 44, 47, or 102 is returned, the number is redialled in G4 mode.

1-3. If any other value is returned, the number is not redialled. Depending on the setting, a transmission failure report may be ejected.

2. The reason display values indicate the D-channel status (origination, termination, or disconnection. Reason 16 "normal disconnection" means that the D channel was disconnected normally. This value is used in case of a B-channel error that occurs after the remote party is connected.

... Example: If G3 communication through ISDN starts and a DCN signal is received from the remote terminal, reason 16 is recorded at the DISC signal in ICM protocol monitor data. In normal status, this reason display is not generated from the network.

3. #3 indicates that the network cannot connect the remote party despite a connection request.

... Example: Despite G4 auto dialling, ISDN may not have the corresponding termination number. The number is then redialled in G3 mode because the remote terminal is probably not a G4 fax (number not existing on ISDN).

- 4. #18 indicates that no ALERT or CONN signal was returned within specified time in response to a SETUP signal while #19 indicates that an ALERT signal was returned but not a CONN signal. The ALERT signal indicates that the analogue terminal is now being called. #19 is used only when the remote terminal is an analogue terminal.
- 5. #28 indicates that the switchboard cannot be connected to the remote terminal because the remote number information is abnormal. For example, the termination number may be short of digits or contain an abnormal value. If the number is dialled with a space or dash (-) in the middle, the switchboard may return #28. #28 is also returned if the number is redialled through a line with an additional service as explained in the manual or prescribed in the procedure.
- 6. #88 indicates that the local terminal does not conform to the transmission capability, low layer compatibility (LLC) or high layer compatibility (HLC) of the call side declared by a SETUP signal.
- 7. #102 indicates that the Layer 3 timer has reached the prescribed time. The timer may be on the network or terminal side.

... Example: T303 is a terminal timer. The timer starts when a SETUP signal is received and stops when a CALLPROC, ALERT, CONN, or RELCOM signal is received. If none of the signals is received from the remote terminal within four seconds, a DISC signal is sent with reason #102.

### 2.3.2.5 B channel troubleshooting

If origination or termination is completed through the D channel, the channel is switched to B for fax signal transmission. In G3 communication through ISDN, the CED, DIS, and PIX signals of G3 fax are sent through B channels. In B-channel troubleshooting, therefore, it is necessary to locate a fault in the local or remote terminal.

From the B channels, the protocol trace data of Layers 2 (Network) to 6 (Presentation) can be collected individually. Seemingly necessary layers should be set before communication. Even when the protocol layer is changed after communication, its trace data is not recorded. The default is Layer 5 (Session).

The protocols of Layers 2 (Network) and 5 (Session) are used for troubleshooting the B channels and that of Layer 6 (Presentation) is used for checking the document size. This section explains the Network, Session, and Presentation protocols.

### 2.3.2.5.1 Network Protocol (Layer 3 of B channel)

For the normal sequence of the Network protocol, see "Network" in the B-channel sequence.

In case of a communication fault in the Network layer, one of the packet signals (CQ, CI, SQ, SI, RQ, and RI) is sent. The cause of the fault can be confirmed by analyzing the cause and diagnostic information contained in this signal.

### Table 1 Packet Signals Used in Network Protocol (Layer 3 of B channel)

Packet signal	Meaning	Description
CR	Call request	10 01 0B (Origination number) (Termination number) (Packet size etc.)
CN	Termination	10 01 0B (Origination number) (Termination number) (Packet size etc.)
CA	Call acceptance	10 01 0F (Origination number) (Termination number) (Packet size etc.)
CC	Connection	10 01 0F (Origination number) (Termination number)
	complete	(Packet size etc.)
CQ	Recovery request	10 01 13 (Cause) (Diag)
CI	Disconnection	10 01 13 (Cause) (Diag) *See Tables 2 and 3
	indication	
CF	Disconnection	10 01 17
	confirmation	
SQ	Restart request	10 00 FB (Cause) (Diag)
SI	Restart indication	10 00 FB (Cause) (Diag) *See Tables 4 and 5
SF	Restart confirmation	10 00 FF
RQ	Reset request	10 01 1B (Cause) (Diag)
RI	Reset indication	10 01 1B (Cause) (Diag) *See Tables 6 and 7
RF	Reset confirmation	10 01 1F
DT	Data	10 01 (Packet number etc.)
RR	RECEIVE READY	10 01 (Packet number etc.)
RNR	RECEIVE NOT READY	10 01 (Packet number etc.)

### Table 2 Causes of CI Packet Disconnection (Cause)

Code value	Description
01	Remote terminal busy or no free channel
03	Invalid request by CR packet
05	Network congestion
09	Connection failure because remote terminal is faulty or power-off
0B	Connection to remote terminal not permitted
0D	Missing
11	Remote procedure error or illegal packet received
13	Local procedure error or illegal packet sent
19	Termination side not permitting charging on termination
29	Termination side not permitting fast selection
80-FF	Normal disconnection

### Table 3 Diagnostic Results of CI Packet (Diag)

Code	Description	Code value	Description
value			
11	Packet level ready	31	Timeout in CA packet wait
12	Terminal restart request	32	Timeout in CF packet wait
14	Empty	41	Illegal signal
15	CC packet wait	42	Illegal parameter
16	CA packet wait	43	Invalid termination address
17	Data transfer in progress	44	Invalid origination address
18	Origination-termination	45	Illegal signal length
	collision		
19	CQ packet wait	46	Termination rejected
21	Packet type unknown	47	No free channel
22	Origination through	48	Collision of origination and
	termination-only channel		termination
26	Packet too short	49	Duplicate request
27	Packet too long	4A	Illegal signal length (address
			length)
29	Illegal SQ, SI, or SF packet	4B	Illegal signal length (facility
			length)
2A	Illegal packet type	00	Other
<i>L</i> / \		00	

### Table 4 Causes of SI Packet Disconnection (Cause)

Code value	Description	
01	Local terminal procedure error	
03	Network congestion	
07	Fault recovery	

### Table 5 Diagnostic Results of SI Packet (Diag)

Code	Description	Code value	Description
value			
11	11 Packet level ready		Packet too long
12	12 Wait for complete		Illegal SQ, SI, or SF packet
	disconnection of all calls		
21	Packet type unknown	34	Timeout in SF packet wait
26	Packet too short	00	Other

### Table 6 Causes of RI Packet Disconnection (Cause)

Code value	Description	
00, 80-FF	Reset or restart request from remote terminal	
01	Communication disabled by remote fault	
03	Remote procedure error	
05	Local procedure error	
07	Network congestion	
09	Remote terminal recovery	
11	Protocol mismatch with remote terminal	
1D	Network fault	

### Table 7 Diagnostic Results of RI Packet (Diag)

Code value	Description	Code value	Description
01	Invalid information	23	Packet type unknown (at PVC communication)
02 Invalid information		26	Packet too short
11	Packet level ready	27	Packet too long
12	DTE restart request	29	Illegal SQ, SI, or SF packet
1B	Flow control ready	2B	Verification packet not permitted
1C	RF wait	2C	Packet not permitted
21	Packet type unknown	00	Other

### 2.3.2.5.2 Session Protocol (Layer 5 of B channel)

For the normal sequence of the Session protocol, see "Session" in the B-channel sequence.

A CSE signal is sent at the end of communication in the Session layer. If communication is suspended, a CSA signal is sent. The cause of a fault can be confirmed by analyzing the session end parameter information contained in this signal.

### Table 8 Signals Used in Session Protocol (Layer 5 of B channel)

Signal	Meaning	
CSS	Session start indication	Originating information
CSE	Session end indication	11 01 (sess
CSA	Session suspend indication	11 01 (sess
CDS	Document start indication	(Explanation
CDE	Document end indication	Checkpoint
CDCL	Document function list indication	(Explanation
RSSP	Session start affirmation	Terminating information
RSSN	Session start negation	(Explanation
RSEP	Session end affirmation	-
RSAP	Session suspend affirmation	-
RDCLP	Document function list affirmation	(Explanation
RDEP	Document end affirmation	Checkpoint
CDPB	Document page boundary indication	Checkpoint
RDPBP	Document page boundary affirmation	(Explanation
RDPBN	Document page boundary negation	32 01 (rease
CDUI	Document user info	-
CSCC	Session change control indication	-
CSUI	Session user information	(Explanation
RSCCP	Session control change affirmation	-
RSUI	Session user information	-
CDR	Document resynchronous indication	32 01 (rease
CDD	Document discard indication	32 01 (rease

Description
terminal ID and date and time
*See 2.3.2.5.2-2
sion end parameter)*See Table 9
sion end parameter)*See Table 9
n omitted)
reference information *See 2.3.2.5.2-1
n omitted)
terminal ID and date and time
n omitted)
n omitted)
reference information *See 2.3.2.5.2-1
reference information *See 2.3.2.5.2-1
n omitted)
on) *See Table 10
n omitted)
in online of
on) *See Table 10
on) *See Table 10

### Table 9 Session end parameter

Code value (binary)	Description	
0000 0000	Do not disconnect	
0000 000X	X=1 Clear transport connection	
0000 00X0	X=1 Local terminal error	
0000 0X00	X=1 Non-recoverable procedure error	
0000 X000	X=1 Other	

This parameter may be displayed in duplicate.

03H=Local procedure error. Will disconnect the Transport layer (Layer 4).

05H=Non-recoverable procedure error. Will disconnect the Transport layer (Layer 4).

### **Table 10 Reason**

Code value	Description	
00H	No special reason	
01H	Unable to set or disconnect session (No paper or memory full)	
02H	Text message given	
03H	Sequence error	
05H	Local terminal error	
06H	Non-recoverable procedure error	

The codes are hexadecimal values.

### 2.3.2.5.2-1 Check point reference information

The ID is 2A. The page number or document count is recorded in an ASCII code format.

- FIF of CDE = 2A 01 35: Indicates that the information is one byte long and the number of document pages is 5.
- FIF of CDPB = 2A 02 31 35: Indicates that the information is two bytes long and the current page of the document is 15.

### 2.3.2.5.2-2 Command FIF

The CSS/RSSP command contains an originating or terminating terminal ID (the preregistered G4 ID of the machine) or Call date & time information. Therefore, the communication log (communication control report (Active report)) and contents (Session layer) can be referenced by analyzing the command.

The CSS/RSSP command contains several information elements (originating terminal ID and other). Necessary information elements are added according to the contents of communication. The CSS/RSSP signal gives the information elements with their relations and listing.



Information element names are given in squares and their IDs are indicated at the upper left positions. In the above example, "Session reference information" of ID 01 appears "Originating terminal ID" of ID 0A.

FIF indicates each information element by "identifier + information element length (number of bytes in a hex format) + information element contents." The example below shows FIF of CSS, but that of RSSP can be interpreted in the same way.

The ex. doe	01	Identifier of information element "Session reference information"
Byte 2	2A	Byte length of information element "Session reference information": 2Ah = 42 bytes
· ↓	0A	Identifier of information element "Originating terminal identifier"
	18	Byte length of information element "Originating terminal identifier": 18h = 24 bytes
	38	38h = Decimal 8
		Followed by 23-byte originating terminal identifier (G4 ID in ASCII code format)
	0B	Identifier of information element "Date and time information"
	0E	Byte length of information element "Date and time information": 18h = 14 bytes
	30	30h = Decimal 0
		Followed by 13-byte date and time information (Origination date and time:
	02	Identifier of information element "Non-basic session function"
	03	Byte length of information element "Non-basic session function": $03h = 3$ bytes
	0E	Identifier of information element "Window size"
	01	Byte length of information element "Window size": $01h = 1$ byte
	03	03h = Decimal 3 indicating "Window size"
	08	Identifier of information element "Service identifier"
	01	Byte length of information element "Service identifier": 01h=1 byte
	01	01h = Decimal 1 (fixed) for "Service identifier"

↓ :

### 2.3.2.5.2-3 CSS signal (Session layer)



### 2.3.2.5.2-4 RSSP signal (Session layer)



### 2.3.2.5.3 Presentation (B channel)

For the normal sequence of the Presentation protocol, see "Presentation" in the B-channel sequence.

The Presentation layer exchanges image information in pages. The reception side declares receiving capabilities and the transmission side declares necessary functions from the capabilities for transmitting image information. Page contents (document size, resolution, and other) can be known by analyzing a CDUIP signal. The CDUIP signal is recorded as "PageD" in the Presentation protocol.

### Table 11 Signals Used in Presentation Protocol (Layer 6 of B channel)

Signal	Meaning	Description	
PressD	Capability declaration	Capabilities of the transmission and reception sides	
		(Paper size, resolution, encoding, and other)	
DocuD	Fax page declaration	Transmission of fax document page	
PageD	Page contents	Size (fast scan and slow scan) and resolution	
TextU	Image information	Image information	

### 2.3.2.5.3-1 Command FIF

The CDUIP (PageD) contains the information of a page to be transmitted. Therefore, the page size and resolution can be known by analyzing this command. See the section of the CDUIP signal.

The CDUIP signal contains the page size and other information elements. Necessary information elements are added according to the contents of the communication elements.

CDUIP FIF indicates each information element by "identifier + information element length (number of bytes in a hex format) + information element contents." The example below shows FIF of CDUIP(PageD).

Byte 1	A2	Identifier of information element "Page descrip
Byte 2	16	Byte length of information element "Page desc
$\downarrow$	02	Identifier of information element "Layout object
	01	Byte length of information element "Layout ob
	02	Layout object type: 02h = Page
	31	Identifier of information element "Layout descr
	11	Byte length of information element "Layout de
	A4	Identifier of information element "Document si
	08	Byte length of information element "Document
	80	Identifier of information element "Fast scan wie
	02	Byte length of information element "Fast scan
	26	Contents of "Fast scan width": Fast scan width
	C0	Fast scan width: 26C0h MBU
	80	Identifier of information element "Slow scan w
	02	Byte length of information element "Slow scan
	36	Contents of "Slow scan width": Slow scan wid
	81	Slow scan width: 3681h MBU
	A6	Identifier of information element "Attribute"
	Ļ	:

ptor" criptor": 16h = 22 bytes ect type" bject type": 01h = 1 byte riptor" scriptor": 11h = 17 bytes ize" t size": 08h = 8 bytes dth"

width": 02h = 2 bytes

value with next byte

vidth"

width": 02h = 2 bytes

Ith value with next byte

### 2.3.2.5.3-2 CDUIP (Page D: Presentation layer)



### 2.3.2.6 ISDN Fax installation notes

ISDN supports G4 and G3 fax communication. A G4/G3 Fax can accommodate an ISDN line directly but a G3 Fax cannot. Therefore, a G3 Fax is connected to ISDN through a terminal adapter (hereinafter, TA) or ISDN router (hereinafter, router). If the TA or router has an S/T point (see "Explanations of terms"), a G4/G3 Fax may be connected directly there.

G3 Fax communication through an ISDN line is called ISDN-G3.

The following sections explain common terms about fax communication (G4 and G3) through an ISDN line, fax and TA/router parameter setting notes, and troubleshooting in transmission and reception.

Explanations of terms

- Terminating resistor (terminator)
- ISDN cable, 10BASE-T cable, and modular jack (MJ) RJ45 and RJ11
- S/T point
- Bus wiring

Installation notes

- Several terminals on a single ISDN line (Bus connection)
- Dial-in contract line
- Using NET1500
- PBX accommodation
- G4/G3 Fax connection to S/T point of TA or router •
- G3 Fax connection to analog point of TA or router

### 2.3.2.7 Explanations of common terms

Terminator

NET64 requires two pieces of 100-ohm terminator on the farthest terminal (connection block). The terminators stabilize signals on a line. Without the terminators, errors will occur especially when the DSU-terminal line is long or several terminals are connected by bus wiring. Each line requires a pair of terminators.

\* An ISDN line uses a four-core cable consisting of two pairs of paired wires for TA/TB (signal transmission) and RA/RB (signal reception). The terminators are connected between TA and TB and between RA and RB.

TAs or routers and ISDN terminals may have built-in terminators that are turned OFF and ON by switches. If several terminals are connected by bus wiring, check the built-in terminators and leave the rsistors alive only in one unit (one pair). If several pairs of terminators are alive on a line, the combined resistance goes down and may cause errors or other functional problems.

ISDN cable, 10BASE-T cable, and modular jack (MJ) RJ45 and RJ11 

A modular jack for an ISDN line is called RJ45. This MJ has eight pins for four wires. Although there are eight pins, only the four pins (pins. 3 to 6) at the centre are used. The polarities are TA (pin 3), RA (pin 4), RB (pin 5), and TB (pin 6). Paired-wire (stranded) cables are used for wiring from DSU to MJ and between MJs. If a non-stranded cable is used for a long distance, errors will occur.

For terminal-side wiring, note the distance from DSU. The wiring forms are point-point connection where only one connection block or terminal is connected to a block and bus wiring where several connection blocks or terminals are connected. The maximum distances from DSU to the farthest terminal in the forms are as follows:

Point-point connection: 750 m

Short-distance bus connection (terminals at random intervals on a bus): 150 m

Long-distance bus connection (all terminals centralized within 50 m on a bus): 550 m

RJ45 MJ is connected to a terminal through a four-core ISDN cable. An ISDN cable has the same MJ (MJ45) as a 10BASE-T cable for LAN. However, the cables are not compatible with each other because their pin numbers and combinations are different from each other (see the table below). If a 10BASE-T cable for ISDN is used, errors will occur.

cable type	Paired pin number
ISDN	Pin 3-6, pin 4-5
10BASE-T	Pin 1-2, pin 3-6

If communication errors occur in Fax communication, check the cable continuity, all the polarities between DSU and connection blocks, and paired wires of the cable. Checking the paired wires may make it necessary to unsheathe the cable partially.

A small MJ for an analogue line is called RJ11. This MJ has six pins for two wires.



### S/T point

An S/T point is a connection point between devices connected to an ISDN line. The connection points are named U, T, S, and R sequentially from the network side. The names represent mere connection points but not physical things.



Device	Description	Actual example
NT1	Network terminating device (when viewed from the office	DSU
	side) realizing power feed and other functions	
NT2	Device with line switching and concentration functions	PBX, etc.
TE1	ISDN terminal with I interface	G4 Fax, etc.
TA	Adapter to connect a non-ISDN terminal to ISDN	TA/router, etc.
TE2	Conventional terminal with no I interface (Non-ISDN	G3 Fax, etc.
	terminal)	

NT1 (DSU) is an essential device but the other devices are combined depending on the status as follows:

- NT1+NT2+TE1 (above connection example 1)
- NT1+NT2+TA+TE2 (Connection example 2)
- NT1+TA+TE2 (Connection example 3)
- NT1+TE1

An S/T point indicates a connection point between NT1 (DSU) and TE1 or TA when there is no NT2 (PBX). In NET64, T and S indicate the same connection point because NT2 is usually not used. Then the point is expressed as S/T.

The U, T, S, and R points indicate the demarcation points of responsibility about each terminal. They also define the ranges of responsibility for maintenance.

The U point is the demarcation point between the class-1 carrier and user. NET64 uses a two-core cable (NET1500: optical cable) from the network to NT1 (DSU) and a four-core cable of RJ45 from NT1 to TE1 or TA.

A TA/router with built-in DSU has NT1 and TA in one cabinet but allows TE1 (ISDN terminal) connection by taking the S/T point outside. A model with no S/T point allows only TE2 connection. A router supporting an S/T point may have a built-in DSU.

Bus wiring

Bus wiring is used to connect several terminals to an ISDN line. The figure below shows this wiring. Two pairs of twisted-pair wires are used to make the polarities (TA, TB, RA, and RB) common between DSU and all connection blocks.

Since the polarities of wiring screws in a connection block may be different, check the pin numbers of RJ45 before wiring.



For bus wiring, note the distance from DSU to the farthest terminal. Short-distance bus connection (terminals at random intervals on a bus): 150 m max. Long-distance bus connection (all terminals centralized within 50 m on a bus): 550 m max.

Since the ISDN cable between a connection block and a terminal is not stranded (pairedwire), do not use a long cable beyond 4 meters.

### 2.3.2.8 Installation notes

• Several terminals on a single ISDN line (Bus connection)

NET64 allows the connection of up to eight terminals to a line through a bus. However, only two sessions can be established at a time. For bus wiring, note the **distance** from DSU and the terminator mounting positions. Since ISDN uses signals of 5.2 µm wide, incorrect wiring may cause signal waveform disorders or errors. Different errors may occur only in a specific device connected to the bus, or the same error may occur frequently.

The maximum distance is prescribed because the line distance increases the loss as the distance from DSU becomes long. The maximum distance is within 750 m when one terminal is connected but within 150 m when several terminals are connected. However, these lengths apply to cables of 0.5 mm in diameter. A thinner cable has greater resistance. This resistance increases the line loss and reduces the maximum length.

A four-core paired-wire cable is used for wiring between MJs. In this case, all terminals must have the same polarities. The polarities are TA (MJ pin 3), TB (MJ pin 6), RA (MJ pin 4), and RB (MJ pin 5). Pair TA with TB and also RA with RB by checking the cable wire colours and patterns. When using an 8-core cable, pair pins 1 and 2 and also pins 7 and 8. (A 10BASE-T cable for LAN has different pin numbers. To prevent errors, do not use a 10BASE-T cable.)

Install a terminator only to the farthest connection block or terminal from DSU. If two or more terminators are attached to a single line, the combined resistance goes down and may cause signal waveform disorders and communication errors.

Many TAs or routers now in the market have built-in terminators that are turned OFF and ON by switches. Terminals may also have built-in terminators. When connecting these terminals by bus wiring, check the built-in terminators and leave the terminator alive only in one unit or install one to the connection block of the farthest terminal.

If terminals are connected to the S/T point (explained later) of a TA/router with built-in DSU and the connection distance is very long, turn OFF the terminator of the TA/router and install a terminator to the farthest terminal. If the terminator of the TA/router is left ON and no terminator is installed to the connection point of the cable from the S/T point, signals may become unstable and result in errors because the long line is not terminated.

For reception only at a specific terminal among the ones connected through a bus, set a dialin number to each terminal by concluding a dial-in service contract with (charged service) or a subaddress to each terminal by no contract (free service). Then notify the transmission side of a terminal-unique number (dial-in number or telephone number + subaddress). Be sure to set "Communication capability (TEL/G4/G3) to a G4/G3 fax where a dial-in number or subaddress is registered. Select a terminal type(s) for communication.

Dial-in contract line

A general public telephone line always has a telephone number (contractor line number). Te dial-in service allows several telephone numbers to be added to a line (up to 8 lines to a NET64 line). (The numbers are called dial-in numbers or subnumbers.) If eight terminals are connected to NET64 and eight dial-in numbers are registered to the terminals, a calling terminal can specify a terminating terminal. If terminals of different communication types are connected by bus wiring, the dial-in service prevents all the terminals from ringing. If a call terminates at a terminal of the dial-in service, the network gives information about the termination number. A terminal with a dial-in number receives a call only when the termination number from the network matches its dial-in number. If the same number is registered to several terminals, a call terminates at all the terminals. (However, such a call is usually received at the nearest terminal to DSU.) One of the additional dial-in services is "global termination." Under the contract of global termination, the network does not give number information about a call terminating with the contractor line number as follows:

Contract	Termination with contractor line	Termination with subnumber	
	number	(added for dial-in)	
Using global termination	Termination number not given	Termination number given	
Not using global termination	Termination number given	Termination number given	

If a call terminates with the subcontractor line number, all ISDN terminals answer the call (sending CALLPROC) and the network selects the fastest one (returning CONN). This reduces the line busy status because all terminals (excluding busy one) answer a call if only terminals of the same communication type (G4Fax, etc.) are connected through a bus. Some models of TA/router support "global termination rejection" to their analogue ports. These models do not allow a call through a global termination line to terminate at ports of global termination rejection (not sending the alerting signal) if the call does not give a termination number but the contractor line number. This function prevents several terminals connected to a TA/router from ringing together and allows a call to terminate only at a specific terminal.

### (Example of use)

Contract number: 567-1000 Subnumber (added for dial-in): 567-1234 TA: Set the dial-in number "5671234" and "global termination rejection" to the port where terminal B is connected. Do not set anything to the port where terminal A is connected. Dial-in contract: Using global termination

If a calling terminal dials "567-0000"  $\Rightarrow$  The network does not give number information to the termination side. In this case, TA does not call the port where terminal B is connected. However, since the port where terminal A is connected is called, only terminal A rings and answers the call. Terminal B does not ring.

If a calling terminal dials "567-1234"  $\Rightarrow$  The network gives number information "5671234" to the termination side. In this case, TA calls the port where terminal B is connected because the dial-in number "5671234" is registered, but not the port where terminal A is connected. In other words, terminal B rings but terminal A does not. Thus, the global termination function can allow termination only at specific terminals.

Using NET1500 (Primary group interface)

NET1500 has a communication speed of 1.5 Mbps and provides up to 24 channels of 64 kbps lines. By contract, 384 kbps and 1.5 Mbps lines are also available in 24B (B channel x 24), 23B+D (B channel x 23, D channel), and high-speed communication modes.

When using a G4/G3 fax on NET1500, take out a 64 kbps line from the PBX and connect the fax machine to the line. However, the 64 kbps line is different from that of NET64.

- The PBX manages lines by extension numbers.
- The number of B channels can be set to 1 or 2.

When connecting a G4 Fax to NET1500, register its extension number at "ISDN number" in the G4 parameters. If "office number + telephone number" is registered, the PBX may reject a call as a wrong number. Check with the PBX agent and register the correct number.

By PBX setting, one B channel can be allocated. This setting permits only one session through the line. If G4 communication is attempted during G3 communication, "No available channel" occurs. The fax side can not cope with this error and two B channels should be set.

A line in a fax can be identified as NET64 or NET1500 by the DSU position. A DSU for NET1500 is mounted before PBX and usually not visible. For NET64, the line is directly connected into the DSU. (The DSU may be hard to see if it is located at a distant position for the convenience of wiring.)

8. PBX accommodation

For fax use, NET1500 is always accommodated in a PBX. See "NET1500" for the precautions.

NET64 may be accommodated in a PBX. If a special number is added before a telephone number, an ISDN line may be acquired from outside lines for communication. See 5-2-3, "NET1500" because this kind of system may manage lines by extension numbers. However, the line configuration is 2B + D.

• G4 Fax connection to S/T point of TA or router

A G4 Fax is connected to the S/T point of a TA or ISDN router. Therefore, a G4Fax cannot be connected to a TA/router with no S/T point.

If the TA/router has a built-in terminator, turn the resistor ON and do not attach any terminator to a connection block on the line. If Layer-1 errors occur because the line distance from DSU is long and several terminals are connected, however, turn OFF the terminator of the TA/router and install a terminator to the farthest connection block.

G3 Fax connection to analogue point of TA or router (ISDN-G3)

A G3 Fax connected to the analogue port of a TA/router.

"Communication capability" is an important parameter in analogue port settings. Set "3.1 kHz Audio" or "Voice" here. A signal from the network (notifying of the remote terminal setting" is compared with this setting. If the settings do not match, a call does not terminate. For example, a TA/router where only "3.1 kHz Audio ("FAX" for some terminals) rejects an incoming call declared as "Voice" from the network.

If possible, enable the termination of both "3.1 kHz Audio" and "Voice." If the model permits the setting of either "3.1 kHz Audio" or "Voice" only, it is recommended to set "3.1 kHz Audio." Setting "3.1 kHz Audio" will reduce the number of calls to be rejected. This setting may be called "FAX" or "TEL" for some models. In addition, setting "NON" may allow some models to accept both "3.1 kHz Audio" and "Voice."

The analogue port settings include "Alerting signal." The TA/router alerts a terminal by 16 Hz or 1300 Hz (no ringing). According to the functions of the connected terminal or the convenience of the client, set either alerting signal. Most models of TA/router allow individual settings to analogue ports.

### 2.3.2.9 Cases of parameter setting error or mismatch

If a problem occurs in ISDN communication, a G4/G3 Fax can eject protocol (ICM/G4 and G3 monitor) data for troubleshooting according to the error code. For a G3 Fax, however, an ISDN line is connected to a TA/router and ISDN-related settings are registered in the TA/router. A G3 Fax cannot provide ICM monitor data for checking a problem in an ISDN line. In other words, the TA/router deals with communication until a remote terminal is connected through the D channel and the G3 Fax deals with communication after switching to the B channels. For troubleshooting before a remote terminal is connected, the operation and settings should be checked with the TA/router. This is different from a G4/G3 Fax that can directly accommodate an ISDN line.

G3 Fax communication through an ISDN line is called ISDN-G3 and can be classified by the environment into the following:

A: An ISDN line is directly accommodated in a G4/G3 Fax and G3 mode is selected (manual/auto).

B: A G4/G3 Fax is connected to the S/T point of a TA or router and G3 mode is selected.

C: A G3 Fax is connected to the analogue port of a TA or router. (ISDN connection to TA/router)

D: A G3 Fax accommodates an analogue line from a PBX connected to an ISDN line (Net64/1500).

A to C are easy to identify but D should be checked with the client or line maintenance agent.

### G4/G3 Fax

**Symptom 1:** Transmission (or reception) with some G3 Fax machines cannot be established.

Cause: The settings do not match between the transmission side and the reception side.

Examples of setting error: This kind of error can often be dtermined by analyzing the SETUP or DISC signal.

Transmission capability mismatch: "3.1 KHz audio" is set on the transmission side and "Voice" on the reception side (or vice versa). Change the setting of either side to that of the other side. Set "Communication capabilities" for Able ("TEL" corresponds to Voice and "G3 Fax" to 3.1 kHz Audio).

In G3 transmission, Able issues a SETUP signal to notify "3.1 kHz Audio" as a transmission capability after auto dialling or "Voice" after on-hook or manual dialling. Therefore, try both dialling in G3 transmission to check connection.

The dial-in or subaddress number from the calling terminal does not match that of the called terminal.

**Symptom 2:** Transmission to a G3 Fax was attempted in G4 auto mode but failed because the mode did not change to G3. - Analyze the DISC signal.

Cause: The line environment of the remote terminal may not allow the mode to change from G4 to G3 automatically.

The mode is changed only when the reason of error code Q.931 from the network is 3 or 88. Depending on the error code, the error processing is classified into three:

- Redialling in G4 mode
- No immediate transmission (No redialling)
- Redialling in G3 mode

Therefore, If the error code from network is except for #3 or #88, it is necessary to call in G3 mode.

Symptom 3: A dial-in number was registered to a fax but an incoming call also rings and terminates at some other terminals.

Cause: No dial-in numbers are set to some other terminals connected through a bus. For termination at a specific bus-connected terminal, different dial-in numbers (subnumbers) should be set to all terminals. (In other words, each terminal requires one unique dial-in number.)

### **ISDN-G3 Fax**

Symptom 4: No documents can be transmitted or received.

Cause: The TA/router is not set correctly.

In general, an analogue port where a G3 Fax is connected ha several items. If the parameters are different from the contents of the G3 Fax functions or the ISDN line contract, transmission or reception may be totally impossible. The parameters differ between manufacturers or models and cannot be explained all. If possible, connect an analogue line to the G3 Fax and check the transmission and reception functions of the fax itself. Then check the settings of the TA/router. Since the check and change methods also depend on the manufacturer and model, consult the client. In particular, router communication (10BASE-T connected to LAN port) is different from general telephone line communication, do not change the settings without permission from the client. Data may be lost or changed if the cable is disconnected and connected, the power switch is turned OFF and ON, or the settings are checked and changed.

TA/router setting items (Representative items about G3 Fax: See the product manual for the contents.)

- Dial-in: Global termination, connected equipment, subaddress, number display, inumber, and alerting signal
- Calling number indication: Priority termination port and other

**Symptom 5:** The fax ringer does not sound at termination or sounds with no termination.

Cause: (1) The TA/router alerting signal is set at 1300 Hz. - No ringing

(2) The TA/router alerting signal is different from the NTT signal. - Ringing with no termination.

**Symptom 6:** Data or image information communication errors occur frequently.

- Cause: (1) The signal level is low because an attenuator is set to the analog port of the TA/router.
  - (2) The line quality of the analog port of the TA/router went down and permitted noises.

### 2.3.3 Super G3 Fax

### 2.3.3.1 Super G3 Fax

In 1996, ITU-T recommended Super G3 Fax.

Super G3 Fax featuring 28.8 kbps communication has the modem capabilities of V.8 and V.34. The protocol consists of V.8 and V.34 and optionally supports 33.6 kbps. Super G3 Fax enables a fax to communicate with models of other manufacturers and also with the conventional 14.4 kbps and 9600 bps faxes.

- Super G3 Fax communication is recorded as SG3 in the mode column of a report.
- Super G3 Fax transmits image information in Error Correction Mode (ECM).
- V.34 is a standard for modems from 28.8 kbps (optionally, 33.6 kbps) to 2400 bps. Prior to the V.34 standard, V.8 prescribes a procedure for selecting optimum mode according to the line status.

For communication with the conventional faxes as well as V.34 (28.8 kbps) ones, Super G3 Fax has also the capabilities of V.17 (14.4 kbps) and V.29/V.27ter (9600/4800 bps). The V.8 standard prescribes a procedure for checking the line status and selecting an optimum speed.

- V.34 does not use the TCF signal in phase B.
- In V.34, the command (NSF, DIS, and other) speed for the conventional procedure section is 1200 bps.



2-106 03/02

V.8

V.34

Phase B

# CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

Signal names and contents

the local terminal sends this signal continuously until the ANSam signal is received. This signal is not recorded in trace For manual transmission, a terminal sends "CI" as the V.8 Also if the protocol enters phase B without detecting ANSam and DIS V.8 capability is enabled (bit 6=1), the origination side sends CI and returns to the V.8 procedure in Super G3 ANSam (response signal): The fax stops after sending a 2100 Hz signal modulated by 15 Hz for 4 continuous seconds or

when CM is detected. If the fax does not support Super G3 mode, CED is detected.

Call menu (CM) signal: This 300 bps signal (\*) declares modem mode available at the local terminal.

Common menu (JM) signal: This 300 bps signal (\*) declares modem mode available at the local and remote terminals and stops when CJ is detected. (For the FIFs of the CM and JM signals, see No.2 "V.8 CM/JM Signal.")

CM end (CJ) signal: This 300 bps signal indicating JM check and CM end is a three-octet string of 0.

V.34 Phase 2 (ph2): Probing The line characteristics are measured using the probing

V.34 Phase 3 (ph3): Equalizer training The modem equalizer is set using the TRN signal. V.34 Phase 4 (ph4): Final training The signal speed is determined. (V.34 Phase 1 means the V.8 procedure.)

The modems of the local and remote terminals automatically execute this section (Phases 2 to 4) to determine the send level, equalizer, and modulation speed. The values determined here have priority over the NSF/DIS contents.

### 2.3.3.2 V.8 CM/JM signal

Table 1 shows the FIF configuration of the CM and JM signals used in V.8. For the details of each bit, see below.

The V.8 standard prescribes a procedure for a modem of multiple capabilities to select optimum mode automatically according to the line status.





- Priority-If the priority is 1 for two or more modulation modes, the mode having the smallest item number in the square at right is used. ....V/34 full duplex" has the top priority.

The priority is 1 for the modes whose explanations are in dotted line squares because they are used for fax.

### 2.3.3.3 V.8 operation for auto transmission

Super G3 Fax also has the capabilities of V.17 (14.4K) and V.29/V.27ter (9600/4800) to support communication with the conventional G3 fax. According to the capabilities of the remote terminal and the detected signal, this fax selects a communication procedure as shown in the flowchart below.

The flow applies when both or either of the originating and terminating terminals has the capability of Super G3 Fax and the originating terminal transmits a document automatically.

# 2.3.3.4 V.8 operation for manual transmission

The flowchart below shows manual transmission from an originating terminal.



2-108 03/02



### 2.3.3.5 Troubleshooting of Super G3 Fax

Super G3 fax uses analogue communication and its troubleshooting is basically the same as that of the conventional G3 Fax. However, since the communication speed and procedure are different, this section describes troubleshooting unique to Super G3 mode.

Super G3 Fax realizes communication up to 28,800 bps by a modem of the V.34 standard. The speed can be optionally increased up to 33,600 bps.

The conventional speed is 14,400 bps (V.17). To realize the high-speed communication of V.34, the conventional data transmission rate must be more than doubled. Therefore, the telephone line guality will affect communication more than ever. Even a telephone line available for error-free communication at 14,400 or 9600 bps may cause an error in Super G3 communication.

An ordinary analogue public line shows a good frequency characteristic in a band from 300 to 3,400 Hz. In Super G3 communication, the communication speed may differ if only the direction of communication is reversed without changing the parties or the telephone line. In this communication, the transmission side determines the communication speed according to the result of line quality measurement by the probing function in the V.34 procedure and the probing result varies each time the direction of communication is reversed. In other words, Super G3 mode cannot always achieve the maximum speed (33,600 bps). In most cases, the Super G3 communication speed is 21,600 bps or more.

The conventional fax up to 14,400 bps uses half-duplex communication where signals are sent alternately. Super G3 fax, however, uses full-duplex communication of a different communication procedure. In full-duplex communication, both faxes issue signals together. While sending signals, each fax monitors signals from the other fax. The communication status can be supervised by monitoring a line for sounds in the conventional fax communication but not in Super G3 communication. If a communication error occurs, the analysis of protocol monitor data is necessary more than ever and the trace data of both the transmitter and receiver may be compared often.

### Notes on Super G3 troubleshooting

ECM: ECM is essential for Super G3 communication. If the ECM function is OFF, even a fax supporting Super G3 mode will use not V.34 but V.17/V.29 (14,000/9600 bps) for communication.

Communication procedure: The Super G3 communication procedure consists of V.8 and V.34. The V.8 procedure is used to check the Super G3 mode capability and to determine the communication speed. Once the V.8 procedure has terminated normally, Super G3 fax changes to the V.34 procedure and sends image information by the V.34 procedure. The V.34 procedure uses the same commands as the G3 procedure (V.17/V.29 or other) and the protocol trace data is also almost the same. However, the actual communication type is full duplex and the command transmission speed is 1200 bps.

The V.8 procedure uses the tonal signals of CNG or CI sent from an originating terminal for manual transmission and ANSam sent from a terminating terminal. If the line receives noises or the signal level is low, an error occurs because the remote terminal cannot recognize the tonal signals correctly. For this check, protocol data of the remote terminal is checked to see whether signals sent from the local terminal are recorded (as recorded in the local trace data).

The V.34 procedure is executed in the order of phases 2, 3, and 4 and [V34ph2], [V34ph3], and [V34ph4] are recorded in the protocol trace data. Once phase 4 has terminated normally, the procedure changes to phases B, C, D, and E. For troubleshooting in these phases, reference the conventional procedure.

If the line receives noises or the signal level is low, the procedure may not progress smoothly. If phases 2, 3, and 4 are repeated, [V34ph2], [V34ph3], and [V34ph4] are recorded again and again in the protocol trace data. If an error occurs in phase 2, [V34ph2] is recorded but [V34ph3] and [V34ph4] are not.

In both of the above two cases, the analog characteristics of the telephone line are defective or the send level is inappropriate.

Send level: Since Super G3 Fax uses analog communication, the signal level is very important. Especially, the signal to noise level (S/N) ratio is the key. For correct signal detection, a certain S/N ratio is necessary. The protocol data may indicate that the remote terminal sends the same signal repeatedly or does not advance to the next procedure. This means that the remote terminal cannot recognize signals from the local terminal. In this case, change the send level. If the noise level does not change, raising the send level should increase the S/N ratio. When changing the send level, vary the send level a little (1 or 2 dB) and find the best value by trying communication several times.

If a digital line (ISDN/corporate digital leased line) or digital equipment (digital PBX/TA) is in use, raising the level too high will cause a waveform disorder to an analog signal and disable normal communication (high-level signal waveforms are deformed at analog-digital conversion). Under this kind of line environment, lowering the send level will establish good communication.

Speed: The maximum speed is 33,600 bps in Super G3 mode. In domestic PSTN communication, however, the actual speed is 31,200 to 21,600 bps in most cases. If the line status is extremely bad, the speed may be even as low as 9600 bps. The communication speed is determined by a transmission terminal according to the result of phase 2 in V.34. Therefore, even when the same line is used, the communication speed varies with the transmission terminal.

Line frequency characteristic (F characteristic): The characteristic of a telephone line about frequency is called "frequency characteristic." The characteristic ideally should be uniform in the speech band from 300 to 3400 Hz but usually deteriorated at at high and low frequencies of a public line (attenuation distortion or signal delay not affecting a speech). The longer the ground distance (more precisely, the line distance of the analogue section) becomes, the worse the deterioration becomes. Compared with ordinary voice or G3 Fax communication, Super G3 communication is greatly affected by the frequency characteristic. Even a line available for normal communication at 14,000 or 9600 bps may cause errors in Super G3 communication. Since most corporate leased lines (digital lines) use voice compression, their frequency characteristics are worse than those of NTT public lines. Therefore, the error occurrence rate goes high in Super G3 communication.

	03/02		
2.3.4 IIT/IOT Status Code FIP	A B	U1-2 Fuser Fan	
U1-1 MAIN MOTOR Failure (BSD 4.1)         Close the R/H Cover and FRONT Cover. Enter Diag mode and Execute Chain4 Func1. Does the MAIN MOTOR rotate?         Y       N         Is the voltage between MAIN MOTOR J205-1(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW PWB J460-8(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW PWB J458-4(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW PWB J458-4(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW PWB J458-3(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW         PWB J458-5(+) & GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW         PWB J458-6(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW         PWB J458-6(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW         PWB J458-6(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW         PWB J458-6(+) and GND(-) +24VDC?         Y       N         Is the voltage between MCU/SW         <	Is the voltage between MAIN MOTOR J205-6(+) and GND(-) +5VDC? Y N Is the voltage between MCU/SW PWB J460-3(+) and GND(-) +5VDC? Y N Replace the MCU/SW PWB. (PL7.2) Check between MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Execute Chain4 Func1. Is the voltage between MAIN MOTOR J205-8(+) and GND(-) +2.5VDC? Y N Execute Chain4 Func1. Is the voltage MCU/SW PWB J460-1(+) and GND(-) +2.5VDC? Y N Replace the MCU/SW PWB. (PL7.2) Check between MCU/SW PWB. (PL7.2) Check between MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MAIN MOTOR. (PL1.1) Execute Chain4 Func1. Is the voltage between MAIN MOTOR J205-7(+) and GND(-) +2.5VDC? Y N Check between MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. They are good. Y N Replace the MAIN MOTOR. (PL1.1) Execute Chain4 Func1. Is the voltage between MCU/SW PWBJ460-2(+) and GND(-) +2.5VDC? Y N Check between MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MAIN MOTOR. (PL1.1) Execute Chain4 Func1. Is the voltage between MCU/SW PWBJ460-2(+) and GND(-) +2.5VDC? Y N Check between MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MCU/SW PWB and MAIN MOTOR for an open wire or poor contact. Replace the MCU/SW PWB. (PL7.2)	Enter Diag mode ar Does the FUSER F Y N Execute Chair Is the voltag GND(-) +24VE Y N Execute Is the vol Y N Che MC Doc the Replace Check betwee open wire or p If they are goo Execute Chain4 Fu J204-2(+) and GND Y N Execute Chair POWER UNIT Y N Execute Chair POWER UNIT Y N Execute MCU/SW Y N Replace the FUSEF	

2-110

# **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting

### failure (BSD 10.1)

nd execute Chain 4 - Func 2. AN rotate at high speed?

n4 Func2. ge between POWER UNIT J204-1(+) and DC?

Chain4 Func2. POWER UNIT Itage between J524-1(+) and GND(-) 0VDC?

eck between POWER UNIT J524-1 and CU/SW PWB J403-8 for an open wire or or contact. If they are good, replace MCU /SW PWB. (PL7.2) the POWER UNIT. (PL7.1) en FUSER FAN and POWER UNIT for an boor contact. od, replace FUSER FAN. (PL5.2) unc2. Is the voltage between POWER UNIT D(-) +3.3VDC?

n4 Func2. Is the voltage between J524-4(+) and GND(-) +3.3VDC?

Chain4 Func2. Is the voltage between N PWB J403-6(+) and GND(-) +3.3VDC?

place the MCU/SW PWB. (PL7.2) etween the MCU/SW PWB and POWER an open wire or poor contact. OWER UNIT. (PL7.1) R FAN. (PL5.2)

### U1-3 LVPS FAN failure (BSD 1.2)

Enter Diag. Mode and execute Chain4 Func2. Does the LVPS FAN rotate at high speed? Υ Ν

> Execute Chain4 Func2. Is the voltage between POWER UNIT J524-1 (+) and GND(-) 0VDC?

Ν Y

> Execute Chain4 Func2. Is the voltage between MCU/SW PWB J403-8 (+) and GND(-) 0VDC? Υ Ν

Replace the MCU/SW PWB. (PL7.2) Check between MCU/SW PWB and POWER UNIT for an open wire or poor contact.

Replace the POWER UNIT. (PL7.1)

Is the voltage between POWER UNIT J524-5(+) and GND(-) +3.3VDC?

Y Ν

Is the voltage between MCU/SW PWB J403-5(+) GND(-) +3.3VDC?

```
Ν
Υ
```

Replace the MCU/SW PWB. (PL7.2)

Check between MCU/SW PWB and POWER UNIT for an open wire or poor contact.

Replace the POWER UNIT. (PL7.1)

# U2-1 Carriage Abnormal (BSD 6.2)

Enter Diag. Mode and execute Chain6 Func1. Does the Carriage operate? Υ Ν

Is the voltage between CARRIAGE MOTOR DRIVE PWB J749-1(+) and GND(-) +24VDC? Ν Is the voltage between CARRIAGE MOTOR DRIVE PWB J748-1(+) and GND(-) +24VDC? Y Ν Is the voltage between IIT/IPS PWB

J735-12(+) and GND(-) +24VDC? Υ Ν

Replace the IIT/IPS PWB. (PL3.1) Check between IIT/IPS & CARRIAGE MOTOR DRIVE PWB for an open wire or poor contact.

Replace the CARRIAGE MOTOR DRIVE PWB.(PL3.1) Is the voltage between CARRIAGE MOTOR DRIVE PWB J748-5(+) and GND(-) +5VDC?

Ν Is the voltage between IIT/IPS PWB J735-8(+) and GND(-) +5VDC?

Ν Y

Replace the IIT/IPS PWB. (PL3.1)

Check between IIT/IPS PWB & CARRIAGE MOTOR DRIVE PWB for an open wire or poor contact.

Che ck between CARRIAGE MOTOR DRIVE PWB J748 and IIT/IPS PWB J735 for an open wire or poor contact. Are they good?

Ν

Repair an open wire or poor contact. Replace CARRIAGE MOTOR DRIVE PWB(PL3.1) and

CARRIAGE MOTOR(PL3.3) in this order.

Execute Chain6 Func11. Move the carriage to the right and left. Does the display change (H/L)?

Υ Ν

Perform the general-purpose transmission sensor FIP. Replace the MCU/SW PWB. (PL7.2)

### U2-2 Carriage Abnormal (BSD 6.2)

```
Does the Carriage operate?
    Ν
        Ν
         Y
             Ν
              Y
    Υ
        Ν
         GND(-) +5VDC?
             Ν
    Are they good?
        Ν
Does the display change (H/L)?
Υ
    Ν
Replace the MCU/SW PWB. (PL7.2)
```

Enter Diag. Mode and execute Chain6 Func1. Is the voltage between Carriage Motor Drive PWB J749-1(+) and GND(-) +24VDC? Is the voltage between Carriage Motor Drive PWB J748-1(+) and GND(-) +24VDC? Is the voltage between IIT/IPS PWB J735-12(+) And GND(-) +24VDC? Ν

Replace the IIT/IPS PWB. (PL3.1) Check between IIT/IPS and Carriage Motor Drive PWB for an open wire or poor contact. Replace the Carriage Motor Drive PWB. (PL3.1) Is the voltage between Carriage Motor Drive PWB J748-5(+) and GND(-) +5VDC?

Is the voltage between IIT/IPS PWB J735-8(+) and

Replace the IIT/IPS PWB. (PL3.1) Check between IIT/IPS PWB and Carriage Motor Drive PWB for an open wire or poor contact. Check between Carriage Motor Drive PWB J748 and IIT/IPS PWB J735 for an open wire or poor contact.

Repair an open wire or poor contact. Replace the Carriage Motor DRIVE PWB.(PL3.1) If the problem persists, replace the CARRIAGE MOTOR.(PL3.3) Execute Chain6 Func11. Move the carriage to the right left.

Perform the general-purpose transmission sensor FIP.

## U2-3 Carriage Abnormal (BSD 6.2)

When moving the carriage to the right and left by hand, is there binding?

```
V
```

```
Ν
    Enter Diagnostic. Mode and execute Chain6 Func1.
    Does the Carriage operate?
         Ν
         Perform U2-1 FIP.
    Execute Chain6 Func2. Does the Carriage operate?
    Υ
         Ν
         Perform U2-1 FIP.
    Replace IIT/IPS PWB (PL3.1), and then MCU/SW PWB
    (PL7.2)
Remove the cause of binding.
```

# **U3 ROS Abnormal Checks**

# WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer's supply while performing tasks that do not require electricity. Electricity can cause death or injury.

# WARNING

Follow the service procedure exactly as written. Use of controls or adjustments other than those specified in this manual, may result in an exposure to invisible laser radiation. During servicing, the invisible laser radiation can cause eye damage if looked at directly.



# Invisible laser radiation

# U3-1 ROS Abnormal (BSD 6.3)

Check between MCU/SW PWB and ROS ASSY for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and ROS ASSY (PL4.1) in this order.

# U3-2 ROS Abnormal (BSD 6.3)

Check between MCU/SW PWB and ROS ASSY for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and ROS ASSY (PL4.1) in this order.

# U3-3 ROS Abnormal (BSD 6.3)

Check between MCU/SW PWB and ROS ASSY for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and ROS ASSY (PL4.1) in this order.

# U3-4 ROS Abnormal (BSD 6.3)

Check between MCU/SW PWB and ROS ASSY for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and ROS ASSY (PL4.1) in this order.

# U3-5 ROS Abnormal (BSD 6.3)

Check between MCU/SW PWB and ROS ASSY for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and ROS ASSY (PL4.1) in this order.

# U3-6 ROS Abnormal (BSD 6.3)

Check between MCU/SW PWB and ROS ASSY for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and ROS ASSY( PL4.1) in this order.
## U4-1 FUSER abnormal (BSD 10.2)

**Initial Check** 

- Check the drawer connector (P/J12) between the FUSER ASSY and main unit for a broken or bent pin, foreign matter, or burn.
- Cheat the FRONT DOOR INTERLOCK SW and turn the power on.

Does the HEATER ROD light?

Ν Remove the FUSER ASSY. Measure the resistance between Drawer connectors P12-1 and P12-4. Is the resistance within  $10\Omega$ ? Υ Ν

Replace the FUSER. (PL6.1)

Return the FUSER ASSY and turn the power on.

Is the voltage between drawer connectors J12-4(+) and J12-1(-) 100VAC?

#### Ν Y

Cheat the R/H Interlock SW. Is the voltage between drawer connectors J12-4(+) J12-1(-) 100VAC?

- Ν Is the voltage between POWER UNIT J10-A1(+) and J10-A3(-) 100VAC?
- Ν

Υ

Is a Choke Coil or cheat connector installed to POWER UNIT P5?(100V model)

Ν

Install the CHOKE COIL or cheat connector.

Is the voltage between POWER UNIT FS-11(+) and FS-12(-) 100VAC?

- N Perform AC FIP.
- Is the voltage between POWER UNIT
- J523-2(+) and GND(-) 0VDC? F
- С D А В

Replace the POWER UNIT (PL7.1). Is the voltage between MCU/SW PWB J403-3(+) and GND(-) 0VDC? Ν Check between MCU/SW PWB J403-3 and POWER UNIT J523-2 for an open wire or poor contact. Replace the MCU/SW PWB.(PL7.2) Check between POWER UNIT and R/H Interlock SW for an open wire or poor contact. If they good, replace the R/H INTERLOCK SW.

(PL2.3) Check the actuator at the R/H INTERLOCK SW.

Check the drawer connector (P/J12) for bad contact. Remove the FUSER ASSY. Measure the resistance between Drawer connectors P12-A4 and P12-A5. Is the resistance less than  $20k\Omega$ ?

```
Replace the FUSER. (PL6.1)
```

D

Ε

Y

N 1205

С

В

Α

Check between FUSER drawer connector and MCU/SW PWB for an open wire or poor contact?

Υ Ν

Ν

Y

Repair an open wire or poor contact.

Check the NVM values by Chain20 Func100 and Chain20 Func101.

Are the values between 0 and 16?

Ν

Change the NVM values. The initial values are 8. Replace the MCU/SW PWB. (PL7.2)

## U4-2 FUSER abnormal (BSD 10.2)

To clear this error, set the Chain50 Func20 value to 0. Turn the power off and wait until the FUSER ASSY cools down well.

and P12-A5?

Ν

Υ

Install the FUSER ASSY, cheat the FRONT INTERLOCK SW, and turn the power on. Is the HEATER ROD continuously lit until an error occurs? Υ

Ν

Ν

Replace the POWER UNIT. (PL7.1) Replace the MCU/SW PWB. (PL7.2) Replace the FUSER. (PL6.1)

Is the resistance within  $2k\Omega$  between drawer connectors P12-A4

Replace the MCU/SW PWB. (PL7.2) Clear the error and turn the power on. Is the voltage between MCU/SW PWB J403-3(+) and GND(-) +5VDC until an error occurs?

## U4-3 FUSER Abnormal (BSD 10.2)

Initial Action

• Check the drawer connector (P/J12) between the FUSER ASSY and main unit for a broken or bent pin, foreign matter, or burnt material.

Turn the power off and remove the FUSER ASSY. Measure the resistance between drawer connectors P12-A4 and P12-A5. Is the resistance  $100k\Omega$  or more?

Ν Υ

Check between the drawer connectors J12 and MCU/SW PWB J402 for an open wire or poor contact. If there is no problem, replace the MCU/SW PWB. (PL7.2)

Replace the FUSER (PL6.1).

## U4-4 FUSER Abnormal (BSD 10.2)

<ul> <li>Initial Action</li> <li>Check the drawer connector (P/J12) between the FUSER ASSY and main unit for a broken or bent pin, foreign matter, or burn.</li> </ul>	A B C D
Cheat the FRONT DOOR INTERLOCK SW and turn the power	
on.	
Does the HEATER ROD light?	
Y N Remove the FUSER ASSY. Measure the resistance between drawer connectors P12-1 and P12-4. Is the resistance $10\Omega$ or more?	
T IN Boplace the EUSER (DL6.1)	
Return the FUSER ASSY and turn the power on is the	Cr
Voltage 100VAC between drawer connectors J12-4(+) and	IN IN
J12-1(-)?	со
Y N	
Cheat the R/H INTERLOCK SW. Is the voltage	
100VAC between drawer connector J12-4(+) and J12-	Remove the FLISE
	drawer connectors
Y N	Is the resistance le
IS the voltage 100 VAC between the POWER	Y N
V N	Replace the I
Is a CHOKE COIL or cheat connector	Check between th
installed to POWER UNIT P5? (100V	PWB for an open w
model)	Y N
Y N	Repair an op
Install a CHOKE COIL or cheat	
connector.	Are the values bet
Is the voltage 100 VAC between the	Y N
POWER UNIT FS-11(+) and FS-12(-)?	Change the N
	Replace the MCU/
A B C D E	

## **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting

Е

Is the voltage 0 VDC between POWER UNIT J523-2(+) and GND(-) ?

Υ Ν

Replace the POWER UNIT.(PL7.1) Is the voltage 0 VDC between the MCU/SW PWB J403-3(+) and GND(-) ? Υ Ν

Check between MCU/SW PWB J403-3 and POWER UNIT J523-2 for an open wire or poor contact.

Replace the MCU/ SW PWB.(PL7.2) heck between the POWER UNIT and R/H ITERLOCK SW for an open wire or poor onnection. If there is no problem, replacethe H INTERLOCK SW.(PL2.3)

the actuator at the R/H INTERLOCK SW. awer connector (P/J12) for bad contact. ER ASSY. Measure the resistance between P12-A4 and P12-A5. ess than  $20k\Omega$ ?

FUSER (PL6.1).

the FUSER drawer connector and MCU/SW wire or poor contact. There is no problem?

en wire or poor contact. values by Chain20 Func100 and Chain20

tween 0 and 16?

NVM values. The initial values are 8. /SW PWB (PL7.2)

#### U4-5 FUSER Abnormal (BSD 10.2) D Е С Α В Is the voltage 0 VDC between the POWER Initial Action UNIT J523-2(+) and GND(-) ? • Check the drawer connector (P/J12) between the FUSER ASSY and main unit for a broken or bent pin, foreign matter, Ν or burn. Replace the POWER UNIT. (PL7.1) Is the voltage 0 VDC between the Cheat the FRONT DOOR INTERLOCK SW and turn the power MCU/SW PWB J403-3(+) and GND(-) ? on. Υ N Does the HEATER ROD light? Check between the MCU/SW PWB Ν J403-3 and POWER UNIT J523-2 for Remove the FUSER ASSY. Measure the resistance an open wire or poor contact. between drawer connector P12-1 and P12-4. Is the Replace the MCU/SW PWB. (PL7.2) resistance less than $10\Omega$ ? Check between the POWER UNIT and R/H Υ Ν INTERLOCK SW for an open wire or poor Replace the FUSER (PL6.1) contact. If there is no problem, replace the R/H Return the FUSER ASSY and turn the power on. INTERLOCK SW. (PL2.3) Is the voltage 100 VAC J12-4(+)and J12-1(-)? Check the actuator at the R/H INTERLOCK SW. Υ Ν Check the drawer connector (P/J12) for bad contact. Cheat the R/H INTERLOCK SW. Is the voltage 100 Remove the FUSER ASSY. Measure the resistance between VAC between the drawer connector J12-4(+) and J12drawer connector P12-A4 and P12-A5. 1(-)? Is the resistance less than $20k\Omega$ ? Υ Ν Y Ν Is the voltage 100 VAC between the POWER Replace the FUSER THERMISTOR. (PL2.3) UNIT J10-A1(+) and J10-A3(-)? Check between the FUSER drawer connector and MCU/SW Ν Y PWB for an open wire or poor contact? There is no problem. Is a CHOKE COIL or cheat connector Ν Υ installed to the POWER UNIT P5? (100V Repair an open wire or poor contact. model) Check the NVM values by Chain20 Func100 and Chain20 Ν Func101. Install the CHOKE COIL or cheat Are the values between 0 and 16? connector. Ν Is the voltage 100 VAC between the Change the NVM values. The initial values are 8. POWER UNIT FS-11(+) and FS-12(-)? Replace the MCU/SW PWB. (PL7.2) Ν Perform AC FIP. С D Е В А

## U4-6 FUSER Abnormal (BSD 10.2)

Initial Check         • Check the drawer connector (P/J12) between the FUSER ASSY and main unit for a broken or bent pin, foreign matter, or burn.         Cheat the FRONT DOOR INTERLOCK SW and turn the power on.         Does the HEATER ROD light?         Y       N         Remove the FUSER ASSY. Measure the resistance between the drawer connector P12-1 and P12-4. Is the resistance less than 10Ω?         Y       N         Replace the FUSER. (PL6.1)         Return the FUSER ASSY and turn the power on. Is the voltage 100 VAC between the drawer connector J12- 4(+) and J12-1(-)?         Y       N         Cheat the R/H INTERLOCK SW. Is the voltage 100 VAC between the drawer connector J12-4(+) and J12-1(-)?         Y       N         Is the voltage 100 VAC between the POWER UNIT J10-A1(+) and J10-A3(-)?         Y       N         Is a CHOKE COIL or cheat connector installed to the POWER UNIT P5? (100V model)         Y       N	A       B       C       D       E         Is the voltage 0 VDC between the POWER UNIT J523-2(+) and GND(-)?       Y       N         I       Replace the POWER UNIT. (PL7.1)       Is the voltage 0 VDC between the MCU/SW PWB J403-3(+) and GND(-)?         Y       N       Check between the MCU/SW PWB         J403-3 and POWER UNIT J523-2 for       an open wire or poor contact.         Replace the MCU/SW PWB. (PL7.2)       Check between the POWER UNIT and R/HINTERLOCK SW for an open wire or poor contact. If there is no problem, replace the R/H INTERLOCK SW. (PL2.3)         Check the actuator at the R/H INTERLOCK SW.         Check the drawer connector (P/J12) for bad contact.         Remove the FUSER ASSY. Measure the resistance between the drawer connector P12-A4 and P12-A5.         Is the resistance less than 20kΩ?         Y       N         Replace the FUSER. (PL6.1)         Check between the FUSER drawer connector and MCU/SW         PWB for an open wire or poor contact?         There is no problem?         Y       N         Replair an open wire or poor contact.         Check the NVM values by Chain20 Func100 and Chain20	If Power OFF/ON doe PWB.(PL7.2) U6-2 Memory Error If Power OFF/ON doe PWB.(PL7.2) U6-3 Memory Error If Power OFF/ON doe PWB (PL7.2). U6-4 Memory Error If Power OFF/ON doe PWB (PL7.2). U6-41 Memory Error If Power OFF/ON doe PWB (PL7.2). U6-42 Memory Error If Power OFF/ON doe PWB (PL3.1). U6-43 Memory Error If Power OFF/ON doe PWB (PL3.1).
Y N Install a CHOKE COIL or cheat connector. Is the voltage 100 VAC between the POWER UNIT FS-11(+) and FS-12(-)?	<ul> <li>Repair an open wire or poor contact.</li> <li>Check the NVM values by Chain20 Func100 and Chain20 Func101.</li> <li>Are the values between 0 and 16?</li> <li>Y N</li> <li>Change the NVM values. The initial values are 8.</li> </ul>	If NVM initialization d PWB (PL7.2), IIT/IPS this order. <b>U6-44 Memory Er</b>
I     I     I     Y     N       I     I     I     Perform AC FIP.       A     B     C     D	Replace the MCU/SW PWB. (PL7.2)	Replace the IIT/IPS order.

(PL7.2).

## **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting U6-1 Memory Error at POWER ON (BSD 3.1C)

es not repair the error, replace the MCU/SW

## or at POWER ON (BSD 3.1C)

es not repair the error, replace the MCU/SW

## or at POWER ON (BSD 3.1C)

es not repair the error, replace the MCU/SW

## ror at POWER ON (BSD 3.1C)

es not repair the error, replace the MCU/SW

## rror at POWER ON (BSD 3.1A)

bes not repair the error, replace the IIT/IPS

## rror at POWER ON (BSD 3.1A)

bes not repair the error, replace the IIT/IPS

## rror at POWER ON (BSD 3.1A 3.1C

does not repair the error, replace MCU/SW S PWB (PL3.1), and DIMM PWB(PL7.2) in

## rror at POWER ON (BSD 3.1A 3.3)

PWB (PL3.1) and DIMM PWB(PL7.2) in this

## U6-5 Memory Error at POWER ON (BSD 3.1C)

If Power OFF/ON does not repair, replace the MCU/SW PWB

## U6-82 Memory Error at POWER ON (BSD 3.1A)

If Power OFF/ON does not repair, replace the IIT/IPS PWB.(PL3.1)

## U6-95 Memory Error at POWER ON (BSD 3.1A 3.1C 3.3)

If NVM initialization does not repair the error, replace the MCU/SW PWB(PL7.2), IIT/IPS PWB(PL3.1), and DIMM PWB(PL7.2) in this order.

## U7-31 Inter-system Communication FAIL (BSD 3.1B)

Check between the MCU/SW PWB and IIT/IPS PWB and between the IIT/IPS PWB and UI PWB for an open wire or poor contact.

If no problem is found, replace the MCU/SW PWB(PL7.2), UI PWB(PLXX.X), and IIT/IPS PWB(PL3.1) in this order.

## U7-32 Inter-system Communication FAIL (BSD 3.1B)

Check between the MCU/SW PWB and IIT/IPS PWB and between the IIT/IPS PWB and UI PWB for an open wire or poor contact.

If no problem is found, replace the MCU/SW PWB(PL7.2), UI PWB(PLXX.X), and IIT/IPS PWB(PL3.1) in this order.

## U7-33 Inter-system Communication FAIL (BSD 3.1B)

Check between the MCU/SW PWB and IIT/IPS PWB and between the IIT/IPS PWB and UI PWB for an open wire or poor contact.

If no problem is found, replace the MCU/SW PWB(PL7.2), UI PWB(PLXX.X), and IIT/IPS PWB(PL3.1) in this order.

## U7-34 Inter-system Communication FAIL (BSD 3.1B)

Check between the MCU/SW PWB and IIT/IPS PWB and between the IIT/IPS PWB and UI PWB for an open wire or poor contact.

If no problem is found, replace the MCU/SW PWB(PL7.2), UI PWB(PLXX.X), and IIT/IPS PWB(PL3.1) in this order.

U7-35 Inter-system Communication FAIL (BSD

## 3.1B)

Check between the MCU/SW PWB and IIT/IPS PWB and between the IIT/IPS PWB and UI PWB for an open wire or poor contact.

If no problem is found, replace the MCU/SW PWB(PL7.2), UI PWB(PLXX.X), and IIT/IPS PWB(PL3.1) in this order.

## U7-41 Inter-system Communication FAIL (BSD 3.1A)

Check between the MCU/SW PWB and IIT/IPS PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB(PL7.2) and IIT/IPS PWB(PL3.1) in this order.

## U7-42 Inter-system Communication FAIL (BSD) 3.1A)

Check between the MCU/SW PWB and IIT/IPS PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB(PL7.2) and IIT/IPS PWB(PL3.1) in this order.

## U7-42 Inter-system Communication FAIL (BSD 3.1A)

Check between the MCU/SW PWB and IIT/IPS PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB(PL7.2) and IIT/IPS PWB(PL3.1) in this order.

## U7-43 Inter-system Communication FAIL (BSD 3.1A)

Check between the MCU/SW PWB and IIT/IPS PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB(PL7.2) and IIT/IPS PWB(PL3.1) in this order.

## U7-44 Inter-system Communication FAIL (BSD) 3.1A)

Check between the MCU/SW PWB and IIT/IPS PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB(PL7.2) and IIT/IPS PWB(PL3.1) in this order.

## U7-45 Inter-system Communication FAIL (BSD 3.1A)

Check between the MCU/SW PWB and IIT/IPS PWB for an open

wire or poor contact. If no problem is found, replace the MCU/SW PWB(PL7.2) and IIT/IPS PWB(PL3.1) in this order.

## U8-3 LAMP/CCD Sensor Abnormal (BSD 6.1B 6.2)

Problem factors:

- CCD PWB defect
- IIT/IPS PWB defect
- MCU/SW PWB defect

## U8-4 LAMP/CCD Sensor Abnormal (BSD 6.1B 6.2)

Problem factors:

- CCD PWB defect
- IIT/IPS PWB defect
- MCU/SW PWB defect

## U8-5 LAMP/CCD Sensor Abnormal (BSD 6.1B 6.2)

Problem factors:

- CCD PWB defect
- IIT/IPS PWB defect
- MCU/SW PWB defect

## U8-6 LAMP/CCD Sensor Abnormal (BSD 6.1B 6.2)

Problem factors:

- CCD PWB defect
- IIT/IPS PWB defect
- MCU/SW PWB defect
- Reflector plate dirty or condensed

## U9-1 MCU/SW PWB Failure (BSD 3.1C)

If Power OFF/ON does not rsolve the problem, replace the MCU/SW PWB (PL7.2).

EXPOSURE LAMP quantity of light not appropriate

• EXPOSURE LAMP quantily of light not appropriate

EXPOSURE LAMP quantily of light not appropriate

• EXPOSURE LAMP quantily of light not appropriate

## U9-31 MCU/SW PWB Failure (BSD 3.1C)

If Power OFF/ON does not solve the problem, replace the MCU/SW PWB (PL7.2).

## U9-32 MCU/SW PWB Failure (BSD 3.1C)

If Power OFF/ON does not solve the problem, replace the MCU/SW PWB (PL7.2).

## U9-33 MCU/SW PWB Failure (BSD 3.1C)

If Power OFF/ON does not solve the problem, replace the MCU/SW PWB (PL7.2).

## U9-41 MCU/SW PWB Failure (BSD 3.1C)

If Power OFF/ON does not solve the problem, replace the MCU/SW PWB (PL7.2).

## H5-61 FINISHER Interface Abnormal (BSD 3.1E)

Check between the MCU/SW PWB and FINISHER CONT PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and FINISHER CONT PWB (PL13.16) in this order.

## H5-62 FINISHER Interface Abnormal (BSD 3.1E)

Check between the MCU/SW PWB and FINISHER CONT PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and FINISHER CONT PWB (PL13.16) in this order.

## H5-63 FINISHER Interface Abnormal (BSD 3.1E)

Check between the MCU/SW PWB and FINISHER CONT PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and FINISHER CONT PWB (PL13.16) in this order.

## H5-64 FINISHER Interface Abnormal (BSD 3.1E)

Check between the MCU/SW PWB and FINISHER CONT PWB for an open wire or poor contact. If no problem is found, replace the MCU/SW PWB (PL7.2) and FINISHER CONT PWB (PL13.16) in this order.

## H5-81 FINISHER Failure (BSD 12.8)

Enter Diag. Mode and execute Chain12 Func22. Does the COMPILE MOTOR rotate?

#### Υ Ν

Execute Chain12 Func22. Is each voltage +12 VDC between FINISHER CONT PWB CN12-1/2/3/4(+) and GND(-) ?

Ν

Is the voltage +24 VDC between the FINISHER CONT PWB CN1-1(+) and GND(-)?

- Ν
- Perform +24VDC FIP.

Replace the FINISHER CONT PWB. (PL13.16) Check between the FINISHER CONT PWB and COMPILEMOTOR for an open wire or poor contact. If no problem is found, replace the COMPILE MOTOR. (PL13.12)

Execute Chain12 Func5. Turn on and off the TAMPER HOME POSITION SENSOR with the tamper.

Does the display change (H/L)?

Ν

Y

Perform the General-purpose transmission sensor FIP. Check the actuator at the TAMPER HOME POSITION SENSOR. If no problem is found, replace the FINISHER CONT PWB (PL13.16).

## H5-82 FINISHER Failure (BSD 12.10)

```
Υ
   Ν
```

Close the TOP COVER or FRONT DOOR. Enter Diag. Mode and execute Chain12 Func29. Does the STAPLE MOTOR rotate? Ν Y

Check between CN10 of the FINISHER CONT PWB and the STAPLER UNIT for an open wire or poor contact. The connection is normal?

Ν

γ

Υ

Repair an open wire or poor contact. Replace the STAPLE HEAD. (PL13.3) Turn the power off and remove the STAPLE HEAD. Turn the power on with the connector connected and execute Chain12 Func16. Turn the STAPLE MOTOR gear manually. Does the display change (H/L)?

Ν The connection is normal. Ν

Repair an open wire or poor contact. Replace the STAPLE HEAD. (PL13.3) Replace the MCU/SW PWB. (PL7.2)

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

Are the TOP COVER and FRONT DOOR closed securely?

Check between CN10 of the FINISHER CONT PWB and STAPLER UNIT for an open wire or poor contact.

## H5-83 FINISHER Failure (BSD12.11)

Enter Diag. Mode and excute Chain12 Func27 or 28. Does the FINISHER TRAY ELEVATOR MOTOR rotate? Ν

Execute Chain12 Func27 or 28. Is each voltage +24 VDC between the FINISHER CONT PWB CN6-1/2(+) and GND(-) ?

Ν

Is the voltage +24VDC between the FINISHER CONT PWB CN1-1(+) and GND(-)?

Υ

Ν

Perform +24VDC FIP.

Replace the FINISHER CONT PWB. (PL13.16) Check between the FINISHER CONT PWB CN6 and TRAY ELEVATOR MOTOR for an open wire or poor contact.

The connection is normal.

Ν

Repair an open wire or poor contact.

Replace the TRAY ELEVATOR MOTOR. (PL13.18)

Execute Chain12 Func12. Push the Paper press lever up and down. Does the display change (H/L)?

Ν

Perform the General-purpose transmittion sensor FIP. Remove the FINISHER RECIVING TRAY. Execute Chain12 Func13.

Turn the UPPER LIMIT SENSOR on and off with paper. Does the display change?

Y Ν

Perform the General-purpose transmittion sensor FIP. Execute Chain12 Func14. Turn the NEAR FULL SENSOR on and off with paper. Does the display change (H/L)?

Υ Ν

Perform the General-purpose transmittion sensor FIP. Replace the MCU/SW PWB. (PL7.2)

## H5-84 FINISHER Failure (BSD 12.10)

Check the removal of screw that secures (for delivery only) STAPLE UNIT.

Check between the FINISHER CONT PWB CN10 and STAPLE UNIT for an open wire or poor contact. If no problem is found, replace the STAPLE HEAD (PL13.3), FINISHER CONT PWB (PL13.16), and MCU/SW PWB(PL7.2) in this order. H6-63 DADF Failure (BSD 3.1D)

If initialization does not clear the problem, replace the DADF CONT PWB. (PLXX.X)

## H6-64 DADF Failure (BSD 3.1D)

If initialization does not clear the problem, replace the DADF CONT PWB. (PLXX.X)

## H6-71 DADF Failure (BSD 3.1D)

Check between the IIT/IPS PWB and DADF CONT PWB for an open wire or poor contact. If no problem is found, replace the DADF CONT PWB(PLXX.X), IIT/IPS PWB(PL3.1), and MCU/SW PWB(PL7.2) in this order.

## H6-72 DADF Failure (BSD 3.1D)

Check between the IIT/IPS PWB and DADF CONT PWB for an open wire or poor contact. If no problem is found, replace the DADF CONT PWB(PLXX.X), IIT/IPS PWB(PL3.1), and MCU/SW PWB(PL7.2) in this order.

## H6-73 DADF Failure (BSD 3.1D)

Check between the IIT/IPS PWB and DADF CONT PWB for an open wire or poor contact. If no problem is found, replace the DADF CONT PWB(PLXX.X), IIT/IPS PWB(PL3.1), and MCU/SW PWB(PL7.2) in this order.

## H6-74 DADF Failure (BSD 3.1D)

Check between the IIT/IPS PWB and DADF CONT PWB for an open wire or poor contact. If no problem is found, replace the DADF CONT PWB (PLXX.X), IIT/IPS PWB(PL3.1), and MCU/SW PWB(PL7.2) in this order.

## H6-75 DADF Failure (BSD 3.1D)

Check between the IIT/IPS PWB and DADF CONT PWB for an open wire or poor contact. If no problem is found, replace the DADF CONT PWB(PLXX.X), IIT/IPS PWB(PL3.1), and MCU/SW PWB(PL7.2) in this order.

## H8-2 Page Memory Failure (BSD 3.1C)

Check the memory connector on the MCU/SW PWB. If no problem is found, replace the MCU/SW PWB. (PL7.2)

## H8-65 Page Memory Failure (BSD 3.1C)

Check the memory connector on the MCU/SW PWB. If no problem is found, replace the MCU/SW PWB. (PL7.2)

## H8-66 Page Memory Failure (BSD 3.1C)

Check the memory connector on the MCU/SW PWB. If no problem is found, replace the optional memory.(PL7.2) If the problem still does not recover, replace the MCU/SW PWB.(PL7.2)

## H8-67 Page Memory Failure (BSD 3.1C)

Check the memory connector on the MCU/SW PWB. If no problem is found, replace the MCU/SW PWB. (PL7.2)

## H8-68 Page Memory Failure (BSD 3.1C)

Check the memory connector on the MCU/SW PWB. If no problem is found, replace the MCU/SW PWB. (PL7.2)

## HD-01 Hard Disk Failure (BSD 3.1C)

Check between the HDC PWB and HDD for an open wire or poor contact. If no problem is found, replace the HDD. (PL7.2)

## HD-02 Hard Disk Failure (BSD 3.1C)

Check between the HDC PWB and HDD for an open wire or poor contact. If no problem is found, replace the HDD. (PL7.2)

## HD-03 Hard Disk Failure (BSD 3.1C)

Check between the HDC PWB and HDD for an open wire or poor contact. If no problem is found, replace the HDD. (PL7.2)

## HD-10 Hard Disk Failure (BSD 3.1C)

Check between the HDC PWB and HDD for an open wire or poor contact. If no problem is found, replace the HDD. (PL7.2)

## HD-71 Hard Disk Interface Abnormal (BSD 3.1C)

Check between the HDC PWB and HDD and between the HDC PWB and MCU/SW PWB for an open wire or poor contact. If no problem is found, replace the HDD (PL7.2), HDC PWB(PL7.2), and MCU/SW PWB(PL7.2) in this order.

## HD-72 Hard Disk Interface Abnormal (BSD 3.1C)

Check between the HDC PWB and HDD and between the HDC PWB and MCU/SW PWB for an open wire or poor contact. If no problem is found, replace the HDD (PL7.2), HDC PWB (PL7.2), and MCU/SW PWB(PL7.2) in this order.

## HD-73 Hard Disk Interface Abnormal (BSD 3.1C)

Check between the HDC PWB and HDD and between the HDC PWB and MCU/SW PWB for an open wire or poor contact. If no problem is found, replace the HDD (PL7.2), HDC PWB (PL7.2), and MCU/SW PWB (PL7.2) in this order.

## HD-74 Hard Disk Interface Abnormal (BSD 3.1C)

Check between the HDC PWB and HDD and between the HDC PWB and MCU/SW PWB for an open wire or poor contact. If no problem is found, replace the HDD (PL7.2), HDC PWB (PL7.2), and MCU/SW PWB(PL7.2) in this order.

## HD-75 Hard Disk Interface Abnormal (BSD 3.1C)

Check between the HDC PWB and HDD and between the HDC PWB and MCU/SW PWB for an open wire or poor contact. If no problem is found, replace the HDD (PL7.2), HDC PWB(PL7.2), and MCU/SW PWB(PL7.2) in this order.

2-120 03/02

## E1-1 REGI SENSOR Jam (BSD 8.5)

Chain Link Codes for Check

- [Chain 8 Func 5] REGI SENSOR
- Chain 8 Func 10] REGI CLUTCH

## Check Items

- REGI SENSOR operation error
- REGI SENSOR actuator broken or missing
- REGI CLUTCH operation error
- REGI ROLL dirt, worn, or operation error
- Transport error due to foreign matter on paper path
- MAIN MOTOR rotation error

## E1-2 REGI SENSOR Jam (BSD 8.5 10.3)

Chain Link Codes for Check

- Chain4 Func1] MAIN MOTOR
- Chain10 Func23] FUSER EXIT SENSOR

## Check Items

- FUSER EXIT SENSOR operation error
- FUSER EXIT SENSOR actuator broken or missing
- DRUM rotation error
- FUSER ROLL rotation error
- ROLL dirt, worn, or operation error
- Transport error due to foreign matter on paper path
- MAIN MOTOR rotation error

## E1-6 REGI SENSOR Jam (BSD 8.5)

Chain Link Codes for Check • [Chain 8 Func 5] REGI SENSOR

Check Items

- Supply voltage drop at customer
  - PWB. SENSOR.(PLXX.X)

## E3-1 FUSER Jam (BSD 10.3 10.5)

Chain Link Codes for Check [Chain 10 Func 23] FUSER EXIT SENSOR [Chain 10 Func 61] EXIT MOTOR

## Check Items

- FUSER EXIT SENSOR defect
- DECURLER ROLL rotation error
- EXIT MOTOR defect

## E3-6 FUSER Jam (BSD 10.3)

- Chain Link Codes for Check

### Check Items

- Supply voltage drop at customer
- EXIT SENSOR. (PL6.1)

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

Check the circuit between the REGI SENSOR and MCU/SW If no problem is found, replace the REGI

FUSER EXIT SENSOR actuator broken or missing

Transport error due to foreign matter on paper path

[Chain 10 Func 23] FUSER EXIT SENSOR

• Check the circuit between the FUSER EXIT SENSOR and MCU/SW PWB. If no problem is found, replace the FUSER

## E5-1 IOT Interlock Open (BSD 1.7A)

Open the R/H COVER and cheat the R/H INTERLOCK SW. Does the error display disappear?

```
Y
    Ν
    Is the voltage +24VDC between the MCU/SW PWB
                                                                Ν
    J406-A15(+) and GND(-)?
        Ν
         Is the voltage +24VDC between the MCU/SW PWB
         J406-A16(+) and GND(-)?
         Υ
             Ν
             Is the voltage +24VDC between the MCU/SW
             PWB J458-6(+) and GND(-)?
              Y
                  Ν
                  Is the voltage +24VDC between the
                  MCU/SW PWB J400-1(+) and GND(-)?
                      N
                       Perform +24VDC FIP.
                  Replace the MCU/SW PWB. (PL7.2)
             Is the voltage +24VDC between the MCU/SW
             PWB J458-5(+) and GND(-)?
              Y
                  Ν
                  Is the voltage +24VDC between the R/H
                  INTERLOCK SW FS234(+) and GND(-)?
                      Ν
                       Check betwee the R/H INTERLOCK
                       SW FS234 and MCU/SWPWB J458-6
                      for an open wire or poor contact.
                  Is the voltage +24VDC between the R/H
                  INTERLOCK SW FS233(+) and GND(-) ?
                      Ν
                       Replace the R/H INTERLOCK SW.
                       (PL2.3)
                  Check between the MCU/SW PWB J458-5
                  and R/H INTERLOCK SW FS233 for an
                  open wire or poor contact.
             Replace the MCU/SW PWB. (PL7.2)
         Check between the MCU/SW PWB J406-A16
         and J406-A15 for an open wire or poor contact.
    Replace the MCU/SW PWB. (PL7.2)
Check the R/H COVER actuator for damage or misalignment.
```

## E5-2 IOT Interlock Open (BSD 1.7A)

Open the FRONT COVER and cheat the FRONT INTERLOCK SW. Does the error display disappear? Is the voltage 0VDC between the MCU/SW PWB J458-1(+) and GND(-)? Ν Is the voltage 0VDC between the MCU/SW PWB J458-2(+) and GND(-)? Ν Replace the MCU/SW PWB. (PL7.2) Is the voltage 0 VDC between the FRONT INTERLOCK SW J621-4(+) and GND(-)? Ν Check between the FRONT INTERLOCK SW J621-4 and MCU/SW PWB J458-2 for an open wire or poor contact. Is the voltage 0 VDC between the FRONT INTERLOCK SW J621-3(+) and GND(-)? Υ Ν Replace the FRONT INTERLOCK SW. (PL2.3) Check between the MCU/SW PWB J458-1 and FRONT INTERLOCK SW J621-3 for an open wire or poor contact. Replace the MCU/SW PWB. (PL7.2) Check the FRONT COVER actuator for damage or misalignment.

## E6-1 CABINET Interlock Open (BSD 1.7B)

Oper	n the	CAE	BINET
INTE	RLO	CK SI	N by I
Does	the e	error	displa
Y	Ν		
	Close	e the	R/H C
	MCU	/SW I	PWB
	Y	N	
		Is the	
		PVVB V	J480 NI
		1 	IN Is the
			Y
			İ
			Repla
		Chec	k betv
		and I	MCU/
		poor	conta
	Repl	ace th	ne MC
Chec	k the	e CA	BINE
misa	lignm	ent.	

R/H COVER and press the CABINET hand or with a screwdriver. y disappear?

COVER. Is the voltage 0 VDC between the J417-A14 (+) and GND(-)?

```
age 0 VDC between the CABINET DRIVE
)-A1 (+) and GND(-)?
```

e voltage 0 VDC between the CABINET /E PWB J483-A11(+) and GND(-)? Ν Is the voltage 0 VDC between CABINET DRIVE PWB J483-A10(+) and GND(-)? Ν

> Replace the CABINET DRIVE PWB. (PL9.1)

```
Is the voltage 0 VDC between the
```

```
CABINET INTERLOCK SW J111-2(+)
and GND(-)?
```

Y N

Check between the CABINET **INTERLOCK SW J111-2 and** CABINET DRIVE PWB J483-A10 for an open wire or poor contact.

Is the voltage 0 VDC between the Cabinet Interlock SW J111-1(+) and GND(-)?

Ν

Replace the CABINET INTERLOCK SW. (PL9.10)

Check between the CABINET Interlock SW J111-1 and CABINET Drive PWB J483-A11 for an open wire and poor contact. ace the CABINET DRIVE PWB. (PL9.1) ween the CABINET DRIVE PWB J480-A1 SW PWB J417-A14 for an open wire or act.

U/SW PWB. (PL7.2)

T R/H COVER actuator for damage or

## E8-2 DUPLEX Jam (BSD 10.4)

Chain Link Codes for Check

- [Chain8 Func31] DUPLEX SENSOR  $\bullet$
- [Chain8 Func38] DUPLEX MOTOR
- [Chain8 Func51] EXIT GATE SOLENOID •
- [Chain8 Func63] EXIT MOTOR  $\bullet$
- [Chain10 Func23] FUSER EXIT SENSOR  $\bullet$

## Check Items

- FUSER EXIT SENSOR defect
- FUSER EXIT SENSOR actuator broken or missing
- EXIT GATE SOLENOID defect
- EXIT GATE operation error  $\bullet$
- EXIT MOTOR defect •
- EXIT ROLL rotation error
- **DUPLEX MOTOR defect** •
- DUPLEX ROLL rotation error
- **DUPLEX SENSOR defect**
- DUPLEX SENSOR actuator broken or missing
- Transport error due to foreign matter on paper path
- ROLL dirty or worn •

## 2-122 03/02

## C1-3 TRAY1 Misfeed (BSD 8.1 8.5)

Chain Link Codes for Check

- [Chain4 Func1] MAIN MOTOR
- [Chain8 Func5] REGI SENSOR
- [Chain8 Func12] TRAY1 FEED CLUTCH

## Check Items

- MAIN MOTOR defect
- FEED CLUTCH defect •
- FEED ROLL rotation error
- REGI SENSOR defect
- **REGI SENSOR** actuator broken or missing
- Transport error due to foreign matter on paper path  $\bullet$
- ROLL dirty or worn

## C2-2 TRAY2 Misfeed (BSD 8.1 8.3 8.4)

Chain Link Codes for Check

- [Chain4 Func1] MAIN MOTOR
- [Chain8 Func2] FEED MOTOR •
- [Chain8 Func6] T/A ROLL2 SENSOR •
- Chain8 Func13] TRAY2 FEED CLUTCH

## Check Items

- FEED MOTOR defect
- FEED CLUTCH defect
- FEED ROLL rotation error
- T/A ROLL rotation error •
- MAIN MOTOR defect
- T/A ROLL2 SENSOR defect
- SENSOR actuator broken or missing
- Transport error due to foreign matter on paper path
- ROLL dirty or worn

- Chain Link Codes for Check • [Chain4 Func1] MAIN MOTOR
- •
- Chain8 Func11] T/A ROLL CLUTCH

## Check Items

- T/A ROLL CLUTCH defect
- T/A ROLL rotation error
- T/A ROLL2 SENSOR defect
- MAIN MOTOR defect
- REGI SENSOR defect lacksquare
- •
- ROLL dirty or worn •

## C3-1 TRAY3 Misfeed (BSD 8.1 8.4)

Chain Link Codes for Check [Chain8 Func2] FEED MOTOR [Chain8 Func7] T/A ROLL3 SENSOR [Chain8 Func14] TRAY3 FEED CLUTCH

## Check Items

- FEED MOTOR defect
- FEED CLUTCH defect
- FEED ROLL rotation error
- T/A ROLL3 SENSOR defect
- •
- ROLL dirty or worn •

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

C2-3 TRAY2 Misfeed (BSD 8.4 8.5)

[Chain8 Func5] REGI SENSOR [Chain8 Func6] T/A ROLL2 SENSOR

SENSOR actuator broken or missing Transport error due to foreign matter on paper path

SENSOR actuator broken or missing Transport error due to foreign matter on paper path

## C3-2 TRAY3 Misfeed (BSD 8.3 8.4)

Chain Link Codes for Check

- [Chain4 Func1] MAIN MOTOR
- [Chain8 Func2] FEED MOTOR  $\bullet$
- [Chain8 Func6] T/A ROLL2 SENSOR

Check Items

- T/A ROLL rotation error
- T/A ROLL2 SENSOR defect
- MAIN MOTOR defect
- FEED MOTOR defect
- T/A ROLL2 SENSOR defect •
- SENSOR actuator broken or missing  $\bullet$
- Transport error due to foreign matter on paper path •
- ROLL dirty or worn

## C3-3 TRAY3 Misfeed (BSD 8.3 8.4)

Chain Link Codes for Check

- [Chain4 Func1] MAIN MOTOR
- [Chain8 Func2] FEED MOTOR
- [Chain8 Func5] REGI SENSOR

Check Items

- MAIN MOTOR defect
- T/A ROLL rotation error
- FEED MOTOR defect  $\bullet$
- **REGI SENSOR defect** •
- SENSOR actuator broken or missing •
- Transport error due to foreign matter on paper path •
- ROLL dirty or worn

## C4-1 TRAY4 Misfeed (BSD 8.1 8.4)

Chain Link Codes for Check

- [Chain8 Func2] FEED MOTOR
- [Chain8 Func7] T/A ROLL3 SENSOR
- [Chain8 Func15] TRAY4 FEED CLUTCH

## Check Items

- FEED MOTOR defect
- FEED CLUTCH defect
- FEED ROLL rotation error
- T/A ROLL3 SENSOR defect
- SENSOR actuator broken or missing
- Transport error due to foreign matter on paper path
- ROLL dirty or worn

## C4-2 TRAY4 Misfeed (BSD 8.3 8.4)

Chain Link Codes for Check

- [Chain4 Func1] MAIN MOTOR
- [Chain8 Func2] FEED MOTOR
- [Chain8 Func6] T/A ROLL2 SENSOR

## Check Items

- T/A ROLL rotation error
- T/A ROLL2 SENSOR defect
- MAIN MOTOR defect
- FEED MOTOR defect
- T/A ROLL2 SENSOR defect •
- SENSOR actuator broken or missing
- Transport error due to foreign matter on paper path •
- ROLL dirty or worn

## C4-3 TRAY4 Misfeed (BSD 8.3 8.4)

Chain Link Codes for Check

- [Chain8 Func2] FEED MOTOR
- Chain8 Func5] REGI SENSOR

### Check Items

- MAIN MOTOR defect
- T/A ROLL rotation error
  - FEED MOTOR defect
  - REGI SENSOR defect
  - •

  - ROLL dirty or worn

## C6-1 DUPLEX Misfeed (BSD 10.4 10.6)

Chain Link Codes for Check

- [Chain8 Func5] REGI SENSOR
- Chain8 Func63] EXIT MOTOR

## Check Items

- DUPLEX ROLL rotation error
- EXIT MOTOR defect
- DUPLEX MOTOR defect
- REGI SENSOR defect
- •
- •
- ROLL dirty or worn

• [Chain4 Func1] MAIN MOTOR

SENSOR actuator broken or missing

Transport error due to foreign matter on paper path

[Chain8 Func38] DUPLEX MOTOR

SENSOR actuator broken or missing Transport error due to foreign matter on paper path

## C8-2 Paper Remaining at FEED Section (BSD 8.4)

Chain Link Codes for Check

[Chain8 Func6] T/A ROLL2 SENSOR

Check Items

- Supply voltage drop at customer
- Check the circuit between the T/A ROLL2 SENSOR and MCU/SW PWB. If no problem is found, replace the T/A ROLL2 SENSOR. (PL2.5)

## C8-3 Paper Remaining at FEED Section (BSD 8.4)

Chain Link Codes for Check [Chain8 Func7] T/A ROLL3 SENSOR Check Items

- Supply voltage drop at customer
- Check the circuit between the T/A ROLL3 SENSOR and MCU/SW PWB. If no problem is found, replace the T/A ROLL3 SENSOR. (PL9.4)

## **C8-6** Paper Remaining at DUPLEX Section (BSD 10.4)

Chain Link Codes for Check

Chain8 Func31] DUPLEX PATH SENSOR

Check Items

- Supply voltage drop at customer
- Check the circuit between the DUPLEX SENSOR and MCU/SW PWB. If no problem is found, replace the DUPLEX PATH SENSOR. (PL12.1)

2-124 03/02

## C9-2 MSI Misfeed (BSD 8.2 8.4)

Chain Link Codes for Check

- Chain4 Func1] MAIN MOTOR
- [Chain8 Func6] T/A ROLL2 SENSOR
- [Chain8 Func17] MSI FEED SOLENOID

### Check Items

- FFED ROLL rotation error
- MAIN MOTOR defect
- MSI FEED SOLENOID defect
- T/A ROLL2 SENSOR defect
- SENSOR actuator broken or missing  $\bullet$
- Transport error due to foreign matter on paper path  $\bullet$
- ROLL dirty or worn

## C9-3 MSI Misfeed (BSD 8.4)

Chain Link Codes for Check

- Chain4 Func1] MAIN MOTOR
- Chain8 Func5] REGI SENSOR

Check Items

- MAIN MOTOR defect
- FEED ROLL rotation error
- REGI SENSOR defect
- SENSOR actuator broken or missing
- Transport error due to foreign matter on paper path
- ROLL dirty or worn

## A1-1 DADF Document Jam (Intake Section) (BSD 5.1 5.2 5.3)

Chain Link Codes for Check [Chain5 Func67] DADF FEED IN SENSOR

Check Items

- Supply voltage drop at customer
- SENSOR. (PL10.4)

## 5.1 5.2 5.3)

Chain Link Codes for Check [Chain5 Func56] DADF FEED IN/REGI MOTOR [Chain5 Func67] DADF FEED IN SENSOR 

Check Items

- FEED IN SENSOR defect
- PICK UP ROLL rotation error
- BELT missing or cut
- •
- ROLL dirty or worn

## 5.1)

Chain Link Codes for Check [Chain5 Func67] DADF FEED IN SENSOR

Check Items

- FEED IN SENSOR defect
- REGI ROLL rotation error
- BELT missing or cut
- SENSOR actuator broken or missing
- ROLL dirty or worn •

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

Check the circuit between the FEED IN SENSOR and DADF CONT PWB. If no problem is found, replace the FEED IN

## A1-2 DADF Document Jam (Intake Section) (BSD

 FEED IN/REGI MOTOR defect SENSOR actuator broken or missing

## A1-3 DADF Document Jam (Intake Section) (BSD

Transport error due to foreign matter on paper path

## A2-1 DADF Document Jam (Regi. Section) (BSD 5.4)

Chain Link Codes for Check

- [Chain5 Func65] DADF READ SENSOR
- Chain5 Func69] DADF REGI SENSOR

## Check Items

- Supply voltage drop at customer
- Check the circuit between each Sensor and DADF CONT PWB. If no problem is found, replace the READ SENSOR(PL10.6). If the problem is not cleared, replace the REGI SENSOR.(PL10.6)

## A2-2 DADF Document Jam (Regi. Section) (BSD 5.3 5.4)

Chain Link Codes for Check

- [Chain5 Func57] DADF FEED IN/REGI MOTOR
- [Chain5 Func65] DADF READ SENSOR •
- [Chain5 Func69] DADF REGI SENSOR  $\bullet$

Check Items

- READ SENSOR defect
- **REGI SENSOR defect**
- **TRANSPORT ROLL rotation error** •
- **REGI ROLL** rotation error
- FEED IN/REGI MOTOR defect
- BELT missing or cut
- SENSOR actuator broken or missing
- ROLL dirty or worn

## A2-3 DADF Document Jam (Regi. Section) (BSD 5.3) 5.4)

Chain Link Codes for Check

- [Chain5 Func51] DADF READ EXIT MOTOR
- [Chain5 Func57] DADF FEED IN/REGI MOTOR
- [Chain5 Func65] DADF READ SENSOR
- [Chain5 Func69] DADF REGI SENSOR

## Check Items

- READ SENSOR defect
- REGI SENSOR defect
- TRANSPORT ROLL rotation error
- REGI ROLL rotation error
- INVERT/EXIT ROLL rotation error
- READ EXIT MOTOR
- FEED IN/REGI MOTOR defect
- BELT missing or cut
- SENSOR actuator broken or missing
- ROLL dirty or worn

## A2-4 DADF Document Jam (Regi. Section) (BSD 5.3) 5.4)

Chain Link Codes for Check

- [Chain5 Func51] DADF READ EXIT MOTOR
- [Chain5 Func57] DADF FEED IN/REGI MOTOR
- Chain5 Func66] DADF EXIT/REVERSE SENSOR

### Check Items

- EXIT/REVERSE SENSOR defect
- READ ROLL rotation error
- TRANSPORT ROLL rotation error
- BELT missing or cut
- SENSOR actuator broken or missing
- ROLL dirty or worn
- Transport error due to foreign matter on paper path

## 5.4)

Chain Link Codes for Check Chain5 Func66] DADF EXIT/REVERSE SENSOR

Check Items

- Supply voltage drop at customer

## 5.3 5.4)

Chain Link Codes for Check • [Chain5 Func51] DADF READ EXIT MOTOR

## Check Items

- REGI SENSOR defect
- FLAP GUIDE operation error
- INVERT EXIT ROLL rotation error
- FEED IN ROLL rotation error
- READ EXIT MOTOR defect
- FEED IN/REGI MOTOR
- BELT missing or cut
- •
- ROLL dirty or worn

## A3-1 DADF Document Jam (Ejection Section) (BSD

Check the circuit between EXIT/REVERSE SENSOR and DADF CONT PWB. If no problem is found, replace the EXIT/ REVERSE SENSOR. (PL10.6)

## A3-2 DADF Document Jam (Ejection Section) (BSD

[Chain5 Func57] DADF FEED IN/REGI MOTOR

[Chain5 Func69] DADF REGI SENSOR

[Chain5 Func81] DADF EXIT/REVERSE SOLENOID

EXIT/REVERSE SOLENOID operation error SENSOR actuator broken or missing

## A3-3 DADF Document Jam (Ejection Section)

Chain Link Codes for Check

- [Chain5 Func51] DADF READ EXIT MOTOR
- [Chain5 Func66] DADF EXIT/REVERSE SENSOR  $\bullet$

Check Items

- EXIT/REVERSE SENSOR defect
- **TRANSPORT** rotation error
- **READ EXIT MOTOR defect** •
- SENSOR actuator broken or missing
- ROLL dirty or worn •

## 2-126 03/02

## A5-1 DADF Interlock Open (BSD 1.7B)

Open the DADF TOP COVER and press the actuator of the DADF INTERLOCK SW with a screwdriver. Does the error display disappear? Ν Close the DADF TOP COVER. Is the voltage +24 VDC between the DADF CONT PWB J2-2(+) and GND(-)? Ν Is the voltage +24 VDC between the DADF CONT PWB J2-1(+) and GND(-)? Υ Ν Is the voltage +24 VDC between the DADF CONT PWB J1-1(+) and GND(-)? Υ Ν Perform +24VDC FIP.

Replace the DADF CONT PWB. (PLXX.X) Is the voltage +24 VDC between the DADF INTERLOCK SW J32-1(+) and GND(-)?

Y N

Υ

Check between the DADF INTERLOCK SW J32-1 and DADF CONT PWB J2-1 for an open wire or poor contact.

Is the voltage +24 VDC between the DADF INTERLOCK SW J32-2(+) and GND(-)?

Υ Ν

Replace the DADF INTERLOCK SW. (PLXX.X) Check between the DADF INTERLOCK SW J32-2 and DADF CONT PWB J2-2 for an open wire or poor contact.

Replace the DADF CONT PWB. (PLXX.X)

Check the DADF TOP COVER actuator for damage or misalignment.

## F4-11 FINISHER IN SENSOR Jam (BSD 12.3 12.5)

Chain Link Codes for Check Chain12 Func1] FINISHER IN SENSOR [Chain12 Func30] FINISHER REVERSE MOTOR [Chain12 Func32] FINISHER FEED MOTOR Check Items

- FINISHER IN SENSOR defect
- FINISHER FEED MOTOR defect
- FEED ROLL rotation error
- FINISHER Invertion MOTOR defect
  - **REVERSE ROLL rotation error**

  - ROLL dirty or worn

## F4-12 FINISHER IN SENSOR Jam (BSD 10.5 12.5)

Chain Link Codes for Check

Check Items

- EXIT MOTOR rotation error
- FINISHER IN SENSOR defect
- SENSOR actuator broken or missing
- ROLL dirty or worn

## F4-16 FINISHER IN SENSOR Jam (BSD 12.5)

Chain Link Codes for Check • [Chain12 Func1] FINISHER IN SENSOR

Check Items

- Supply voltage drop at customer

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

 SENSOR actuator broken or missing Transport error due to foreign matter on paper path

Chain10 Func61] EXIT MOTOR [Chain12 Func1] FINISHER IN SENSOR

FACE UP EXIT ROLL rotation error

Transport error due to foreign matter on paper path

• Check the circuit between the FINISHER IN SENSOR and FINISHER CONT PWB. If no problem is found, replace the FINISHER IN SENSOR. (PL13.11)

## F4-21 FINISHER REVERSE SENSOR Jam (BSD 12.5)

Chain Link Codes for Check

- [Chain12 Func2] FINISHER REVERSE SENSOR
- [Chain12 Func21] FINISHER TRANSFER MOTOR
- [Chain12 Func31] FINISHER REVERSE MOTOR

Check Items

- FINISHER REVERSE SENSOR defect
- FINISHER REVERSE MOTOR defect
- **REVERSE ROLL** rotation error •
- FINISHER TRANSFER MOTOR defect
- TRANSFER ROLL rotation error
- SENSOR actuator broken or missing
- ROLL dirty or worn
- Transport error due to foreign matter on paper path

## F4-22 FINISHER REVERSE SENSOR Jam (BSD 12.5)

Chain Link Codes for Check

- Chain12 Func2] FINISHER REVERSE SENSOR
- [Chain12 Func32] FINISHER FEED MOTOR

### Check Items

- FINISHER REVERSE SENSOR defect
- FINISHER FEED MOTOR defect
- FEED ROLL rotation error
- $\bullet$ SENSOR actuator broken or missing
- ROLL dirty or worn
- Transport error due to foreign matter on paper path

## F4-26 FINISHER REVERSE SENSOR Jam (BSD 12.5)

Chain Link Codes for Check

Chain12 Func2] FINISHER REVERSE SENSOR

### Check Items

- Supply voltage drop at customer
- Check the circuit between the FINISHER REVERSE SENSOR and FINISHER CONT PWB. If no problem is found, replace the FINISHER REVERSE SENSOR. (PL13.15)

- Chain Link Codes for Check

### Check Items

- FINISHER TIMING SENSOR defect
- TIMING ROLL rotation error
- EXIT ROLL rotation error
- TRANSFER BELT rotation error
- SENSOR actuator broken or missing
- ROLL dirty or worn
- BELT missing or cut

## F4-32 FINISHER TIMING SENSOR Jam (BSD 12.6)

Chain Link Codes for Check

Check Items

- FINISHER TIMING SENSOR defect
- TRANSFER ROLL rotation error
- SENSOR actuator broken or missing
- ROLL dirty or worn

## F4-31 FINISHER TIMING SENSOR Jam (BSD 12.6)

 [Chain12 Func3] FINISHER TIMING SENSOR [Chain12 Func21] FINISHER TRANSFER MOTOR

FINISHER TRANSFER MOTOR defect Transport error due to foreign matter on paper path

 [Chain12 Func3] FINISHER TIMING SENSOR [Chain12 Func21] FINISHER TRANSFER MOTOR

 FINISHER TRANSFER MOTOR defect Transport error due to foreign matter on paper path

## F4-36 FINISHER TIMING SENSOR Jam (BSD 12.6)

Chain Link Codes for Check

• [Chain12 Func3] FINISHER TIMING SENSOR

Check Items

- Supply voltage drop at customer
- Check the circuit between the FINISHER TIMING SENSOR and FINISHER CONT PWB. If no problem is found, replace the FINISHER TIMING SENSOR. (PL13.8)

## F4-41 FINISHER EXIT SENSOR Jam (BSD 12.7)

Chain Link Codes for Check

- [Chain12 Func4] FINISHER EXIT SENSOR
- [Chain12 Func21] FINISHER TRANSFER MOTOR

Check Items

- FINISHER EXIT SENSOR defect
- FINISHER TRANSFER MOTOR defect
- EXIT ROLL rotation error •
- **TRANSFER BELT rotation error** •
- SENSOR actuator broken or missing •
- ROLL dirty or worn •
- BELT missing or cut

## 2-128 03/02

## F4-42 FINISHER EXIT SENSOR Jam (BSD 12.7)

Chain Link Codes for Check

• [Chain12 Func4] FINISHER EXIT SENSOR [Chain12 Func21] FINISHER Transport MOTOR

### Check Items

- FINISHER EXIT SENSOR defect
- FINISHER Transport MOTOR defect
- EXIT ROLL rotation error
- Transport BELT rotation error
- SENSOR actuator broken or missing
- ROLL dirty or worn
- BELT missing or cut
- Transport error due to foreign matter on paper path

## F4-46 FINISHER EXIT SENSOR Jam (BSD 12.7)

Chain Link Codes for Check

Chain12 Func4] FINISHER EXIT SENSOR

### Check Items

- Supply voltage drop at customer
- Check the circuit between the FINISHER EXIT SENSOR and FINISHER CONT PWB. If no problem is found, replace the FINISHER EXIT SENSOR. (PL13.12)

## F7-1 FINISHER Interlock Open (BSD 12.2)

Close the L/H LOWER COVER and L/H UPPERE COVER. Does the error display disappear?

Ν

Open the L/H LOWER COVER and press the actuator of the PAPER PATH COVER SENSOR with a screwdriver. Does the error display disappear?

Ν Υ

Perform the General-purpose transmittion sensor FIP.

Check that the Cover is installed securely.

End of work.

1
Reinstall t
DOOR.
s the volt
CONT PV
ΎΝ
Is th
CON
Y

the FRONT COVER and close the FRONT tage + 24 VDC between the FINISHER VB CN3-3(+) and GND(-)? ( he voltage + 24 VDC between the FINISHER NT PWB CN3-1(+) and GND(-)? Ν Is the voltage + 24 VDC between the FINI-SHER CONT PWB CN1-1(+) and GND(-)? Υ Ν Perform +24VDC FIP. Replace the FINISHER CONT PWB.(PL13.16) Keep pressing the actuator of the STAPLER COVER SW. Is the voltage +24 VDC between the STAPLER COVER SW connector and GND? Ν Replace the STAPLER COVER SW.(PL13.2)

contact.

End of work.



## F7-2 FINISHER Interlock Open (BSD 12.1)

Ν Remove the FRONT COVER and press the actuator of the STAPLER COVER SW by hand. Does the error display disappear?

Υ

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

Close the FRONT DOOR. Does the error display disappear?

Check between the STAPLER COVER SW and INISHER CONT PWB for an open wire or poor

Replace the FINISHER CONT PWB. (PL13.16)

Check the FRONT DOOR actuator for damage.

## F7-3 FINISHER Interlock Open (BSD 12.2)

Close the TOP COVER.

Does the error display disappear?

```
Υ
```

Ν Remove the FRONT COVER. Is the TOP COVER SENSOR actuator installed correctly? Ν Reinstall the actuator. Is the TOP COVER latched securely? Y Ν Check the latch mechanism. Perform the General-purpose transmittion sensor FIP.

End of work.

## F8-1 FINISHER Interlock Open (BSD 12.2)

Install the FINISHER.

Does the error display disappear?

Ν

```
Is the FINISHER latched securely with the main unit?
```

Ν

Reinstall the FINISHER.

Remove the FRONT COVER. Is the DOCKING SENSOR actuator installed correctly?

Y Ν

Reinstall the actuator.

Is the main unit actuator normal?

Ν

Replace the LATCH STOPPER. (PL13.1)

Perform the General-purpose transmittion sensor FIP.

End of work.

## J1-2 No Toner (BSD 9.2)

Is the voltage +3.3 VDC between the MCU/SW PWB J462-19(+) and GND(-)? Ν Υ

Replace the MCU/SW PWB. (PL7.2) Is the voltage +24 VDC between the MCU/SW PWB J462-17(+) and GND(-)?

Ν Is the voltage +24 VDC between the MCU/SW PWB J400-1(+) and GND(-)?

Ν Y

Perform +24VDC FIP.

Replace the MCU/SW PWB. (PL7.2)

Is the voltage +24 VDC between the TONER EMPTY SENSOR J141-3(+) and J141-2(-)?

Ν

Check between the TONER EMPTY SENSOR J141 and MCU/SW PWB J462 for an open wire or poor contact. Is the voltage +3.3 VDC between TONER EMPTY SENSOR J141-1(+) and GND(-)?

Ν

V

Check between the TONER EMPTY SENSOR J141 and MCU/SW PWB J462 for an open wire or poor contact. Replace the TONER EMPTY SENSOR. (PL5.1)

## J3-1 Drum/Toner Cartridge Loading Error (BSD 9.1)

```
Extract and insert the CRU.
Does the error display disappear?
     Ν
     bent pin.
     Y
         Ν
          Repair the problem.
     J461-1(+) and GND(-)?
         Ν
               Ν
          Y
               Ν
               Ν
          wire or poor contact.
End of work.
```

## J8-1 CRUM Access Error (BSD 9.1)

pin. PWB(PL7.2) in this order.

Check the CRU drawer connector P/J606 for a broken or

Is the voltage 0 VDC between the MCU/SW PWB

Is the voltage 0 VDC between the MCU/SW PWB J461-5(+) and GND(-)?

Replace the MCU/SW PWB. (PL7.2) Is the voltage 0 VDC between the CRU drawer connector J606-2(+) and GND(-)?

Check between the CRU drawer connector J606-2 and MCU/SW PWB J461-5 for an open wire or poor contact. Is the voltage 0 VDC between the CRU drawer connector J606-6(+) and GND(-)?

Replace the CRU. (PL5.1) Check between the CRU drawer connector J606-6 and MCU/SW PWB J461-1 for an open Replace the MCU/SW PWB. (PL7.2)

## J6-1 CRU End of Life (BSD 9.1)

If CRU replacement does not clear the problem, replace the MCU/ SW PWB.(PL7.2)

Check the CRU drawer connector P/J606 for a broken or bent

If no problem is found, replace the CRU(PL5.1) and MCU/SW

2-130 03/02

## J8-3 CRU Access Error (BSD 9.1)

Check the CRU drawer connector P/J606 for a broken or bent pin. Check between the CRU drawer connector J606 and MCU/SW PWB J461 for an open wire or poor contact. If no problem is found, replace the CRU(PL5.1) and MCU/SW PWB(PL7.2) in this order.

## J8-4 CRU Access Error (BSD 9.1)

Check the CRU drawer connector P/J606 for a broken or bent pin. Check between the CRU drawer connector J606 and MCU/SW PWB J461 for an open wire or poor contact. If no problem is found, replace the CRU(PL5.1) and MCU/SW PWB(PL7.2) in this order.

## **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting

## WARNING

Switch off the machine and disconnect the power cord from the customer's outlet while performing tasks that do not need electricity. Electricity can cause death or injury.

AC POWER FIP (BSD 1.1 1.2)

## WARNING

## Switch off the machine and disconnect the power cord.

Perform the Power Outlet Check. Is the voltage correct?

Υ

Ν

Check the circuit breaker at the customer.

Check the power cord for an open wire. The power cord is normal.

Ν

Replace the power cord.(PL7.1)

Connect the power cord to the outlet and the machine. Is the voltage 100 VAC between the CIRCUIT BREAKER FS243(+) and FS244(-)?

Y Ν

Replace the CIRCUIT BREAKER. (PL7.1)

POWER UNIT FS11(+)FS12(-) Is the voltage 100 VAC ? Ν

Check between the CIRCUIT BREAKER and POWER UNIT for an open wire or poor contact.

Is a CHOKE COIL or cheat connector installed to the POWER UNIT P5? (100V model)

Υ Ν

Install a CHOKE COIL or cheat connector.

Is the voltage 100 VAC between the POWER UNIT J8-3(+) and J8-6(-)?

Υ Ν

Replace the POWER UNIT. (PL7.1)

Turn on the MAIN POWER SW. Is the voltage 100 VAC between the POWER UNIT J8-4(+) and J8-1(-)?

Υ Ν

А В

#### В А

Is the voltage 100 VAC between the MAIN POWER SW J620-4(+) and J620-1(-)?

Ν

Is the voltage 100 VAC between the MAIN POWER SW J620-6(+) and J620-3(-)?

Ν

Check between the MAIN POWER SW and POWER UNIT for an open wire or poor contact. Replace the MAIN POWER SW. (PL2.3)

Check between the MAIN POWER SW and POWER UNIT for an open wire or poor contact.

Replace the POWER UNIT. (PL7.1)

## +24VDC POWER FIP (BSD 1.1 1.6)

```
Is the voltage +24 VDC between the MCU/SW PWB J400-1(+)
and GND(-)?
    Ν
    Is +24DC WIRE normal (no short circuit with theFRAME)?
    Υ
         Ν
         Repair the short circuit.
    Is the voltage +24 VDC between the POWER UNIT
    J521-1(+) and GND(-)?
    Υ
         Ν
         Is the voltage +5 VDC between the POWER UNIT
         J523-1(+) and GND(-)?
         Υ
              Ν
              Is the voltage +5 VDC between the MCU/SW
              PWB J403-4(+) and GND(-)?
                  Ν
                   Is the voltage +5 VDC between the
                   MCU/PWB J400-10(+) and GND(-)?
                       Ν
                       Is the voltage +5 VDC between the
                       Power Unit J521-5(+) and GND(-)?
                            Ν
                            Is the voltage 100 VAC between
                            the POWER UNIT J8-4(+) and
                            J8-1(-)?
                                 Ν
                                 Perform AC POWER FIP.
                            Perform +5VDC POWER FIP.
                       Check between the POWER UNIT
                       J521-5 and MCU/PWB J400-10 for
                       an open wire or poor contact.
                   Replace the POWER UNIT. (PL7.1)
              Check between the POWER UNIT J523-1 and
              MCU/SW PWB J403-4 for an open wire or
              poor contact.
         Replace the POWER UNIT. (PL7.1)
    Check between the POWER UNIT and MCU/SW PWB for
    an open wire or poor contact.
Check between the MCU/SW PWB and the corresponding part
for an open wire or poor contact.
```

## +5VDC POWER FIP (BSD 1.1 1.2 1.3 1.4)

+3.3VDC POWER FIP (BSD 7.2 7.5) Is the voltage +5 VDC between the MCU/SW PWB J400-9(+) Is the voltage +3.3 VDC between the ESS PWB J300-1(+) and and GND(-)? Is the voltage +3.3 VDC between the MCU/SW PWB J417-A7(+) GND(-)? and GND(-)? Ν Y Ν Is +5 VDC WIRE normal (no short circuit with the FRAME)? Υ Ν Is the voltage +3.3 VDC between the ESS LVPS J3502-Is +3.3 VDC WIRE normal (no short circuit with the 1(+) and GND(-)? Ν Repair the short circuit. FRAME)? Ν Is the voltage +5 VDC between the MCU/SW PWB Υ Ν Is +3.3 VDC WIRE normal (no short circuit with the J403-4(+) and GND(-)? Repair the short circuit. FRAME)? Ν Is the voltage +5 VDC between the MCU/SW PWB Y Ν Is the voltage +5 VDC between the MCU/PWB J400-9(+) and GND(-)? Repair the short circuit. Is the voltage 100 VAC between the ESS LVPS J802-J400-10(+) and GND(-)? Υ Ν Υ Ν Perform +5VDC POWER FIP. 1(+) and J802-3(-)? Is the voltage +5 VDC between the POWER Replace the MCU/SW PWB. (PL7.2) Ν UNIT J521-5(+) and GND(-)? Check between the MCU/SW PWB and the corresponding part Is the voltage 100 VAC between the ESS relayconnector J15-1(+) and J15-2(-)? Ν for an open wire or poor contact. Is the voltage 100 VAC between the Ν POWER UNIT J8-4(+) and J8-1(-)? Is the voltage 100 VAC between the POWER UNIT J2-1(+) and J2-2(-)? Y Ν Perform AC POWER FIP. Y Ν Replace the POWER UNIT. (PL7.1) Check J400-10 between the POWER UNIT J521-5 and MCU/PWB for a short circuit Check between the ESS relay connector of the WIRE to FRAME. If no problem is and POWER UNIT for an open wire or poor found, replace the POWER UNIT.(PL7.1) contact. Check between the ESS relay connector and Check between the POWER UNIT J521-5 and MCU/PWB J400-10 for an open wire or poor ESS LVPS for an open wire or poor contact. contact. Replace the ESS LVPS. (PL7.5) Replace the MCU/SW PWB. (PL7.2) Check between the ESS LVPS and the corresponding part Is the voltage +5 VDC between the POWER UNIT for an open wire or poor contact. J523-1(+)and GND(-)? Check between the ESS PWB and the corresponding part for an Ν open wire or poor contact. Check between the POWER UNIT J523-1 and MCU/ SW PWB J403-4 for an open wire or poor contact. Replace the POWER UNIT. (PL7.1) Check between the MCU/SW PWB and the corresponding part for an open circuit or poor contact.

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

## ESS +3.3VDC POWER FIP (BSD 19.1)

## MF +12VDC POWER FIP (BSD 19.1)

Υ

Is the voltage +12 VDC between the MF MAIN PWB J300-5(+) and GND(-)? and GND(-)? Ν Ν Υ Is the voltage +12 VDC between the MF LVPS J507-5(+) and GND(-)? Ν Ν Is +12 VDC WIRE normal (no short circuit with the FRAME)? Υ Ν Υ Repair the short circuit. Is the voltage 100 VAC between the MF LVPS J3A-4(+) and J3A-3(-)? Ν Υ V Is the voltage 100 VAC between the MF relay connector J14-1(+) and J4-2(-)? Y Ν Is the voltage 100 VAC between the POWER UNIT J1-1(+) and J1-4(-)? Υ Ν Replace the POWER UNIT. (PL7.1) Check between the POWER UNIT and MF relay connector for an open wire or poor contact. Check between the MF relay connector and MF LVPS for an open wire or poor contact. Replace the MF LVPS. (PL7.4) Check between the MF LVPS and MF MAIN PWB for an open wire or poor contact. Check between the MF MAIN PWB and the corresponding part for an open wire or poor contact.

## MF +5VDC POWER FIP (BSD 19.1)

```
Is the voltage +5 VDC between the MF MAIN PWB J300-1(+)
                                                               and GND(-)?
                                                               Υ
    Is the voltage +5 VDC between the MF LVPS J507-1(+)
     and GND(-)?
         Is +5 VDC WIRE normal (no short circuit with the
          FRAME)?
              Ν
              Repair the short circuit.
         Is the voltage 100 VAC between the MF LVPS
         J3A-4(+) and J3A-3(-)?
              Ν
              Is the voltage 100 VAC between the MF relay
              connector J14-1(+) and J4-2(-)?
               Y
                   Ν
                   Is the voltage 100 VAC between the
                   POWER UNIT J1-1(+) and J1-4(-)?
                        Ν
                        Replace the POWER UNIT. (PL7.1)
                   Check between the POWER UNIT and MF
                   relay connector for an open wire or poor
                   contact.
              Check between the MF relay connector and MF
              LVPS for an open wire or poor contact.
          Replace the MF LVPS. (PL7.4)
     Check between the MF LVPS and MF MAIN PWB for an
     open wire or poor contact.
```

Check between the MF MAIN PWB and the corresponding part for an open wire or poor contact.

Ν Is the voltage -12 VDC between the MF LVPS J507-6(+) and GND(-)? Ν Is -12 VDC WIRE normal (no short circuit with the FRAME)? Y Ν Repair the short circuit. Is the voltage 100 VAC between the MF LVPS J3A-4(+) and J3A-3(-)? Y Ν Is the voltage 100 VAC between the MF relay connector J14-1(+) and J4-2(-)? Υ Ν Is the voltage 100 VAC between the POWER UNIT J1-1(+) and J1-4(-)? Y Ν Replace the POWER UNIT. (PL7.1) Check between the POWER UNIT and MF relay connector for an open wire or poor contact. Check between the MF relay connector and MF LVPS for an open wire or poor contact. Replace the MF LVPS. (PL7.4) Check between the MF LVPS and MF MAIN PWB for an open wire or poor contact.

for an open wire or poor contact.

## MF -12VDC POWER FIP (BSD 19.1)

Is the voltage -12 VDC between the MF MAIN PWB J300-6(+)

Check between the MF MAIN PWB and the corresponding part

## OPTION LVPS +12VDC POWER FIP (BSD 19.1)

Is the voltage +12 VDC between the OPTION MOTHER PWB J320-5(+) and GND(-)? Ν Υ Is the voltage +12 VDC between the OPTION LVPS J507-5(+) and GND(-)? Ν Is +12 VDC WIRE normal (no short circuit with the FRAME)? Y Ν Repair the short circuit. Is the voltage 100 VAC between the OPTION LVPS J3C-4(+) and J3C-3(-)? Ν Y Is the voltage 100 VAC between the

> OPTIONJ11-1(+) and J11-2(-)? Y Ν Is the voltage 100 VAC between the

POWER UNIT J1-2(+) and J1-5(-)?

Υ Ν Replace the POWER UNIT. (PL7.1) Check between the POWER UNIT and OPTION relay connector for an open wire or poor contact.

Check between the OPTION relay connector and OPTION LVPS for an open wire or poor contact.

Replace the OPTION LVPS. (PL9.5)

Check between the OPTION LVPS and MF MAIN PWB for an open wire or poor contact.

Check between the OPTION MOTHER PWB and the corresponding part for an open wire or poor contact.

2-134 03/02

## **OPTION LVPS +5VDC POWER FIP (BSD 19.1)**

Is the voltage +5 VDC between the OPTION MOTHER PWB J320-6(+) and GND(-)? J320-1(+) and GND(-)? Ν Ν Is the voltage +5 VDC between the OPTION LVPS J507-1(+) and GND(-)? Ν Is +5 DC WIRE normal (no short circuit with the FRAME)? Y N Repair the short circuit. Is the voltage 100 VAC between the OPTION LVPS J3C-4(+) and J3C-3(-)? Ν Is the voltage 100 VAC between the OPTION relay connector J11-1(+) and J11-2(-)? Υ Ν Is the voltage 100 VAC between the POWER UNIT J1-2(+) and J1-5(-)? Ν Replace the POWER UNIT. (PL7.1) Check between the POWER UNIT and OPTION relay connector for an open wire or poor contact. Check between the OPTION relay connector and OPTION LVPS for an open wire or poor contact. Replace the OPTION LVPS. (PL9.5) Check between the OPTION LVPS and MF MAIN PWB for an open wire or poor contact.

Check between the OPTION MOTHER PWB and the corresponding part for an open wire or poor contact.

Is the voltage 100 VAC between the OPTIONRelay connector J11-1(+) and J11-2(-)? Y Ν Is the voltage 100 VAC between the

```
contact.
```

Check between the OPTION LVPS and MF MAIN PWB for an open wire or poor contact. Check between the OPTION MOTHER PWB and the

Ν

Y

FRAME)?

Ν

Ν

## CHAPTER 2 TROUBLESHOOTING Level 2 Troubleshooting

## **OPTION LVPS –12VDC POWER FIP (BSD 19.1)**

Is the voltage -12 VDC between the OPTION MOTHER PWB

Is the voltage -12 VDC between the OPTION LVPS J507-6(+) and GND(-)?

Is -12 VDC WIRE normal (no short circuit with the

Repair the short circuit.

Is the voltage 100 VAC between the OPTION LVPS J3C-4(+) and J3C-3(-)?

> POWER UNIT J1-2(+) and J1-5(-)? Υ Ν

Replace the POWER UNIT. (PL7.1)

Check between the POWER UNIT and OPTION relay connector for an open wire or poor contact.

Check between the OPTION relay connector and OPTION LVPS for an open wire or poor

Replace the OPTION LVPS. (PL9.5)

corresponding part for an open wire or poor contact.

## FINISHER LVPS +24VDC POWER FIP (BSD 12.1)

Is the voltage +24 VDC between the FINISHER CONT PWB CN1-1(+) and GND(-)?

```
Y
                                                               Ν
    Ν
    Is the voltage +24 VDC between the FINISHER LVPS
    CN51-1(+) and GND(-)?
        Ν
                                                                   Ν
        Is +24VDC WIRE normal (no short circuit with the
        FRAME)?
        Υ
                                                               Υ
             Ν
                                                                   Ν
             Repair the short circuit.
        Is the voltage 100 VAC between the FINISHER LVPS
        CN1-1(+) and CN1-3(-)?
         Υ
             Ν
             Is the voltage 100 VAC between the FINISHER
             relay connector J13-1(+) and J13-2(-)?
             Y
                 Ν
                  Is the voltage 100 VAC between the
                  POWER UNIT J3-1(+) and J3-3(-)?
                  Υ
                      N
                      Replace the POWER UNIT. (PL7.1)
                  Check between the POWER UNIT and
                  FINISHER relay connector for an open
                  wireor poor contact.
             Check between the FINISHER relay connector
             and FINISHER LVPS for an open wireor poor
             contact.
         Replace the FINISHER LVPS. (PL13.16)
    Check between the FINISHER LVPS and FINISHER CONT
    PWB for an open wire or poor contact.
Check between the FINISHER CONT PWB and the
corresponding part for an open wire or poor contact.
```

## FINISHER LVPS +5VDC POWER FIP (BSD 12.1)

Is the voltage +5 VDC between the FINISHER CONT PWB CN17-1(+) and GND(-)?

```
Is the voltage +24 VDC between the FINISHER CONT
PWB CN1-1(+) and GND(-)?
```

Perform +24VDC POWER FIP.

Is +5 VDC WIRE normal (no short circuit with the FRAME)?

Repair the short circuit.

```
Replace the FINISHER CONT PWB. (PL13.16)
```

Check between the FINISHER CONT PWB and the corresponding part for an open wire and poor contact.

## PAPER JAM IN EXIT GUIDE FIP (BSD10.5)

```
jammed paper.
rollers rotate?
Υ
    Ν
```

Υ Ν

Connect all loose connectors and re-run the test. Measure the continuity and voltages between the exit motor and the exit PWB. Are all the voltages correct?

Ν

Υ

Replace the following parts, in this order: • Wiring harnesses • Exit motor PWB (PL7.1) • MCU PWB (PL7.2) Replace the exit motor (PL2.4). Check the OCT assembly for worn and damaged parts.

Open the right-hand cover, check for obstructions and remove

Close the cover and delete the current print job. Go to C/E diagnostics and run Chain 8, Function 60. Do the exit

Check the connections between the exit motor and the exit PWB. Are all the connectors correctly seated?

## **Power Outlets Check**

## CAUTION

Incorrect voltage may damage the machine. The machine must not be connected to the power outlet if the voltage is incorrect. The following steps check the input voltage:

- Check the machine identification plate to confirm the 1 machine voltage.
- 2 Check the supply voltage by performing one of the following checks:
  - Go to US and XCI 114VAC
  - Go to European Union 230VAC
  - Go to Europe 220VAC

## US and XCI 115VAC

US and XCI 115 VAC, Figure 1. Measure the AC voltage between AC line and neutral and between AC neutral and GND. The voltage between line and neutral is 104 to 127 VAC and the voltage between neutral and GND is less than 3 VAC.



N-1-043-A

Figure 1 US, XCI and AO 115 VAC Outlet

## European Union 230 VAC ± 10%, Figure 2. Measure the AC voltage between AC line and neutral and between AC neutral and earth/GND. The voltage between line and neutral is 207 to



253 VAC and the voltage between neutral and GND is less than

N-1-044-A

## Figure 2 XE (UK) and AO 230 VAC Outlet

## Europe 220 VAC

3 VAC.

Europe 220 VAC, Figure 3. Measure the AC voltage between the supply pins, then between a supply pin and earth and then between the other supply pin and earth. The voltage is 196 to 244 VAC between the supply pins and between one of the supply pins and earth. Between the other supply pin and earth, the voltage is less than 3 VAC.



N-1-045-A

## Figure 3 XE (UK) and AO 230 VAC Outlet

If the supply voltages are incorrect, or the wiring of the main supply is found to be defective, inform your technical manager.

## **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting

## 2.3.6 General-purpose FIP

## **Reflection Sensor fault FIP**



Enter Chain XX Func XXX in Diag (CE) mode. Block the sensor with blank paper. Is **LOW** displayed?

#### Y Ν

Is the voltage +5 VDC between the Sensor pin 2 (+) and GND(-)?

## Ν

Check between the Sensor pin 2 and PWB pin 8 for an open wire or poor contact. If no problem is found, replace the PWB.

Is the voltage +5 VDC between the Sensor pin 1(+) and GND(-)?

## Ν

Is the voltage +5 VDC between the PWB pin 4(+)andpin 5(-)?

Ν

Replace the PWB.

Check the wires between the PWB pin 4 and Sensor pin 1 and between the PWB pin 5 and Sensor pin 3 for an open wire or poor contact.

Check the sensor for contamination or installation fault. If no problem is found, replace the sensor.

Remove the blank paper from the sensor. Is HIGH displayed?

#### γ Ν

Disconnect the sensor connector.

Does the display change to **HIGH**?

Ν

Check the circuit from sensor pin 2 to PWB pin 8 for a short circuit. If no problem is found, replace the PWB. Check the sensor installation and external lighting. If no

problem is found, replace the sensor.

Check the sensor installation. If no problem is found, replace the Sensor.



Enter Chain XX Func XXX in Diag (CE) mode. Block the sensor. Is **HIGH** displayed?

Disconnect the sensor connector.

**Transmission Sensor fault FIP** 

Does the display change to **HIGH**?

## Υ

Ν

Ν

Y

Υ

Check the circuit from sensor pin 2 to PWB pin 8 for a short circuit. If no problem is found, replace the PWB. Replace the sensor.

Remove the block from the optical path of the sensor.

Does the display change to **LOW**?

Is the voltage +5 VDC between the sensor pin 2 (+) and GND(-)?

Ν

Ν

Check between the sensor pin 2 and PWB pin 8 for an open wire or poor contact. If no problem is found, replace the PWB.

Is the voltage +5 VDC between the sensor pin 1(+) and pin 3(-)?

## Ν

Check the wires between the PWB pin 4 and sensor pin 1and between the PWB pin 5 and sensor pin 3 for an open wire or poor contact. If no problem is found, replace the PWB.

Check the sensor for contamination or installation fault. If no problem is found, replace the sensor.

Check the sensor for an installation problem and the actuator for a bending or operation error.

If no problem is found, replace the sensor.

## Switch (Normal Open) fault FIP



Enter Chain XX Func XXX in Diag (CE) mode. Turn on the switch. Does the display change to LOW? Ν Is the voltage +5 VDC between the swith pin 2 (+) and GND(-)? Υ Ν Check between the Switch pin 2 and PWB pin 3 for an open wire or poor contact. If no problem is found, replace the PWB. When the switch is on, is the voltage +5 VDC between the Switch pin 1(+) and GND? Ν v Replace the switch. Check between the PWB pin 4 and switch pin 1 for an open wire or poor contact. If no problem is found, replace the PWB. Turn off the switch. Does the display change to **HIGH**? Ν Disconnect the switch connector. Is the display still **HIGH**? Υ Ν Check the circuit from the switch pin 2 to PWB pin 3 for a short circuit. If no problem is found, replace the PWB. Replace the switch. Check the switch installation. If no problem is found, replace the switch.

TP-1-082-A



Before this FIP, check that the solenoid and clutch operate with no mechanical problems.

Enter Chain XX Func XXX in Diag (CE) mode. Turn on the power.

```
Is the voltage +24 VDC between the PWB pin 3(+) and GND(-)?
Y
    Ν
```

Is the voltage +24 VDC between the Solenoid/clutch pin 2(+) and GND(-)?

```
Ν
Is the voltage +24 VDC between the Solenoid/clutch
Pin 1 (+) and GND(-)?
```

```
Υ
   Ν
```

Υ

Check the wire between the PWB pin 4 and Solenoid/clutch pin 1 for an open wire or poor contact.

If no problem is found, replace the PWB. Replace the Solenoid/Clutch.

Check between the PWB pin 3 and Solenoid/clutch pin 2 for an open wire or poor contact.

Replace the PWB.

## Solenoid/Clutch keep energized FIP

Turn off the power. Disconnect the PWB connector. Is the resistance less than  $10\Omega$  between the connector Pin 3 and Frame? Ν Υ

Replace the PWB.

Check the circuit from PWB pin 3 to solenoid/clutch pin 2 for short circuit. If no problem is found, replace the Solenoid/clutch.

## **CHAPTER 2 TROUBLESHOOTING** Level 2 Troubleshooting

## Motor doesn't rotate FIP



Before this FIP, check that the motor is not locked or loaded.

Enter Chain XX Func XXX in Diag (CE) mode. Turn on the power.

```
Is the voltage +24 VDC between the PWB pin 3(+) and GND(-)?
Y
    Ν
```

```
Is the voltage +24 VDC between pin 2(+) of the motor and
    GND(-)?
    Υ
         Ν
         Is the voltage +24 VDC between pin 1(+) of the motor
         and GND(-)?
         Υ
              Ν
              Is the voltage +24 VDC between the PWB pin 4
              (+) and GND(-)?
              Υ
                   Ν
                   Replace the PWB.
              Repair an open wire or poor contact of the wire
              from the PWB pin 4 and motor pin 1.
         Replace the motor?
    Check between the PWB Pin 3 and motor Pin 2 for an open
    wire or poor contact.
Replace the PWB.
```

## Motor keeps rotating FIP

Turn off the power. Disconnect the PWB connector. Is the resistance within  $10\Omega$  between the connector pin 3 and Frame? Y Ν

Replace the PWB.

Check the circuit from the connector pin 3 to motor pin 2 for a short circuit. If no problem is found, replace the motor.

## 2.4 How to Use the Diagnostic (C/E) Mode

## 2.4.1 Entering the Diagnostic (C/E) Mode

- 1. Turn the power on.
- 2. While holding the numeric key 0 down for three or more seconds, press the Start button.
- 3. If you have entered Diagnostic. mode from the copy or fax screen, display the Menu screen by pressing "Feature Selection" button.

## 2.4.2 Exiting the Diagnostic (C/E) Mode

While holding the numeric key 0 down, press the Start button.

- 4. If diagnosis is in progress, press the Stop button to stop the diagnosis.
- 5. Press the Re-start button.

## 2.4.3 Entering the Chain Function

Press the "Feature Selection" button. to display the Menu screen as needed.

6. Select LCD panel buttons in the following order:

"Custom Presets" -> "Diagnostics" -> "Chain Function"-> "Chain No."

- 7. Enter a chain code using the key pad.
- 8. Press the Function No. button.
- 9. Enter a function code using the key pad.
- 10. Press the Start button to execute the diagnostics.

If the Chain No. button is then selected, diagnosis is not executed.

The Diag. mode screens are hierarchical as follows:

## Menu Screen

- **Specifications Setting** 
  - Diagnostics
    - Auto Diag
    - Chain Func
    - Memory R/W
    - Memory Clear

Print Report/List

└─ Self-Diagnostic Report

## 2.4.4 Changing the Chain Function

Press the Chain No. or Function No. button again.

11. After confirming that the input code has been cleared, enter a new code. When changing both the Chain and Function codes, change the Chain code first. The Chain code cannot be changed alone.

## 2.4.5 Memory Read/Write

Display and change the MF-SYS memory contents or system data. Data display and input formats

- Hexadecimal input (0 to 10, A, B, C, D, E, and F)
- Decimal input (0 to 10)
- Binary input (0 or 1)
- 12. Address input
  - Up to 6 hexadecimal digits can be entered.
- 13. Hexadecimal input method
  - For input from A to F, use the LCD panel buttons.

## 2.4.6 Memory Clear

Initialize various data affecting operations, and erase or initialize data registered or set by the user.

The data is cleared by USER, SYSTEM, or ALL Clear. The table below lists the three type of clearance.

	USER	CE		Noval Data F				FILE	
			Counter	History	Operation status	Management division	Comm. managemen t	Other	
USER Clear	У	-	-	-	-	у	-	У	у
SYSTEM Clear	-	У	-	-	-	-	-	-	У
ALL Clear	у	у	у	у	у	у	У	у	у

y: Cleared or initialized -: Not cleared or initialized USER:: User setting data SYSTEM: Setting data in CE mode

## **CHAPTER 2 TROUBLESHOOTING** How to use the Diagnostic C/E Mode

## 2.4.7 ASCII Code

Character	Hexadecimal	Decimal	Character	Hexadecimal	Decimal
0	30	48	I	49	73
1	31	49	J	4A	74
2	32	50	К	4B	75
3	33	51	L	4C	76
4	34	52	M	4D	77
5	35	53	N	4E	78
6	36	54	0	4F	79
7	37	55	Р	50	80
8	38	56	Q	51	81
9	39	57	R	52	82
A	41	65	S	53	83
В	42	66	Т	54	84
С	43	67	U	55	85
D	44	68	V	56	86
E	45	69	W	57	87
F	46	70	X	58	88
G	47	71	Y	59	89
Н	48	72	Z	5A	90

## How to use the Diagnostic C/E Mode CHAPTER 2 TROUBLESHOOTING

WorkCentre Pro 423/428	2-142 03/02	CHAP How to
2.4.8 Self-diagnosis	System Data for Auto Di	agnosis
Self-diagnosis checks inside the machine for a fault	Label	
The basic self-diagnostic operations are as follows:	AUTO DIAG SELEC	T 1 Select auto diagnosis (M
Auto Diagnosis The machine is diagnosed about the items registered in the system data. items can be changed by altering the system data. In CE mode, diagnor returns to the first item after finishing the last, and continues infinitely. diagnostic processing stops after finishing the last. Individual diagnosis	The diagnostic stic processing In user mode,	Bit7:G/A MSBC Register Bit6:DRAM(LM) Add/Dat Bit5:DRAM(WN) Add/Dat Bit4:DRAM(OM) Add/Dat Bit3:DRAM(LM) March P Bit2:DRAM(WN) March F Bit1:DRAM(OM) March F Bit0:OP-MOT Loop Back
Specified items are diagnosed individually. When specifying a diagnostic Chain-Function code from the panel.	item, enter its AUTO DIAG SELEC	T 2 Select auto diagnosis (M Bit7:ROM
Diagnostic result display		Bit6: Not used
Diagnostic results are displayed on the panel at the end of processing. The be output as a self-diagnostic report.	results can also	Bit4:SRAM Add/Data Bus Bit3:SRAM March Patter
Operating procedure		Bit2:RTC Bit1: Not used Bit0: Not used
Enter Diag. (CE) mode.	AUTO DIAG SELEC	T 3 Select auto diagnosis (V
14. Select LCD buttons in the following order:		Bit7:BP-F Register Read
"Custom Presets"->"Diag"->"Chain Func"		Bit6:BP-F Register R/W
15. Enter the Chain Code.		Bit4:BP-F DRAM March
16. Press the Function No. button.		Bit3:BP-F CODEC DMA
17. Enter the Function Code and press the Start Button.		Bit1:BP-F CODEC EXPR
18. Self-diagnosis is executed. "No error" is displayed at normal termination of	r an error code	Bit0:BP-F CODEC CLIPF
(D code) at abnormal termination.	AUTO DIAG SELEC	T 4 Select auto diagnosis (G Bit6:DPRAM Bit5:ROM Bit4:DPMC Bit3:RCNV, Image RAM Bit2:MODEM Register, R Bit1:MODEM Loop Back Bit0:EEPROM
	AUTO DIAG SELEC	T 5 Select auto diagnosis (Pa Bit7:Panel Bit6: Not used Bit5: Not used Bit4: Not used Bit3: Not used Bit2: Not used Bit1: Not used Bit0: Not used
	AUTO DIAG SELEC	T 7 Select auto diagnosis(G3

## PTER 2 TROUBLESHOOTING o use the Diagnostic C/E Mode

## Item M/F MAIN PWB/OP-MOT/OM) Read/Write Check ta Bus Check ata Bus Check ata Bus Check Pattern Test Pattern Test Pattern Test Test MMB) us Check rn Test /CEM0) dTest Test ss/Data Bus Test Pattern Test Test EC Test RED Test PER Test G3M0) Bit7:DRAM RAM Test Panel)

G3M1)

Label	Item
	Bit7:DRAM Bit6:DPRAM Bit5:ROM Bit4:DPMC Bit3:CODEC,RCNV,Image RAM Bit2:MODEM Register, RAM Bit1:MODEM Loop Back Test Bit0:EEPROM
AUTO DIAG SELECT 8	Select auto diagnosis(G3M2) Bit7:DRAM Bit6:DPRAM Bit5:ROM Bit4:DPMC Bit3:CODEC,RCNV,Image RAM Bit2:MODEM Register, RAM Bit1:MODEM Loop Back Test Bit0:EEPROM
AUTO DIAG SELECT 9	Select auto diagnosis(G4M0) Bit7:ROM Bit6:SRAM Bit5:DPRAM Bit4:CODEC,RCNV,Image RAM Bit3: Internal Loop Back Bit2:DPMC Bit1: Not used Bit0: Not used
AUTO DIAG SELECT 10	Select auto diagnosis(G4M1) Bit7:ROM Bit6:SRAM Bit5:DPRAM Bit4:CODEC,RCNV,Image RAM Bit3: Internal Loop Back Bit2:DPMC Bit1: Not used Bit0: Not used
AUTO DIAG SELECT 11	Bit7:ROM Bit6:SRAM Bit5:DPRAM Bit4:CODEC,RCNV,Image RAM Bit3: Internal Loop Back Bit2:DPMC Bit1: Not used Bit0: Not used Select auto diagnosis(ICM)

Label	
	Bit7:ROM Bit6SRAM Bit5:DPRAM Bit4:ST Transceiver Bit3: Not used Bit2: Not used Bit1: Not used Bit0: Not used
AUTO DIAG SELECT 12	Select auto diagnosis(H Bit7:Logical Block R/W ( Bit6:HDD built-in diagno Bit5: Not used Bit4: Not used Bit3: Not used Bit2: Not used Bit1: Not used Bit0: Not used

## Item

HDIF/HDD) Check (Nondestructive) osis

How to use the Diagnostic C/E Mode CHAPTER 2 TROUBLESHOOTING

### Individual Diagnostics Chain Function Code List

Chain	Function	Item	Content
53	1	G/A MSBC Register Read/Write Test	MAIN-SYS
53	2	DRAM(LM) Add/Data Bus Check	MAIN-SYS
53	3	DRAM(WN) Add/Data Bus Check	MAIN-SYS
53	4	DRAM(OM) Add/Data Bus Check	ОМ
53	5	DRAM(LM) March Pattern Test	MAIN-SYS
53	6	DRAM(WN) March Pattern Test	MAIN-SYS
53	7	DRAM(OM) March Pattern Test	ОМ
53	8	OP-MOT Loop Back Test	OP-MOT
53	20	BP-F Register Read Test	BP-F
53	21	BP-F Register Read/Write Test	BP-F
53	22	BP-F DRAM Address/Data Bus Test	BP-F
53	23	BP-F March Pattern Test	BP-F
53	24	BP-F CODEC DMA Test	BP-F
53	25	BP-F CODEC CODEC Test	BP-F
53	26	BP-F CODEC EXPRED Test	BP-F
53	27	BP-F CODEC CLIPPER Test	BP-F
53	40	ROM	MEMORY/RTC
53	42	EEPROM	MEMORY/RTC
53	43	SRAM Add/Data Bus Check	MEMORY/RTC
53	44	SRAM March Pattern Test	MEMORY/RTC
53	45	RTC	MEMORY/RTC
53	80	All Logical Block Address Read/Write Check (Nondestructive)	HDIF/HDD
53	81	All Logical Block Address Read/Write Check (Nondestructive)	HDIF/HDD
53	82	HDD formatting (512byte/block)	HDIF/HDD
53	83	HDD Internal Diag.	HDIF/HDD
53	84	HDD status check	HDIF/HDD
53	100	DRAM	G3M0
53	101	DPRAM	G3M0
53	102	ROM	G3M0
53	103	DPMC	G3M0

			•
Chain	Function	Item	Content
53	104	CODEC,RCNV,Image RAM	G3M0
53	105	MODEM Register, RAM Check	G3M0
53	106	MODEM Loop Back Test	G3M0
53	107	EEPROM	G3M0
53	110	G3M0/ICM Loop Back Test	G3M0/ICM
53	111	G3M0/ICM Loop Back Test	G3M0/ICM
53	152	DPRAM	G4M0
53	153	CODEC,RCNV,Image RAM	G4M0
53	154	Internal Loop Back	G4M0
53	155	DPMC	G4M0
53	161	G4 Loop Back	G4M0
53	200	Panel self-diagnosis	PANEL
53	210	MCPP,LCTC Register Read/Write Test	PANEL
53	211	ROM	PANEL
53	212	DRAM Add/Data Bus Check	PANEL
53	213	DRAM March Pattern Test	PANEL
53	214	VRAM(SRAM)	PANEL
53	215	LED Test	PANEL
53	216	Touch/LCD Test	PANEL
53	217	Key Test	PANEL
53	218	MAG. Card Read Test	PANEL
53	250	ROM	ICM
53	251	SRAM	ICM
53	252	DPRAM	ICM
53	253	ST Transceiver	ICM
53	260	Digital signal pattern reception (Channel D)	ICM
53	261	Digital signal pattern reception (Channel B1)	ICM
53	262	Digital signal pattern reception (Channel B2)	ICM
153	100	DRAM	G3M1
153	101	DPRMA	G3M1
153	102	ROM	G3M1
153	103	DPMC	G3M1
153	104	CODEC,RCNV,Image RAM	G3M1

## CHAPTER 2 TROUBLESHOOTING How to use the Diagnostic C/E Mode

Chain	Function	Item	Content
153	105	MODEM Register, RAM Check	G3M1
153	106	MODEM Loop Back Test	G3M1
153	107	EEPROM	G3M1
153	110	G3M0/ICM Loop Back Test	G3M1/ICM
153	111	G3M0/ICM Loop Back Test	G3M1/ICM
153	150	ROM	G4M1
153	151	SRAM	G4M1
153	152	DPRAM	G4M1
153	153	CODEC,RCNV,Image RAM	G4M1
153	154	Iernal Loop Back	G4M1
153	155	DPRAM	G4M1
153	161	G4 Loop Back	G4M1
253	100	DRAM	G3M2
253	101	DPRAM	G3M2
253	102	ROM	G3M2
253	103	DPMC	G3M2
253	104	CODEC,RCNV,Image RAM	G3M2
253	105	MODEM Register, RAM Check	G3M2
253	106	MODEM Loop Back Test	G3M2
253	107	EEPROM	G3M2
253	110	G3M0/ICM Loop Back Test	G3M2/ICM
253	111	G3M0/ICM Loop Back Test	G3M2/ICM

## How to use the Diagnostic C/E Mode CHAPTER 2 TROUBLESHOOTING

20.1	Press the Self-	Diagnostic Report button.				
21.	Press the Start	button.				
The result of the auto diagnostic is printed out as a self-diagnostic report.						
			-			
Details of	f Self-Diagnost	tic Items				
NO	Board	Diag. Items	Active	Result	Detail Code	
1	MAIN	G/A MSBC	ON	OK		
		DRAM(LM) Bus Test	ON	OK		
		DRAM(WM) Bust Test	ON	OK		
		DRAM(LM) Pattern Test				
		DRAM(WN) Pattern Test				
		BP-F Register ReadTest	ON	OK		
		BP-F Register R/W Test				
		BP-F DRAM Bust Test	ON	OK		
		BP-F DRAM Pattern Test				
		BP-F DMA	ON	OK		
		BP-F CODEC	ON	OK		
		BP-F EXPRED	ON	OK		
		BP-F CLIPPER	ON	OK		
		G3M DRAM	ON	OK		
		G3M DPRAM	ON	OK		
		G3M ROM	ON	OK		
		G3M DPMC	ON	OK		
		G3M CODEC, RCNV, Image RAM	ON	D1-35	2108	
		G3M MODEM Register Test	ON	OK		
		G3M Loop Test	ON	OK		
		G3M EEPROM	ON	OK		
2	OM	DRAM(OM) Bust Test	ON	OK		
		DRAM(OM) Pattern Test				
3	MOMORY/	ROM				
	RTC	EEPROM				
		SRAM Bus Test	ON	OK		
		SRAM Pattern Test				
		RTC	ON	OK		
4	PANEL	PANEL	ON	OK		
5	OP-MOTO	Loop Back	ON	OK		
6	G3M1	DRAM	ON	OK		
		DPRAM	ON	OK		

# After the auto diagnostic is completed, select the Menu screen (in the Diag mode).

19. Press the Report/List output button.

WorkCentre Pro 423/428

20 Droop the Colf Diagnostic Depart h

### D

Self-Diagnostic Report

Procedure

		How to u	use the Di	agnostic	C/E Mode
NO	Board	Diag. Items	Active	Result	Detail Code
		ROM	ON	OK	
		DPMC	ON	OK	
		CODEC, RCNV, Image RAM	ON	OK	
		MODEM Register Test	ON	OK	
		MODEM Loop Test	ON	OK	
		EEPROM			
7	G3M2	DRAM	ON	OK	
		EEPROM	ON	OK	
		DPRAM	ON	OK	
		ROM	ON	OK	
		DPMC	ON	OK	
		CODEC, RCNV, Image RAM	ON	D1-37	2108
		MODEM Register Test	ON	OK	
		MODEM Loop Test	ON	OK	
		EEPROM			
8	G4M0	DRAM	ON		
		CODEC, RCNV, Image RAM	ON	OK	
		Loop Back		OK	
		DPMC			
9	G4M1	ROM			
		SRAM			
		DPRAM	ON		
		CODEC, RCNV, Image RAM	ON	OK	
		Loop Back		OK	
		DPMC			
10	ICM	ROM			
		RAM			
		DPRAM	ON	OK	
		ST Transceiver	ON	OK	
11	HDIF/HDD	Logical Block Read/Write Test			

## **CHAPTER 2 TROUBLESHOOTING**

## 2.4.9 Chain-Function Codes

Chain-Function assignments

- Chain1:Standby Power
- Chain4:Machine Drive Power •
- Chain5:Document Transportation
- Chain6:Imaging
- Chain7:Paper Supply  $\bullet$
- Chain8:Paper Transportation
- Chain9:Marking •
- Chain10:Fusing/Copy Transportation
- Chain12:Finisher
- Chain13:Monitoring
- Chain15:Hard Disk •
- Chain20:IOT NVM Adjustment/NVM Initialize
- Chain21:IIT NVM Adjustment
- Chain23:Test Print (600dpi) ۲
- Chain24:Test Print (400dpi)
- Chain25:Billing/EPSV
- Chain28:Custom Presets
- Chain30:HFSI Counter/CRUM
- Chain40:Fault History/Counter •
- Chain50:Mode Set
- Chain53/153/253:Automatic Diagnostic (MFarea) ۲
- Chain54: Signal Send Test =ICM (FAX area)
- Chain55/155/255: Signal Send Test =NCU (FAX area)
- Chain57: Fax System Data •
- Chain58: Set Fax Function (Image Processing/Transmission)

The function of Chain 155/255 is the same as that of Chain 55 (115 for G3M1/255 and 255 for G3M2)

2.4.9.1	Output	Check	Chain	Function	Code	Li
---------	--------	-------	-------	----------	------	----

Chain	Function	Part/Signal	Ref. BSD
4	1	MAIN MOTOR ON	
4	2	FUSER & LVPS FAN MOTOR (High Speed)	
5	34	DADF Read Position (Side Regi)	
		This value enters Ch21-Fun82.	
5	35	DADF Read Position ADJ This value enters Ch21-Fun87.	
5	50	DADF Transport Motor Forward (48%)	
5	51	DADF Transport MOTOR Forward (100%)	
5	52	DADF Transport MOTOR Forward (400%)	
5	53	DADF Transport MOTOR Reverse (Backward)	
5	54	DADF Pickup Roller Down	
5	55	DADF Pickup Roller and Separation Roller Rotation	
5	56	DADF Pre-regi. 1 Roller Rotation (48%)	
5	57	DADF Pre-regi. 1 Roller Rotation (100%)	
5	58	DADF Pre-regi. 1 Roller Rotation (400%)	
5	59	DADF Pickup Roller Up	
5	80	DADF Paper Reverse Ejection Roller CLUTCH	
5	81	DADF Paper Reverse Ejection Roller SOLENOID	
5	82	DADF PICK UP Up/Down CLUTCH	
5	83	DADF Large Roller Clutch	
5	84	DADF STAMP SOLENOID	
5	90	DADF LED	
5	99	DADF Sensor Adjustment	
6	1	LAMP CARRIAGE Forward	
6	2	LAMP CARRIAGE Reverse	
6	20	CCD Adjustment Setup	
6	25	EXPOSURE LAMP	
6	30	Auto Regi. Adjustment Slow Scan This value enters Ch21-Fun71.	
6	31	Auto Regi. Adjustment Fast Scan This value enters Ch21-Fun70.	
6	73	LD Quantity of Light Check (600dpi)	

03/02

2-147

## .ist

## How to use the Diagnostic C/E Mode CHAPTER 2 TROUBLESHOOTING

Chain	Function	Part/Signal	Ref. BSD
6	74	LD Quantity of Light Check (400dpi)	
6	75	ROS Motor Number of Rotations (600dpi)	
6	76	ROS Motor Number of Rotations (400dpi)	
7	29	MSI Guide Paper Width Sensor If the value is greater than 250, the balance after deduction of 250 is displayed.	
8	1	MAIN MOTOR ON	
8	2	TTM FEED MOTOR	
8	10	REGI CLUTCH	
8	11	T/A ROLL CLUTCH	
8	12	TRAY1 FEED CLUTCH	
8	13	TRAY2 FEED CLUTCH	
8	14	TRAY3 FEED CLUTCH	
8	15	TRAY4 FEED CLUTCH	
8	17	MSI FEED SOLENOID	
8	38	DUP MOTOR (Slow)	
8	39	DUP MOTOR (Fast)	
8	51	EXIT GATE SOLENOID	
8	60	EXIT MOTOR Test (Forward Fast)	
8	61	EXIT MOTOR Test (Forward Slow)	
8	62	EXIT MOTOR Test (Rear Fast)	
8	63	EXIT MOTOR Test (Rear Slow)	
9	1	MAIN MOTOR ON	
9	20	DEVE BIAS Test (DC&AC)	
9	21	DEVE CLOCK CHANGE 34	
9	22	DEVE BIAS AC600 Test	
9	23	BCR (AC)	
9	24	BCR (DC)	
9	26	BTR SEL	
9	27	DTS	
9	30	BTR DA	
10	4	FUSER FAN MOTOR (High Speed)	
10	6	OFFSET MOTOR Forward Run	

Chain	Function	Part/Signal	Ref. BSD
10	7	OFFSET MOTOR Backward Run	
10	51	EXIT GATE SOLENOID	
10	60	EXIT MOTOR Test (Forward Fast)	
10	61	EXIT MOTOR Test (Forward Slow)	
10	62	EXIT MOTOR Test (Rear Fast)	
10	63	EXIT MOTOR Test (Rear S⊡ow)	
12	21	FINISHER TRANSFER MOTOR	
12	22	FINISHER COMPILE MOTOR	
12	23	FINISHER PADDLE SOLENOID	
12	24	FINISHER EXIT UNIT UP/DOWN SOLENOID	
12	25	FINISHER LEVER SOLENOID	
12	26	FINISHER FEED MOTOR (Reverse) (STAPLER Unit Moving)	
12	27	FINISHER TRAY ELEVATOR MOTOR (Up)	
12	28	FINISHER TRAY ELEVATOR MOTOR (Down)	
12	29	FINISHER STAPLER MOTOR	
12	30	FINISHER REVERSE MOTOR (Forward Run)	
12	31	FINISHER REVERSE MOTOR (Backward Run)	
12	32	FINISHER FEED MOTOR	
15	1	HD Inspection and Removal of Defective Blocks	
15	4	Reliability Test	

## CHAPTER 2 TROUBLESHOOTING How to use the Diagnostic C/E Mode
### 2.4.9.2 Input Check Chain Function Code List

Chain	Function	Part/Signal	Ref. BSD
1	1	R/H INTERLOCK	
1	2	FRONT INTERLOCK	
1	10	CABINET INTERLOCK	
5	60	DADF EMPTY SENSOR	
5	61	DADF SIZE1 DOCUMENT SENSOR	
5	62	DADF SIZE3 DOCUMENT SENSOR	
5	63	DADF SIZE4 DOCUMENT SENSOR	
5	64	DADF SIZE5 DOCUMENT SENSOR	
5	65	DADF REGI SENSOR	
5	66	DADF Paper Reverse Ejection Sensor	
5	67	DADF PICK UP SENSOR	
5	68	DADF Separation Encoder Sensor	
5	69	DADF PRREGI1 SENSOR	
5	70	DADF PRREGI2 SENSOR	
5	71	DADF Paper Feed Section Cover Release Switch	
6	6	DOCUMENT SIZE SENSOR (Slow Scan)	
6	11	REGISTRATION SENSOR	
6	21	PLATEN INTLOCK SWITCH	
6	22	PLATEN ANGLE SWITCH	
7	1	TRAY1 SIZE SENSOR	
7	2	TRAY2 SIZE SENSOR	
7	3	TRAY3 SIZE SENSOR	
7	4	TRAY4 SIZE SENSOR	
7	6	MSI SIZE SENSOR	
7	7	TRAY1 NO PAPER SENSOR	
7	8	TRAY2 NO PAPER SENSOR	
7	9	TRAY3 NO PAPER SENSOR	
7	10	TRAY4 NO PAPER SENSOR	
7	12	MSI NO PAPER SENSOR	
7	13	TRAY1 NEAR END SENSOR	
7	14	TRAY2 NEAR END SENSOR	
7	15	TRAY3 NEAR END SENSOR	
7	16	TRAY4 NEAR END SENSOR	
8	5	REGISENSOR	
8	6	T/A ROLL2 SENSOR	
8	7	T/A ROLL3 SENSOR	
8	31	DUP SENSOR	
9	2	DRUM DETECT	
9	4		
10	20	FUSER CONTROL SENSOR (Analog Value)	

Chain	Function	Part/Signal	Ref. BSD
10	23	FUSER EXIT SENSOR	
12	1	FINISHER PAPER IN SENSOR	
12	2	FINISHER REVERSE SENSOR	
12	3	FINISHER TIMING SENSOR	
12	4	FINISHER PAPER EXIT SENSOR	
12	5	FINISHER TAMPER HOME POSITION SENSOR	
12	6	FINISHER STACK HEIGHT SENSOR	
12	7	FINISHER TOP COVER SENSOR	
12	8	FINISHER PAPER PATH COVER SENSOR	
12	9	FINISHER DOCKING SENSOR	
12	10	STAPLER COVER SW	
12	11	FINISHER PAUSE SW	
12	12	FINISHER LEVER SENSOR	
12	13	FINISHER UPPER LIMIT SENSOR	
12	14	FINISHER NEAR FULL SENSOR	
12	15	FINISHER FACE UP TRAY FULL SENSOR	
12	16	STAPLE HEAD HOME POSITION SENSOR	
12	17	STAPLE SELF PRIM SENSOR	
12	18	LOW STAPLE SW	
12	19	STAPLER CARTRIDGE SET SW	
12	20	STAPLER UNIT LOCK SW	
12	33	STAPLER UNIT HOME POSITION SENSOR	
13	1	ALL SENSOR SWITCH CHECK (Analog Value)	
		(Excluding Key, Tray Size Sensor, and DADF	
		Sensor/Switch)	

#### WorkCentre Pro 423/428

### 2.4.9.3 NVM Settings

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
6	40	Maximum number of pages Transmitted	1	999	999	1 sheet		This
6	41	Minimum Guaranteed Read Time for Accumulated Document (DADF)	1	4	20	1 sec		
6	42	Maximum Number of Copies Accumulated	1	999	999	1 sheet		
6	43	Minimum Guaranteed Read Time for Accumulated Document (PLATEN)	1	4	20	1 sec		
6	60	Image Section ROS Quantity of Light (600dpi)HANA Text/Text Photo	31	93	124			
6	61	Image Section ROS Quantity of Light (600dpi)HANA Photo	31	87	124			
6	62	Image Section ROS Quantity of Light (400dpi)HANA	31	93	124			
6	63	Quantity of Light after Feedback Control (600dpi)	-	40	-			Auto is co repla
6	64	Quantity of Light after Feedback Control (400dpi)	-	46	-			Auto is co repla
6	65	Coefficient for Controlling Light of Quantity	1	5	99			
6	80	LASER SIDE REGI Adjustment (600dpi)ALL TRAY	1	50	99	0.0423mm		As tl shift
6	81	LASER SIDE REGI Adjustment (600dpi)TRAY1	1	50	99			
6	82	LASER SIDE REGI Adjustment (600dpi)TRAY2	1	50	99			
6	83	LASER SIDE REGI Adjustment (600dpi)TRAY3	1	50	99			
6	84	LASER SIDE REGI Adjustment (600dpi)TRAY4	1	50	99			
6	85	LASER SIDE REGI Adjustment (600dpi)MSI	1	50	99			
6	86	LASER SIDE REGI Adjustment (600dpi)DUP ALL TRAY	1	50	99			
6	87	LASER SIDE REGI Adjustment (600dpi)DUP TRAY1	1	50	99			
6	88	LASER SIDE REGI Adjustment (600dpi)DUP TRAY2	1	50	99			
6	89	LASER SIDE REGI Adjustment (600dpi)DUP TRAY3	1	50	99			
6	90	LASER SIDE REGI Adjustment (600dpi)DUP TRAY4	1	50	99			
6	91	Edge erase in fast scan (left)	0	47	94	0.0423mm		
6	92	Edge erase in fast scan (right)	0	47	94	0.0423mm		
6	93	Edge erase in slow scan (LE)	0	47	94	0.0423mm		
6	94	Trail edge image cut amount adj.	0 -26mm	50 0mm	119 +31mm	0.26mm		
6	95	MSI image loss adjustment amount	0 -4mm	130 +1.5mm	189 +4mm	0.0423mm		
6	96	LASER SIDE REGI Adj. (600dpi) 90 degree Rotation	1	50	99			
6	97	LASER SIDE REGI Adj. (600dpi) 180 degree Rotation	1	50	99			
6	98	LASER SIDE REGI Adj. (600dpi) 270 degree Rotation	1	50	99			

Remarks
value is stored in M/F MAIN PWB NVM.
o rewritten after print. The value in Ch6-60 opied at NVM initialization and DRUM acement.
o rewritten after print. The value in Ch6-60 opied at NVM initialization and DRUM acement.
he adj. value is increased, the image s close to the FRONT.

Chain	Function	Item	Min. value	Default	Max. value	Amount of Adjustment	[
6	100	Correction action for streaks (Fax)	0	2	10	Mm	Cori side
6	101	Fast scan edge erase amount (left) (Fax/Printer)	0	47	94	0.0423 mm (dot)	
6	102	Fast scan edge erase amount (right) (Fax/Printer)	0	47	94	0.0423 mm (dot)	
6	103	Slow scan edge erase amount (lead edge) (Fax/Printer)	0	47	94	0.0423 mm (dot)	
9	90	DEVE BIAS DC Component	152	170	187		
10	30	FUSER ON DELAY TIME AT WARM UP	0	20	200	0.01 sec	
10	31	FUSER ON DELAY TIME AT STANDBY	0	20	200	0.01 sec	
10	32	FUSER ON DELAY TIME AT RUNNING	0	20	200	0.01 sec	
10	33	FUSER ON DELAY TIME AT LOW POWER	0	20	200	0.01 sec	
10	34	FUSER OFF/ON Count Reduction Control at STANDBY	0	3	20	1 deg.C	
10	35	FUSER OFF/ON Count Reduction Control at Running	0	3	20	1 deg.C	
10	36	FUSER OFF/ON Count Reduction Control at LOW POWER	0	3	20	1 deg.C	
15	1	HDD defective block check & clearance					10-k
15	6	HDD MODEL CODE					10-b
15	7	Number of Pages Accumulated on HD	1	200	200	1 page	
15	8	Number of Faulty Blocks on HD					
15	9	Total Number of Blocks on HD					
15	10	HD Fault Block Inspection Area	1	62	83	100block	Exe
15	11	Number of Backup Blocks on HD	1	75	255	2block	Exe
20	1	LEAD REGI Adjustment - ALL TRAY	102	112	142	0.26mm	As t app
20	2	LASER LEAD REGI Adjustment (90 degree ROTATION)	10	36	50	0.26mm	
20	3	LASER LEAD REGI Adjustment (180 degree ROTATION)	10	36	50	0.26mm	
20	4	LASER LEAD REGI Adjustment (270 degree ROTATION)	10	36	50	0.26mm	
20	5	MSI Guide Width Asjustment (Min. width)	208	243	255		Whe its re
20	6	MSI Guide Width Asjustment (Max. width)	0	13	47		Whe its re
20	7	MSI size detection offset value adjustment	0	16	30	1mm	
20	8	Count for Clearing No-toner Warning Status	1	5	99		
20	14	Toner save to be enabled/disabled	0	0	1		0:dis
20	15	Toner Save: Threshold of Adjacent White Pixels	0	0	255		
20	16	Toner Save: Threshold of Noted Black Pixels	0	63	255		
20	17	Toner Save: Converted Image Darkness	0	0	255		
20	18	Delay of Two Clock Pulses in Input Video Data	0	1	1		0:De
20	21	Memory Overflow Processing During Accumulation	0	1	1		0:Di

Remarks
ective action for streaks of lead edge and edge at Fax send Scanning
v
wto ASCII codo
byte ASCII code
cute Ch15-1 after setting change.
cute Ch15-1 after setting change.
ne adj. value is increased, the image ears later.
en NVM is written, Ch7-6 is executed and esult is written into NVM.
en NVM is written, Ch7-6 is executed and
sabled 1:enabled
Scontinue 1: No delay

#### 2-152 03/02

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	Remarks
								case of mechanical fault)
20	30	Smoothing enabled/disabled	0	1	1			0:disabled 1:enabled
20	31	Make Edge Count Result Available	0	63	255			
20	32	Edge Count Threshold (At Copying)	0	111	255			
20	33	Black Pixel Count	0	101	255			
20	34	Operational Offset Value	0	102	255			0-99:Positive 100-255:Negative
20	35	Enable/Disable Dot Area Control	0	1	1			0:disabled 1:enabled
20	36	Enable/Disable Criteria 1	0	1	1			0:disabled 1:enabled
20	37	Enable/Disable Criteria 2	0	1	1			0:disabled 1:enabled
20	38	Enable/Disable Criteria 3	0	1	1			0:disabled 1:enabled
20	39	Edge Count Threshold (Printer/FAX)	0	90	255			
20	40	Multiplication Factor for Coefficient of Error 0FH in 16- character Mode	0	6	8			
20	41	LEAD REGI Adjustment TRAY1	0	8	16	0.26mm		As the adj. value is increased, the image appears later.
20	42	LEAD REGI Adjustment TRAY2-4	0	8	16	0.26mm		As the adj. value is increased, the image appears later.
20	43	LEAD REGI Adjustment MSI	0	8	16	0.26mm		As the adj. value is increased, the image appears later.
20	44	LEAD REGI Adjustment DUP	0	8	16	0.26mm		As the adj. value is increased, the image appears later.
20	45	REGI LOOP TIMER ALL TRAY	40	47	57	0.26mm		Increasing the value enlarges the loop.
20	46	REGI LOOP TIMER TRAY1	0	15	15	0.26mm		Increasing the value enlarges the loop.
20	47	REGI LOOP TIMER TRAY2-4	0	15	15	0.26mm		Increasing the value enlarges the loop.
20	48	REGI LOOP TIMER MSI	0	15	15	0.26mm		Increasing the value enlarges the loop.
20	49	REGI LOOP TIMER DUP	0	15	15	0.26sec		Increasing the value enlarges the loop.
20	50	REGI CLUTCH OFF TIMER ALL TRAY	35	60	63	0.002 sec.		
20	51	INVERT TIMING ALL TRAY	46	60	74	10ms		Increasing the value delays the reversing position by 1.9 mm.
20	58	MAIN MOTOR KI GAIN	1	1	99			
20	59	MAIN MOTOR KP GAIN	1	4	99			
20	60	Initializing NVM for the IOT adjustment	-	-	-	-		Ch6,9,20
20	64	Initializing NVM for the IIT/IPS adjustment	-	-	-	-		Ch21
20	66	Initializing NVM for mode setting	-	-	-	-		Ch50
20	67	Initializing all NVMs for the IOT	-	-	-	-		Initialize Ch6, 9, 12, 20, 23, 25, 28, and 50
								(including Ch15 for new NVM) and clear job
								memory, DC HFSI counter (excluding print
								count), fault history and counter (excluding
								NVM for MF), and also unused areas (not
								clearing MC model code and serial number

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	Remarks
								for initialized NVM)
20	68	Initializing all NVMs for the IIT	-	-	-	-		Ch14,21
20	70	Initializing NVM for Diag20-60-66	-	-	-	-		Ch6,9,14,20,21,23,28,50
20	71	Initializing NVM for Presets.	-	-	-	-		Ch28
20	80	Initializing NVM for Fail History	-	-	-	-		Ch40-1
20	81	Initializing NVM for Jam History	-	-	-	-		Ch40-2 to 4
20	82	Initializing NVM for Fail Counter	-	-	-	-		Ch40-10 to 49
20	83	Initializing NVM for Jam Counter	-	-	-	-		Ch40-50 to 99
20	84	Initializing NVM for Fail /Jam Counter & History	-	-	-	-		Clear Ch40 to all 0.
20	85	Initializing all NVMs (including HFSI Counters)	-	-	-	-		Execute Diag 20-67 and 20-68.
20	100	FUSER temperature adjustment (Ready temp.)	0	8	16	3 deg.C		Range: -24 to +24
20	101	FUSER temperature adjustment (Standby temp.)	0	8	16	3 deg.C		Range: -24 to +24
20	102	For Low Power temperature adjustment	0	8	16	3 deg.C		Range: -24 to +24
20	103	For Feed Start Temperature Adjustment	0	8	16	3 deg.C		Range: -24 to +24
20	104	For TRUN1 Temperature Adjustment	0	8	16	3 deg.C		Range: -24 to +24
20	105	For TRUN2 Temperature Adjustment	0	8	16	3 deg.C		Range: -24 to +24
20	106	For TRUN3 Temperature Adjustment	0	8	16	3 deg.C		Range: -24 to +24
20	107	Count A for Temperature Switching	1	20	98	1		Values of A and B: A <b< td=""></b<>
20	108	Count B for Temperature Switching	2	50	99			Values of A and B: A <b< td=""></b<>
20	109	Enable/Disable Jam Detection	0	0	1			
20	110	FUSER Temperature Adjustment (Standby2 temp.)	0	8	16	3 deg.C		Range: -24 to +24
21	1	Fine adjustment in the IIT slow scan direction (Copy)	0	5	10	Resizing		Resizing factor X (0.99%to1.01%)
			-1%	0%	+1%	factor X		
						0.2%		
21	2	Fine adjustment in the IIT fast scan direction	0	10	20	Resizing		Resizing factor X (0.99%to1.01%)
			-1%	0%	+1%	factor X		
						0.1%		
21	3	Fine adjustment in the IIT slow scan direction (FAX)	0	5	10	Resizing		Resizing factor X (0.99%to1.01%)
			-1%	0%	+1%	factor X		
						0.2%		
21	5	Fine adjustment of density setup Lighter-2Copy (text)	0	64	255			
21	6	Fine adjustment of density setup Lighter-1Copy (text)	0	64	255			
21	7	Fine adjustment of density setup Normal Copy (text)	0	64	255			
21	8	Fine adjustment of density setup Daker-1Copy (text)	0	64	255			
21	9	Fine adjustment of density setup Daker-2Copy (text)	0	64	255			
21	10	Fine adj. of density setup Lighter-2Copy (text/photo)	0	64	255			
21	11	Fine adj. of density setup Lighter-1Copy (text/photo)	0	64	255			
21	12	Fine adj. of density setup Normal Copy (text/photo)	0	64	255			
21	13	Fine adj. of density setup Daker-1Copy (text/photo)	0	64	255			
21	14	Fine adj. of density setup Daker-2Copy (text/photo)	0	64	255			

#### 2-154 03/02

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment
21	15	Fine adj. of density setup Lighter-2Copy (photo)	0	64	255		
21	16	Fine adj. of density setup Lighter-1Copy (photo)	0	64	255		
21	17	Fine adj. of density setup Normal Copy (photo)	0	64	255		
21	18	Fine adjustment of density setup Daker-1Copy (photo)	0	64	255		
21	19	Fine adjustment of density setup Daker-2Copy (photo)	0	64	255		
21	20	Fine adj. of density setup Lighter-2FAX (text/photo, photo)	0	64	255		
21	21	Fine adj. of density setup Lighter-1FAX (text/photo, photo)	0	64	255		
21	22	Fine adj. of density setup Normal FAX (text/photo, photo)	0	64	255		
21	23	Fine adj. of density setup Daker-1FAX (text/photo, photo)	0	64	255		
21	24	Fine adj. of density setup Daker-2FAX (text/photo, photo)	0	64	255		
21	25	Fine adi. of density setup AE Copy (text)	0	64	255		
21	26	Fine adi, of density setup AE Copy (text)DADF	0	64	255		
21	31	AE Threshold Fixed Start Line	0	48	255		
21	32	Inclination from AE Ground Threshold	0	2	2		0:2
21	33	AE Operation Mode (DC Machine)	0	1	1		0:TH
21	34	AE Operation Mode (FAX Machine)	0	1	1		
21	35	Number of Pixels in AE Fast Scan Non-detected Area	0	128	255		
21	36	Maximum Qualified Darkness of AE Ground	0	140	255		
21	37	AE Offset	0	40	255		
21	38	AE Sampling Start Line	0	0	255		
21	39	Enable/Disable RE Darkness Interpolation (Fast Scan)	0	1	1		0:dis
21	40	Enable/Disable RE Darkness Interpolation (Slow Scan)	0	1	1		0:dis
21	41	Enable/Disable AGC/AOC	0	1	1		0:dis
21	42	ODD/EVEN DC Level Correction Value (600dpi)	0	128	255		Rew
21	43	ODD/EVEN DC Level Correction Value (400dpi)	0	128	255		Rew
21	44	ODD/EVEN DC Level Correction Value (300dpi)	0	128	255		Rew
21	45	ODD/EVEN DC Level Correction Value (200dpi)	0	128	255		Rew
21	46	AGC gain (600dpi)	0	0	255		Rew
21	47	AGC gain (400dpi)	0	0	255		Rew
21	48	AGC gain (300dpi)	0	0	255		Rew
21	49	AGC gain (200dpi)	0	0	255		Rew
21	50	AOC Offset (600dpi)	0	144	255		Rew
21	51	AOC Offset (400dpi)	0	144	255		Rew
21	52	AOC Offset (300dpi)	0	144	255		Rew
21	53	AOC Offset (200dpi)	0	144	255		Rew
21	54	Enable/Disable Shading Correction	0	1	1		0:dis
21	55	Average Count of Shading Correction Data	1	20	100		
21	56	Platen shading correction factor setup	0	140	255		
21	57	DADF shading correction factor setup	0	128	255		
21	58	Document detection threshold level	0	40	128		
21	59	TRC-LUT Fixed Value (for Cin-Dout Characteristic	0	64	255		Fror

Remarks
1:3 2:5
I varying mode 1:TH fixed mode
sabled 1:enabled
sabled 1:enabled
sabled 1:enabled
rritten at power-on
ritten at power-on
vritten at power-on
ritten at power-on
ritten at power-on
ritten at power-on
ritten at power-on
vritten at power-on
vritten at power-on
vritten at power-on
vritten at power-on
rritten at power-on
sabled 1:enabled
nt halftone output (white to black)

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
		Measurement)						
21	60	Sharpness setup high resolution (text)	0	0	2			0:No
21	61	Sharpness setup high resolution (text/photo)	0	0	2			0:No
21	62	Sharpness setup high resolution (photo)	0	0	2			0:No
21	63	Sharpness setup medi. resolution (text/photo)	0	1	2			0:Sł
21	64	Sharpness setup medi. resolution (photo)	0	0	2			0:No
21	65	Sharpness setup low resolution (text/photo)	0	1	2			0:Sł
21	66	Sharpness setup low resolution (photo)	0	0	2			0:No
21	67	Sharpness setup high resolution (text/photo) DADF	0	0	2			0:Sł
21	70	IIT side edge regi. adjustment (Manual) Platen	32	128	255			Ch6
21	71	IIT lead edge regi. adjustment (Manual) Platen	120	132	144			Ch6
21	72	A4/A3 Selection (No Document Detection)	0	0	1			1:Se
21	80	DADF lead edge regi. adjustment	0	40	79	0.127mm		
			-5mm	0mm	+5mm			
21	81	DADF trail edge regi. adjustment	0	31	63	0.127mm		
			-4mm	0mm	+4mm			
21	82	DADF side edge regi. adjustment	0	45	196	approx.		Offs
			0mm	1.9mm	8.0mm	0.04mm		
21	83	DADF magnification adjustment in slow scan direction	0	35	70	0.1%		
		(Сору)	-3.5%	0%	+3.5%			
21	84	DADF magnification adjustment in slow scan direction (FAX)	0	35	70	0.1%		
			-3.5%	0%	+3.5%			
21	85	DADF STAMP SOLENOID ON time adjustment	5	10	40	0.001		
			5msec	10msec	40msec			
21	86	DADF STAMP position adjustment	0	15	30	1mm		
			-5mm	10mm	25mm			
21	87	DADF scanning position adjustment	0	6	26	0.393mm		
			-5mm	-2.7mm	+5mm			
21	88	Analog Main/Sub Selection	0	0	1			0:M
21	90	Binary threshold AE Lighter-2 FAX(text) medi. resolution	0	200	255			-
21	91	Binary threshold AE Lighter-1 FAX(text) medi, resolution	0	170	255			
21	92	Binary threshold AE Normal FAX(text) medi. resolution	0	150	255			
21	93	Binary threshold AE Darker-1 FAX(text) medi, resolution	0	90	255			
21	94	Binary threshold AE Darker-2 EAX(text) medi, resolution	0	30	255			
21	95	Binary threshold AE Lighter-2 EAX(text) low resolution	0	180	255			
21	96	Binary threshold AE Lighter-1 FAX(text) low resolution	0	160	255			+
21	97	Binary threshold AE Normal EAX(text) low resolution	0	140	255			
21	98	Binary threshold AE Darker-1 EAX(text) low resolution	0	80	255			+
21	00	Binary threshold AE Darker 2 EAV(text) low resolution	0	20	255			
<b>∠</b> I	ษษ	Dinary Intestion AE Darker-2 FAA(lext) IOW resolution	U	30	200			

Remarks
ormal 1:Sharp1 2:Sharp2
ormal 1:Smooth1 2:Smooth2
harp 1: Normal 2:Smooth
ormal 1:Smooth1 2:Smooth2
narp 1:Normal 2:Smooth
ormal 1:Smooth1 2:Smooth2
narp 1:Normal 2:Smooth
-31 result input
-so result input
et value from platen registration point
ain line output 1:Sub line output

#### 2.4.9.4 Test Print

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
23	1	Analog ASIC Test Print 3X3 Photo Output (600dpi)	-	-	-	-		
23	6	IPS Test Print: Grid+Slant (1dot) Error Diffusion Output (600dpi)	-	-	-	-		
23	7	IPS Test Print: Grid+Slant (4dot) Error Diffusion Output (600dpi)	-	-	-	-		
23	8	IPS Test Print: Continuous gradation in the fast scan (256 gradations) 3X3 Photo Output (600dpi)	-	-	-	-		
23	9	IPS Test Print: Continuous gradation in the slow scan (256 gradations) 3X3 Photo Output (600dpi)	-	-	-	-		
23	10	IOT Test Print: Solid blank (600dpi)						
23	11	IOT Test Print: Solid black (600dpi)	-	-	-	-		
23	12	IOT Test Print Grating form (1dot) (600dpi)	-	-	-	-		
23	13	IOT Test Print Grating form (4dot) (600dpi)	-	-	-	-		
23	14	IOT Test Print Grating+Slanting form (1dot) (600dpi)	-	-	-	-		
23	15	IOT Test Print Grating+Slanting form (4dot) (600dpi)	-	-	-	-		
23	20	IOT Test Print Black-and-White Horizontal Striped Pattern (600dpi)	-	-	-	-		Alternate ou 80 mm inte
23	21	Normal pattern of continuous gradation in fast scan line (256 gradations) (600dpi)	-	-	-	-		Lighting pos
23	22	Dark pattern of continuous gradation in fast scan line (256 gradations) (600dpi)	-	-	-	-		Lighting pos
23	23	Normal pattern of continuous gradation in slow scan line (256 gradations) (600dpi)	-	-	-	-		Lighting pos
23	24	Dark pattern of continuous gradation in slow scan line (256 gradations) (600dpi)	-	-	-	-		Lighting pos
23	25	Normal pattern of continuous gradation in fast scan line (64 gradations) (600dpi)	-	-	-	-		Lighting pos
23	26	Dark pattern of continuous gradation in fast scan line (64 gradations) (600dpi)	-	-	-	-		Lighting pos
23	27	Normal pattern of continuous gradation in slow scan line (64 gradations) (600dpi)	-	-	-	-		Lighting pos
23	28	Dark pattern of continuous gradation in slow scan line (64 gradations) (600dpi)	-	-	-	-		Lighting pos
23	29	Fixed Pattern (600dpi)	-	-	-	-		NVM adjust
23	30	Paper Feed Alignment Pattern (600dpi)	-	-	-	-		NVM adjust

Remarks
utput of all-black and all-white patterns at rvals in the slow direction
sition control PM.SEL=01
sition control PM.SEL=00
sition control PM.SEL=01
sition control PM.SEL=00
sition control PM.SEL=01
sition control PM.SEL=00
sition control PM.SEL=01
sition control PM.SEL=00
ment of darkness and lighting position
ment of darkness and image registration

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	Remarks
								position
23	50	1-sided/2-sided setting for Test Print (600dpi)	0	0	1			0: 1-sided 1: 2-sided
23	52	Darkness Adjustment for Test Print (600dpi)	0	128	255			0 to 255:lighter - darker
23	53	Lighting Position Adjustment for Test Print (600dpi)	0	1	3			0:left 1:mid 2:right 3: Single Line,Dark
23	54	Image Registration Adjustment for Test Print (600dpi)	0	0	255			
23	55	Ejection Tray Setting for Test Print (600dpi)	0	0	18			0:Face Down Tray 1:Face Up Tray 13:Finisher Tray1 14:Finisher Tray2
24	10	IOT Test Print: Solid blank (400dpi)	-	-	-	-		
24	11	IOT Test Print: Solid black (400dpi)	-	-	-	-		
24	12	IOT Test Print: Grating form (1dot) (400dpi)	-	-	-	-		
24	13	IOT Test Print: Grating form (4dot) (400dpi)	-	-	-	-		
24	14	IOT Test Print: Grating+Slanting form (1dot) (400dpi)	-	-	-	-		
24	15	IOT Test Print: Grating+Slanting form (4dot) (400dpi)	-	-	-	-		
24	20	IOT Test Print Black and white horizontal streaks (400dpi)	-	-	-	-		Alternate output of all-black and all-white patterns at 80 mm intervals in the slow direction
24	21	Normal pattern of continuous gradation in fast scan line (256 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=01
24	22	Dark pattern of continuous gradation in fast scan line (256 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=00
24	23	Normal pattern of continuous gradation in slow scan line (256 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=01
24	24	Dark pattern of continuous gradation in slow scan line (256 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=00
24	25	Normal pattern of continuous gradation in fast scan line (64 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=01
24	26	Dark pattern of continuous gradation in fast scan line (64 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=00
24	27	Normal pattern of continuous gradation in slow scan line (64 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=01
24	28	Dark pattern of continuous gradation in slow scan line (64 gradations) (400dpi)	-	-	-	-		Lighting position control PM.SEL=00
24	29	Fixed Pattern (400dpi)	-	-	-	-		NVM adjustment of darkness and lighting position
24	30	Paper Feed Alignment Pattern (400dpi)	-	-	-	-		NVM adjustment of darkness and image registration position

### 2.4.9.5 Billing/EPSV

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	Remarks
25	1	Total number of prints displayed (the present counter reading) 1	2999997	2999997				No. of copy prints 3 + No. of printer prints 4 + No. of FAX Prints 5
25	2	Total number of prints (Counter reading at the previous closing) 2	2999997	2999997				Total number of prints at the previous closing
25	3	No. of copy prints (present counter reading) 3	999999	999999				Writes the data in the backup area as well. Counts up when the copy print is output normally including Test Print and Report Print.
25	4	No. of Printer prints (present counter reading) 4	999999	999999				Writes the data in the backup area as well. Counts up when the copy print is output normally including O/A Interface Print and Remote Print.
25	5	No. of FAX Prints (present counter reading) 5	999999	999999				Writes the data in the backup area as well. Counts up when the received print is output normally.
25	6	No. of Copy Prints (Counter reading at the previous closing)	999999	999999				Displays the number of copy prints at the previous closing.
25	7	No. of Printer Prints (Counter reading at the previous closing)	999999	999999				Displays the number of printer prints at the previous closing.
25	8	No. of FAX Prints (Counter reading at the previous closing)	999999	999999				Displays the number of fax prints at the previous closing.
25	9	No. Copy Prints (present counter reading) SUB	999999	999999				DC Backup Data
25	10	No. Printer Prints (present counter reading) SUB	999999	999999				DC Backup Data
25	11	No. FAX Prints (present counter reading) SUB	999999	999999				DC Backup Data
25	12	No. Copy Prints (present counter reading) IIT	999999	999999				IIT Backup Data
25	13	No. Printer Prints (present counter reading) IIT	999999	999999				IIT Backup Data
25	14	No. FAX Prints (present counter reading) IIT	999999	999999				IIT Backup Data
25	20	M/C serial No.						10bytes ASCII code The codes applicable to wiring are numerical values (30hex - 39hex), capital English letters (41hex - 5Ahex) and Nulls (00hex) only. Any other letters will generate marginal error.
25	21	M/C model code						8bytes ASCII code. The codes applicable to wiring are numerical values (30hex-39hex), capital English letters (41hex -5Ahex) and Nulls (00hex) only. Any other letters will generate marginal error.
25	22	Notification of ERU/CRU Switching	0	1	1			0: No notice 1: Notice
25	23	Toner Bomb Notification for Toner Supply Warning	0	0	1			0: No notice 1: Notice
25	24	EPSV Counter Threshold (System Fail)	0	10	127	1 time		0: No notice 1-127: 1 to 127 times
25	25	EPSV Counter Threshold (Local Fail)	0	10	127	1 time		0: No notice 1-127: 1 to 127 times
25	26	EPSV Counter Threshold (Paper Jam)	0	20	127	1 time		0: No notice 1-127: 1 to 127 times
25	27	EPSV Counter Threshold (Document Jam)	0	40	127	1 time		0: No notice 1-127: 1 to 127 times

Chain	Function	Item	Min.	Default	Max.	Amount of	Adjustment	Remarks
			value		value	Change		
25	28	EPSV Feed Count Threshold (Trays 1 to 4)	0	3000	9999	100 sheets		0: No notice 1-9999: 100 to 999900 sheets
25	29	EPSV Feed Count Threshold (MSI)	0	3000	9999	100 sheets		0: No notice 1-9999: 100 to 999900 sheets
25	36	Clear ASC Alert Information						Clear also the Fail/JamHistory and counter.
25	37	U-product Recovery(Recall) Order	0	0	127			Set the part number on the Write screen.
25	50	Print Counter Write: Upload from Main Side (DC) to Backup Side (IIT)						Upload the copy, fax, and printer counts simultaneously.
25	51	Print Counter Write: Download from Backup side (IIT) to Main side (DC)						Download the copy, fax, and printer counts simultaneously.
25	60	Accessories installed/not installed	0	0	5			0:Not installed 1:Copylyzer 2:Coin Kit 3:Reset Counter 4:Copy Dispensor 5:Key Corder
25	61	Accessories installed/not installed (Key SW/Foot SW)	0	0	2			0:Not installed 1:Key SW 2:/Foot SW
25	63	EPSV Type (Directly Coupled with Related Product/ Slave/Master)	0	-	2			0: Directly Coupled with Related Product 1: Master 2: Slave This data is valid only when EP connection is detected. (Communication detection)
25	64	Detection of EPSV Connection	0	-	1			0: No 1: Yes (Hardware detection)
25	65	EPSV Connection	0	0	1			0: No 1: Yes
25	66	Telephone Line Connection	0	0	1			0: No 1: Yes
25	67	Operation Specification When TRESS is Installed	0	0	2			0: Notice to SV (Type S) 1: Both notices(Type B) 2: Notice to TRESS (Type T)
25	68	UI Billing Meter Display Option	0	0	3			0: present Total meter 1: present Total meter/ closing date Total meter 2:present Total/Copy(FAX), Printer meter 3:present Total/Copy(FAX), Printer meter/closing date Total, Copy(FAX), and Printer meter
25	83	M/C serial No.	-	-	-	-		10-byte ASCII code
25	84	M/C model code	-	-	-	-		4-byte ASCII code
25	85	Dial type	0	0	2			0:Pushbutton 1:Dial (10pp) 2:Dial (20pp)
25	86	Modem Ring Count	1	1 or 10	15			0: No response 1-15: 1 to 15 times (Initial value: 1 for master and 10 for slave)
25	87	Tel/Fax Installation	0	1	1			0: No 1: No ok???
25	88	Installer's Employee Number	-	-	-	-		10-byte ASCII code
25	89	EPSV ID	-	-	-	-		10-byte ASCII code
25	90	Telephone Number (Outside)	-	-	-	-		16-byte ASCII code
25	91	Telephone Number (Extension)	-	-	-	-		16-byte ASCII code
25	92	Host Terminal Telephone Number	-	-	-	-		24-byte ASCII code
25	93	Master Closing Date	0	31	31	1 day		0: No processing 1-31: 1 to 31days
25	94	Master Periodic Notification Date	0	31	31	1 day		0: No processing 1-31: 1 to 3days
25	95	Machine Fixed-Time Call Count	0	0	127	1 time		

#### 2.4.9.6 Custom Presets

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
28	1	Panel Setting 1: Initial Priority Tray	0	0	9			0:Auto 1:Tray
28	2	Panel Setting 2: Initial Priority Tray	0	7	7			0:Auto 1:magr 5:mag 5 6:ma
28	3	Panel Setting 3: Initial Copy Darkness (for 5-Level Adjustment)	0	0	5			0:Auto 1:lighte 5:darker 2
28	4	Panel Setting 4: Original Type default value	0	0	2			0:text 1:photo
28	5	Panel Setting 5: Output	0	0	4			0:Center 1:Fac Japan)
28	6	Panel Setting: Initial Copy Screen	0	0	2			0:Basic Featur Menu
28	10	Fixed Resizing Factor 1□	250 25%	886 86.6%	4000 400%	0.1%		
28	11	Fixed Resizing Factor 2	250 25%	816 81.6%	4000 400%	0.1%		
28	12	Fixed Resizing Factor 3	250 25%	707 70.7%	4000 400%	0.1%		
28	13	Fixed Resizing Factor 4	250 25%	1414 141.4%	4000 400%	0.1%		
28	14	Fixed Resizing Factor 5	250 25%	1225 122.5%	4000 400%	0.1%		
28	15	Fixed Resizing Factor 6	250 25%	1154 115.4%	4000 400%	0.1%		
28	20	Normal Input Tone	0	1	1			0: off 1: on
28	21	Abnormal Input Tone (Including Unnecessary Key)	0	1	1			0: off 1: on
28	22	Normal End Tone	0	1	1			0: off 1: on
28	23	Copy End Tone	0	0	1			0: off 1: on
28	24	Abnormal End Tone	0	1	1			0: off 1: on
28	25	Wait to Ready Change Tone	0	1	1			0: off 1: on
28	26	CRU Alarm Tone	0	1	1			0: off 1: on
28	30	Tray 1 Priority	1	1	4			1:Priority 1 2:F
28	31	Tray 2 Priority	1	2	4			1:Priority1 2:P
28	32	Tray 3 Priority	1	3	4			1:Priority1 2:P
28	33	Tray 4 Priority	1	4	4			1:Priority1 2:P

Remarks
1 2:Tray2 3:Tray3 4:Tray4 9:MSI
nification 1 2:mag 2 3:mag 3 4:mag 4 ag 6 7:100%
er 2 2:lighter 1 3:Normal 4:darker 1
o 2:text/photo
ce Up 4:Finisher (2,3: Not used in
res 1:Customized Features 2:Features
Priority2 3:Priority3 4:Priority4
riority2 3:Priority3 4:Priority4
riority2 3:Priority3 4:Priority4
riority2 3:Priority3 4:Priority4

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	Remarks
28	36	Enable/Disable Stack OCT	0	1	1			0:disabled 1:enabled
28	37	Load Limit	0	0	99			0: disabled 1-99: 1 to 99 sheets
28	38	Enable/Disable 90-Degree Rotation	0	1	1			0:disabled 1:enabled
28	39	Enable/Disable Auto Tray Switching	0	1	1			0:ATS disabled 1:ATS enabled
28	40	Tray in No APS Auto Mode	1	1	4			1-4:Tray1 to Tray 4
28	41	Enable/Disable Auto Clear	0	1	1			0:disabled 1:enabled
28	42	Auto Clear Timer	1	1	4	1 min.		1-4:1 to 4 minutes
28	43	Enable/Disable Auto Power Save (DC Machine)	1	15	255	1 min.		0: disabled
28	44	Enable/Disable ROS Power Save	9	9	30	1 sec.		
28	46	Center Shift	0	0	1			0:disabled 1:enabled
28	48	Enable/Disable Auto Power Off	1	45	105	1 min.		0: Enable Input (Condition of Prohibition)
28	49	DADF Jam Detection at Copying	0	0	1			0:Regular 1: Maximum size (fixed)
28	50	Frame Erasure (Top/Bottom)	0	5	50	1mm		
28	51	Frame Erasure (Right/Left)	0	5	50	1mm		
28	52	Frame Erasure (Center)	0	10	50	1mm		
28	54	Customized Features (Customized Copy Screen 1)	0	1	21			0:No setting 1:Paper tray 2:Reduction/enlargement 3:Copy darkness 4:Binding margin 5:Hight/Width independent resizing 6:Document type 7:Frame erasure 8:Center shift 9:Not used 10: Continuous page copy 11:Duplex copy 12: Electronic sort 13:N in 1 14:Transparency interleaf 15:Copy ejection 16:Mix size 17:Edit 18:Book duplex/(As book) 19:Annotation 20:Booklet 21:Form synthesis
28	55	Customized Features (Customized Copy Screen 2)	0	2	21			0:No setting 1:Paper tray 2:Reduction/enlargement 3:Copy darkness 4:Binding margin 5:Hight/Width independent resizing 6:Document type 7:Frame erasure 8:Center shift 9:Not used 10: Continuous page copy 11:Duplex copy 12: Electronic sort 13:N in 1 14:Transparency interleaf 15:Copy ejection 16:Mix size 17:Edit 18:Book duplex/(As book) 19:Annotation 20:Booklet 21:Form synthesis
28	56	Customized Features (Customized Copy Screen 3)	0	3	21			0:No setting 1:Paper tray 2:Reduction/enlargement 3:Copy darkness 4:Binding margin 5:Hight/Width independent resizing 6:Document type 7:Frame

WorkCentre Pro 423/428				2-162 03/02			CHAI How to		
Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment		
								erasure 8:Cent copy 11:Duplex 14:Transparen 17:Edit 18:Boo 20:Booklet 21:I	
28	57	Customized Features (Customized Copy Screen 4)	0	6	21			0:No setting 1: 3:Copy darkne independent re erasure 8:Cent copy 11:Duples 14:Transparen 17:Edit 18:Boo 20:Booklet 21:	
28	58	Customized Features (Customized Copy Screen 5)	0	10	21			0:No setting 1: 3:Copy darkne independent re erasure 8:Cent copy 11:Duple: 14:Transparen 17:Edit 18:Boo 20:Booklet 21:1	
28	59	Customized Features (Customized Copy Screen 6)	0	4	21			0:No setting 1: 3:Copy darkne independent re erasure 8:Cent copy 11:Duples 14:Transparen 17:Edit 18:Boo 20:Booklet 21:	
28	60	Job Settings for Finisher Tray 1 (Top)	0	7	7			0:None 1:Copy only 5:Copy an	
28	61	Job Settings for Finisher Tray 2 (Mid)	0	7	7			0:None 1:Copy only 5:Copy an	
28	70	Print Enable Timer 1	0	10	240	1 sec.			
28	71	Print Enable Timer 2	0	6	240	1 sec.			
28	90	Initial Copy Screen (Electronic Sort)	0	0	1			0:OFF 1:ON	
28	91	Initial Screen Selection Mode (DC)	0	2	2			0:Menu 1:FAX	
28	91	Initial Screen Selection Mode (DC)	0	0	2			0:Menu 1:FAX	

#### CHAPTER 2 TROUBLESHOOTING o use the Diagnostic C/E Mode

Remarks

ter shift 9:Not used 10: Continuous page x copy 12: Electronic sort 13:N in 1 cy interleaf 15:Copy ejection 16:Mix size k duplex/(As book) 19:Annotation Form synthesis

Paper tray 2:Reduction/enlargement ess 4:Binding margin 5:Hight/Width esizing 6:Document type 7:Frame ter shift 9:Not used 10: Continuous page x copy 12: Electronic sort 13:N in 1 cy interleaf 15:Copy ejection 16:Mix size k duplex/(As book) 19:Annotation Form synthesis

Paper tray 2:Reduction/enlargement ss 4:Binding margin 5:Hight/Width esizing 6:Document type 7:Frame ter shift 9:Not used 10: Continuous page x copy 12: Electronic sort 13:N in 1 cy interleaf 15:Copy ejection 16:Mix size k duplex/(As book) 19:Annotation Form synthesis

Paper tray 2:Reduction/enlargement ss 4:Binding margin 5:Hight/Width esizing 6:Document type 7:Frame ter shift 9:Not used 10: Continuous page x copy 12: Electronic sort 13:N in 1 cy interleaf 15:Copy ejection 16:Mix size ok duplex/(As book) 19:Annotation Form synthesis

only 2:FAX only 3:Copy and fax 4:Print nd print 6:FAX and print 7:All

only 2:FAX only 3:Copy and fax 4:Print nd print 6:FAX and print 7:All

2:Copy

2:Copy

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
28	101	Enable/Disable Substitute Alarm	0	01	1			0:OFF 1:ON
28	102	Line Monitor Volume adjustment	1	02	3	1		1:LOW 2:MID
28	103	Alarm Volume adjustment	1	02	3	1		1:LOW 2:MID
28	104	Adjust Volume at Conversation Reserved Call	0	03	3	1		0:OFF 1:LOW
28	105	Line Monitor	0	01	1	1		0:No 1:Yes
		The telephone line can be monitored through the speaker for a dial tone or remote response from when auto dialing starts until the remote party answers.						
28	108	DTMF Monitor	0X00	00	0X01	1		0X00:Do not r
		The DTMF tone can be monitored through the line monitor speaker at off-hook dialing.						
28	111	Initial Fax Screen	1	02	4	1		1:G4 auto 2:G
		Communication Mode						(Speed: 4800
28	112	Initial Fax Screen	1	03	3	1		1: Superfine (
		Transmission image quality						3:Standard
28	113	Initial Fax Screen	1	03	5	1		1-5:lighter to c
		Darkness						
28	115	Initial Fax Screen	0	00	2	1		0:text 1:photo
		Select Image Quality						
28	116	Fax Panel Default (Initial Screen)	0	00	1	1		0:OFF 1:ON
		Sender Record						
28	118	Fax Panel Default (Initial Screen)	0	00	1	1		0:OFF 1:ON
		(Passage) Stamp						
28	119	Fax Panel Default (Initial Screen)	0	00	1	1		0:OFF 1:ON
		Monitor print						
28	120	Initial Fax Screen Type: A specified screen appears if the fax screen is in initial mode at M/C boot-up or auto clearance or All Clear is pressed in fax mode.	0	00	3	1		0:Basic feature meau 3:Dial c
28	130	Enable/Disable Copy Function	0	01	1	1		0: copy disabl
		The copy function can be disabled for a client who uses M/C only as a fax.						
28	131	Enable/Disable Time-Specified Power Save	0	00	1	1		0: disabled 1:
28	132	Power Save disabled ON/OFF	0	00	1	1		0:off(disabled)

Remarks
3:HIGH
3:HIGH
2:MID 3:HIGH
nonitor 0X01:Monitor
3 auto 3: International communication bps max) 4:Super G3
very high quality) 2:Fine (high quality)
Jarker
2:text/photo
es 1:Customized features 2:Features directory
ed 1: copy enabled
enabled
1:on(enabled)

Wor	kCentre	Pro 423/428		2-164 03/02			CHAF How to		
Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment		
28	134	Power Save Time	00:00	2100	23:59	2		00:00 to 23:59	
28	135	Stanby time	00:00	0800	23:59	2		00:00 to 23:59	
28	140	Function registered at upper left of customized fax screen	0	01	17	1		0: No setting 1 type 3: Transm mode 5: Read transmission 7 record 9: Time Communication 13: Monitor rep duplex docume	
28	141	Function registered at upper middle of customized fax screen	0	02	17	1		0: No setting 1 type 3: Transn mode 5: Read transmission 7 record 9: Time Communication 13: Monitor rep duplex docume	
28	142	Function registered at upper right of customized fax screen	0	03	17	1		0: No setting 1 type 3: Transm mode 5: Read transmission 7 record 9: Time Communication 13: Monitor rep duplex docume	
28	143	Function registered at lower left of customized fax screen	0	04	17	1		0: No setting 1 type 3: Transm mode 5: Read transmission 7 record 9: Time Communication 13: Monitor rep duplex docume	
28	144	Function registered at lower middle of customized fax screen	0	07	17	1		0: No setting 1 type 3: Transn mode 5: Read transmission 7 record 9 <sup>-</sup> Time	

#### PTER 2 TROUBLESHOOTING o use the Diagnostic C/E Mode

Remarks

**BCD** display

**BCD** display

1: Transmission screen 2: Document nission darkness 4: Communication specification 6: Synthesized 7: Transmission sheet 8: Transmitter Specification 10: Confidential n 11: Polling Reservation 12: Polling port 14: Document passage stamp 15: ent 16: (None) 17: (None) 1: Transmission screen 2: Document mission darkness 4: Communication specification 6: Synthesized 7: Transmission sheet 8: Transmitter Specification 10: Confidential n 11: Polling Reservation 12: Polling port 14: Document passage stamp 15: ent 16: (None) 17: (None) 1: Transmission screen 2: Document mission darkness 4: Communication specification 6: Synthesized 7: Transmission sheet 8: Transmitter Specification 10: Confidential n 11: Polling Reservation 12: Polling port 14: Document passage stamp 15: ent 16: (None) 17: (None) 1: Transmission screen 2: Document nission darkness 4: Communication specification 6: Synthesized 7: Transmission sheet 8: Transmitter Specification 10: Confidential n 11: Polling Reservation 12: Polling port 14: Document passage stamp 15: ent 16: (None) 17: (None) 1: Transmission screen 2: Document nission darkness 4: Communication specification 6: Synthesized 7: Transmission sheet 8: Transmitter

Specification 10: Confidential

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
								Communication 13: Monitor re duplex docum
28	145	Function registered at lower right of customized fax screen	0	0D	17	1		0: No setting type 3: Trans mode 5: Rea transmission record 9: Tim Communication 13: Monitor rea duplex docum
28	150	Transmitting Screen Display	0	00	1	1		0: Do not disp
28	151	Telephone Directory Display Start Number	1	0001	200	2		1 to 200 (500
28	152	Unit of charge (yen) used to calculate the number of units for division management when a charge notice is received from ISDN	0X000 0	0A00	0XFF09	2		0X0000 to 0X
28	153	Accumulation by 90-degree rotation at fax transmission or polling reserved accumulation	0	01	1	1		0: No accumu rotation
28	154	A4SEF reduced accumulation or equal-size accumulation if accumulation by auto resizing is specified to LETTER-SEF document	0	00	1	1		0: Equal-size accumulation
28	155	Print Priority Setting Three priority levels each for received print, automatic report, and local print (System data: OR of priority levels)	0	00	63	1		0 to 63(0 to 0) bit0,1: receive bit2,3: auto re Default=0 Bit4,5: local p
28	160	Initial Scanner Screen Type A specified screen appears if the scanner screen is in initial mode at M/C boot-up or auto clearance or All Clear is pressed in scanner mode.	0	00	3	1		0: Basic scan function list 3
28	161	Function registered at upper left of customized scanner screen	0	01	7	1		0: No setting Read darknes 6: Duplex doo
28	162	Function registered at upper middle of customized scanner screen	0	02	8	1		0: No setting Read darknes 6: Duplex doo

Remarks
---------

ion 11: Polling Reservation 12: Polling eport 14: Document passage stamp 15: nent 16: (None) 17: (None)

1: Transmission screen 2: Document smission darkness 4: Communication ad specification 6: Synthesized 7: Transmission sheet 8: Transmitter ne Specification 10: Confidential ion 11: Polling Reservation 12: Polling eport 14: Document passage stamp 15: nent 16: (None) 17: (None)

play 1: Display

at memory extension)

(FF09: 0.0 to 255.9(yen)

ulation by rotation 1: Accumulation by

accumulation 1: A4SEF reduced

#### X3F)

ed print priority(0 to 2) (0:L, 2:H) Default=0 eport priority(0 to 2) (0:L,2:H)

print priority(0 to 2) (0:L,2:H) Default=0

nner 1: Customized scanner 2: Scanner 3: No scanner screen

1: Read resolution 2: Document type 3: ss 4: Read size 5: Read resizing factor cument 7: Mixed-size document

1: Read resolution 2: Document type 3: ss 4: Read size 5: Read resizing factor cument 7: Mixed-size document

WorkCentre	Pro 423/428
------------	-------------

2-1	66
03/	/02

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
28	163	Function registered at upper right of customized scanner screen	0	03	9	1		0: No setting Read darknes 6: Duplex doc
28	164	Function registered at lower left of customized scanner screen	0	04	10	1		0: No setting Read darknes 6: Duplex doc
28	165	Function registered at lower middle of customized scanner screen	0	05	11	1		0: No setting Read darknes 6: Duplex doc
28	166	Function registered at lower right of customized scanner screen	0	07	12	1		0: No setting Read darknes 6: Duplex doc
28	167	SCANNER Initial Screen	1	04	4	1		1:600dpi 2:40
28	168	SCANNER Initial Screen	0	00	2	1		0: text 1: phot
28	169	SCANNER Initial Screen Darkness	1	03	5	1		1 to 5: lighter
28	170	Broadcast Confirmation Screen Display	0	01	1	1		0: No confirma
28	171	FAX Initial Screen Initial Setting of Manual Transmission/Reception	0	00	1	1		0: Reception
28	172	FAX Initial Screen Initial Setting of Reception Mode	0	00	1	1		0: Auto recept
28	173	FAX Initial Screen Initial Setting of Mixed Size	0	00	1	1		0:OFF 1:ON
28	180	Destination of Ejection for Fax Manual Job Report	0	00	20	1		0:centre tray 1 12: finisher lov
28	181	Destination of Ejection for Fax Automatic Job Report	0	00	20	1		0:centre tray 1 12: finisher lov
28	182	Destination of Ejection for PSTN0 Outside Line Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	183	Destination of Ejection for PSTN0 Extension Line Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	184	Destination of Ejection for PSTN1 Outside Line Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov

#### **CHAPTER 2 TROUBLESHOOTING** How to use the Diagnostic C/E Mode

#### Remarks

1: Read resolution 2: Document type 3: ss 4: Read size 5: Read resizing factor ument 7: Mixed-size document

1: Read resolution 2: Document type 3: ss 4: Read size 5: Read resizing factor ument 7: Mixed-size document

1: Read resolution 2: Document type 3: ss 4: Read size 5: Read resizing factor ument 7: Mixed-size document

1: Read resolution 2: Document type 3: ss 4: Read size 5: Read resizing factor ument 7: Mixed-size document

0dpi 3:300dpi 4:200dpi

to 2: text/photo

to darker

ation 1: Confirmation

1: Transmission

tion 1: Manual reception

I,: side tray, 1: side tray, 11: finisher top, wer

1,: side tray, 1: side tray, 11: finisher top, wer

1,: side tray, 1: side tray, 11: finisher top, wer

I,: side tray, 1: side tray, 11: finisher top, wer

I,: side tray, 1: side tray, 11: finisher top, wer

Chain	Function	Item	Min. value	Default	Max. value	Amount of Change	Adjustment	
28	185	Destination of Ejection for PSTN1 Extension Line Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	186	Destination of Ejection for PSTN2 Outside Line Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	187	Destination of Ejection for PSTN2 Extension Line Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	188	Destination of Ejection for ISDN Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	189	Destination of Ejection for CSDN Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	190	Destination of Ejection for OA I/F Reception Print	0	00	20	1		0:centre tray 1 12: finisher lov
28	301	Use Tray 1 for FAX reception/Report printing		1				0: not used, 1
28	302	Use Tray 2 for FAX reception/Report printing		1				0: not used, 1
28	303	Use Tray 3 for FAX reception/Report printing		1				0: not used, 1
28	304	Use Tray 4 for FAX reception/Report printing		1				0: not used, 1

1,: side tray, 1: side tray, 11: finisher top, wer 1,: side tray, 1: side tray, 11: finisher top, wer 1,: side tray, 1: side tray, 11: finisher top, wer 1,: side tray, 1: side tray, 11: finisher top, wer 1,: side tray, 1: side tray, 11: finisher top, wer 1,: side tray, 1: side tray, 11: finisher top, wer used used used used

#### 2.4.9.7 HFSI Counter/CRUM

Chain	Function	Item	Min. value	Default	Max. value	Amount of change	Adjustment	
30	1	Number of copies scanned	0	-	999999			Increments at r sheet documer number of copi determine repla
30	2	Number of times the scanner lamp lit	0	-	999999			Increments at I determine the I
30	3	Number of documents the DADF scanned	0	-	999999			Increments at r (one sheet). T the ADF/DADF consumable pa
30	6	Number of feeds made by Tray 1	0	-	999999			Increments where registration post usage of the Transition the Transition for construction of the Transition of the Tran
30	7	Number of feeds made by Tray 2	0	-	999999			Increments who registration pos usage of the Tr timings for cons
30	8	Number of feeds made by Tray 3	0	-	999999			Increments who registration pos usage of the Tr timings for cons
30	9	Number of feeds made by Tray 4	0	-	999999			Increments who registration pos usage of the Tr timings for cons
30	12	Number of feeds made by MSI	0	-	999999			Increments who registration pos usage of the M for consumable
30	13	Number of feeds made by DDM	0	-	999999			Increments who registration pos usage of the D for consumable
30	15	Drum revolution time						To check the D
30	16	Number of prints made by the CRUM						6 digits
30	51	STAPLER Count	0	-	999999			Stops increment reached 100,00

#### **CHAPTER 2 TROUBLESHOOTING** How to use the Diagnostic C/E Mode

#### Remarks

normal termination of a copy scan (one it). This value is used to check the ies made by the MF machine and to acement timings for consumable parts. amp lighting. This value is used to amp replacement timing.

normal termination of a scan from DADF his value is used to check the usage of and to determine replacement timings for rts.

en a sheet from Tray 1 reaches the sition. This value is used to check the ray1 and to determine replacement sumable parts.

en a sheet from Tray 2 reaches the sition. This value is used to check the ray2 and to determine replacement sumable parts.

en a sheet from Tray 3 reaches the sition. This value is used to check the ray3 and to determine replacement sumable parts.

en a sheet from Tray 4 reaches the sition. This value is used to check the ray4 and to determine replacement sumable parts.

en a sheet from MSI/SSI reaches the sition. This value is used to check the SI and to determine replacement timings parts.

en a sheet from DDM reaches the sition. This value is used to check the DM and to determine replacement timings parts.

Frum usage. 6 minutes = 1 count.

nting when the NVM write count has 00 (NVM write limit).

### 2.4.9.8 Fault History/Counter

Chain	Function	Item	Min. value	Default	Max. value	Amount of change	Adjustment	Remarks
40	1	Fail History						Stores the latest 10 error codes and the total count at error occurrence.
40	2	Jam History (DC-SYS/Output)						Stores the latest 10 error codes and the total count at error occurrence.
40	3	Jam History (Input)						Stores the latest 10 error codes and the total count at error occurrence.
40	10	U1:MAIN MOTOR Failure/FAN Failure	0	0	255			Stores the U1 count.
40	11	U2: Carriage Failure	0	0	255			Stores the U2 count.
40	12	U3:ROS Failure	0	0	255			Stores the U3 count.
40	13	U4:FUSER Failure	0	0	255			Stores the U4 count.
40	14	U6: DC SYS/PANEL memory error at M/C startup	0	0	255			Stores the U6 count.
40	15	U7:Communication Fail between Systems	0	0	255			Stores the U7 count.
40	16	U8:LAMP/CCD Sensor Failure	0	0	255			Stores the U8 count.
40	20	H5:FINISHER Failure	0	0	255			Stores the H5 count.
40	21	H6:DADF Failure	0	0	255			Stores the H6 count.
40	22	H8:SWITCH Failure	0	0	255			Stores the H8 count.
40	23	N7:ESS I/F Failure	0	0	255			Stores the N7 count.
40	24	UE:EPSV Failure	0	0	255			Stores the UE count.
40	25	H7:Interface error between Switcher and IIT	0	0	255			Stores theH7 count.
40	26	HD:HD Failure	0	0	255			Stores theHD count.
40	27	U9:Switcher Failure	0	0	255			Stores the U9 count.
40	50	E1:Jam at REGI SENSOR	0	0	255			Stores the E1 count.
40	51	E3:Jam at FUSER	0	0	255			Stores the E3 count.
40	53	E8:Jam at DUPLEX	0	0	255			Stores the E8 count.
40	54	C1:Tray1 Misfeed	0	0	255			Stores the C1 count.
40	55	C2:Tray2 Misfeed	0	0	255			Stores the C2 count.
40	56	C3:Tray3 Misfeed	0	0	255			Stores the C3 count.
40	57	C4:Tray4 Misfeed	0	0	255			Stores the C4 count.
40	59	C6:DUPLEX Misfeed	0	0	255			Stores the C6 count.
40	61	C9:MSI Misfeed	0	0	255			Stores the C9 count.
40	62	A1: Document jam (Lead-in section)	0	0	255			Stores the A1 count. (excluding A1-2)
40	63	A2: Document jam (REGISENSOR section)	0	0	255			Stores the A2 count. (excluding A2-2)

Work	Centre P	ro 423/428			CHAR How to			
Chain	Function	Item	Min. value	Default	Max. value	Amount of change	Adjustment	
40	64	A3:Document jam (Ejection section)	0	0	255			Stores the
40	67	DADF Misfeed	0	0	255			Stores the
40	68	F4:FINISHER Paper Jam	0	0	255			Stores the
40	101	U Code History						Stores the
40	102	Paper Jam History						Stores the
40	103	Document Jam History						Stores the

### PTER 2 TROUBLESHOOTING o use the Diagnostic C/E Mode

Remarks

ne A3 count. (excluding A3-2)

ne ADF/DADF Misfeed count.

ne F4 count.

ne latest 20 U codes.

ne latest 20 paper jam related errors.

ne latest 20 document jam related errors.

#### 2.4.9.9 Mode set

Chain	Functio	Item	Min. value	Default	Max. value	Amount of change	Adjustment	Remarks
50	1	Printing after detecting Toner Empty	0	1	1			0:On 1:Off (By selecting "Off", the M/C cycles down after sensing.)
50	6	MSI installed (auto detection)	0	-	1			0:No 1:Yes by hard copy (reading out only)
50	7	FACE UP TRAY installed	0	0	1			0:No 1:Yes
50	9	90-Degree Rotation installed	0	-	1			0:No(without PGM) 1:Yes(with PGM)
50	10	DUPLEX installed	0	-	1			0:No 1:Yes by hard copy (reading out only)
50	11	OCT installed (auto detection)	0	-	1			0:No 1:Yes
50	20	FUSER OVER TEMP disabled	0	0	1			0:Disabled 1:Generated
50	22	Automatically disable copying job (CP/CF/CFP)	4	10	99	1 min.		0:Disable 4 to 99:4 to 99min.
50	23	Darkness at Auto selection (copy darkness)	1	3	5			1:Dark 2:Dark a little 3:Normal 4:Light a little 5:Light
50	24	Warm-up Time Setting for Cold Area (All Tray)	0	0	60	1 sec.		0:Disable 1-60:1 to 60 sec.(Adjustment at IOT condensation)
50	26	Auto interruption of printer job	0	10	99	1 min.		0:Disable 4-99:4 to 99 min.
50	28	MAIN MOTOR speed adjustment	0	11	21	0.1%		
50	29	Adjustment of Toner Empty Warning detection	5	23	40	0.1 sec.		
			0.5	2.3 sec.	4 sec.			
50	30	Adjustment of Toner Empty detection	20	160	200	0.1 sec.		
			2 sec.	16 sec.	20 sec.			
50	31	MC type	0		1			0:DC model 1:MF model
50	33	Number of paper trays installed	2		3			2:3 trays 3:4 trays (If tray 4 enabled, auto detected after restart)
50	36	DADF is installed	0		2			0:No 2:DADF By hardcopy (reading out only)
50	37	Printer KIT is installed	0		1			0:No 1:Yes By hardcopy (reading out only)
50	39	Switcher is installed	0		1			0:No 1:Yes By hardcopy (reading out only)
50	40	Page memory feature installed	0		2			0:No 1:A4 2:A3By hardcopy (reading out only)
50	41	DADF Stamp installed	0		1			0:No 1:Yes By hardcopy (reading out only)
50	42	Front exposure control	0	0	1			0:No 1:Yes
50	44	MSI A4/LETTER size switchover	0	0	1			0:A4 1:LETTER
50	45	Tray 1 paper type	0	0	2			0: plain paper, 1: transparency, 2: thick paper
50	46	Tray 2 paper type	0	0	2			0: plain paper, 1: transparency, 2: thick paper
50	47	Tray 3 paper type	0	0	2			0: plain paper, 1: transparency, 2: thick paper

2-	17	2
03	s/0	2

Chain	Functio n	Item	Min. value	Default	Max. value	Amount of change	Adjustment	
50	48	Tray 4 paper type	0	0	2			0: plain pape
50	49	MSI paper type	0	0	2			0: plain pape
50	51	FINISHER is installed	0		1			0:No 1:Yes E
50	52	HARD DISK is installed (Electronic Sort Kit)	0		1			0:No 1:Yes E
50	55	HARD DISK Stop at Auto Power Save	0	0	1			0:No 1:Yes
50	62	Tray4 is available/not available	0	0	1			0:No 1:Yes
50	62	Tray4 is available/not available (AP)	0	1	1			0:No 1:Yes
50	63	Switching of Processing at Fax Rotation Transmission	0	0	1			0: No trunca unit (with ima
50	67	Auto Clearance when Related Product Card Comes Off	0	0	1			0: Auto clear
50	68	Duplex Mode Setting at Power on	0	0	1			0:No 1:Yes
50	69	Adjustment of Idle Rotation Time (Duplex)	0	1	5	1 sec.		
50	72	Main Motor Off Timing at Warm up	2	26	30	1 sec.		
50	73	Adjustment of Rotation Time for Preventing Press Roll Deformation	0	35	60	0.01 sec.		
50	75	Copy-FAX Lyzer Division Management	0	0	3	1		0: Copy and Copy and fai copy under o
50	76	Tray1 Paper Type which is informed of EPSV	1	2	7	1		0: unknown, transparency
50	77	Tray2 Paper Type which is informed of EPSV	1	2	7	1		0: unknown, transparency
50	78	Tray3 Paper Type which is informed of EPSV	1	2	7	1		0: unknown, transparency
50	79	Tray4 Paper Type which is informed of EPSV	1	2	7	1		0: unknown, transparency
50	80	MSI Paper Type which is informed of EPSV	1	2	7	1		0: unknown, transparency
50	81	Frame Erasure Setting in N-in-1 Copy Mode	0	0	10	1mm		
50	82	For MSI Installation Check	0	0	1			0:No 1:Yes
50	83	For DM Installation Check	0	0	1			0:No 1:Yes
50	84	For OCT Installation Check	0	0	1			0:No 1:Yes
50	85	For Face Up Tray Installation Check	0	0	1			0:No 1:Yes
50	86	Read Size Specification	0	0	1			0: Detected

#### **CHAPTER 2 TROUBLESHOOTING** How to use the Diagnostic C/E Mode

#### Remarks

er, 1: transparency, 2: thick paper

er, 1: transparency, 2: thick paper

By hardcopy (reading out only)

By hardcopy (reading out only)

tion (with no image loss) 1: Truncation at age loss)

rance 1: No auto clearance

fax under no division management 1: x under division management 2: Only division management

1: other, 2: normal, 3: tracing paper, 4: y, 5: roll, 6: heat sensitive, 7: thin

1: other, 2: normal, 3: tracing paper, 4: y, 5: roll, 6: heat sensitive, 7: thin

1: other, 2: normal, 3: tracing paper, 4: y, 5: roll, 6: heat sensitive, 7: thin

1: other, 2: normal, 3: tracing paper, 4: y, 5: roll, 6: heat sensitive, 7: thin

1: other, 2: normal, 3: tracing paper, 4: y, 5: roll, 6: heat sensitive, 7: thin

size 1: 1-inch/8-kai paper

Chain	Functio n	Item	Min. value	Default	Max. value	Amount of change	Adjustment	Remarks
50	86	Read Size Specification	0	1	1			0: Detected size 1: 1-inch/8-kai paper
50	90	CE MODE	0	00	1	1		0:USER Mode 1:CE Mode
		No related to switching by numeric key operation						
50	91	HDD is installed (FAX)	0	01	1	1		0:No 1:Yes
50	92	VCEM is installed	0	03	1	1		0:No 1:Yes
								bit0:CH0 bit1:CH1
50	93	OA Module is installed(SCSI)	0	01	1	1		0:No 1:Yes
50	95	Flag for Special Machine Operation for Debugging	00	00	FF	1		0 to FF
50	96	Flag for Special Machine Operation for Debugging	00	00	FF	1		0 to FF
50	97	Flag for Interlocking LCD back lit ON/OFF with Power Save	0	01	1	1		0: back lit not OFF 1: back lit OFF
50	101	Battery backup (3 hours guaranteed)	0	01	1	1		0:No 1:Yes
50	103	Printer XP module installed	0	01	1	1		0:No 1:Yes
50	105	NCU installed	0	07	7	1		0:No 1:Yes
								bit0:CH0 bit1:CH1 bit2:CH2
50	106	NCU internal option installed	0	01	7	1		0:No 1:Yes
								bit0:CH0 bit1:CH1 bit2:CH2
50	107	G4M installed	0	03	3	1		0:No 1:Yes
								bit0:CH0 bit1:CH1
50	108	G3M installed	0	07	7	1		0:No 1:Yes
								bit0:CH0 bit1:CH1 bit2:CH2
50	109	ICM installed	0	01	1	1		0:No 1:Yes
50	111	G3M*-14.4kModem installed: Check installation of	0	07	7	1		0:No 1:Yes
		G3M*14.4kModem and rewrite it automatically. Also rewrite system data automatically.						bit0:CH0 bit1:CH1 bit2:CH2
		G3M*_MODEM_TX_SPEED G3M*_MODEM_RX_SPEED						
50	112	IIT installed	0	01	1	1		0:No 1:Yes
50	113	IOT installed	0	01	1	1		0:No 1:Yes

				03/02	How to			
Chain	Functio	Item	Min. value	Default	Max. value	Amount	Adjustment	
50	n 120	Country code for the multinational use		00		of change		00:JAPAN(JF 09:AUSTRAL 0F:BELGIUM 20:CANADA( 3C:FINLAND 46:GREECE( 54:INDONES 59:ITALY(ITA 73:MEXICO(I ZEALAND(NZ 89:PHILIPPIN 9C:SINGAPC A5:SWEDEN A9:THAILANI
50	121	Switching of A4-Size Fast Scan Width on FX Machine	0	00	1	1		0: A4 width 1
50	122	Dual Access Function During transmission or reception, the next transmission or conv operation can be specified	0	01	1	1		0:dual access
50	123	Version and ID of Division Management Card		10				VVVVIIII VV
50	124	Large-Memory size		0A				1 to 10Mbyte
50	125	The board type cannot be detected automatically at power on. The XP board is interfaced. This may also be set by CE.	0	01	1	1		0:SCSI I/F 1:I
50	126	Validation of Backup Battery (Validation from DRAM refresh status at power on)	0	00	1	1		0:disabled 1:e
50	127	Printer Job Priority When a printer job activation request is received from DC- SYS, the printer job priority set in system data is compared with the priority of ppb connected to the ready link. If the printer job priority is higher, the printer job is activated and other activation requests are rejected.	0	11	FFH	1		0 to FFH(FFH
50	128	OCT enabled/disabled at printing(receive printing/report printing/check printing)	0	01	1	1		0:OCT disabl
50	131	Enable/Disable Communication Order Change from Panel	0	01	1	1		0: Disable 1:
50	132	Enable/Disable Print Order Change from Panel	0	01	1	1		0: Disable 1:

#### **CHAPTER 2 TROUBLESHOOTING** o use the Diagnostic C/E Mode

#### Remarks

PN) 04:GERMANY(FRG) IA(AUS) 0A:AUSTRIA(AUT) (BEL) 16:BRAZIL(BRA) (CAN) 31:DENMARK(DEN) (FIN) 3D:FRANCE(FRA) (GRE) 50:HONGKONG(HNG) SIA(INA) 57:IRELAND(IRL) A) 61:KOREA(KOR) 6C:MALYSIA(MAL) MEX) 7B:HOLLAND(HOL) 7E:NEW ZL) 82:NORWAY(NOR) NES(PHI) 8B:PORTUGAL(POR) DRE(SIN) A0:SPAIN(ESP) (SWE) A6:SWIZERLAND(SUI) D(THA) B4:UK(GBR) B5:UNITED A) BC:VIETNUM F0:TAIWAN FF:CEE 1:Letter width s disabled 1: dual access enabled VV:1 to 9 IIII:0 to 6 s LAN I/F enabled H:Top Priority) led 1:OCT enabled Enable Enable

Chain	Functio	Item	Min. value	Default	Max. value	Amount Adjustment	Remarks
50	133	Enable/Disable Priority Transmission Specification from Panel	0	01	1	1	0: Disable 1: Enable
50	135	Component of ID used for controlling Relay Broadcast Infinite Loop Prevention Function		0001			1 to 0XFFFF
50	136	Composite ESS Installation Status	0	01	1	1	0:Not installed 1:Installed
50	200	Remote Center Call ON/OFF Flag	0	01	1	1	0:OFF 1:ON
50	201	Machine Telephone Number (for Remote Maintenance)					38bytes Character String
50	202	Communication Mode for EP-Front to Machine	0	00	1	1	0:G3 1:G4
50	203	Installer's Employee Number		00000000 00			5 bytes Character String
50	204	1Way/2Way setting	0	01	1	1	0:1Way 1:2Way
50	206	Inspection/Repair Request Function ON/OFF Flag	0	00	1	1	0:OFF 1:ON
50	207	Fixed-Time Report Count		00		1	0 to 0XFF
50	208	EP-Front Telephone number					38bytes Character String
50	209	Communication Mode for Machine to EP-Front	0	00	1	1	0:G3 1:G4
50	210	Installation Date			FFFFF	3	
50	211	TEL No. of Communication Management Data Destination					38bytes Character String
50	212	Communication Mode for Machine to Communication Management Data Destination	0	00	1	1	0:G3 1:G4
50	213	Alert Origination Function ON/OFF Flag	0	00	1	1	0:OFF 1:ON
50	214	Auto Notification Time		FFFF		2	Hour and minute
		Shared for fixed-time notification, auto notification of paper count data, and periodic polling.					
50	215	Billing Notification Day	0	00	31	1	0: No notification 1-31: Notification day
50	216	Billing Notification Time (Hour and Minute)		1530		2	
50	217	Paper Count Notification Interval	0	00	3	1	0: No notification 1: Daily 2: Weekly 3: Monthly
50	218	Auto Notification Date		31		1	0X01 to 0X31(BCD expression)
		Shared for paper count notification and periodic polling.					
50	220	Consumable Replacement	0	00	1	1	0: No notification 1: Notification
		Replenishment data auto notification ON/OFF flag					
50	221	Periodic Polling Notification Interval	0	00	3	1	0: No notification 1: Daily 2: Weekly 3: Monthly
50	231	System Fail or Local Fail1 Count Threshold		0A		1	0 to 0XFF (0: Not detected) Default: 10 (0X0A)
50	232	System Fail or Local Fail2 Count Threshold		0A		1	0 to 0XFF (0: Not detected) Default: 10(0X2A)

2-1	76
03/	02

Chain	Functio n	Item	Min. value	Default	Max. value	Amount of change	Adjustment	Remarks
50	233	System Fail or Local Fail3 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X3A)
50	234	System Fail or Local Fail4 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X4A)
50	235	System Fail or Local Fail5 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X5A)
50	236	System Fail or Local Fail6 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X6A)
50	237	System Fail or Local Fail7 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X7A)
50	238	System Fail or Local Fail8 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X8A)
50	239	System Fail or Local Fail9 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X9A)
50	240	System Fail or Local Fail10 Count Threshold		0A		1		0 to 0XFF (0: Not detected) Default: 10(0X1A)
50	241	Paper Jam 1 Count Threshold		14		1		0 to 0XFF (0: Not detected) Default: 10(0X14)
50	242	Paper Jam 2 Count Threshold		14		1		0 to 0XFF (0: Not detected) Default: 20(0X15)
50	243	Paper Jam 3 Count Threshold		14		1		0 to 0XFF (0: Not detected) Default: 20(0X16)
50	244	Paper Jam 4 Count Threshold		14		1		0 to 0XFF (0: Not detected) Default: 20(0X17)
50	245	Paper Jam 5 Count Threshold		14		1		0 to 0XFF (0: Not detected) Default: 20(0X18)
50	246	Document Jam 1 Count Threshold		28		1		0 to 0XFF (0: Not detected) Default: 20(0X28)
50	247	Document Jam 2 Count Threshold		28		1		0 to 0XFF (0: Not detected) Default: 40(0X29)
50	248	Document Jam 3 Count Threshold		28		1		0 to 0XFF (0: Not detected) Default: 40(0X30)
50	249	Document Jam 4 Count Threshold		28		1		0 to 0XFF (0: Not detected) Default: 40(0X31)
50	250	Document Jam 5 Count Threshold		28		1		0 to 0XFF (0: Not detected) Default: 40(0X32)
50	251	Tray 1 Feed Count Threshold		000186A0		4		0 to 0XFFFFFFF (0: Not detected)
50	252	Tray 2 Feed Count Threshold		000186A0		4		0 to 0XFFFFFFF (0: Not detected)
50	253	Tray 2 Feed Count Threshold		000186A0		4		0 to 0XFFFFFFF (0: Not detected)
50	254	Tray 2 Feed Count Threshold		000186A0		4		0 to 0XFFFFFFF (0: Not detected)
50	255	MSI Feed Count Threshold		0000C35 0				0 to 0XFFFFFFF (0: Not detected)
50	331	System Fail or Local Fail 1 Count - Object Error Code 1		4421		2		0 to 0XFFFF (0: Not detected)
50	332	System Fail or Local Fail 2 Count - Object Error Code 1		4422		2		0 to 0XFFFF (0: Not detected)
50	333	System Fail or Local Fail 3 Count - Object Error Code 1		4423		2		0 to 0XFFFF (0: Not detected)
50	334	System Fail or Local Fail 4 Count - Object Error Code 1		4133		2		0 to 0XFFFF (0: Not detected)
50	335	System Fail or Local Fail 5 Count - Object Error Code 1		4135		2		0 to 0XFFFF (0: Not detected)
50	336	System Fail or Local Fail 6 Count - Object Error Code 1		4141		2		0 to 0XFFFF (0: Not detected)
50	337	System Fail or Local Fail 7 Count - Object Error Code 1		4142		2		0 to 0XFFFF (0: Not detected)
50	338	System Fail or Local Fail 8 Count - Object Error Code 1		4143		2		0 to 0XFFFF (0: Not detected)

Chain	Functio	Item	Min. value	Default	Max. value	Amount	Adjustment	Remarks
	n					of change		
50	339	System Fail or Local Fail 9 Count - Object Error Code 1		4483		2		0 to 0XFFFF (0: Not detected)
50	340	System Fail or Local Fail 10 Count - Object Error Code 1		4484		2		0 to 0XFFFF (0: Not detected)
50	341	Paper Jam 1 Count – Object Error Code 1		4E11		2		0 to 0XFFFF (0: Not detected)
50	342	Paper Jam 2 Count – Object Error Code 1		4E12		2		0 to 0XFFFF (0: Not detected)
50	343	Paper Jam 3 Count – Object Error Code 1		0000		2		0 to 0XFFFF (0: Not detected)
50	344	Paper Jam 4 Count – Object Error Code 1		4E31		2		0 to 0XFFFF (0: Not detected)
50	345	Paper Jam 5 Count – Object Error Code 1		0000		2		0 to 0XFFFF (0: Not detected)
50	346	Document Jam 1 Count – Object Error Code 1		4A12		2		0 to 0XFFFF (0: Not detected)
50	347	Document Jam 2 Count – Object Error Code 1		4A13		2		0 to 0XFFFF (0: Not detected)
50	348	Document Jam 3 Count – Object Error Code 1		4A22		2		0 to 0XFFFF (0: Not detected)
50	349	Document Jam 4 Count – Object Error Code 1		4A23		2		0 to 0XFFFF (0: Not detected)
50	350	Document Jam 5 Count – Object Error Code 1		4A24		2		0 to 0XFFFF (0: Not detected)

### 2.4.9.10 Automatic Diagnostic

Chain	Function	Description	Object PWB
53	1	G/A MSBC Register Read/Write Check	MAIN-SYS
53	2	DRAM(LM) Address/Data Bus Check	MAIN-SYS
53	3	DRAM(WM) Address/Data Bus Check	MAIN-SYS
53	4	DRAM(OM) Address/Data Bus Check	OM
53	5	DRAM(LM) March Pattern Test	MAIN-SYS
53	6	DRAM(WM) March Pattern Test	MAIN-SYS
53	7	DRAM(OM) March Pattern Test	OM
53	8	OP-MOTO Address/Data Bus Loop Back Test	OP-MOT
53	20	BP-F Register Read Test	BP-F
53	21	BP-F Register Read/Write Test	BP-F
53	22	BP-F DRAM Address/Data Bus Test	BP-F
53	23	BP-F DRAM Pattern Read/Write Test	BP-F
53	24	BP-F DMA Test	BP-F
53	25	BP-F CODEC Test	BP-F
53	26	BP-F EXPRED Test	BP-F
53	27	BP-F CLIPPER Test	BP-F
53	40	EPROM	MMB
53	42	EEPROM	MMB
53	43	SRAM Address/Data Bus Check	MMB
53	44	SRAM March Pattern Test	MMB
53	45	RTC	MMB
53	84	HDD status check	HDIF/HDD
53	100	DRAM/SRAM	G3M0
53	101	DP-RAM	G3M0
53	102	ROM	G3M0
53	103	G/A DPMC1	G3M0
53	104	CODEC & G/A RCNV	G3M0
53	105	MODEM Register, AM Check	G3M0
53	106	MODEM Loop Back Test	G3M0
53	107	EEPROM	G3M0
53	110	Loop Back (ISDN ch0)	G3M0/ICM
53	111	Loop Back (ISDN ch1)	G3M0/ICM
	-		

Chain	Function	Description	Object PWB
53	152	DPRAM	G4M0
53	153	CODEC	G4M0
53	155	G/A	G4M0
53	161	G4 Loop Back	G4M0/ICM
53	200	Panel Diagnostic	PANEL
53	210	MCPP, LCTC Register R/W Check	PANEL
53	211	ROM	PANEL
53	212	DRAM Address/Data Bus Check	PANEL
53	213	DRAM Match Pattern Test	PANEL
53	214	VRAM(SRAM)	PANEL
53	215	LED Test	PANEL
53	216	Tonch & LCD Test	PANEL
53	217	Key Test	PANEL
53	250	ROM	ICM
53	251	SRAM	ICM
53	252	DPRAM	ICM
53	253	ST Transceiver	ICM
53	260	Receive a Digital Signal Pattern (Channel D)	ICM
53	261	Receive a Digital Signal Pattern (Channel B1)	ICM
53	262	Receive a Digital Signal Pattern (Channel B2)	ICM
153	100	DRAM	G3M1
153	101	DP-RAM	G3M1
153	102	ROM	G3M1
153	103	G/A DPMC1	G3M1
153	104	CODEC & G/A RCNV	G3M1
153	105	MODEM Register, RAM Check	G3M1
153	106	MODEM Loop Back Test	G3M1
153	107	EEPROM	G3M1
153	110	Loop Back(ISDN ch0)	G3M1/ICM
153	111	Loop Back(ISDN ch1)	G3M1/ICM
153	150	ROM	G4M1
153	151	SRAM	G4M1
153	152	DPRAM	G4M1

Chain	Function	Description	Object PWB
153	153	CODEC	G4M1
153	155	G/A	G4M1
153	161	G4 Loop Back	G4M1/ICM
253	100	DRAM	G3M2
253	101	DP-RAM	G3M2
253	102	ROM	G3M2
253	103	G/A DPMC1	G3M2
253	104	CODEC & G/A RCNV	G3M2
253	105	MODEM Register, RAM Check	G3M2
253	106	MODEM Loop Back Test	G3M2
253	107	EEPROM	G3M2
253	110	Loop Back(ISDN ch0)	G3M2/ICM
253	111	Loop Back(ISDN ch1)	G3M2/ICM

### 2.4.9.11 Signal Send Test

Chain	Function	Description	Object PWB
54	230	DTMF "#"	ICM
54	231	DTMF "*"	ICM
54	232	DTMF "0"	ICM
54	233	DTMF "1"	ICM
54	234	DTMF "2"	ICM
54	235	DTMF "3"	ICM
54	236	DTMF "4"	ICM
54	237	DTMF "5"	ICM
54	238	DTMF "6"	ICM
54	239	DTMF "7"	ICM
54	240	DTMF "8"	ICM
54	241	DTMF "9"	ICM
54	242	DTMF "A"	ICM
54	243	DTMF "B"	ICM
54	244	DTMF "C"	ICM
54	245	DTMF "D"	ICM
54	260	Digital Pattern Test	ICM
54	271	Pulse 96kHz	ICM
54	272	Pulse 1NFO1	ICM
54	280	Tone 400Hz	ICM
54	290	ISDN Circuit Loop	ICM
55	1	G3M0 Relay ON/OFF Test (Relay Test0)	G3M0
55	2	G3M0/G3M1ON/OFF Test (Relay Test0/Relay Test1)	G3M0/G3M1
55	3	G3M0/G3M2 ON/OFF Test(Relay Test0/Relay Test2)	G3M0/G3M2
55	4	G3M0/G3M1/G3M2 ON/OFF Test(Relay Test0/Relay Test1/Relay Test2)	G3M0/G3M1/G3M2
55	201	Single Tone 0Hz	G3M0/ICM
55	202	Single Tone 400Hz	G3M0/ICM
55	203	Single Tone 462Hz	G3M0/ICM
55	204	Single Tone 697Hz	G3M0/ICM

Chain	Function	Description	Object PWB
55	205	Single Tone 770Hz	G3M0/ICM
55	206	Single Tone 852Hz	G3M0/ICM
55	207	Single Tone 941Hz	G3M0/ICM
55	208	Single Tone 1004Hz	G3M0/ICM
55	209	Single Tone 1080Hz	G3M0/ICM
55	210	Single Tone 1100Hz	G3M0/ICM
55	211	Single Tone 1209Hz	G3M0/ICM
55	212	Single Tone 1300Hz	G3M0/ICM
55	213	Single Tone 1336Hz	G3M0/ICM
55	214	Single Tone 1477Hz	G3M0/ICM
55	215	Single Tone 1500Hz	G3M0/ICM
55	216	Single Tone 1633Hz	G3M0/ICM
55	217	Single Tone 1650Hz	G3M0/ICM
55	218	Single Tone 1850Hz	G3M0/ICM
55	219	Single Tone 2100Hz	G3M0/ICM
55	230	DTMF "#"	G3M0/ICM
55	231	DTMF "*"	G3M0/ICM
55	232	DTMF "O"	G3M0/ICM
55	233	DTMF "1"	G3M0/ICM
55	234	DTMF "2"	G3M0/ICM
55	235	DTMF "3"	G3M0/ICM
55	236	DTMF "4"	G3M0/ICM
55	237	DTMF "5"	G3M0/ICM
55	238	DTMF "6"	G3M0/ICM
55	239	DTMF "7"	G3M0/ICM
55	240	DTMF "8"	G3M0/ICM
55	241	DTMF "9"	G3M0/ICM
55	242	DTMF "A"	G3M0/ICM
55	243	DTMF "B"	G3M0/ICM
55	244	DTMF "C"	G3M0/ICM
55	245	DTMF "D"	G3M0/ICM
55	250	V.17 14400bps	G3M0/ICM
55	251	V.17 12000bps	G3M0/ICM

Chain	Function	Description	Object PWB
55	252	V.29 9600bps	G3M0/ICM
55	253	V.29 7200bps	G3M0/ICM
55	254	V.27ter 4800bps	G3M0/ICM
55	255	V.27ter 2400bps	G3M0/ICM
55	256	V.17 9600bps	G3M0/ICM
55	257	V.17 7200bps	G3M0/ICM
55	258	V.21 300bps	G3M0/ICM
55	260	V.34 2400bps	G3M0/ICM
55	261	V.34 4800bps	G3M0/ICM
55	262	V.34 7200bps	G3M0/ICM
55	263	V.34 9600bps	G3M0/ICM
55	264	V.34 12000bps	G3M0/ICM
55	265	V.34 14400bps	G3M0/ICM
55	266	V.34 16800bps	G3M0/ICM
55	267	V.34 19200bps	G3M0/ICM
55	268	V.34 21600bps	G3M0/ICM
55	269	V.34 24000bps	G3M0/ICM
55	270	V.34 26400bps	G3M0/ICM
55	271	V.34 28800bps	G3M0/ICM
55	272	V.34 31200bps	G3M0/ICM
55	273	V.34 33600bps	G3M0/ICM
55	301	Single Tone 0Hz	G3M0/NCU Ext.
55	302	Single Tone 400Hz	G3M0/NCU Ext.
55	303	Single Tone 462Hz	G3M0/NCU Ext.
55	304	Single Tone 697Hz	G3M0/NCU Ext.
55	305	Single Tone 770Hz	G3M0/NCU Ext.
55	306	Single Tone 852Hz	G3M0/NCU Ext.
55	307	Single Tone 941Hz	G3M0/NCU Ext.
55	308	Single Tone 1004Hz	G3M0/NCU Ext.
55	309	Single Tone 1080Hz	G3M0/NCU Ext.
55	310	Single Tone 1100Hz	G3M0/NCU Ext.
55	311	Single Tone 1209Hz	G3M0/NCU Ext.
55	312	Single Tone 1300Hz	G3M0/NCU Ext.

Chain	Function	Description	Object PWB
55	313	Single Tone 1336Hz	G3M0/NCU Ext.
55	314	Single Tone 1477Hz	G3M0/NCU Ext.
55	315	Single Tone 1500Hz	G3M0/NCU Ext.
55	316	Single Tone 1633Hz	G3M0/NCU Ext.
55	317	Single Tone 1650Hz	G3M0/NCU Ext.
55	318	Single Tone 1850Hz	G3M0/NCU Ext.
55	319	Single Tone 2100Hz	G3M0/NCU Ext.
55	330	DTMF "#"	G3M0/NCU Ext.
55	331	DTMF "*"	G3M0/NCU Ext.
55	332	DTMF "0"	G3M0/NCU Ext.
55	333	DTMF "1"	G3M0/NCU Ext.
55	334	DTMF "2"	G3M0/NCU Ext.
55	335	DTMF "3"	G3M0/NCU Ext.
55	336	DTMF "4"	G3M0/NCU Ext.
55	337	DTMF "5"	G3M0/NCU Ext.
55	338	DTMF "6"	G3M0/NCU Ext.
55	339	DTMF "7"	G3M0/NCU Ext.
55	340	DTMF "8"	G3M0/NCU Ext.
55	341	DTMF "9"	G3M0/NCU Ext.
55	342	DTMF "A"	G3M0/NCU Ext.
55	343	DTMF "B"	G3M0/NCU Ext.
55	344	DTMF "C"	G3M0/NCU Ext.
55	345	DTMF "D"	G3M0/NCU Ext.
55	350	V.17 14400bps	G3M0/NCU Ext.
55	351	V.17 12000bps	G3M0/NCU Ext.
55	352	V.29 9600bps	G3M0/NCU Ext.
55	353	V.29 7200bps	G3M0/NCU Ext.
55	354	V.27ter 4800bps	G3M0/NCU Ext.
55	355	V.27ter 2400bps	G3M0/NCU Ext.
55	356	V.17 9600bps	G3M0/NCU Ext.
55	357	V.17 7200bps	G3M0/NCU Ext.
55	358	V.21 300bps	G3M0/NCU Ext.
55	360	V.34 2400bps	G3M0/NCU Ext.

Chain	Function	Description	Object PWB
55	361	V.34 4800bps	G3M0/NCU Ext.
55	362	V.34 7200bps	G3M0/NCU Ext.
55	363	V.34 9600bps	G3M0/NCU Ext.
55	364	V.34 12000bps	G3M0/NCU Ext.
55	365	V.34 14400bps	G3M0/NCU Ext.
55	366	V.34 16800bps	G3M0/NCU Ext.
55	367	V.34 19200bps	G3M0/NCU Ext.
55	368	V.34 21600bps	G3M0/NCU Ext.
55	369	V.34 24000bps	G3M0/NCU Ext.
55	370	V.34 26400bps	G3M0/NCU Ext.
55	371	V.34 28800bps	G3M0/NCU Ext.
55	372	V.34 31200bps	G3M0/NCU Ext.
55	373	V.34 33600bps	G3M0/NCU Ext.
55	401	Single Tone 0Hz	G3M0/NCU Outer
55	402	Single Tone 400Hz	G3M0/NCU Outer
55	403	Single Tone 462Hz	G3M0/NCU Outer
55	404	Single Tone 697Hz	G3M0/NCU Outer
55	405	Single Tone 770Hz	G3M0/NCU Outer
55	406	Single Tone 852Hz	G3M0/NCU Outer
55	407	Single Tone 941Hz	G3M0/NCU Outer
55	408	Single Tone 1004Hz	G3M0/NCU Outer
55	409	Single Tone 1080Hz	G3M0/NCU Outer
55	410	Single Tone 1100Hz	G3M0/NCU Outer
55	411	Single Tone 1209Hz	G3M0/NCU Outer
55	412	Single Tone 1300Hz	G3M0/NCU Outer
55	413	Single Tone 1336Hz	G3M0/NCU Outer
55	414	Single Tone 1477Hz	G3M0/NCU Outer
55	415	Single Tone 1500Hz	G3M0/NCU Outer
55	416	Single Tone 1633Hz	G3M0/NCU Outer
55	417	Single Tone 1650Hz	G3M0/NCU Outer
55	418	Single Tone 1850Hz	G3M0/NCU Outer
55	419	Single Tone 2100Hz	G3M0/NCU Outer
55	430	DTMF "#"	G3M0/NCU Outer

Chain	Function	Description	Object PWB
55	431	DTMF "*"	G3M0/NCU Outer
55	432	DTMF "0"	G3M0/NCU Outer
55	433	DTMF "1"	G3M0/NCU Outer
55	434	DTMF "2"	G3M0/NCU Outer
55	435	DTMF "3"	G3M0/NCU Outer
55	436	DTMF "4"	G3M0/NCU Outer
55	437	DTMF "5"	G3M0/NCU Outer
55	438	DTMF "6"	G3M0/NCU Outer
55	439	DTMF "7"	G3M0/NCU Outer
55	440	DTMF "8"	G3M0/NCU Outer
55	441	DTMF "9"	G3M0/NCU Outer
55	442	DTMF "A"	G3M0/NCU Outer
55	443	DTMF "B"	G3M0/NCU Outer
55	444	DTMF "C"	G3M0/NCU Outer
55	445	DTMF "D"	G3M0/NCU Outer
55	450	V.17 14400bps	G3M0/NCU Outer
55	451	V.17 12000bps	G3M0/NCU Outer
55	452	V.29 9600bps	G3M0/NCU Outer
55	453	V.29 7200bps	G3M0/NCU Outer
55	454	V.27ter 4800bps	G3M0/NCU Outer
55	455	V.27ter 2400bps	G3M0/NCU Outer
55	456	V.17 9600bps	G3M0/NCU Outer
55	457	V.17 7200bps	G3M0/NCU Outer
55	458	V.21 300bps	G3M0/NCU Outer
55	460	V.34 2400bps	G3M0/NCU Outer
55	461	V.34 4800bps	G3M0/NCU Outer
55	462	V.34 7200bps	G3M0/NCU Outer
55	463	V.34 9600bps	G3M0/NCU Outer
55	464	V.34 12000bps	G3M0/NCU Outer
55	465	V.34 14400bps	G3M0/NCU Outer
55	466	V.34 16800bps	G3M0/NCU Outer
55	467	V.34 19200bps	G3M0/NCU Outer
55	468	V.34 21600bps	G3M0/NCU Outer
55	469	V.34 24000bps	G3M0/NCU Outer

Chain	Function	Description	Object PWB
55	470	V.34 26400bps	G3M0/NCU Outer
55	471	V.34 28800bps	G3M0/NCU Outer
55	472	V.34 31200bps	G3M0/NCU Outer
55	473	V.34 33600bps	G3M0/NCU Outer

#### 2.4.9.12 Fax System Data

\*:Same feature with Channel 1 \*\*:Same feature with Channel 1 & 2 \*\*\*:Same feature with Channel 1, 2, and 3

(Channel 1:Chain code 157, Channel 2:Chain code 257, Channel 3:Chain code 357) When there are two defaults (ex. 10(0A)), the value outside the parentheses is decimal and that inside is hexadecimal.

Chain	Function	Item	Content	Default	Description	Access by
57	1**	Line Type (NCU0: Outside Line)	0:PSTN(Public Switched Telephone Network) 1:PBX(Private Branch Exchange) 2 = Direct Line	00	This data sets a line type for the main unit connection line (NCU0). When NTT is set, busy tone detection is enabled. If 2= Direct Line is set, a 1300 Hz signal is sent to the line when a single numeric key is pressed.	User
57	2**	Dial Type Channel 0 for Outside Line	0:PB(DTMF) 1:DP(10PPS) 2:DP(20PPS)	00	This data sets a dial type for signal send to the main unit connection line (NCU0). Set PB for pushbutton signals and 20PPS or 10PPS for dial pulse signals. Setting a wrong dial type always results in busy processing.	User
57	3**	Line Type (NCU0: Extension Line)	0:PSTN 1:PBX 2:Direct Line	01	Sets up a type of the line when the NCU0 is replaced with the optional "Ext/Outside line NCU". Press the "Extension" button on the Control Panel to connect this line. The parameter (FUNC.No.) indicates "Function No.001" (Function=001).	User
57	4**	Dial Type Channel 0 for Extension Line	0:PB(DTMF) 1:DP(10PPS) 2:DP(20PPS)	00	Sets up a type of the line when the NCU0 is replaced with the optional "Ext/Outside line NCU". The parameter indicates Chain=057 and Function=002(Dial type), and when a wrong dial is set up, all signals will be processed as "Busy".	User
57	5	Restriction of Dial Type Change	0: Do not restrict 1: Restrict	00	Restriction of Dial Type Change for 57-2 and 4	CE
57	10	Pause time	0 to 255 sec.	03	For origination to NCU connected line (NTT/PBX), dialing stops for the set time. A pause is inserted into the remote party's telephone number information for the user to hear the tone and the second dial tone. For ISDN, any pause before "/" is ignored. Once "/" has appeared, the operation is the same as in the above NCU case.	User
57	11	Independent communication intervals at broadcast operation	3-255 sec (1 setp=1 sec)??	08	This data prescribes intervals between independent communication sessions in broadcast. If frequent relay broadcast instructions are anticipated and the general communication volume is large, set a greater value to extend the line free time for longer reception because relay broadcast results do not return easily.	User
57	12	Number of resend operations	0 to 5 times(5) (1step=1 resend) (0: No resend operated)	03	When a transmission ends as invalid at auto send operation due to abnormal line condition or failure at the remote terminal, release the line once, then resend the page not transmitted. The data specifies the number of resend operations to be dialed for.	User
57	13	Enable/Disable Received Document Sorting by Line Services	0: Disable 1: Enable	00		
57	14	Enable/Disable Received Document Sorting by Lines	0: Disable 1: Enable	00		
Chain	Function	Item	Content	Default	Description	
-------	----------	--	---	---------	--	
57	15	PSTN0 Network Service Contract	0: No Number Display/Modem Dial- in 1: Number Display 2: Modem Dial-in n	00		
57	16	PSTN1 Network Service Contract	0: No Number Display/Modem Dial- in 1: Number Display 2: Modem Dial-in n	00		
57	17	PSTN2 Network Service Contract	0: No Number Display/Modem Dial- in 1: Number Display 2: Modem Dial-in n	00		
57	18	ISDN Network Service Contract	0: No Number Display/Modem Dial- in 1: Number Display 2: Modem Dial-in n	00		
57	20	Number of redials	0 to 255 times(0:No redialing made) (1step=1 redial)	05	At the auto send, when the remote terminal do line, release the line and redial for send again. of redialings for such a case. 0 for redialing me made.	
57	21	Interval between redials(□)	1 to 255 min. (1step=1 min.)	01	The data specifies the time between the releas first redialing. When more than 6 redialings ha specifies the time between the fifth and sixth re	
57	22	Interval between redials(2)	1 to 255 min. (1step=1 min.)	01	The data specifies the time between the line re the second. When more than 6 redialings have the time between the sixth and seventh redialir	
57	23	Interval between redials(3)	1 to 255 min. (1step=1 min.)	01	The data specifies the time between the line re and the third. When more than 6 redialings ha specifies the time between the seventh and eig	
57	24	Interval between redials(4)	1 to 255 min. (1step=1 min.)	01	The data specifies the time between the line re the fourth. When more than 6 redialings have the time between the eighth and ninth redialing	
57	25	Interval between redials(5)	1 to 255 min. (1step=1 min.)	01	The data specifies the time between the line re the fifth.	
57	26	Restriction of Redial Parameter Change by User	0:Not restricted 1:Restricted	00		
57	30	iFAX(Internet Fax) Function	0: Not supported 1: Supported	00		
57	31	iFAX(Internet Fax) Function	0: Not supported 1: Supported	00		
57	32	iFAX(Internet Fax) Function	0: Not supported 1: Supported	00		
57	33	iFAX(Internet Fax) Function	0: Not supported 1: Supported	00		

	Access by
es not answer due to the busy The data specifies the number eans that no redialing will be	User
e of line at auto send and the ve been set up, the data dialings.	User
lease at the first redialing and been set up, the data specifies gs.	User
lease at the second redialing /e been set up, the data hth redialings.	User
lease at the third redialing and been set up, the data specifies s.	User
ease at the fourth redialing and	User

#### 2-186 03/02

Chain	Function	Item	Content Defa		Description
57	34	iFAX(Internet Fax) Function	0:TIFF-S 1:TIFF-F 2:TIFF-J	00	
57	35	Priority Order in Received Document Sorting by Line Services	0:Dial-in 1:Number Display	00	
57	36	SMTP Send I/F Activation	0: Stop 1: Start	00	
57	50**	Call Restriction on PSTN0 (NCU Guard)	0: Enable call 1: Disable call	00	This data prohibits a G3 fax or telephone call to unit. This restriction is applied when NCU0 is ir connected or when NCU0 is used for reception
57	51**	Call Restriction on G3CH0 (Channel 0 Communication Guard)	0: Enable call 1: Disable call	00	This data prohibits a G3 fax to NCU0 installed of Telephone call is enabled. Individually reflectable on each speed dial (reference)
57	52**	Call Restriction on EXT0 (NCU Guard)	0: Enable call 1: Disable call	00	This data prohibits a G3 fax or telephone call to optional NCU0 for extension and outside line is applied when the optional NCU0 is installed but when the optional NCU0 is used for reception o
57	60**	Dial tone detection time (NCU0□PSTN)	0 to 255 sec.	10	If PSTN is selected with Chain=057 and Function origination, dial tone detection is attempted from in this data. When the dial tone is detected or the dial signal send operation starts.
57	61**	Dial tone detection time (NCU□□PBX)	0 to 255 sec.	04	If PBX is selected with Chain=057 and Function origination, dial signal send is attempted from he this data. When the prescribed time has passed starts.
57	62	On-Hook Dial Monitor Timer	0: Infinite 1:60sec 2:90sec 3:180sec	02	
57	63	Send time by 1300Hz(NCU0□L Line)	0 to 25500ms (1step=100ms)	40	When L line is selected at Chain=057 and Func 1300Hz single signal can be sent by pressing a specifies the time to send this signal.
57	70**	PB signal level (NCU0□Outside line)	0 to 20(1step=-1dB) (Reference: 7=- 9dbm or equivalent for FX)	07	When PB is selected at Chain=057 and Function signal will be sent onto the outside line by the let When the telephone line is not connected, set up
57	71**	PB signal level (NCU0□Extension line)	0 to 20(1step=-1dB) (Reference: 7=- 9dbm or equivalent for FX)	07	When PB is selected at Chain=057 and Functio signal will be sent onto the extension line by the When the telephone line is not connected, set u
57	72	PB signal send time by manual send	0 to 255ms	100	When PB is selected at Chain=057 and Functio signal will be sent onto the outside line for the s Basically, the value need not be changed.
57	78		1 to 15(digit)	05	Destination Check Set destination check and the number of lower
57	79		0 to 255 sec.	60	Re-origination Timer Set the re-origination inhibition interval on this ti
57	80	CNG Send at Manual Transmission	0: Do not send 1: Send	01	-

	Access by
<ul> <li>NCU0 installed on the main nstalled but the line is not only.</li> </ul>	CE
on the main unit. Function=050	CE
r to page 2-207)	
o an extension when the installed. This restriction is t the line is not connected or only.	CE
on=001 (line type) for auto n hook-off for the time specified he prescribed time has passed,	CE
n=001(line type) for auto look-off for the time specified in ld, dial signal send operation	CE
ction=001 (Line type), the any key of the keypad. The data	CE
on=002(dial type), the push tone evel of power as specified. up a smaller figure.	CE
on=004(dial type), the push tone e level of power as specified. up a smaller figure.	CE
on=002(dial type), the push tone specified time by manual send.	CE
digits for re-origination control.	
imer for re-origination control.	
	1

Chain	Function	Item	Content	Default	Description	Access by
57	81	CNG Signal Send Start Time	Time from the end of dialing until the first CNG signal is sent: 0 to 25500(ms) 1step=100ms	30	This data prescribes the time from the end of dialing until the first CNG signal is sent in auto origination. Change the numeric value if a telephone connection is automatically set up for a receiving terminal with a FAX/TEL auto switching function due to the relationship of timing between termination and CNG signal send.	CE
57	82	CNG Send Time.	0 to 255 sec.	58	The data specifies the period of time when the CNG signal is sent out by auto send.	CE
57	85	CNG signal transmission timing by manual send	0 to 25500ms (1step=100ms)	00	The data specifies the interval between pressing of the Start button and the transmission of the CNG signal by the manual send. In case failure occurs at the terminal when the CNG signal is sent immediately after pressing the Start button, change the value.	CE
57	90	Disabling the keypad	0:enabled 1:disabled	00	The data is to meet the customer's needs to perform the send operation only by using the numbers stored in the speed dial and no dialing using the keypad will be made.	CE
57	91	DTMF Idle Monitor Timer.	0 to 255 sec.	45	Sets up time to monitor when no transmission is made at the DTMF process such as DTMF type relay send. The smaller the value, the more severe the DTMF signal transmission at the send side. The greater the value, the easier the operation at the emitting side of the DTMF signal, but there could be wrong operation occurring resulting in longer monitor time required.	CE
57	92	DTMF Response Monitor Timer.	0 to 255 sec.	04	This timer monitors a response signal at the DTMF process such as DTMF relay send.	CE
57	150	Line Power Feed Monitor.	0:Not monitored 1:Monitored	00	Specifies if the feeding status of current on the ISDN line will be monitored.	CE
57	151*	Line type (G4M0)	1:ISDN-CSDN 2:ISDN-PSDN 3:CSDN 4:PSDN	01	Sets up the line type when various ISDN and digital lines are supported. The data needs not be changed as only ISDN-CSDN is supported currently.	CE
57	152	Default G4 Line Selection from ISDN-G4 and CSDN-G4 (X21)	0:ISDN-CSDN 1:CSDN(X21)	00	The data specifies priority of selection between the ISDN line and CSDN line (high speed digital line) by G4 send. The data needs not be changed with G4 model which is not compatible with the CSDN line.	CE
57	153	Default G4-Network Protocol	0:X25PLP 1:T70NL 2:IS8208	02	The data specifies the initial setup of G4 protocol to be used for G4 send. The data needs not be changed with the domestic machines connected to INS64/1500(via DPBX). "T70NL" needs to be set up with G4 models compatible to CSDN lines, only when the CSDN line has the priority.	CE
57	154	Default G4-Network Protocol on calling ISDN-G4 (X21)	0:X25PLP 1:T70NL 2:IS8280	01	No change because X21 is not supported	
57	160	Restrictions on sending ISDN0 (network guard)	0: Send not restricted 1:Send restricted	00	The data can be changed when all send operations to the ISDN line via B1ch need to be restricted. By changing the data, B1ch can be open to be used only as a receive channel.	CE
57	161	Restrictions on sending ISDN1 (network guard)	0: Send not restricted 1:Send restricted	00	The data can be changed when all send operations to the ISDN line via B2ch need to be restricted. By changing the data, B2ch can be open to be used only as a receive channel.	CE

# 2-188 03/02

Chain	Function	Item	Content	Default	Description	Access by
57	162	Restrictions on sending ISDN_ANALOG	0: Send not restricted 1:Send restricted	00	The data can be changed when analog send (G3 Fax/Telephone) by the ISDN line needs to be restricted. By changing the data, the ISDN line can be open only to be used for digital send or digital send or analog receive.	CE
57	163***	Restrictions on sending G4CH0(Channel 0 communication guard)	0: Send not restricted 1:Send restricted	00	The data can be changed when G4 mode send by the ISDN line needs to be restricted. By changing the data, the ISDN line can be restricted only to be used for analog send operation.	CE
57	164	Restrictions on sending ISDN_CSDN0:G4 restriction (B1ch)(network guard)	0: Send not restricted 1:Send restricted	00	The data can be changed when G4 mode send to the ISDN line via B1ch needs to be restricted. By changing the data, the traffic volume of G4 send operation via ISDN line can be restricted.	CE
57	165	Restrictions on sending ISDN_CSDN1:G4 restriction (B2ch)(network guard)	0: Send not restricted 1:Send restricted	00	The data can be changed when G4 mode send to the ISDN line via B2ch needs to be restricted. By changing the data, the traffic volume of G4 send operation via ISDN line can be restricted.	CE
57	180	ISDN dial tone	0:tone off 1:400Hz consecutive tone 2:400Hz On(260ms)/Off(260ms) 3:400Hz On(180ms)/Off(260ms)	01	The data specifies the mock dial tone type to be informed to the operator by Main unit when the handset is lifted up and the ISDN line has been captured.	CE
57	184	DTMF Signal Amplification Gain	0 to -28 dB m	16=-16 dB m	This data specifies a send power level for a selected pushbutton tone signal (DTMF) when an ISDN line is connected.	CE
57	190	Closed-Area Communication	0:Disable 1:Enable	00		
57	201	Reception Mode	0: TEL/FAX mode (TEL Priority) 1: FAX mode (FAX Only)	01	Set the Reception Mode	
57	202	Ring detection time at FAX	0 to 255 sec. (1step=1 sec.)	00	Set up time to switch to Fax when transmission is received. Bell rings at the handset/separate telephone for the specified time when the terminal receives a call.	User
57	203	Restriction of change of the ring detection time by user	0: Do not restrict 1: Restrict	00	The data to restrict the change of 57-202 ring detection time at FAX.	
57	204		0 to 255 sec. 1step=1 sec.	21	Auto Answering Time in TEL/FAX Auto Switching Mode (TEL Priority)	
57	210	Direct Mail refection	0=Off 1=On	00	The terminal refers the last 4 digits of all numbers stored in the speed dial directory to the last 4 digits of the ID codes sent from the remote terminal and receives only the numbers that match. The feature can be switched on and off. "Space" will be ignored when the reference is made.	CE
57	260	CNG Signal (Dial Tone) Detection Time.	0 to 25500(ms) 1step=100ms	55	This data is used in TEL Priority mode. If no CNG signal is detected within this time, the auto answering function (external telephone) is called.	
57	270	CED Send	0: Do not send 1: Send	01		
57	271	CED Send for Manual Reception	0: Do not send 1: Send	01		
57	272	CED Send Frequency	0:2100Hz 1:1650Hz 2:1100Hz	00	This data changes the frequency of a CED. If an eco suppressor causes a fault in international communication, change the frequency to other than 2100 Hz. However, be careful when changing the frequency because some transmitters may monitor only CED signals of 2100 Hz	CE

Chain	Function	Item	Content	Default	Description	Access by
57	273	CED Send time	0 to 25500ms (1step=100ms)	27	This data changes the frequency of a CED signal. As the send time has been specified (2.6 to 4.0 sec.) as standard by the ITU-T recommendation and some transmitters monitor the detection time of CED signals, be careful when changing.	CE
57	274	Interval between the line closure and the CED signal transmission (Fax only mode)	0 to 25500ms (1step=100ms)	18	This data specifies the time from when a call terminates until when the terminal is switched to FAX and a CED signal is sent. If the CED signal is sent at a late timing, the transmitter may not recognize the terminal as a fax. If the CED signal is sent at an early timing, a connection delay may disable the transmitter to detect the CED signal.	CE
57	276	CED signal transmission timing by manual receive	0 to 25500ms (1step=100ms)	00	Specifies time between the pressing of manual receive button and the transmission of CED signal. As described in Chain=057 and Function=274(Time between the line close and the CED signal transmission) for auto receive, when the CED signal is sent at a late timing, the transmitter may not recognize the terminal as a Fax.	CE
57	301	First subscriber to be displayed	0:Not to be displayed 1:To be displayed	00	Specifies whether or not to enable "26 Informing the sending terminal's number" when the telephone number has been in->23. ISDN ID 1".	User
57	302	Communication capability of the first subscriber's number (Telephone)	0:Off 1:On	00	Specifies whether or not to have "25 Communication Capability" functioned as a telephone when the telephone number has been stored in ISDN ID 1".	User
57	303	Communication capability of the first subscriber's number (G2/G3 Fax)	0:Off 1:On	00	Specifies whether or not to have the G2/G3FAX functioned as "25 Communication Capability" when the telephone number has been stored in. ISDN ID 1".	User
57	304	Communication capability of the first subscriber's number(G4 Fax)	0:Off 1:On	00	Specifies whether or not to have the G4 FAX functioned as "25 Communication Capability" when the telephone number has been stored in ISDN ID 1".	User
57	311	Second subscriber's number to be displayed	0:Not to be displayed 1:To be displayed	00	Specifies whether or not to enable "30. Informing the sending terminal's number" when the telephone number has been stored in ISDN ID 2".	User
57	312	Communication capability of the second subscriber's number (Telephone)	0:Off 1:On	00	Specifies whether or not to have "29. Communication Capability" functioned as a telephone when the telephone number has been stored in ISDN ID 2".	User
57	313	Communication capability of the second subscriber's number (G2/G3 Fax)	0:Off 1:On	00	Specifies whether or not to have the G2/G3FAX functioned as "29. Communication Capability" when the telephone number has been stored in ISDN ID 2".	User
57	314	Communication capability of the second subscriber's number (G4 Fax)	0:Off 1:On	00	Specifies whether or not to have the G4 FAX functioned as "29. Communication Capability" when the telephone number has been in ISDN ID 2".	User
57	321	Third subscriber's number to be displayed	0:Not to be displayed 1:To be displayed	00	Specifies whether or not to enable "34. Informing the sending terminal's number" when the telephone number has been stored in ISDN ID 3".	User
57	322	Communication capability of the third subscriber's number (Telephone)	0:Off 1:On	00	Specifies whether or not to have "33. Communication Capability" functioned as a telephone when the telephone number has been stored in ISDN ID 3".	User
57	323	Communication capability of the third subscriber's number (G2/G3 Fax)	0:Off 1:On	00	Specifies whether or not to have the G2/G3FAX functioned as "33. Communication Capability" when the telephone number has been stored in ISDN ID 3".	User

# 2-190 03/02

Chain	Function	Item	Content	Default	Description	Access by
57	324	Communication capability of the third subscriber's number (G4 Fax)	0:Off 1:On	00	Specifies whether or not to have the G4 FAX functioned as "33. Communication Capability" when the telephone number has been stored in ISDN ID 3".	User
57	331	Fourth subscriber's number to be displayed	0:Not to be displayed 1:To be displayed	00	Specifies whether or not to enable "38. Informing the sending terminal's number" when the telephone number has been stored in ISDN ID 4".	User
57	332	Communication capability of the fourth subscriber's number (Telephone)	0:Off 1:On	00	Specifies whether or not to have "37. Communication Capability" functioned as a telephone when the telephone number has been stored in ISDN ID 4".	User
57	333	Communication capability of the fourth subscriber's number (G2/G3 Fax)	0:Off 1:On	00	Specifies whether or not to have the G2/G3FAX functioned as "37. Communication Capability" when the telephone number has been stored in ISDN ID 4".	User
57	334	Communication capability of the fourth subscriber's number (G4 Fax)	0:Off 1:On	00	Specifies whether or not to have the G4 FAX functioned as "37. Communication Capability" when the telephone number has been stored in ISDN ID 4".	User
57	451	Conversation Reservation Function	0:Off 1:On	00	Determines whether or not to enable the Conversation reservation as described in the ITU-T recommendation. Effective for controlling both send and receive operations.	CE
57	461	G3 mode RX Gain (ISDN)	0 to 15(0 to -15dB) 15= -15dBm	00	Specifies the G3 receive power level using ISDN.	CE
57	462	TX Gain in ISDN G3 communication mode	0 to 15(0 to -15dB)	04= - 4dBm	Specifies the send power level in the G3 mode using the ISDN line.	CE
57	501	Selecting paper for receive operation	0:Tray selection 1:User selection	00	This data specifies the received paper size for information in the paper size area of DIS/DTC or NSF/NSC signals. This allows you to restrict or specify the original size sent by terminal.	User
57	502	Paper selected by user(1)	0 to 74 (Total value of A4LEF=4, A5LEF=8, B5LEF=64)	4C	Determines the programmed paper size which is effective when User Selection is set up in Chain=057 and Func=501 (As paper selected for receive operation). A4LEF, A5LEF, or B5LEF is available for selection.	User
57	503	Paper selected by user(2)	0 to 294 (Total value of A3=2, A4=4, B4=32, letter=256)	0126	Determines the programmed paper size which is effective when User Selection is set up in Chain=057 and Func=501 (As paper selected for receive operation). A3SEF, A4SEF, B4SEF, or Letter is available for selection.	User
57	520	V.34 modulation capability	00: Disabled 01:V34	01	Determines whether or not the Super G3(V.34) modulation capability will be enabled. Individually reflectable on each speed dial (refer to page 2-207)	CE
57	550**	Image Signal Send Level (G3M0:NCU0)	0 to 20(1step=-1dB) 0=-10dbm or equivalent	00	Determines the image signal send power level for G3 fax communication through the outside line of NCU. As prescribed in Article 14 of the Terminal Equipment and Other Regulations, the power level is set to -8dBm or less. For this machine-10dBm or more cannot be set. Individually reflectable on each speed dial (refer to page 2-207)	CE
57	551**	Image Signal Send Level (G3M0:EXT0)	0 to 20(1step=-1dB) (Ref.: for FX, 0=-10dbm or equivalent)	00	Determines the image signal send power level for G3 fax communication through the outside line of NCU. As prescribed in Article 14 of the Terminal Equipment and Other Regulations, the power level is set to -8dBm or less. For this machine-10dBm or more cannot be set.	CE

Chain	Function	Item	Content	Default	Description
57	552**	Termination (Receive) Level(G3M0:NCU0)	0 to 50(1step=-1dB)	43= - 43dBm	Determines the signal amplification level for a considered outside line of NCU. If signals from the remote change the data for 48 or a higher grade. How data error because the entire level of termination
57	553**	Termination (Receive) Level (G3M0:EXT0)	0 to 50(1step=-1dB)	43= - 43dBm	Determines the signal amplification level for a d extension line of NCU. If signals from the remo all, change the data for 40 or a lower grade. H a data error because the entire level of termina
57	554**	G3M0 TX Cable Equalizer	0:0dB(0km) 1:4dB(2.7km) 2:8dB(5.3km) 3:12dB(8km)	01	Equalizes oscillation according to the length of subscriber's switchboard and main unit. When data errors in the overall transmission, change Individually reflectable on each speed dial (refe
57	555**	G3M0 RX Cable Equalizer	0:0dB(0km) 1:4dB(2.7km) 2:8dB(5.3km) 3:12dB(8km)	01	Equalizes oscillation according to the length of subscriber's switchboard and main unit. When data errors in the overall receive, change the vi- each speed dial (refer to page 2-207)
57	560	T1 timer setting at send operation	0 to 255 sec.	36	When the terminal is connected to fax operatio identifying the remote terminal. When the signation time occurs, the value will be reset.
57	561	T1 timer setting at receive operation	0 to 255 sec.	39	When the terminal is connected to fax operation identifying the remote terminal. When the signation time occurs, the value will be reset.
57	562	T2 timer setting	0 to 255(1step=100ms)	60	timer is to detect the loss of an instruction and value will be reset when the flag sequence is p occurs. Try to increase the data when carrier i data or exchanging messages after image data collision.
57	563	T3 timer setting	0 to 255(1step=100ms)	150= 15sec	Sets up time to call operator for warning when sending image data with delayed conversation over time occurs, the data will be reset.
57	564	T4 timer setting at auto send/receive operation	0 to 255(1step=100ms)	30= 3sec	Sets up intervals between resend operations for is connected for auto receive fax operation. Cl when signals are collided with each other by do BPS(overseas) or at the network in the busines voice compression rate is high.)
57	565	T4 timer setting at manual send/receive operation	0 to 255(1step=100ms)	45= 4.5sec	When the terminal is connected to manual rece determines the intervals between resend opera should basically not be changed.

	Access by
all terminating through the party cannot be detected at all, ever, noise will easily cause a g signals rises.	CE
all terminating through the ote party cannot be detected at owever, noise will easily cause ting signals rises.	CE
unloaded cable between the there are many fallbacks or the value. r to page 2-207)	CE
unloaded cable between the there are many fallbacks or alue. Individually reflectable on	CE
n, this data sets up time before I is properly detected or over	CE
n, this data sets up time before I is properly detected or over	CE
synchronized response. The roperly detected or overtime s detected on receiving image which results in signal	CE
sending a message after When the operator answers or	CE
r all signals when the terminal ange the data to 35, 40, or 45 alayed transmission at the 4800 as environments where the	CE
ive operation, this data tions for all signals. The data	CE

#### 2-192 03/02

Chain	Function	Item	Content	Default	Description
57	566	G3M ECM T5 Timer(Common to two channels)	0:30 min. 1:10 min. 2:65 sec. 3:2 min.	01	Determines the time for monitoring the release of "RNR" state in ECM communication. When the likely to be released. When the time set up is lo an invalid sequence will be delayed.
57	570**	G3M0 NSF,DIS Resend Timer	0:3 sec. 1:3.45 sec. 2:2.55 sec. 3:4.5 sec.	00	When the terminal is connected to auto receive intervals between resend operations at an exch NSS/DCS signals for identifying the remove terr (3.45 sec.) or 11 (4.5 sec.) when the signals are delayed transmission at the network in the busin where the voice compression rate is high.
57	572	Idle Time Timer Value Recommended in	0 to 255ms(1step=1ms)	75=	
57	573	1.30	0 to 255ms(1step=10ms)	75ms 10= 100ms	Monitor Timer Value from Carrier Down until Dru Information Reception
57	576**	G3M0 DIS ignore(No. of DIS signals ignored)	0 to 255 times	00	Cuts the signal over 250ms momentarily to rebo the CED signal from the receiving terminal has the DIS/NSF signal). Change the data to 1 (1 ig frequently or transmission failure due to echoes Individually reflectable on each speed dial (refer
57	577**	Number of G3M0DIS signals ignored	0 to 255 times	00	Enables the feature of Chain=057 and Function ignored) only when 4800bps is selected.
57	581	No. of bytes to send DIS/DTC FIF	0:4bytes system 1: 5bytes system 2: 6bytes system 3: 7bytes system 4: 8bytes system 5: 9bytes system 6: 10bytes system 7: 11bytes sys 8: 12bytes system 9: 13bytes sys 10:14bytes system	10	Specifies the number of bytes for sending the D system is to deal with the super fine resolution r Service using the old type G3 models or compu communication error may occur when the DIS/E system is detected. Change the system to 5Byt Ensure to get an approval of the customer for cl performance will be lowered by the change.
57	582**	G3M0 Modem Mode	00:AUTO 01:ITU-T G3	00	Determines whether or not to send nonstandard When ITU-T G3 is selected, you cannot use the remote service feature.
57	590	Fast Mode Protocol	00:OFF 01:ON	00	Determines whether or not to enable the Fast M
57	592	MPSX capacity at activating the Fast Mode Protocol	0:Off 1:On	00	Determines whether or not to change the mode while the Fast Mode Protocol is being activated
57	593	High-Speed/Low-Speed Capacity in Remote Maintenance	0: Low-speed TRESS 1: High-speed TRESS	01	This data prescribes a protocol type for remote setting unless specified otherwise.
57	594**	Command Preamble Send Time for Remote Maintenance	0:300ms 1:1sec	00	Determines the preamble time for remote service if data errors cause communication failure and r
57	595	Fast Protocol capability	0:Off 1:On	00	

	Access by
of the remote machine from the time set up is short, the line is ong, the line release timing at	CE
operation this data sets up hange of NSF/DIS and minal. Change the data to 01 e collided with each other by ness environments, or 4800bps	CE
opout During Image	
oot the echo-suppressor that stopped in 4800bps (ignoring gnore) when 4800bps is used s occurs often. r to page 2-207)	CE
=576(No. of DIS/NSF signals	CE
DIS/DTC signals. The 14Bytes mode/inches. In the VAN uter programs, however, DTC signal of the 14Bytes tes or 4Bytes in such a case. hanging the system as the	CE
d signals (NSF/NSC/NSS). FX unique features and	CE
Node Protocol which is the FX	CE
e without going back to Phase B I.	CE
service. Do not change this	CE
ce. Change the value to 1 sec necessitate resend frequently.	CE

Chain	Function	Item	Content	Default	Description
57	601**	G3M0 TX Modem Speed	1:2400bps 2:4800bps 3:7200bps 4:9600bps 5:12000bps 6:14400bps 7:16800bps 8:19200bps 9:21600bps 10:24000bps 11:26400bps 12:28800bps 13:31200bps 14:33600bps	14	Sets up a starting Modem speed for sending G Individually reflectable on each speed dial (refe
57	602**	G3M0 TX Modem Speed	1:2400bps 2:4800bps 3:7200bps 4:9600bps 5:12000bps 6:14400bps 7:16800bps 8:19200bps 9:21600bps 10:24000bps 11:26400bps 12:28800bps 13:31200bps 14:33600bps	14	Sets up a starting Modem speed for receiving based on the modem speed setup will be inform
57	603	14400 bps modem type	0=Off 1=V1.7 2=V3.3 & V1.7 3=V3.3	02	Selects a 14400bps modem type for sending a ITU-T recommends to use V.17 and this data r
57	610**	EQM Comparative data (G3M0) in 4800BPS	0 to 7F FTT send	47(2F)	Determines the standard fall back data based ( Monitor) at receiving 4800bps
57	611**	EQM Comparative data (G3M0) in 7200BPS	0 to 7F FTT send	48(30)	Determines the standard fall back data based Monitor) at receiving 7200bps
57	612**	EQM Comparative data (G3M0) in 9600BPS	0 to 7F FTT send	56(38)	Determines the standard fall back data based Monitor) at receiving 9600bps
57	613**	EQM Comparative data (G3M0) in TCM7200BPS	0 to 7F FTT send	70(46)	Determines the standard fall back data based Monitor) at receiving TCM7200bps
57	614**	EQM Comparative data (G3M0) in TCM9600BPS	0 to 7F FTT send	64(40)	Determines the standard fall back data ba Monitor) at receiving TCM9600bpS
57	615**	EQM Comparative data (G3M0) in 12000BP	0 to 7F FTT send	64(40)	Determines the standard fall back data ba Monitor) at receiving 12000bps
57	616**	EQM Comparative data (G3M0) in 14400BPS	0 to 7F FTT send	64(40)	Determines the standard fall back data ba Monitor) at receiving 14400bps
57	620	Communication Declaration Data Type	Total value of MH=2, MR=4, MMR=8, IMAGE=16, JBIG=32, Binary=256	318	Selects the coded or composite capability to i sending NSF/DIS signals. The data should n instructed.
57	623	CCITT MMR capability	0:Off 1:On	01	Selects handling of the MMR capability that c data should not be changed unless otherwise i
57	624	TCM capability	0:Off 1:On	01	Selects whether or not to enable the TCM cap changed unless otherwise instructed.

	Access bv
3 signals. r to page 2-207)	CE
63 signals. The loading Modem ned to the NSF/DIS signal.	CE
nd receiving G3 signals. The eeds not be changed.	CE
on the EQM(Eye Quality	CE
sed on the EQM(Eye Quality	CE
sed on the EQM(Eye Quality	CE
sed on the EQM(Eye Quality	CE
nform the remote terminal when ot be changed unless otherwise	CE
an be instructed by ITU-T. The nstructed.	CE
ability. The data should not be	CE

#### 2-194 03/02

Chain	Function	Item	Content	Default	Description	Access by
57	630	G3 protocol minimum scan capability	0:20ms(T7.7) 1:5ms(T7.7) 2:10ms(T7.7) 3:20ms(2T7.7) 4:40ms(2T7.7) 5:40ms(2T7.7) 6:10ms(2T7.7) 7:0ms(T7.7)	07	Selects handling of the minimum scan capability that can be instructed by ITU- T. In the transmission with VAN service using the old type G3 Fax or computer system, transmission failure may occur if machine instructs to use 0ms. In such a case, change the data to 2-10ms. Customer's approval is required for changing the data as the transmission performance will be abated.	CE
57	640	Communication Declaration Paper Size (1)	Total value of 4=A4 LEF 8=A5 LEF 64=B5 LEF 256=Letter LEF	332(01 4C)	Selects the LEF paper size transmittable. Normally, set up data as described in Chain=057 and Function=502/503. (as paper selected by user)	CE
57	641	Communication Declaration Paper Size	Total value of 2=A3 4=A4 32=B4 256=Letter 512=Legal 1024=Letter double	1830(0 726)	Selects the SEF paper size transmittable. Normally, set up data as described in Chain=057 and Function=502/503. (as paper selected by user)	CE
57	650**	Sending G3M0 TSI/CIG Send	0:AUTO 1:forced sending 2:not sending	00	Determines whether or not to transmit the TSI/CIG signal to inform the remote terminal of the G3 ID code data. The "Auto" setup on delivery means that the TSI/CIG signal can be transmitted only when CSI signal from the receiving terminal is detected. This is because the old type G3 Fax machine may generate transmission failure when it receives the TSI /CIG signal. In the incompany toll dialing system where voice compression rate is high (eg. 16K9, the TSI/CIG signal may generate an error and result in the following DCS signal not detected. In such a case, change the TSI/CIG signal to "Not to send" and conduct transmission test.	CE
57	651	Sending G3M CSI Send	0:Send 1:No to send	00	Determines whether or not to send the CSI signal to inform the remote terminal of the G3 ID code data. "Send" is selected on delivery. In the incompany toll dialing system where voice compression rate is high (eg. 16K9, the CSI signal may generate error and result in the following DIS signal not detected. In such a case, change the CSI signal to "Not to send" and conduct transmission test.	CE
57	652	Sending local terminal name	0 : Off 1 : On	01	Determines whether or not to insert the local terminal name registered in the non standard NSF/NSC/NSS signal and inform the remote terminal of it.	CE
57	660	TCF check	0:Normal 1:EQM/TCF not to be checked	00	Modem training by sending 0 data for 1.5 sec. is performed before actual transmission of images so that an appropriate mode speed to match the line quality can be selected. This data determines whether or not to enable the training (TCF signal). By selecting Normal, TCF will be cheched and compared to EQM. In case error bit ("1") is detected or the EQM data is over the standard, FTT signal will be transmitted.	CE
57	661**	G3M0 Tap Hold	0:Off 1:On	00	At G3 FAX protocol, modem training is conducted at Phase B and Phase C1. When the difference is over the standard, the receive side releases the line. Tap Hold feature is to lock the modem status equalized by the TCF signal in the environment where the line quality can be significantly changed, and to ignore the modem status that can be reset by the training signal prior to image data so that the line quality changes can be absorbed in the protocol.	CE

Chain	Function	Item	Content	Default	Description
57	663	Number of FTTs Resulting in Fall Back at G3M 9600/7200/4800/2400bps	0: Twice FTT fallbacks at all frequencies 1: Once FTT Fall Back at 4800/2400bps only (twice FTT Fall Back at others) 2: Once FTT Fall Back at all frequencies	00	When error is detected by the TCF signal or th receiving terminal sends FTT signal. This data speed will be reduced based on the FTT signal sent by Main unit.
57	670	No. of consecutive lines for sending RTN signal	0 to 255line(1step=1line)	05	When error is identified in the image data rece number of consecutive error lines to determine back, the MCF signal or RTN signal. Some tra whenever they receive the RTN signal or send such a case, set up a greater number for conse
57	671	Area rate allowed for sending RTN signal	0 to 100%(1step=1%)	05	When error is identified in the image data rece of error area to determine which signal should or RTN signal. Some transmitters may falls ba RTN signal or send back the same image data greater number for the area rate.
57	672	Area rate allowed for sending RTP signal	0 to 10%(1step=0.1%)	05	When error is identified in the image data receive between the MCF signal and RTN signal, the F conducting the training again. This data set as error area rate. Some transmitters may falls ba RTN signal or send back the same image data greater number for the area rate.
57	673	Page processing for RTN signal detected at send side. If the transmitter receives RTN, continuation is determined from this data.	1: Suspend transmission (This sentence is resent.)	00	Determines how to handle thr transmission pages sent from the receiving terminal. Some of the to send back the RTN signal with the severe entrecognizes the error status which can be overlancessary, therefore, to understand the RTN paterminal when you change the setup.
57	676	Storing error codes for EOR/RTN signals	0 :Do not store 1 :Store RTN 2: Store EOR 3: Store EOR and RTN	02	Determines whether or not to store error when or received.
57	680	FSK Detection before Image Information Reception	0:No 1:Yes	01	
57	690	ECM capability (Auto Error Resend Function)	0:Off 1:On	01	This data determines the Error Correction Mod by ITU-T. The ECM capability bit data of the N signal, based on the setup data, changes and using the signal. Individually reflectable on each speed dial (refe
57	691	ECM Frame Size	0:256bytes 1:64kbytes	00	This data specifies the frame size of the send s is made. The ITU-T recommendation specifies has never been changed.

	Access by
e EQM data check, the specifies how the modem detected when the signal is	CE
ved, this data specifies the which signal should be send nsmitters may falls back back the same image data. In ecutive error lines.	CE
ved, this data specifies the rate be send back, the MCF signal ck whenever they receive the In such a case, set up a	CE
ved, and the level generated is TP signal will be sent back for the standard by specifying the ack whenever they receive the In such a case, set up a	CE
e that detected the RTN signal eceiving terminals may appear ror rate, but the machine boked by human eyes. It is rocess status of the remote	CE
the EOR/RTN signals are sent	CE
e capability as recommended SF/NSC/NSS/DIS/DTC/ DCS nforms the remote terminal of it r to page 2-207)	CE
ide when ECM communication to use 64 and 256 but the data	CE

# 2-196 03/02

Chain	Function	Item	Content	Default	Description	Access by
57	692**	G3M0 ECM CTC Number	0:000 to 7:111	05	Determines whether or not to send the CTC signal (including the fall back data) after sending the identical frame the specific times. By increasing the setup data, the signal will be send by the same modem speed on the line where the failure occurred which is not practical.	CE
57	693**	G3M0 ECM CTC Speed Down	0:Off 1: Speed down.	01	The data should not be changed as the transmission can be completed more often by letting the fall back occur at the CTC signal.	CE
57	694**	Sending CTC at 2400bps	0:Send 1:Do not send	00	In the G3 models, a modem with 2400bps or higher?? speed is not used. Possibility of completing communication is higher by releasing the line once, then transmitting signals using the newly supplied line, rather than sending 2400bps repeatedly using an inferior quality line. As a result, the data should normally be not changed.	CE
57	696**	Action after G3M0 ECM EOR detection	0: To be continued 1: Release line for EOR-EOP only	01	EOR signal can be detected when an extremely inferior line is supplied. In such a case, possibility is higher to complete by releasing the line, then using a newly supplied line rather than continuing communication using the existing line. Accordingly, the data need not be changed.	CE
57	791	Link modulo	0:Modulo 8 1:Modulo 128	00	In the communication using the ISDN line, this data specifies the modulo type used for monitoring the number system of data link layer (for checking the signal delivered, or received, etc.).	CE
57	801	Network modulo	0:Modulo 8 1:Modulo 128	00	In the communication using the ISDN line, this data determines the applicable area where the numbers can be added to the data packet, so that the network layer cannot be overflowed	CE
57	802	CSDN Protocol	0:X21PLP 1:T70null 2:IS8208modified	02	In the communication using the ISDN-CDDN line, this data determines the protocol used for communicating to the line exchange network. Basically, the data needs not be changed.	CE
57	803	Packet size	7:128bytes 8:256bytes 9:512bytes 10:1024bytes 11:2048bytes 12:4097bytes	11	In the G4 communication, this data determines the maximum user data field length of data packet for the network layer. When a small size is selected, the data size transmitted per packet will be smaller and a longer transmission time will result depending on the data volume.	CE
57	810	TDT blocking size	7:128 8:256 9:512 10:1024 11:2049	11	In the G4 communication, this data determines the data blocking size at the transport layer. The data must be set to "2048" to be accessible to the G4 facsimile communication network.	CE
57	820	Session window	1 to 3	03	In the G4 communication, this data determines the number of consecutive transmission of data package for the session layer. As the value is smaller, the number of delivery checks for data packages will be greater and a longer communication time will result.	CE
57	821	Wireless communication monitor timer	0:Infinite 1: to 255sec (1sec=1step)	60= 60sec	In the G4 communication, this data sets up time to monitor non communication status for the session layer protocol. The data need not be changed unless otherwise instructed.	CE
57	822	Exceptional process of sessions	0:Session 1:Document	00	In the G4 communication, when communication failure occurs, this data determines which layer should be moved to the disabled status, the session layer or document layer.	CE

Chain	Function	Item	Content	Default	Description	Access by
57	830	G4 Trace Mode	0:Overwrite 1:Buffer full 2:Mixed	00	Specifies the method of receiving/storing the protocol tracing obtained into memory in the G4 communication. "Overwrite" is a FIFO method for the signal, "Buffer Full" is to fill the memory with signal, and "Mixed" is the combination of data received immediately before and after the trace.	CE
57	831	G4 Trace Layer	2:Data link 3:Network 4:Transport 5:Session 6:Presentation 8:Between CPUs	05	In the G4 communication, this data specifies the protocol tracing layer for obtaining. It is necessary to specify the layer before activating communication for obtaining the protocol.	CE
57	832	G4 Trace Channel	0:All channels 1:Specific channel	01	In the G4 communication, this data specifies the channel for the protocol tracing for obtaining. When "All channels" is selected, it is necessary to understand the usage before changing data as the trace storage capacity for a channel will be reduced.	CE

#### Fax Feature Setup List (Image process/Send operation) When there are two defaults (ex. 10(0A)), the value outside the parentheses is decimal and that inside is hexadecimal.

Chain	Function	Item	Description	Default	Description	Access by
58	2	Maximum length of long original	0:600mm 1:3600mm	00	Specifies handling of the long original by using DADF. When 3600mm is selected, original of that length can be transmitted but jammed paper cannot be detected in case the original is slipped on the way.	User
58	3	Send local terminal ID(LOCAL I.D)	0:Off 1:On	01	Determines whether or not to send the local terminal ID code to the remote terminal.	User
58	28	Printing receive at relay station	0 to 999	0000	Specifies the number that enables printing at relay station in the DTMF relay broadcast operation	User
58	51	Default coding for storing originals (.cf.No.92)(for debug)	1:MH 2:MR 3:MMR 4(out of use):Image 5:JBIG-BASIC 6:JBIG- OPTION	05	Determines a coding method at storing originals. Do not change data unless otherwise instructed. Individually reflectable on each speed dial (see page 2-207)	CE
58	52	Selecting Metric (mm) or Imperial (inch) when scanning originals	0:Metric at scanning 1:Inch at scanning 2:Inch at super fine resolution and Metric for others	02	By enabling this feature, subtle deterioration of images can be generated. Do not change data unless otherwise instructed.	CE
58	53	Send Header Name Print in the Polled mode (except forced poll)	1:Yes 0:No	01	Determines whether or not to add the Send Header name to the polled original.	CE
58	62	Page division threshold at transmission (At declaration of cut paper on remote terminal)	0 0(0)mm to 255(FF)mm (1step=1mm)	16	This data is used to set a page division threshold when cut paper is declared by a DIS signal as available recording paper.	CE
58	63	Remaining memory capacity available for storage transmission. Threshold to start reading the next page in real-time transmission.	0 to 100%(64) (1step=1%)	00	Specifies the memory capacity available for the memory send operation. As the data is increased, memory overflow for the original may occur on one hand, but memory capacity for receive operation can be secured on the other.	CE
58	64	Memory threshold for shifting to real time send	0 to 99% (1step=1%) 99%=Real time transmission	20	As the remaining memory capacity is being used up during storing of memory, Main unit moves to the real time transmission which enables send operation while storing original. This data specifies the memory threshold when the send operation is moved to the realtime transmission.	CE
58	65	FAX Photo mode	0:Difference diffused 1:Dither	00	Specifies the halftone type for storing original in the photo mode.	CE
58	70	Counting transmission error pages as transmitted ones	0:Error page not to be counted 1:Error page to be counted Note: The above selection is possible only if system data LOG_SENT_ PAGE is 1.	01	Specifies how to handle Activity Report for the pages that received RTN signals. "Error page to be counted" means that the RTN signals should be handled as the MCF signal.	CE
58	101	Selecting 100% or auto reduced on receiving data	0:100% 1:Auto reduced	01	When the length of the data received is between the standard length of receive width and the page margin as set up at Chain=058 and Function=102 (Page margin at outputting prints) with "Auto reduced" selected, the machine automatically reduce the data received to be within the standard length. When 100% magnification is selected, the machine prints data in 100% magnification but data may be lost by page margin feature enabled.	User

Chain	Function	Item	Description	Default	Description	Access by
58	102	Page split margin on outputting prints	0mm to 127mm (1step=1mm)	16	When the data overflew out of the standard size by specifying the page margin for receive operation, a process in Chain=058 and Function=101 (100% or auto reduced for the data received) will be enabled. This data specifies the page margin amount.	User
58	103	Page combined on printing data received	0:No combined 1:Combined	00	In the identical jobs of receive operation, this data determines whether or not to enable the feature that two pages of same standard size data will be reduced for output in a page of print (2in1).	User
58	104	Printing A3-wide received document in the same or reduced size on Ledger paper	0: Print an A3-wide received document in the same size(100%) on Ledger paper by deleting both ends from the image information 1: Print an A3-wide received document on Ledger paper by reducing into 93.9% (279/297).	00		
58	105	Selecting an tray for outputing received document, report, and confirmation prints	0:Face down tray output 1:Face up tray output	00	Specifies outputting documents/report and copies separately in the Side Tray Kit (Face Up Tray) installed machines.	User
58	150	Fast scan line resolution (inch)	0:Disable reception 1: Enable reception bit2:200ppi bit4:300ppi bit5:400ppi bit6:600ppi	116(007 4)	Specifies the fast scan line resolution by the inch. Do not change the data unless otherwise instructed.	CE
58	151	Fast scan line resolution (mm)	0:Disable reception 1: Enable reception bit2:8dot/mm bit4:12dot/mm bit5:16dot/mm	52(0034 )	Specifies the fast scan line resolution by the mm. Do not change the data unless otherwise instructed.	CE
58	152	Slow scan line resolution (inch)	0:Disable reception 1: Enable reception bit1:100ppi bit2:200ppi bit4:300ppi bit5:400ppi bit6:600ppi	118(007 6)	Specifies the slow scan line resolution by the inch. Do not change the data unless otherwise instructed.	CE
58	153	Slow scan line resolution (mm)	0:Disable reception 1: Enable reception bit1:3.85line/mm bit2:7.7line bit4:11.55line/mm bit5:15.4line/mm	54(0036 )	Specifies the slow scan line resolution by the mm. Do not change the data unless otherwise instructed.	CE
58	160	Memory threshold to reject documents received	0 to 100% (1step=1%) 100%=All is rejected	00	Specifies the remaining memory capacity that is capable of handling image data rreceived. The customers who want to use this machine only for sending operation, should set the data to 100%.	CE
58	161	Memory threshold to shift to real time receive	0 to 99% (1step=1%)	20	When the remaining memory capacity available for processing the communication image data becomes low, Main unit moves to the realtime receive operation that receives data continuously while printing the data received. This data specifies the threshold of remaining memory capacity available to move to the real time receive mode. As the setup value is greater, it is easier to move to the real time receive mode. However, the IOT will be used more frequently and it will be harder to use the dual access feature that uses IOT.	CE

# 2-200 03/02

Chain	Function	Item	Description	Default	Description
58	162	File threshold to boot jobs (activating the memory send, receive boot or electronic sorting)	1 to 400files(w/o HDD) 1 to 1000files(with HDD) 400(1000)-N files accepted)	23	Checks the number of files left, apart from ch memory capacity available when activating th boot or electronic sorting. This data specifies available for booting each job.
58	163	Handling of documents when Stop button is pressed during printing	0:Delete 1:Store	01	Determines whether the processing of image stored when the operator press the Stop butt
58	164	Recognizing received document size as Letter/Legal/Ledger	0=Recognize none 1=Recognize Letter 2=Recognize Legal 3=Recognize Letter/Legal	00	<ul> <li>Even when Letter or Legal paper is loaded or Legal-size fax can usually not be received.</li> <li>Letter-size or Legal-size fax can be rece terminal is of a different manufacturer (ITU</li> </ul>
					the sizes.
58	165	Number of backup files (received files)	0 to 200	50	
58	166	Header Printed for G4 receive (CIL)	0:No Header printed 1:Header printer	00	Determines which clock should be used to pr communication onto the receive header, the terminal or of the receiving terminal. The par using the receiving terminal, and "1" for using remote terminal. It is necessary to set up 1 ( Chain=058 and Function=167.
58	167	Header Print capability for G4 receive	0:Off 1:On	00	In the G4 receive operation, this data determ the Receive Header of Main unit at the lead e When the sending terminal prints the send he edge of image data, the receive header overv name. The data will be printed as described Function=166(G4 Header Print).
58	168	Selection of smoothing mode for reduction or enlargement at receive printing	XXX00:Thinning out XXX01:Between dots and lines XXX10:Storing fine lines XX0XX:Old smoothing XX1XX:Smoothing with TIS 01XXX:TIS weak 10XXX:TIS on 11XXX:TIS strong	21(15)	Specifies the rreduction method of data receil longer than the standard size and Auto Redu described in Chain=058 and Functin=101 (10 data received).
58	170	Printing stored data	0:Off 1:On	01	When a problem occurs, such as consumable paper out of stock, or paper jammed, Main un data and printing them when a problem is cle whether or not to enable that feature.
58	172	Data pattern to replace in case of decode error during printing	0:White line 1:Front line	01	Specifies how to inform irreproducible line da "White line" may look the received data nice, unclear depending on the error area and cau be read as "0") Be careful when changing da

	Access by
necking the remaining he memory send, receive s the appropriate file	CE
e data will be deleted or ton while printing.	CE
n the tray, Letter-size or	CE
eived even when the remote U-T G3 fax).	
he remote terminal supports	
rint the time of clock of the sending rameter specifies "0" for g the clock sent by the (Header to be printed) for	CE
nines whether or not to print edge of the receive data. eader name at the lead writes the send header in Chain=058 and	CE
ived when the document is uced is selected as 00% or auto reduced for the	CE
les or an appropriate size of nit is capable of storing the eared. This data selects	CE
ata received to the receiver. but the data may appear use misreading. (eg. "8" can ata.	CE

Chain	Function	Item	Description	Default	Description
58	180	90 deg. rotation at outputting data or report	0:Off 1:On	01	When the user can select paper on receiving Chain=057 and Function=501, if an appropri A4LEF) is not loaded, enable 90 deg. rotatio memory to paper that matches the size after This data determines whether or not to enab
58	181	Smoothing	0:Off (Simple enlargement) 1:On	01	Main unit's pixel density for recording is 400 received is below 400PPI, the image will be process. This data determines whether or n binary image at the stretching process.
58	182	Duplex printing on Outputting (received data print/report print/check print)	0:Off 1:On	00	Duplex printing is available with Duplex Mod data determines whether or not to enable un for the information of the same job when out reports. This feature should be handled by i change will be made by each C/E. (EP-TRE
58	183	180 deg. Rotation for Side-Two on outputting SEF paper	0:Off 1:On	00	When "On" is selected at Chain=058 and Fu on receiving data or reports), Main unit active on the Long Edge Binding. Therefore, when the short edge of SEF paper, select On.
58	184	180 deg. Rotation for Side-Two on outputting LEF paper	0:Off 1:On	00	When "On" is selected at Chain=058 and Fu on receiving data or reports), Main unit active on the Long Edge Binding. Therefore, when the short edge of LEF paper, select On.
58	301	Outputting Activity Report	0:Off 1:On	01	Determines the timing of outputting the Activ selected, the Report will be automatically ou communications of receive and send operati When the Report is output manually in C/E n communication results will be output.
58	302	Outputting Broadcast Report	0:Off 1:On	01	While Outputting Broadcast/Multi-Poll Repor and Function=354 specifies an outputting tin data specifies how to output a broadcast job
58	303	Outputting Relay Broadcast Report	0:Off 1:To be sent to the specific station	01	Specifies an outputting timing for Relay Broa received from the relay broadcast station are output and send operation will be processed
58	304	Outputting Send Fault (Transmission) Report	0:Off 1:On	01	Determines whether or not to inform the ope error. When "On" is selected for Transmission was error in communication, Send Fault (Transport output regardless of the setup status.
58	306	Outputting Transmission report when transmission is stopped	0:Off 1:On	00	When the operator pressed the Stop Button is enabled, this data determines whether or r (Transmission) Report.
58	310	Selecting Auto Deletion for polled documents	00:Not to be deleted 01:To be deleted after comm.	00	Determines how to handle the polled (confid memory

	Access by
data as described in ate paper (A4SEF or n (A4SEF-A4LEF) in repositioning for outputting. le the 90° rotation feature.	CE
PPI. When the image data stretched to 400PPI during ot to smooth the edge of	CE
ule installed models. This conditional duplex printing outting data received or ndividual C/E and any SS)	CE
nction=181(Duplex printing ates duplex recording based the customer wants to bind	CE
nction=182(Duplex printing ates duplex recording based the customer wants to bind	CE
ity Report. When "On" is tput when 50 ons are accumulated. node, the latest 50	User
t as described in Chain=058 hing for a multi-poll job, this	User
dcast Report. As all jobs completed, reports will be based on this data.	User
rator of the specific send job on (Monitor) Report which nsmission) Report will be	User
or stopped a send job after it not to output Send Fault	User
ential) documents stored in	User

2-202
03/02

Chain	Function	Item	Description	Default	Description
58	311	Selecting Auto Deletion for Documents received in the Mail Box	0: To be deleted after comm.1: To be stored after comm.	01	
58	350	Outputting Protocol Monitor	0:Manual output 1:When comm error occurs 2:Output all	00	Main unit is loaded with the Protocol Monitor visually checking the status and cause of con occurs so that quick action is taken. This da output the Protocol Monitor. For G4 comm., Function=830 to 832 is effective.
58	352	Controlling protocol monitor report ejection under specific conditions	Bit0:RTN/PIN send/receive bit1:RTP send/receive bit2:PPR send/receive bit3:CTC send/ receive bit4:EOR send/receive bit5:FTT send/receive(equal conditions for fast mode) bit6: command FCS error bit7:command resend bit8:Momentary failure bit9:decode error (G3 only) bit10: Collection of auxiliary information bit:11 Reserved bit12: Reserved bit13: Reserved bit14: Reserved bit15:Custom use	0000	
58	353	Outputting Power Off Report (for debug)	0:Off 1:On	01	This report will be output to inform the opera stored due to the power shutdown or similar determines how the Power Off Report can be data unless otherwise instructed.
58	354	Outputting Multi-Poll Report	0:Off 1:On	01	While Outputting Broadcast/Multi-Poll Repor Funotion=302 specifies an outputting timing data specifies how to output a multi-poll job.
58	355	Activity Report Log Display Priority	0:Addressed name>Remote terminal name>Tel. No.>Remote ID>CCITT 1:Remote ID>Tel.No.>Remote terminal name>Addressed name>CCITT	00	Determines the priority of data to be printed name of Activity Report. When "0" is selected Addressed name recorded in the Speed dial in the remote terminal ->Tel. No>ID code of signal->Communication mode will be printed recorded in the remote terminal->ID code da signal->Communication mode will be printed
58	356	Handling of Transmission Report	24 hours	UT	selected as described in Chain=058 and Fur for the documents not transmitted). When the retained, Send Fault documents will be accu eventually overflows memory.
58	360	Registering power failure/reboot (including emergency) into Activity Report	0:Off 1:On	00	

	Access by
	User
feature which is capable of mmunication failure when it ta specifies a timing to each data in Chain=057 and	CE
tor of deletion of documents accidents. This data e output. Do not change the	CE
t in Chain=058 and foa a broadcast job, this	CE
for the remote terminal ed as setup on delivery, list->Local name recorded data for the CSI/CIG/TSI on sending. Local name ta for the CSI/CIG/TSI on receiving.	CE
ot transmitted when "On" is action=559(Selecting resend and documents not sent are mulated in memory and	CE

Chain	Function	Item	Description	Default	Description	Access by
58	370	Selecting Append Data for event tracing	0X00:Event code only 0X01:Event code and *prm	00		
58	371	Controlling trace buffer overwrite	0X00:overwrite 0X01:until full	00		
58	372	Selecting trace mode from procedure trace, interface trace, auxiliary information trace, and event trace	bit0: procedure trace bit1: interface trace bit2: auxiliary information trace bit3:event trace 0X00 to 0X0F	05		
58	501	Time display	0: 12 hr display 1:24 hr display	00	Determines 12 hour or 24 hour for displaying the time stored	User
58	502	Display order of Year, Month, Date, Hour, and Minute	0:YY_MM_DD 1:MM_DD_YY 2:DD_MM_YY	00	Selects Japanese, American, or British method for the order of printing date on Reports or Lists.	User
58	503	Time indication (hour)	0 to 0X23(0 to 23 hour)	21	Specifies how "Hour" should be indicated for a delayed send operation when it is initially set up on the Control Panel.	User
58	504	Time indication (min)	0 to 0X59(0 to 59 min)	00	Specifies how "Minute" should be indicated for a delayed send operation when it is initially set up on the Control Panel.	User
58	505	Switching display and language to print	0: 1 letter 2 byte 1:1 letter 1 byte	00	To be able to switch the language on display or printed when we support the second language in the future.	User
58	510	Combined send capability	0:Off 1:On	01	Determines whether or not to have the combined send feature functioned (When a job to the same address is waiting for transmission, send the job combined with the current send job handling it as the subsequent page) A delayed job with the time specified, a job waiting for redialing, of the broadcast/relay broadcast selected, of mail Box, of Relay Send, of Immediate send, Memory capacity insufficient, Speed dial used with the keypad, or of the different department number (Operator Card management Kit installed) is not applicable to this feature. Jobs sent combined will be separately printed on the Activity report as an individual job (the time sent will be administered at the end of each page)	User
58	511	Relay broadcast selection capability	0:Off 1:On	01	Determines whether or not to have the Relay broadcast selection capability functioned.	User
58	512	Mail Box selection capability	0:Off 1:On	01	Determines whether or not to have the Mail Box selection capability functioned.	
58	513	Remote service. Receiving service from TRESS master through line	0:Disabled 1:Enabled	01	This data is used to enable or disable the remote service capability. If "Disable" is selected, EP-TRESS releases the line when a reception response signal is detected.	CE
58	551	Manual receive button during communication	0:Manual receive 1:Manual poll	00	Determines that the Manual Receive button in the Telephone mode should be functioned as Manual Receive or Manual Poll	CE
58	552	Timer value for auto start when abbreviated dialling or quick dialling (including group or wild card " * ") is specified	0 to 59 sec.	06		

# 2-204 03/02

Chain	Function	Item	Description	Default	Description	Access by
58	555	Number of speed dials available	0 to 65535 200:with MMB-A installed 500:with MMB-B installed	200		
58	558	Resending for Send Fault documents by pressing the Stop button.	0:Off 1:On	00	When the operator presses the Stop button during send operation, the document will be handled as a Send Fault job. This data determines whether or not to resend the job.	CE
58	559	Resending of Send Fault documents	0:Off 1:On	00	Determines whether the documents not sent and stored in memory should be resent as enabled by operator. When "On" is selected, check that "1" (auto deleted in 24 hrs) is set up in Chain=058 and Function=356 (Handling of documents not sent) and explain to the customer that the documents will be deleted in 24 hrs.	CE
58	560	Relay broadcast capability	0:Off 1:On(TOKI method) 2:On(Mashu method)	02	Determines whether or not to enable the Relay Broadcast capability. When "Off" is selected, NSF signal will be set to "Not function" to inform the transmitter as such.	CE
58	563	Remote sort copy reception capability	0:Off 1:On	01	<ol> <li>The transmission side can specify the number of copies (up to 99) to the reception side to output the specified number of copies by multi- copying. (Setting at shipping from factory: 2 copies)</li> <li>The number of copies can be specified to Able 3321N/3221N/1321N Series, Able 3300/1300 Series, Able 3010/3011/3015/3016, and 7030/7033 Telecopier.</li> </ol>	CE
58	565	Handling of the same destination at speed dial registration	0: Enable registration of the same address 1: Disable registration of the same address	01		
58	566	DTMF(PB) detection capability (for DTMF I/F)	0:Off 1:On	01	Determines whether or not to enable various features using DTMF. (Relay Broadcast or Mail Box)	CE
58	567	Setting remote reception and key detection count	0 to 15time(1step=1 time)	00		
58	568	Broadcast/Multi-Poll type	0:One by one 1:Simultaneously 2:Disabled	01	Determines how the Broadcast and Multi-Poll operation should be enabled when multi-ports are conneted: one by one or simultaneously.	CE
58	570	Start time of operating status hours	0 to 23 hr	08	This data is used to set the traffic measurement start time for an operation status report that can be acquired by EP-TRESS only.	CE
58	572	End time of operating status hours	0 to 23 hr	20	This data is used to set the traffic measurement end time for an operation status report that can be acquired by EP-TRESS only.	CE
58	574	Accessibility to Private Mail Box from remote terminal using DTMF/IF	0:Off 1:On	01	Determines whether or not to enable accessibility to the Private Mail Box (confidential box) using DTMF	CE
58	576	Password for the DTMF Relay Broadcast Operation	00 to 99	00	To enter a reference password at send side for enabling the DTMF Relay Broadcast operations.	CE
58	581	System data for forced calculation of accounting data (data for abbreviated number)	0:ISDN charge to be applied 1:ISDN charge to be ignored	01	After completing a send operation using the ISDN line, the network will inform the transmitter of the accounting data to be charged for the communication. This data determines which accounting data should be applied as the charge, the charge sent by the network or the data to be registered in the individual Speed Dial directory.	CE

Chain	Function	Item	Description	Default	Description	Access by
58	582	Time allocation for the Transmission charge (0 to 3)	00:Daytime 01:Night 10:Late night 11:Not used 0:00:XXXX XXbb 1:00:XXXX bbXX 2:00:XXbb XXXX 3:00:bbXX XXXX	170(AA)	With the optional Operator card Management kit installed communication made between midnight and 3:59 will be calculated and charged as specified.	CE
58	583	Time allocation for the Transmission charge (4 to 7)	00:Daytime 01:Night 10:Late night 11:Not used 4:00:XXXX XXbb 5:00:XXXX bbXX 6:00:XXbb XXXX 7:00:bbXX XXXX	170(AA)	With the optional Operator card Management kit installed communication made between midnight and 7:59 will be calculated and charged as specified.	CE
58	584	Time allocation for the Transmission charge (8 to 11)	00:Daytime 01:Night 10:Late night 11:Not used 8:00:XXXX XXbb 9:00:XXXX bbXX 10:00:XXbb XXXX 11:00:bbXX XXXX	00	With the optional Operator card Management kit installed communication made between midnight and 11:59 will be calculated and charged as specified.	CE
58	585	Time allocation for the Transmission charge (12 to 15)	000:Daytime 01:Night 10:Late night 11:Not used 12:00:XXXX XXbb 13:00:XXXX bbXX 14:00:XXbb XXXX 15:00:bbXX XXXX	00	With the optional Operator card Management kit installed communication made between midnight and 15:59 will be calculated and charged as specified.	CE
58	586	Time allocation for the Transmission charge (16 to 19)	00:Daytime 01:Night 10:Late night 11:Not used 16:00:XXXX XXbb 17:00:XXXX bbXX 18:00:XXbb XXXX 19:00:bbXX XXXX	64(40)	With the optional Operator card Management kit installed communication made between midnight and 19:59 will be calculated and charged as specified.	CE
58	587	Time allocation for the Transmission charge (20 to 23)	00:Daytime 01:Night 10:Late night 11:Not used 20:00:XXXX XXbb 21:00:XXXX bbXX 22:00:XXbb XXXX 23:00:bbXX XXXX	149(95)	With the optional Operator card Management kit installed communication made between midnight and 23:59 will be calculated and charged as specified.	CE
58	590	Forced polling at Printer failure	0:Disable 1:Enable forced poll	00	When the maintenance service is conducted for the problem caused by the IOT failure, there may be cases that the data received must be deleted or retrieved urgently as required by the customer. In such cases, change the data to "Enable forced poll" and the data stored in the memory can be retrieved by polling from the remote terminal. However, as you may have to handle the customer information directly, you need to get prior approval by the customer and let the customer know that all information cannot always be retrieved.	CE
58	591	Permitting the existence of multiple time- specified polling	0:Permit 1:Do not permit	01		
58	592	Restricting Forced 4800 bps setting menu to support PTT	0: Do not restrict 1: Restrict	00		

WorkCentre Pro 423/428			2-206 03/02		CHAP How to
Chain	Function	Item	Description	Default	Description
58	593	Restricting Local ID setting menu to support PTT	0: Do not restrict 1: Restrict	00	

Access by

Chain	Function	Item	Content	Default	Description	Access by
R/W	455	1300Hz Call	00:Off 01:On		Sets up whether or not to receive a call without the sound of a bell at F network. Select "00" when the machine receives a call without the sound of a bell, but because of noise.	CE
R/W	2DE	Alerting time after dialling(NTT)	0 to 255 sec.			
R/W	2E4	Alerting time after dialling(PBX)	0 to 255 sec.			
R/W	5DC	ISDN T310 timer	7 to 255 sec. 1step=1 sec.			
R/W	5E6	ICM trace layer type	05:Layer 3 07:Layer 2+3 0F:Layer 1+2+3			
R/W	60F	V8 capability	00:Off 01:On			

#### WorkCentre Pro 423/428

#### 2-208



System Data			
	57 - 51		
57 - 50			
57 - 52			
	157 - 51		
157 - 50			
157 - 52			
<b></b>	257 - 51		
257 - 50			
257 - 52	57 162		
	57 - 105 157 - 163		
	57 - 160		
	57 - 160		
	57 - 162		

is attached -> Restrict 12 and ed at G4 read.)
de line 1 when NCU0 and ICM line to receive-only) -> Restrict
only -> Restrict 4.
G3 transmission and speech

**Communication Parameters of Individual Settings to Speed Dial Numbers in CE** If Speed (abbreviated) dial numbers are set in CE mode, the communication parameters listed in the table below can be individually to the numbers, irrespective of the Ch-Func set values. If "Auto" is set, the Ch-Func set values are selected. The default is "Auto" for all the items below.

Depending on the item, the setting contents differ from those of Ch-Func. Set the parameters to each abbreviated dial number by referencing the table below and system data.

Panel	Panel display	Contents	Abbreviated dial settings and notes	Corresponding C
19	Send ATT level	Tone (image signal) send level	<ul> <li>0 to 15, auto</li> <li>The values from 0 to 15 are the same as those in the Ch-Func setting range.</li> </ul>	57-550 Setting range <u>0</u> t
20	DIS pass count	Number of ignoring DIS from remote terminal	<ul> <li>0 to 14, auto</li> <li>The values from 0 to 14 are the same as those in the Ch-Func setting range.</li> </ul>	57-576 Setting range <u>0</u> t
21	Modem speed	Maximum modem speed at transmission and polling	<ul> <li>0 to 14, auto</li> <li>The values from 1 to 14 are the same as those in the Ch-Func setting range.</li> <li>Do not use 0 reserved for future use.</li> </ul>	57-601 Setting range 1 t 1=2400bps to 1
22	Transmission equalizer value	Value of the transmission cable equalizer	<ul> <li>0 to 14, auto</li> <li>The values from 0 to 3 are the same as those in the Ch-Func setting range.</li> <li>Do not use 4 to 14 reserved for future use.</li> </ul>	57-554 Setting range 0, 0=0dB, 1=4dB,
23	Reception equalizer value	Value of the reception equalizer	<ul> <li>0 to 14, auto</li> <li>The values from 0 to 3 are the same as those in the Ch-Func setting range.</li> <li>Do not use 4 to 14 reserved for future use.</li> </ul>	57-555 Setting range 0, 0=0dB, 1=4dB,
24	ECM	ECM mode at transmission and polling	<ul> <li>OFF, ON, auto</li> <li>ECM communication with each destination can be turned OFF and ON, irrespective of the Ch-Func settings.</li> </ul>	57-690 0=OFF, <u>1</u> =ON
25	SG3(V.34)	SuperG3 mode at transmission and polling	<ul> <li>OFF, ON, auto</li> <li>SG3 communication with each destination can be turned OFF and ON, irrespective of the Ch-Func settings.</li> </ul>	57-520 0=OFF, <u>1</u> =ON
26	JBIG	JBIG-BASIC communication at transmission and polling	<ul> <li>Disable(JBIG comm. OFF), Enable(ON), auto</li> <li>Even when the Ch-Func setting is ON, JBIG-BASIC comm. with each destination can be turned OFF by setting "Disable" here. (However, JBIG does document read.)</li> <li> "58-051" sets the document read mode.</li> </ul>	57-051 Setting range 1, 1=MH, 2=MR, 3= (Do not use 6 res

Ch-Func settings (Underline: default) to 20(0=-10dBm, to 255(1 step=once) to <u>14</u> 4=336000 bps , 1, 2, 3 2=8dB, 3=12dB , <u>1,</u> 2, 3 2=8dB, 3=12dB 2, 3, <u>5</u>, 6 =MMR, 5=JBIG-BASIC, 6=JBIG-OPTION served for future use.)

# CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING

#### Contents

3.1 Introduction	2
3.1.1 Chapter 3 Composition and Distinction	2
3.1.2 How to Use the Image Troubleshooting	2
3.2 Image Quality Specifications	3
3.2.1 Test Pattern Types	3
3.2.2 How to Use the Test Pattern	3
3.2.3 Built-in Test Pattern	6
3.3 Image Quality Troubleshooting	9
3.3.1 Copy Sample	9
3.3.2 Cautions on image quality troubleshooting	9
3.3.3 Basic rules on action against image quality problems	9
3.3.4 Image Quality Adjustment	9
3.3.5 Corrective action against image quality problems	11
C - 1 Too light copies	11
C - 2 White copies	12
C - 3 White off: Copy sample	13
C - 4 White off: Copy sample	13
C - 5 White off Copy sample	14
C - 6 Spot white off Copy sample	15
C - 7 Black lines Copy sample	15
C - 8 Black lines Copy sample	16
C - 9 Black spots Copy sample	16
C - 10 Belt high-background Copy sample	
C - 11 Belt high-background Copy sample	
C - 12 High background Copy sample	
C - 13 Solid black copies	
С - 14 Skip	
C - 15 Smear Copy sample	20
C - 16 Jitter/Data error Copy sample	20
C - 17 Distortion (Hunting) Copy sample	
C - 18 Banding Copy sample	
C - 19 Magnification failure Copy sample	22
C - 20 Pool lesolution	
C - 22 Finger Merk	∠ა ^^
C - 22 Mairá	Z3 24
C = 23 Will E	24
C - 25 Poor registration: Convigamela	24 عد
C - 26 Unoven density: Convigample	20 De
C = 27 Wrinkle in copies	20 วค
	∠0

C - 28	Skew
C - 29	Black bands

C - 30 Dark copies.....

	•••	 •••	 •							• •				•	 •••	•••	 •••		•	 •				• •	 		•••	 •		 2	27	7
	•••	 •••	 •							• •				•	 •••	•••	 •••		•	 •				• •	 		•••	 •		 2	28	3
•••	•••	 •••		• •	•••	•••	 •	•••	 •	• •	• •	•	 •		 •••	•	 •	• •	•	 •	•••	•	•••	• •	 	•••		 •••	•••	 2	28	8

#### Contents CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING

- 3.1 Introduction
- 3.1.1 Chapter 3 Composition and Distinction
  - 1. Chapter 3, Image Quality Troubleshooting, is subdivided into Image Quality Specifications and Image Quality Troubleshooting.
  - 2. In the Image Quality Specification section, all types of test patterns and image quality judgment procedures using and applications of test patterns are explained.
  - 3. In the Image Quality Troubleshooting section, troubleshooting procedures of possible image quality problems and components causing image quality problems are explained. Procedures are described in tables, which contain problem causes and corrective action procedures.

- 3.1.2 How to Use the Image Troubleshooting
  - 1. Select a page corresponding to the image quality troubleshooting to be executed from the Contents and following the corrective action procedure instructed therein.
  - 2. Always use the correct judgment procedure when an image quality problem is analyzed, referring to 3.2 Image Quality Specifications.
  - 3. For image quality problems unique to the fax mode, check if the same problem recurs by making test communications with the NSC. If the problem does not recur, ask the remote terminal operator to check for abnormalities.

#### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.1 Introduction

#### 3.2 Image Quality Specifications

3.2.1 Test Pattern Types

The following three types of Test Patterns are used for DocuCentre 230/280:

- 499T247 A3 Test Pattern (Fig.1)
- 499T281 Fax Test Pattern (Fig.2) •
- Built-in Test Pattern (This Test Pattern is stored in the memory and used for identifying problem causes for boards)

#### 3.2.2 How to Use the Test Pattern

Note For specifications, refer to Section 6 Specifications.

To check copy quality, use A3 Test Pattern (499T247). For checking image quality when the DADF is used or send/receive using fax features, use fax Test Pattern (499T281). Fax Test Pattern (499T281) is a chart having A4 LEF and B4 SEF lead edges and is used according to the document size. Use the ordinary paper for checking image quality.

A. Magnification

Terminology description

Indicates the vertical and horizontal enlargement or reduction percentages against the original. Matching to the selected magnification is specified. Judgment procedure:

• 499T247

Compare distance between two target positions on a copy to that on the Test Pattern.

• 499T281

Make a copy using the DADF and compare distance between two target positions on a copy to that on the Test Pattern.

B. Skip and Smear

Terminology description:

Represents missing images in the copy feed and transverse directions. Degree of missing images is specified.

Judgment procedure:

Make a copy of Test Pattern (499T247) and observe the ladder.

C. Resolution

Terminology description:

Represents how fine the original images can be reproduced and the degree is specified. Resolution 4.3 indicates that each line is reproduced independently when 4.3 lines are drawn within 1 mm at equal intervals.

Judgment procedure:

Make a copy of Test Pattern (499T247) and observe resolution at three target areas (or two targets for enlarged copies).

D. Legibility

Terminology description:

The character reproducing level of a document send/received using the fax feature is specified.

Judgment procedure:

Conduct send/receive using Test Pattern (499T281) and observe character patterns at two areas.

#### 3.2 Image Quality Specifications CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING

- E. Lead Edge Registration
  - Terminology description:

Represents deviation between lead edges of copy images and paper. The degree of deviation is specified.

Judgment procedure:

• 499T247

Measure distance from the lead edge of paper to that of images.

• 499T281

Make a copy using the DADF and measure distance from the lead edge of paper to the bottom line of an isosceles triangle.

F. Side Registration

Terminology description:

Represents deviation of images in the copy feed direction and transverse to the copy feed direction. The degree of image deviation is specified.

Judgment procedure:

• 499T247

Measure distances between targets and side edges of the copy.

• 499T281

Make a copy using the DADF and measure distance from the side edge of paper to the bottom line of an isosceles triangle.

- G. Skew
  - Terminology description:

Indicates that copy images are copied at an angle against the paper. The degree of inclination is specified.

Judgment procedure:

• 499T247

Measure distances from two targets to the side edge of paper and calculate the difference.

499T281  $\bullet$ 

Make a copy using the DADF and measure distance from the side edge of paper to the bottom line of an isosceles triangle.

- H. Line Copy Density
  - Terminology description:

Represents density of characters and lines. Degree of character and line density is specified.

Judgment procedure:

Make a copy of Test Pattern (499T281) and check density and uniformity at three paragraphs.

I. Solid Reproducibility

Terminology description:

Represents image density of solid black area. Degree of solid image density is specified.

- Judgment procedure:
- 499T247

Observe density and uniformity at three solid areas.

499T281 Print the Test Pattern using the fax send/receive features and observe density and uniformity at three solid/white alternate areas.

White area: Background

Terminology description:

Represents density of areas without images. Degree of whiteness is specified. The work of high background is generally used to indicate dark white area or background.

Judgment procedure:

Make a copy of Test Pattern (499T247) and observe the background which is the darkest among white areas.

#### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.2 Image Quality Specifications





#### Fig.2 Fax Test Pattern (499T281) j0hn3002

-	Check item	-	Check item
Α	Magnification	F	Side Registration
	A1: Vertical Magnification	G	Skew
	A2: Horizontal Magnification		G1: Lead Edge Skew
В	Skip and Smear		G2: Side Edge Skew
С	Resolution	Н	Line Copy Density
D	Legibility	I	Solid Reproducibility
E	Lead Edge Registration	White area:	Background

#### 3.2 Image Quality Specifications CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING

#### 3.2.3 Built-in Test Pattern

With DocuCentre230/280, the Built-in Test Pattern can be printed out. This is used for analyzing each board on image quality problems caused by boards.

- Built-in Test Pattern printing out procedure
  - 1. Enter the diag (C/E) mode.
  - 2. Bring up the Diagnostic menu and press the Chain Function button.
  - 3. Press the Chain button and enter 23 of the chain code.
  - 4. Press the Function button and enter the specific function code of the Test Pattern.
  - 5. Press the Start button.
  - 6. Select Tray and enter number to copy.
  - 7. Press the Start button.
  - 8. Press the Close button.
- Type and output unit of Built-in Test Pattern (600dpi)

Chain	Function	Test Pattern	Output unit (board)
No.	No.		
23	1	ANALOG ASIC TEST 3x3 Photo	IIT/IPS (SD)
23	6	Grid+Slanting lines (1BIT)	IIT/IPS (TIS)
23	7	Grid+Slanting lines (4BIT)	IIT/IPS (TIS)
23	8	Continuous gradation (Fast scan line 256 gradations) 3x3 Photo	IIT/IPS (TIS)
23	9	Continuous gradation (Slow scan line 256 gradations) 3x3 Photo	IIT/IPS (TIS)
23	10	Blank copies	MCU/SW PWB
23	11	Solid black copies	MCU/SW PWB
23	12	Grid pattern (1BIT)	MCU/SW PWB
23	13	Grid pattern (4BIT)	MCU/SW PWB
23	14	Grid+Slanting lines (1BIT)	MCU/SW PWB
23	15	Grid+Slanting lines (4BIT)	MCU/SW PWB
23	20	IOT TEST PRINT of black and white horizontal streaks	MCU/SW PWB
23	21	Standard pattern with continuous gradation in fast scan direction (256 gradations)	MCU/SW PWB
23	22	Dark pattern with continuous gradation in fast scan direction (256 gradations)	MCU/SW PWB
23	23	Standard pattern with continuous gradation in slow scan direction (256 gradations)	MCU/SW PWB
23	24	Dark pattern with continuous gradation in slow scan direction (256 gradations)	MCU/SW PWB
23	25	Standard pattern with continuous gradation in fast scan direction (64 gradations)	MCU/SW PWB

23	26	Dark pattern with continuous gradation in	MCU/SW PWB
		fast scan direction (64 gradations)	
23	27	Standard pattern with continuous gradation	MCU/SW PWB
		in slow scan direction (64 gradations)	
23	28	Dark pattern with continuous gradation in	MCU/SW PWB
		slow scan direction (64 gradations)	
23	30	Paper feed alignment adjustment pattern	MCU/SW PWB

• Type and output unit of Built-in Test Pattern (400dpi)

Chain	Function	Test Pattern	Output unit (board)
No.	No.		
24	10	Blank copies	MCU/SW PWB
24	11	Solid black copies	MCU/SW PWB
24	12	Grid pattern (1BIT)	MCU/SW PWB
24	13	Grid pattern (4BIT)	MCU/SW PWB
24	14	Grid+Slanting lines (1BIT)	MCU/SW PWB
24	15	Grid+Slanting lines (4BIT)	MCU/SW PWB
24	20	IOT TEST PRINT of black and white	MCU/SW PWB
		horizontal streaks	
24	21	Standard pattern with continuous gradation	MCU/SW PWB
		in fast scan direction (256 gradations)	
24	22	Dark pattern with continuous gradation in	MCU/SW PWB
		fast scan direction (256 gradations)	
24	23	Standard pattern with continuous gradation	MCU/SW PWB
		in slow scan direction (256 gradations)	
24	24	Dark pattern with continuous gradation in	MCU/SW PWB
		slow scan direction (256 gradations)	
24	25	Standard pattern with continuous gradation	MCU/SW PWB
		in fast scan direction (64 gradations)	
24	26	Dark pattern with continuous gradation in	MCU/SW PWB
		fast scan direction (64 gradations)	
24	27	Standard pattern with continuous gradation	MCU/SW PWB
		in slow scan direction (64 gradations)	
24	28	Dark pattern with continuous gradation in	MCU/SW PWB
		slow scan direction (64 gradations)	
24	30	Paper feed alignment adjustment pattern	MCU/SW PWB

#### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.2 Image Quality Specifications

Output Unit and Image Flow of Built-in Test Pattern 



Using Built-in Test Patterns Built-in Test Pattern is used for identifying the problem cause whether it is in the Xero related IOT or IIT, apart from analyzing boards on image guality problems caused by control boards. Following is the Test Patterns used for analyzing image quality problems and problem identifying method:

**Test Pattern** 

Continuous

 $\bullet$ 

•

 $\bullet$ 

gradation [23-21]

Grid (1Bit)

Continuous

gradation

[23-21]

White Off

Continuous

gradation

White Off

[23-10]

Solid black

[23-11]

[23-21]

[23-10]

[23-6]

problems.

Note

#### How to identify the problem area

Check that two black bands copied with the darkest density of the Test Pattern copy has almost the same density as 1.3 solid. When it is lower, the problem control board is in the IOT side, when it is the same, on the IIT side. Perform an appropriate troubleshooting by referring to 3.3.5 Corrective action against image quality

When the problem is not reproduced by using the Test Pattern specified at the left column, the problem can be in the IOT side, when it is reproduced, it can be in the IIT (density related setup data).

> ROS Power Set Up and density related data setup are properly adjusted on delivery. Refer to 3.3.4 Image Quality Adjustment, and be careful on changing setup values.

Use the Test Pattern specified at the left column and check if the background covers the entire copy. When the entire image has background, the problem control board can be on the IOT side, when it has not, the IIT side.

Perform an appropriate troubleshooting by referring to 3.3.5 Corrective action against image quality problems.

When the defect is generated to the specific Test Pattern, the IOT control board may have the problem, and when it is not, the IIT board may have the problem. Perform an appropriate troubleshooting by referring to 3.3.5 Corrective action against image quality problems.

#### 3.2 Image Quality Specifications CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING

23-13]

Image Quality Problem	Test Pattern	How to identify the problem area							
Deletion (Image with deletion)	Grid (4-Bit) [23-13]	When the defect is generated to the specific Test Pattern, the IOT control board may have the problem, and when it is not, the IIT board may have the problem. Perform an appropriate troubleshooting by referring to 3.3.5 Corrective action against image quality problems.							
Jitter	Grid (4-Bit)	Perform an appropriate troubleshooting by							
(Blurred images)	[23-13]	referring to 3.3.5 Corrective action against image quality problems.							
Banding	Continuous	Check with the Test Pattern.							
(Vertical stripes of	gradation								
0.5mm pitches in	[23-8]								
the transverse	Continuous								
direction to the	gradation								
copy fed direction)	[23-9]								
Other	Grid (4-Bit)	Check with the Test Pattern.							

# CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.2 Image Quality Specifications
#### 3.3 Image Quality Troubleshooting

#### 3.3.1 Copy Sample

When an image quality problem occurs, make A3 copy samples using Test Pattern (499T247) in order to judge, understand the symptom and execute a suitable corrective action. Use Test Pattern (499T281) for image quality problem of printout using the fax send/receive features.

#### 3.3.2 Cautions on image quality troubleshooting

Image quality problems are usually corrected according to procedures instructed in troubleshooting tables corresponding to the problems. When an image quality problem occurs continuously or an abnormal symptom is observed, check the installation environment, originals used and lives of consumables.

1. Installation environment

The power source voltage must be 100±10%(FX), 110±10%(TFX) 220±10%(KX), 220 - 240V±10%(FXA) VAC.

- Avoid places subject to high temperature and moisture (near water valves, water heaters, humidifiers, air-conditioners or fire sources).
- Avoid places subject to ammonia gas.
- Select places not subject to direct sunshine (if unavoidable, instruct the customer to install curtains).
- Select places with good ventilation.
- Select places where the machine can be secured horizontally level.
- 2. Check of originals causing image quality problems
  - Check of original density
    - E.g.: Check for wrong judgment of high background when diazo copies or newspapers are used as originals.
    - E.g.: Check for wrong judgment of too light copies when light pencil written or blue no-carbon paper originals are used.
- 3. Check of consumables
  - Check lives of CRU: 24K copies
- 4. Check of paper
  - Store paper at a place of low humidity.
- 5. Host-side check for an image quality fault
  - Check whether the fault depends on the application.
  - Try printing from another client.
  - Try printing by another application.

- Try printing by another icon (file).
- Replace the application.
- Check the client system.
- Try printing by another icon (file).

#### 3.3.3 Basic rules on action against image quality problems

The first thing to be done is cleaning of components. Check for the mirror, lens, ROS window, platen glass, platen cushion, white reference board, transport section, and fuser section for contamination and clean, if necessary. Excessive or quick contamination at certain components is often caused by improper environmental condition. In such a case, a suitable action should be taken.

#### 3.3.4 Image Quality Adjustment

Proper adjustment has been completed to the machine on delivery and no further adjustment should be necessary in the field. However, extra adjustments can be required according to the customer's preference. When light copies, high background or too dark density is generated, perform troubleshooting by referring to 3.3.5 Corrective action against image guality problems.

When the problem persists, perform adjustment.

- 1. Diagnostic Code used for Image Quality Adjustment Use Diag Code [21-5] to [21-57] to perform image quality adjustment.
- 2. Cautions on image quality adjustment Check notes described by symptoms below when performing image quality adjustment.
- 1) For improving reproducibility of low concentration images as required by the customer (Green or blue characters or lines)

Instruct the customer that density can normally be improved by manually selecting the "Dark" button. When the setup data is changed as described below, confirm with the customer that the change may trigger other problems.

- Decreasing the Diag Code [21-31] setup data.
- Note copies. Recommend the customer to use the manual density adjustment button.

In this case, threshold level for eliminating the AE ground color decreases and as a result, high background of the originals, such as newspapers, may appear on

- Check
  - 1. Check that the values are correctly set up in the Diag Code [21-5] to [21-37]. (See NVM table)
  - 2. Check that the ROS window is not contaminated.
  - 3. Print out the built-in Test Pattern of continuous gradation in the Diag Code [23-21]. Check that the darkest two black bands in the Test Pattern copy has almost the same density as 1.3 solid.
    - When the density is lower, the problem can be Xero related.
    - When the density is almost the same, the IIT may have the problem.
- When the density of built-in Test Pattern is normal
  - A. Check the IIT.
    - When the controlled auto density light is too Check that the setup data in the Diag Codes below are appropriate. (See NVM table) Change the data as needed. [21-25,26,31to37]
    - density When the manually controlled is light too Check that the setup data in the Diag Codes below are appropriate. (See NVM table) Change the data as needed. [21-5 to 24]
  - B. Check the control board.

Problem of control board rarely causes light copies, but when the problem persists after conducting the above checks, use a built-in Test Pattern and check each board for problems.

3) When the image is too light at one half side of copy

Print out the built-in Test Pattern with continuous gradation in the Diag Code [23-23]. Check for a light image at one half side of the copy.

- When the outboard side (front side of the machine) is light,
  - □ The CRU has not been properly installed.
- When the built-in Test Patterns does not show light images, check the IIT white reference board for contamination. (Particularly for the DADF white reference board)

4) High background for the entire image or density is too dark

Print out the built-in Test Pattern of the entire white copy in the Diag Code [23-10] and of continuous gradation in the Diag Code [23-23]. Check for high-background in the entire image.

□ When the entire image has background, poor toner charging can be the cause. (Replace the CRU.)

When the built-in Test Pattern has background, check XERO related components (CRU, BTR, or DST) for problems.

- Replace the CRU, then HVPS.
- When the built-in Test Pattern has no background A. Check the IIT.
  - (See NVM table) Change the data as needed.
  - When background is observed in the manually adjusted density
    - matter.
    - (See NVM table) Change the data as needed.
  - B. Check the control board.

If the problem persists, use the built-in Test Pattern to check each board for problems.

### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting

When background is observed in the auto adjusted density Check the data setup in the Diag Codes [21-25] to [21-57] are appropriate. • Check the white reference board for pieces of paper, dust or foreign

Check that the data setup in the Diag Codes [21-5 to 24] are appropriate.

3.3.5 Corrective action against image quality problems

#### WARNING

Some of the Image Quality correction activities can involve exposure to laser radiation. This is indicated by the laser warning symbol in the text. Where this is seen, observe the laser precautions.

#### WARNING

Switch off the electricity to the machine. Disconnect the power cord from the customer's supply while performing tasks that do not require electricity. Electricity can cause death or injury.

#### WARNING

Follow the service procedure exactly as written. Use of controls or adjustments other than those specified in this manual, may result in an exposure to invisible laser radiation. During servicing, the invisible laser radiation can cause eye damage if looked at directly.



Invisible laser radiation

Too light copies C - 1 Copy sample



j0hn3004

Symptom Too light copies

(Copies with lower density characters and drawings throughout the whole area compared with the standard density)

Cause	Corrective ac
Paper with high moisture content	Replace p
	<ul> <li>Instruct th</li> </ul>
BCR	Replace C
Faulty BCR	Replace H
Drum	Check dis
Drum ground failure	
Drum	Replace C
<ul> <li>Quality change and</li> </ul>	
deterioration	
Developer bias failure	Replace C
	Replace H
Toner	Replace C
Insufficient toner supply	
Toner	Remove (
Toner blocking	horizontal
Toner deterioration	Replace C
ROS	Set up RC
Insufficient light qty of ROS	•
ROS	Clean the
Laser light blocked	Remove c
Contamination of white reference board	Clean the

iction
paper.
he customer to store paper in dry places.
CRU.
HVPS.
iscontinuity.
CRU.
CRU.
HVPS.
CRU.
CRU and release toner by shaking it
ally.
CRU.
OS
e ROS window.
obstacles on the light path.
e white reference board.

Causa	Corrective action	~
Cause		C
Inappropriate AE setup data	<ul> <li>Check NVM setup data. [21-37]</li> </ul>	
Inappropriate shading	• Check NVM setup data. [21-56][21-57]	
<ul> <li>Control Board</li> <li>Faulty MCU/SW PWB or IIT/IPS PWB</li> </ul>	<ul> <li>Print out built-in Test Pattern (continuous gradation) to check and isolate faulty board.</li> </ul>	
<ul> <li>Control Board</li> <li>Connection failure of MCU/SW PWB, IIT/IPS PWB, MF MAIN PWB</li> </ul>	Check that the connections are secure.	
<ul><li>Control Board</li><li>Faulty CCD PWB</li></ul>	Replace CCD PWB.	
Density setup failure	<ul> <li>Check NVM setup data. (Diag [21-5 to 57])</li> </ul>	

C - 2 White copies Copy sample



j0hn3005

Symptom

White copies (Output of entirely white copies without characters and drawings) action ne CRU drive structure. CRU. CRU and drive structure. HVPS. continuity of magnetic roll. or foreign matter in the laser path between d drum. built-in Test Pattern to check and isolate bard. connectors for connection. CCD PWB. or replace BTR.

•	Check th
•	Replace
•	Check C
•	Replace
•	Check co
•	Check fo
	ROS and
•	Print out
	faulty bo
	-
•	Check co
•	Replace
	-
•	Repair o
	• • • • • • • • •

### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting



#### j0hn3006

Symptom: White off (Copies with missing or too light characters and drawings in a belt shape in the copy feed direction)

Cause	Corrective action
Moisture of paper	Replace paper.
	• Instruct the customer to store paper in dry places.
BCR	Replace CRU.
Faulty BCR	Replace HVPS.
Faulty HVPS	
Quality change and deterioration of Drum surface	Replace CRU.
Interrupted laser path	Check for foreign matter or contamination on the
	laser path (mirror, ROS window) between ROS
	drum.
Partially dirty white reference	Clean the white reference board.
board	
Foreign matter (paper or fiber	Remove foreign matter.
chips) on Sheet Platen of DADF	
Control board	Print out built-in Test Pattern (4BIT line pattern) to
<ul> <li>Faulty MCU/SW PWB or</li> </ul>	check and isolate faulty board.
IIT/IPS PWB	
Control board	Replace CCD PWB.
Faulty CCD PWB	•
Toner	Replace CRU.
Insufficient toner supply	-
Toner	Replace CRU.
Toner blocking	-

White off: Copy sample C - 4



j0hn3007

Symptom: White off

(Copies with missing or too light characters and drawings in a belt shape in the transverse to copy feed direction)

Cause	Corrective ac
Moisture or wrinkle of paper	
	<ul> <li>Replace µ</li> <li>Instruct th</li> </ul>
Foulty BCP	Instruct in
Faulty DCR	Replace C
_	Replace F
Drum	<ul> <li>Check for</li> </ul>
Drum revolution failure	
Drum	Replace C
<ul> <li>Quality change and</li> </ul>	
deterioration (at 94mm	
intervals)	
Toner	Check for
Magnetic roll revolution failure	
Developer bias	Replace H
Output failure of HVPS	
Developer bias	Check cor
Magnetic roll discontinuity	
Control board	Replace
• A failure occurs even when the	(BSD 6.5/
ROS synchronized signal from	,
SOS Sensor (Line Sync signal	
at IPS (BSD 6.5/6.4/6.3/6.1)	
lasts longer than the specific	
time and does not generate	AVOID DIF
status code [U3-3]. See BSD	In
6 5/6 3/6 4 SOS signal failure	
lowered ROS Power or	
rovolution failure of POS Motor	

tion	
paper.	
e customer to store paper in dry place	s.
CRU.	
IVPS.	
a skipping gear at CRU.	
CRU.	
a skipping gear at CRU.	
IVPS.	
ntinuity of magnetic roll.	
ROS Assy, then IIT/IPS	PWB.
6.4/6.3/6.1)	
visible laser radiation	

Cause	Corrective action	C - 5
can be the cause. Poor contact of BTR (Deformed bias plate)	Repair or replace BTR.	

White off Copy sample



j0hn3008

Symptom: White off

(Copies with missing or too light characters and drawings in a belt shape in the copy feed direction at solid and halftone areas.)

Cause	Corrective action
BCR	Replace CRU.
Faulty BCR	Replace HVPS.
Flaws on the drum surface in circumference direction	Replace CRU.     Charly for the series of the drives flows. (Foreign)
	Check for the cause of the drum flaws. (Foreign
	naller on BTR of installation of the drum
Toner	
Uneven toner coating on the	• Replace CRO.
magnetic roll.	
Foreign matter on Sheet Platen of	Clean DADF glass.
DADF (paper and fiber chips)	
Flaws in heat roller in	Replace Fuser.
circumference direction	Check for the cause of the Heat Roller flaws.
	(Deformation of Stripper Finger and installation of
	the Heat Roller peripherals)
Burrs or flaws of paper transport system	Check paper transport system for burrs and flaws.
Interrupted laser path	Check laser path (mirror, and ROS window) from
	ROS to drum for foreign matter.
Partially dirty (spots) white ref. board	Clean the White Reference Board.
Control board	Print out built-in Test Pattern (of continuous
Faulty MCU/SW PWB or	gradation or 4-BITline pattern) to check and
IIT/IPS PW	isolate faulty board.
Control board	Replace CCD PWB.
Faulty CCD PWB	
BTR is dirty.	Clean or replace BTR.
IIT No.1-3 mirrors are dirty.	Clean the mirrors.

## CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting

#### Black lines Copy sample C - 7

#### Spot white off Copy sample C - 6



#### j0hn3009

#### Symptom: Spot white off (Copies with missing characters and drawings in spot shapes)

Cause	Сс	prrective action
Moisture or wrinkle of paper	•	Replace paper.
	•	Instruct the customer to store paper in dry places.
DTS contamination	•	Clean or replace DTS.
Quality change or deterioration of	•	Replace CRU.
drum or detached OPC		
Damage, quality change and	•	Replace Heat Roller.
deterioration of Heat Roller surface		
(at 94mm intervals)		
Control board	•	Print out built-in Test Pattern (4BIT line pattern) to
Faulty MCU/SYSTEM PWB or		check and isolate faulty board.
IIT/IPS PWB		2
Condensation of the Platen Glass	•	Clean the Platen Glass.
at rear		



#### j0hn3010

Symptom: Black lines (Black lines of below 1mm width appear on copies in the copy feed direction)

Cause	Corrective a
Drum	Replace
<ul> <li>Flaws on Drum surface in</li> </ul>	Check for
circumference direction	matter or
Drum	Replace
Poor Drum cleaning	•
Fuser	Replace
• Flaws on Heat Roller surface in	Check for
circumference direction	(Deforma
	Heat Roll
Fuser	Check N
Too high fuser temperature	(Diag: [2(
setting	(= :::9: [= :
Toner	Replace
Uneven toner supply	•
Foreign matter on Sheet Platen of	Clean DA
DADF (paper and fiber chips)	
Faulty reflection of White	Clean the
Reference Board	
Control board	Print out
Faulty MCU/SW PWB or	gradation
IIT/IPS PWB	isolate fa
Control board	Replace
Faulty CCD PWB	
IIT No.1 - 3 mirrors are dirty.	Clean the



ction CRU. r the cause of the Drum flaws. (Foreign BTR or installation of drum peripherals) CRU. Heat Roller. r the cause of the Heat Roller flaws. ation of Strip Finger and installation of ller peripherals) IVM setup data. 20-100 to 106]) CRU. ADF glass. e White Reference Board. built-in Test Pattern (continuous or 4-BIT line pattern) to check and ulty board. CCD PWB. e mirrors.

Black lines Copy sample

C - 8

#### Black spots Copy sample C - 9



#### j0hn3011

Symptom: Black lines (Black lines of below 1mm width appear on copies in the transverse to copy feed direction)

Cause	Corrective action
Drum	
Flaws on Drum surface in axial	
direction (At 94mm intervals)	
	Charle CDU courling for elvipping
Drum revolution foilure	Check CRU coupling for skipping.
	Replace Heat Roller.
Flaws on Heat Roller surface in axial	
direction (At 94mm intervals)	
Fuser	Check NVM data.
Too high fuser temperature setting	(Diag: [20-100 to 106])
ROS Unit	Check power source and voltage, then
• Incident light quantity to SOS lowered	replace ROS assembly.
	DANGER AVOID DIRECT EXPOSURE TO BEAM Invisible laser radiation
Control board	Print out built-in Test Pattern (continuous
• Faulty MCU/SW PWB or IIT/IPS PWB	gradation or 4-BIT line pattern) to check
	and isolate faulty board
Control board	
Eaulty CCD PWB	
BCR	
• Flaws on the BCR surface (in 1/1mm	
intonvolo)	
initer valoj	

XEROX •

j0hn3012

Symptom Black spots

(Black spots appearing on copies)

Cause	Corrective ac
Dirty Platen Glass	Clean Pla
Dirty Platen Cushion	Clean or r
Faulty BCR	Replace 0
Output failure of HVPS	Replace H
Drum (in 94mm intervals)	Remove f
<ul> <li>Foreign matter on Drum</li> </ul>	
surface	
Drum (in 94mm intervals)	Replace 0
Contamination, quality change	
and deterioration of Drum	
surface	
Drum (in 94mm intervals)	Replace 0
Spots on Drum surface	•
Contamination on Heat Roller	Clean Heat
surface (in 94mm intervals)	
Flaws on magnetic roll surface (in	Replace C
55mm intervals)	
Ioner	Replace C
<ul> <li>Flaws on Developer sleeve</li> </ul>	

## CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting



action
laten Glass.
r replace Platen Cushion.
CRU.
HVPS.
foreign matter.
CRU.
CRU.
aat Pollor
CRU.
CRU.

#### Belt high-background Copy sample C - 10



#### j0hn3013

Symptom: Belt high-background (Belt like images appearing in the copy feed direction. Belt width exceeds 1mm and light one is called belt high background while dark one is called black belt.)

Cause	Corrective action
Faulty BCR	Replace CRU.
Drum	Replace CRU.
Poor Drum cleaning	-
Drum	Replace CRU.
• Contamination, quality change,	
and deterioration of Drum	
Drum	Replace CRU.
Uneven toner thickness	
Dirty Platen Glass	Clean Platen Glass.
	Clean DADF Glass.
HVPS	<ul> <li>Replace HVPS, check continuity.</li> </ul>
<ul> <li>Output failure of HVPS, and</li> </ul>	
contact failure of terminals	
Control board	Print out built-in Test Pattern (continuous
Faulty MCU/SW PWB or IPS	gradation or line pattern) to check and isolate
PWB (When shading	faulty board.
compensation fails, high	
background appears at both	
sides.)	
Control board	Replace CCD PWB.
Faulty CCD PWB	
Fuser	Clean/replace the appropriate roller.
Contamination, quality change	
and deterioration of	
Heat/Pressure Roller	

XEROX

#### j0hn3014

Symptom: Belt high-background (Belt like images appearing in the transverse to copy feed direction. Belt width exceeds 1mm and light one is called belt high background while dark one is called black belt.)

Belt high-background Copy sample

C - 11

Cause	Corrective action
Faulty BCR	Replace CRU.
Drum	Replace CRU.
<ul> <li>Poor cleaning of Drum</li> </ul>	•
Drum	Replace CRU.
• Contamination, quality change	
and deterioration of Drum	
Drum	Check continuity path of Drum grounding.
Faulty grounding of Drum	
Dirty Platen Glass	Clean Platen Glass.
Control board	• Print out built-in Test Pattern (line pattern) to
• Faulty MCU/SW PW or IIT/IPS	check and isolate faulty board.
PWB	
HVPS	Replace HVPS, and check continuity.
• Output failure of HVPS, and	
contact failure of terminals	
BTR	Replace BTR.
• BTR failure (at 55mm intervals)	
Fuser	Clean/Replace the appropriate roller.
• Contamination, quality change	
and deterioration of	
Heat/Pressure Roller (at 94mm	
intervals)	



C - 13 Solid black copies Copy sample



j0hn3016

High background Copy sample C - 12



j0hn3015

Symptom: High background

(Contamination of white areas by toner particles)

Cause	Corrective action
Faulty BCR	Replace CRU.
Drum	Replace CRU.
Poor cleaning of Drum	
Drum	Replace CRU.
Contamination, quality change	
and deterioration of Drum	
Developer bias failure	Replace HVPS.
Output failure of HVPS, and	Replace HVPS, and check continuity.
contact failure of terminals	
Dirty Platen Glass	Clean Platen Glass.
Foreign matter on the White	Remove foreign matter.
Reference Board (causes AE	
Inappropriate AF setting	Chack NV/M cature data [21, 27]
	Check NV/M setup data [21-57]     Check NV/M setup data [21 56] [21 57]
compensation coefficient	• Check NVM setup data [21-56] [21-57]
Control board	Print out built-in Test Pattern (continuous
Faulty MCU/SW PWB or	gradation or line pattern) to check and isolate
IIT/IPS PWB(When shading	faulty boards
compensation fails, back-	
ground occurs at both sides)	
Control board	Check connectors for poor electrical connections.
Poor electrical connection of	
PWB connectors	
Control board	Replace CCD PWB.
Faulty CCD PWB	

#### Symptom

Solid black copies

(Solid black copies without images)

Cause	Сс	orrective a
CRU	•	Replace
Faulty BCR	•	Check B
Control board	•	Print out
<ul> <li>Faulty MCU/SW PWB or</li> </ul>		gradatior
IIT/IPS PWB		faulty boa
Control board	•	Replace
Faulty CCD PWB or IPS PWB	•	Replace
HVPS	•	Replace
<ul> <li>Output failure of HVPS, and</li> </ul>		
contact failure of terminals		

### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting

action CRU. CR/CRU for continuity. built-in Test Pattern (continuous n or line pattern) to check and isolate ards CCD PWB. IIT/IPS PWB. HVPS and check continuity.

#### C - 14 Skip Copy sample





Symptom Skip

(Copies with missing characters or images)

- Skip represent missing images caused by vibration or speed changes of the drum or optics during exposure process.
- Drum and optics drive mechanisms should be checked when skip problem occurs.

Cause	Corrective action
Optics (Problem occurs in platen mode.)	Clean Carriage Rail.
Contamination or foreign matter on	
the Carriage Rail	
Optics (Problem occurs in platen mode.)	Clean or replace Carriage Cable.
• Flaws, damage, contamination or	
foreign matter on the Carriage	
Cable	
Optics (Problem occurs in platen mode.)	Adjust Belt tension or replace Belt.
Loose Timing Belt	
Optics (Problem occurs in platen mode.)	Clean or reinstall Pulley.
• Dirt or wrong orientation of Pulley	
Optics (Problem occurs in platen mode.)	Check Carriage Motor.
Faulty rotation of Carriage Motor	
Problem occurs in DADF mode.	Clean or replace Feed/Retard Roll.
Dirty, worn, or deformed	
Feed/Retard Roll	
Problem occurs in DADF mode.	Clean or replace Platen Roll.
Dirty Platen Roll	•

Cause	Correctiv
Problem occurs in DADF mode.	Clear
• Dirty or worn Belt, Pulley, Gear or	
Clutch	
Problem occurs in DADF mode.	Chec
Faulty DADF	
Problem occurs in DADF mode.	Chec
Faulty DADF LARGE ROLL DRIVE	(BSD
Motor	,
Drum drive mechanism	Clear
Dirty CRU Coupling	
Drum drive mechanism	Clear
<ul> <li>Dirty, worn and faulty Belt and</li> </ul>	
Pulley	
BTR rotation failure	Clear
Dirty CRU Gear	Clear
Dirty BRT Gear	

ve action

n or replace drive components.

ck DADF Motor. (BSD5.3)

ck DADF LARGE ROLL DRIVE Motor D5.3)

n CRU Coupling.

n or replace drive components.

n or replace CRU.

n or replace BTR Gear.

Smear Copy sample

C - 15

#### Jitter/Data error Copy sample C - 16



j0hn3019 Symptom: Jitter/Data error (Zigzag lines in copy feed direction)

Jitter or data error of receive data • FAX receive:

	•	Copy mode:	Jitter of print data	
--	---	------------	----------------------	--

Cause	Corrective ac
<ul> <li>Jitter/data error during Fax receive</li> <li>Data error caused by noise of telephone line</li> </ul>	<ul> <li>Print out b faulty boa</li> </ul>
<ul> <li>Jitter/data error during Fax receive</li> <li>Jitter/data error caused by poor electrical connection of NCU</li> </ul>	Check NC (BSD 19.2)
<ul><li>Jitter/data error during Fax receive</li><li>Faulty modem in MF MAIN PWB</li></ul>	Replace N
<ul> <li>Jitter in copy mode</li> <li>Faulty MCU/SW PWB or IIT/IPS PWB</li> </ul>	<ul> <li>Print out t faulty boa</li> </ul>
<ul><li>Jitter in copy mode</li><li>Faulty SOS sensor or ROS</li></ul>	Replace F
Drive PWB (Occurs at the same level in the inside and outside.)	AVOI
Jitter in copy mode <ul> <li>Faulty ROS Motor</li> </ul>	Replace F     Replace N

ſÌ XEROX

j0hn3018 Symptom: Smear (Copies with blurred images)

- Smear represents blurred images caused by vibration or speed changes of Drum and paper • in the transfer process.
- Check paper transport drive mechanism, mainly drum and paper feed when smear problem occurs.

-			
	Cause	Co	rrective action
	Faulty DTS	•	Replace DTS.
	Fuser	•	Clean or replace the Gears.
	<ul> <li>Foreign matter or damage of</li> </ul>		
	Heat Roller Gears		
	Fuser	•	Replace Pressure Roller.
	Deformed Pressure Roller		
	Damage of Paper Transport Gear,	•	Replace them.
	Pulley or Belt	<u> </u>	
	Faulty rotation of Drum	•	Check CRU Coupling.
		•	Replace CRU.
	Faulty Main Drive Assy	•	Replace Main Drive Assy.
	Foreign matter in Transfer area	•	Remove foreign matter.
	R/H Chute	•	Repair/Replace the Chute.
	• R/H Chute is loose/detached or		
	binding.		
	BTR feed fault	•	Replace BTR.
	BTR is dirty.		

## CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting



ction built-in Test Pattern to check and isolate ard.

CU PWB for poor electrical connection. 2)

MF MAIN PWB. (PL 7.3)

built-in Test Pattern to check and isolate ard.

ROS Assy.



Invisible laser radiation

ROS Assy. MCU/SW PWB.

#### Distortion (Hunting) Copy sample C - 17



#### j0hn3020

Symptom: Distortion (Hunting) (Copies with wavy lines in copy feed direction, especially, vertical scale lines.)

Cause	Corrective action
Detached or wavy documents	Load documents again.
Faulty Carriage Cable Capstan	Replace IIT Capstan Shaft.
Faulty ROS Motor	• Replace ROS Assy.
Worn or faulty DADF Document Feed Rollers/Gears	Replace Roller/Gear.

#### C - 18 Banding Copy sample



#### j0hn3021

Symptom: Banding (Copies with striped images occurring regularly in the copy feed direction of half tone copies)

#### [Check]

Print out built-in test pattern [23-8], [23-9] to check the cycle of occurrence.

Cause	Сс	prrective ac
Vibration of ROS Motor	•	Replace F
		AV
	•	Replace N
Vibration of Drum	•	Check Ma
	•	Replace C



#### Magnification failure Copy sample C - 19

COPY B Α Х

Symptom

- Magnification failure
- Vertical magnification failure of DADF Use Diag Code [21-80] to [21-87] for adjustment.

Cause	Сс	prrective action
Faulty IPS PWB (Horizontal	•	Replace IIT/IPS PWB.
magnification failure)		
Full/Half Rate Carriage Installation	•	Install Carriage correctly.
Position failure		0 7
Installation failure of CCD Assy	•	Replace CCD Assy.
Application/Driver failure (when	•	Replace Application/Driver.
using printer)		

### Symptom: Poor resolution

(Copies of unsharp images throughout entire area)

Corrective ac
Replace 0
Install Ca
Reinstall
AVOI
<ul> <li>Check N\</li> </ul>



j0hn3022



j0hn3023

### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting

C - 20 Poor resolution Copy sample

3-22

ction CRU. arriage correctly. or replace ROS Assy. DANGER DIRECT EXPOSURE TO BEAM Invisible laser radiation VM setup data.

#### Residual image (ghost) C - 21 Copy sample



j0hn3024

Symptom

Residual image (ghost)

(Toner images incompletely cleaned from drum or heat roller and reproduced on next copy.)

Cause	Corrective action
Drum (At 94mm intervals)	Replace CRU.
Poor cleaning of Drum	
Drum (At 94mm intervals)	Replace CRU.
• Contamination, quality change	
and deterioration of Drum	
Fuser (At 94mm intervals)	Clean or replace Heat/Pressure Roller.
Contamination, quality change	
and deterioration of	
Heat/Pressure Roller	
Fuser (At 94mm intervals)	Check NVM setup data.
<ul> <li>Faulty setting of Fuser</li> </ul>	(Diag: [20-100 to 106])
temperature	
Toner (At 55mm intervals)	Replace CRU.
Mag Roller failure	•

C - 22 Finger Mark Copy sample



j0hn3025

Symptom

Finger Mark

(Represents copies with toner spilled on the lead and trail edges.)

Cause	Corrective action
Faulty DTS	Replace DTS.
	Replace HVPS.
Deterioration of Toner	Replace CRU.

#### C - 23 Moiré Copy sample

#### j0hn3026

Symptom

Moiré

(Copied patterns have interference fringe when the printed Document is copied.)

Cause	Corrective action
Moiré is generated when a printed Document is copied in the auto density or manual density mode.	<ul> <li>Recommend the customer to use photo mode when a patterned Document is copied.</li> </ul>
Moiré is generated when a printed Document is copied for two generations in the photo mode.	<ul> <li>Instruct the customer that copying for two generations may cause Moiré.</li> <li>Recommend the customer to change magnification.</li> </ul>
Moiré is generated when a printed Document is copied in the photo mode.	Rotate the Document setting. (90 degrees)

C - 24 Poor fusing Copy sample



j0hn3027

#### Symptom Poor fusing

(Images on copies that can easily be removed by rubbing using a finger.)

Cause	Corrective ad
Moisture of paper/special paper	Replace
	<ul> <li>Instruct the second seco</li></ul>
Fuser	Check N
Too low Fuser Temperature	(Diag: [20
setting	
Fuser	ReplaceF
• Flaws in or deformation of Heat	
Roller or Pressure Roller	
Power	Change t
Power voltage is too low.	

3-24

### CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting

ction

paper.

the customer to store paper in dry places. WM setting.

0-100 to 106])

user.

the voltage.

#### Poor registration: Copy sample C - 25



j0hn3028

#### Symptom: Poor registration

(Image position deviated in the copy feed direction or transverse to copy feed direction.)

Cause	Corrective action
Deviation of lead edge registration	Install Platen Glass correctly. (Fix the glass while
<ul> <li>Faulty orientation of Platen</li> </ul>	pressing to the left and rear.)
Glass	Execute IIT lead edge registration adjustment.
	[06-301] (ADJ 3.1.1)
Deviation of lead edge registration	Clean the Baffle.
Foreign matter in DADF Platen	• Execute DADF lead edge registration adjustment.
Baffle, or Skipping of or worn	[21-80] (ADJ 3.1.3)
DADF Feed roller	
Deviation of lead edge registration	Replace Roller and Spring.
Paper transport roller is worn	Execute IOIT lead edge registration adjustment.
up to the Drum or worn Spring	[20-01] (ADJ 7.2.1)
Deviation of lead edge registration	Check the structure and replace failure parts.
<ul> <li>Paper tray end guide is</li> </ul>	
loose/detached.	
Deviation of lead edge registration	Adjust IIT magnification in slow scan direction.
IIT magnification failure in slow	(ADJ 3.1.4)
scan direction	
Deviation of lead edge registration	<ul> <li>Adjust DADF scanning position.</li> </ul>
DADF scanning position failure	[21-8-] (ADJ 3.1.3)
Deviation of side registration	<ul> <li>Install Platen Glass correctly. (Fix the glass while</li> </ul>
Faulty orientation of Platen	pressing to the left and rear.)
Glass	<ul> <li>IIT side registration adjustment [06-30]</li> </ul>
	(ADJ 3.1.2)
Deviation of side registration	<ul> <li>Instruct the customer to load paper correctly.</li> </ul>
Wrong orientation of DADF	<ul> <li>Adjust DADF scanning position as needed.</li> </ul>
Document Guide	[21-82] (ADJ 3.1.3)

Cause	Сс	orrective a
Deviation of side registration	•	Instruct th
Improper loading of paper in	•	Adjust IO
the paper tray.		,
Deviation of side registration	•	Check th
Paper tray side guide is		
loose/detached.		

action

the customer to load paper correctly. OT side registration. [06-80] (ADJ 7.2.2)

ne structure and replace failed parts.

C - 27 Wrinkle in copies Copy sample



j0hn3029

Symptom

Uneven density

Cause	Corrective action
Dirty BTR, or DTS	Clean or replace BTR, or DTS.
Drum	Replace CRU.
• Quality change or deterioration	
of Drum	
Drum	Replace CRU.
Quality change or deterioration	
or BCR	
Fuser	Replace Fuser.
Quality change or deterioration	
Heat Roller	
Deteriorated Exposure Lamp	Replace Exposure Lamp.
	Replace Lamp Ballast PWB.
Control board	Print out built-in Test Pattern (continuous
<ul> <li>Faulty MCU/SW PWB or</li> </ul>	gradation) to isolate faulty board.
IIT/IPS PWB	
Control board	Check PWB connectors for poor electrical
Poor electrical connection of	connections.
PWB connectors.	
ROS	Clean ROS window
Dirty ROS Window	

j0hn3030

Symptom Wrinkle in copies

Cause	Corrective ac
Moisture of paper	Replace p
	<ul> <li>Instruct th</li> </ul>
Skew on paper feed	Check pa
Disconnection, burrs or foreign matter of Roller in Paper Transport	Check pa
Fuser	Remove p
Foreign matter of Heat Roller	
(wound paper)	
Fuser	Adjust an
<ul> <li>Wrong orientation of Inlet</li> </ul>	Replace i
Chute	

Uneven density: Copy sample C - 26

## CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting



ction paper. he customer to store paper in dry places. aper transport. aper transport. paper. ny In-Out level of Lower Inlet Chute. it as needed.

C - 28 Skew Copy sample



#### j0hn3031

Symptom

Skew (Inclined images, distortion of images, or incorrect straightness)

Skew is generated by many causes. Ensure you find out and isolate the cause first.

Cause	Corrective action
Paper skew at paper transport	Instruct the customer to load paper correctly.
<ul> <li>Incorrect paper loading to</li> </ul>	
Paper Tray	
Paper skew at paper transport	Operation failure of Registration Clutch.
Worn Paper Transport Roller before	Replace Roller and Spring.
Drum, skew of paper feed due to	
unbalanced Spring	
Paper skew at paper transport	Replace the appropriate parts.
Tray End/Side Guide is	
loose/detached or broken.	
Paper skew at paper transport	Reinstall the cover.
<ul> <li>Wrong installation of left hand</li> </ul>	
cover.	
Document skew at DADF	Set Document Guide correctly.
<ul> <li>Incorrect setting of DADF</li> </ul>	
Document Guide	
Document skew at DADF	Replace Roller or Spring.
Worn DADF Document Feed	• Execute the DADF document skew adjustment.
Roller or deteriorated Spring	
IIT skew (Image distortion)	<ul> <li>Install Platen Glass correctly.</li> </ul>
<ul> <li>Incorrect seating of Platen</li> </ul>	(Fix the glass while pressing to the left and rear.)
Glass	
IIT skew (Image distortion)	<ul> <li>Install the Carriages correctly.</li> </ul>
<ul> <li>Incorrect parallelism between</li> </ul>	
Full and Half Rate Carriages	

Cause	Corrective ac
<ul> <li>ROS skew (Incorrect straightness)</li> <li>Wrong orientation of ROS Assy or faulty ROS Assy</li> </ul>	<ul> <li>Check ins Assy as n</li> </ul>
	AVOID

ction stallation of ROS Assy. Replace ROS needed.





Invisible laser radiation

#### C - 29 Black bands Copy sample



j0hn3032

Symptom Black bands (Copies with black bands in the feed direction)

Cause	Corrective action
Faulty BCR	Replace CRU.
	Check BCR terminal of HVPS.
	Replace HVPS.

Symptom Dark copies

(Density level of text/photo is higher than standard.)						
Cause	Corrective action					
Quality change and deterioration of the Drum	Replace CRU.					
Excessive light quantity of ROS	Replace ROS.					
Density setup failure	Check NVM setup.					



j0hn3033

C - 30 Dark copies Copy sample

## CHAPTER 3 IMAGE QUALITY TROUBLESHOOTING 3.3 Image Quality Troubleshooting

# CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT

# Contents

4.1		2
4.2	DISASSEMBLY AND ASSEMBLY	3
1.	Drive	3
	REP 1.1.1 Main Drive Assembly	3
2.	Paper Transport	4
	REP 2.2.2 Size Cam	4
	REP 2.4.1 R/H Chute Assembly	5
	REP 2.4.2 Exit Assembly	6
	REP 2.4.3 OCT Assembly	6
	REP 2.11.1 Registration Chute Assembly	7
3.	IIT	8
	REP 3.1.1 Platen Glass	8
	REP 3.1.2 IIT/IPS PWB	9
	REP 3.2.1 Lens Assembly and CCD PWB	10
	REP 3.3.1 Timing Pulley	10
	REP 3.3.2 Carriage Cable	11
	REP 3.4.1 Exposure Lamp	13
	REP 3.4.2 Lamp Wire Harness	14
	REP 3.5.1 Platen Cushion	15
	REP 3.6.1 Control Panel	16
4.	ROS	17
	REP 4.1.1 ROS	17
6.	Fuser	18
	REP 6.1.1 Fuser Assembly	18
_	REP 6.2.1 Pressure Roll	18
R	EP 6.2.2Heater Rod	19
7.		20
	REP 7.2.1 MCU/SW PWB Assembly	20
•	REP 7.5.1 ESS PWB Assembly	21
8.		
0	Cabinet	22
9.		ZZ
	REP 9.1.1 Drive Joint	ZZ
	REP 9.5.1 Option Mother PWB	24 25
		25 عد
	NEF = J I I I I D A D E A scombly	20 26
	NEF 10.1.1 DADE ASSEILIDIY	0∠ حر
	NEF IV.I.Z DAUF FIALEII GIASS	

REP 10.1.3	DADF Platen Cushion	27
REP.10.2.1	DADF Feeder Assembly	
REP 10.3.1	Left/Right Counter Balance	
REP 10.5.1	DADF Nudger Roll	
REP10.5.2	DADF Feed Roll	
RFP 10.6.1	Reg Roller	32
REP 10.6.2	Size Sensor Assembly	
11. MSI		
RFP 11 1 1	MSI Assembly	
REP 11 4 1	MSI Feed Roll	
REP 11 4 2	MSI Retard Roll	
13 Finisher		
RED 13 1 1	Finisher Assembly	
RED 13 / 1	Stapler Motor	
DED1251	Povorso Motor Bolt	
DED 13 5 2	Food Motor Bolt	
DED 12 12 1	1 Compiler Motor	40
NEF 13.12.1	1 Evit Beller Accombly	۲۰ ۱۹
REP 13.14.1		42
REP 13.14.2	2In-Roller Assembly	
REP 13.14.3	S Lower Paper Guide	
REP 13.16.1		
4.3 ADJUSTME	NT	46
3. IIT 4	6	
	T Lead Edge Registration (Home	46
Position in S	Now Scan Direction)	10 46
	T Side Registration (Home Position in	
Fast Scan D	lirection)	
		۲+۸۲ ۸۸
	lagnification Adjustment SEE (Slow Scan Direction)	40 ۸۷
	lagnification Adjustment in LEE (Slow Scan Direction)	<del>4</del> 0 ۵۵
	esition of Full/Holf Poto Corriggo	
	VAL	
	JISITATION Procedure	
ADJ 7.2.1 IC	T Lead Edge Registration	52
	JI Side Registration	52
ADJ 7.2.3 E	age Erase Amount Adjustment	
13. Finisher		
ADJ 13.6.1	Adjusting the Paddle Position	
CHAPTER 4 [	C DISASSEMBLY/ASSEMBLY AND ADJUS	Content STMEN

03/02

4-1

# nts NT

#### 4.1 Introduction

4.1.1 Using Disassembly, Assembly, and Adjustment

There are the following rules in the procedures for taking field services, e.g., disassembly, assembly, replacement, and adjustment of parts.

1. [Subsystem] : It is divided into 13 subsystems, which are described in this manual. Each subsystem is further divided into sub-titles. Each title has an item number that matches a plate number shown in the parts list in Chapter 5. By this method, the user can easily find a target procedure from the parts list and vice versa. [Example] Disassembly, Assembly, and Adjustment: Main 1.1.1 Drive Motor Assembly Parts List:

PL1.1 Main Drive Motor

- 2. [Figure -1]: Figure-1" at the end of sentences indicates that the detailed procedure is the work procedure in the illustration. The illustration shows the symmetric parts on the left and right only with the ones in either side.
- 3. [Installation]: Describes only a comment because the installation procedure is the reverse of the removal procedure.
- 4. [Replacement Procedure]: The replacement procedure is omitted when it is easy without the removal and installation procedures; however, only a comment is described if the related adjustment is required.
- 5. [Reference Procedure]:"REP or ADJ 2.1.3" following the procedure indicates a disassembly, assembly, or adjustment item to be referenced.
- 6. [Prerequisites]: Be sure to confirm the prerequisites listed as notes before the procedure.

# 4-2 CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT03/02 4.1 Introduction

7. [Modification]: A modification number is shown before the title or procedure for which a difference is between the preceding and modified contents.

#### [Example 1]

- x.x.x "A" Roller [5V executed]
- \* Indicates that all the procedures indicated by this title apply to a 5V-executed machine.

#### [Example 2]

- 2. [3V unexecuted]: Remove the "B"Roller.
- \* Indicates that procedure 2 applies only to a 3Vunexecuted machine.

#### [Example 3]

- Figure -1 [3V executed]
- \* Indicates that the reference diagram of Figure-1 belongs to a 3V-executed machine.

#### [Example 4]



This symbol indicates the contents that are modified by the modification expressed with a number in the symbol.



This symbol indicates the contents that are not yet modified with the modification expressed with a number in the symbol.

- 8. [Machine direction name]: Defines the position and direction used in each procedure and directions in the machine as follows:
  - Front: Front of machine
  - Right: Right, taking a front view of the machine
  - Left : Left, taking a front view of the machine
  - Rear: Rear, taking a front view of the machine

- 4.2 Disassembly and Assembly
- 1. Drive
- REP 1.1.1 Main Drive Assembly Ref. PL: PL1.1

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### WARNING

After switching off the machine the fuser surfaces are still hot. Allow to cool, or avoid contact while working near the fuser.

#### CAUTION

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

Procedure

- 1. Pull out the R/H unit.
- 2. Remove the CRU.
- 3. Remove the Fuser Assembly. (REP6.1.1)
- 4. Remove the Rear Cover. (PL8.3)
- 5. Remove the Electrical Cover. (PL7.1)
- 6. If the machine has a fax function, open the MF Box. (PL7.3)
- 7. If the machine has an HDD for Electronic Sorting

Kit, remove the HDD. (Figure-1)

- 1) Disconnect the connectors (2).
- 2) Remove the screws (4).
- 3) Remove the HDD.



- 8. Release the Wire Harness from the Clamp. (Figure-2)
  - 1) Disconnect the Connectors (2).
  - 2) Release the Wire Harness from the Clamp.



9. Remove the Feed Clutch Assembly. (Figure-3)

- 1) Remove the screws (2) and standoff.
- 2) Remove the Bracket.





WorkCentre Pro 432/428

# 4.2 Disassembly and Assembly



10. Remove screw (Figure 4) 1) Remove screw from inside CRU cavity.

2 j0hn4103 (Figure-3) j0hn4103

3) Remove the Bearing and Feed Clutch

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-4 03/02 4.2 Disassembly and Assembly

- 11. Remove the Main Motor Assembly. (Figure-5)
  - 1) Disconnect the connector.
  - 2) Remove the KL-Clip.
  - 3) Remove the Gear.
  - 4) Remove the screws (4).
  - 5) Remove the Main Motor Assembly.



#### Installation

#### Procedure

- 1. Perform the removal steps in reverse order with the following notes in mind.
- Note Install the Main Drive Assembly while lifting the Link Assembly for CRU. (Figure-6)



#### 2. Paper Transport

REP 2.2.2 Size Cam Ref. PL: PL2.2

Installation

Procedure



1. Slide the End Guide to the position of 8.5" to align the Sector hole with the Tray hole. (Figure-1)

(Figure-1) j0hn4201

- 2. Install the Size Cam while aligning its hole with the U groove of the Tray. (Figure-2)
  - 1) Install the Size Cam.
  - 2) Insert the Lock Pin.



(Figure-2) j0hn4202

#### REP 2.4.1 R/H Chute Assembly

Ref. PL: PL2.4

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

Procedure

- 1. Pull out the R/H Unit.
- 2. If the machine has an F/U Tray, remove the F/U Tray. (PL2.4)
- 3. If the machine has an MSI, remove the MSI. (REP11.1.1)
- 4. Remove the Exit Assembly (REP2.4.2) or the OCT Assembly (REP2.4.3).
- 5. Remove the R/H Chute Assembly. (Figure-1)
  - 1) Remove the screws (2).
  - 2) Remove the screws (2).
  - 3) Remove the R/H Chute Assembly.



#### Installation

Procedure

WorkCentre Pro 432/428

(Figure-1)j0hn4203

1. Perform the removal steps in reverse order.

4.2 Disassembly and Assembly

#### REP 2.4.2 Exit Assembly Ref. PL: PL2.4

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

#### Procedure

- 1. Pull out the R/H Unit.
- 2. If the machine has an MSI, remove the MSI. (REP11.1.1)
- 3. Remove the R/H Lower Cover. (Figure-1)
  - 1) Remove the screws (2).
  - 2) Remove the Handle.
  - 3) Remove the screws (2).
  - 4) Remove the R/H Lower Cover.



#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-6 03/02 4.2 Disassembly and Assembly

- 4. Remove the Exit Assembly. (Figure-2)
  - 1) Remove the screw.
  - 2) Push in the Rear Upper Rail.
  - 3) Loosen the screws (2).
  - 4) Remove the screws (2).
  - 5) Remove the Exit Assembly.



#### Installation

#### Procedure

1. Perform the removal steps in reverse order.

#### REP 2.4.3 OCT Assembly Ref. PL: PL2.4

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

# power cord.

#### Procedure

- 1. Pull out the R/H Unit.
- - (PL11.1)

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the

2. If with an F/U Tray, remove the F/U Tray. (PL2.4) 3. If the machine has an MSI, remove the MSI.

- 4. Remove the R/H Lower Cover. (Figure-1)
  - 1) Remove the screws (2).
  - 2) Remove the Handle.
  - 3) Remove the screws (2).
  - 4) Remove the R/H Lower Cover.



- 5. Remove the OCT Assembly. (Figure-2)
  - 1) Disconnect the connectors (2).
  - 2) Remove the screw.
  - 3) Push in the Rear Upper Rail.
  - 4) Loosen the screws (2).
  - 5) Remove the screws (2).
  - 6) Remove the OCT Assembly.



(Figure-2) j0hn4206

Installation

Procedure 1. Perform the removal steps in reverse order.

#### REP 2.11.1 Registration Chute Assembly Ref. PL: PL2.11

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

# power cord.

#### After switching off the machine the fuser surfaces are still hot. Allow to cool, or avoid contact while working near the fuser.

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

Procedure

- 1. Pull out the R/H Unit.
- - Harness. (Figure-1)

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the

#### WARNING

#### CAUTION

2. Remove the Fuser Assembly. (PL6.1) 3. Disconnect the Connectors and release the Wire 1) Lift the Registration Chute Assembly. 2) Disconnect the Connector. 3) Disconnect the Wire Harness and release from the Clamps (4). 4) Disconnect the red wire. 5) Disconnect the white wire.

# 4.2 Disassembly and Assembly



- 4. Remove the Registration Chute Assembly. (Figure-4)
  - 1) Remove the KL-Clip (2).
  - 2) Remove the Registration Chute Assembly.



(Figure-4) j0hn4210

#### Installation Procedure

1. Perform the removal steps in reverse order.

# 3. IIT

REP 3.1.1 Platen Glass Ref. PL PL3.1

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

4-8 03/02

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the Platen Glass. (Figure-1)
  - 1) Remove the screws (2).
  - 2) Remove the Plate.
  - 3) Remove the Platen Glass.



#### Installation

#### Procedure

1. Perform the removal steps in reverse order with the following notes in mind.

Note



#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4.2 Disassembly and Assembly

Install the Platen Glass while pressing in the direction of Arrow A and the Plate while pressing in the direction of Arrow B. (Figure-2)

(Figure-2) j0hn4302

#### REP 3.1.2 IIT/IPS PWB Ref. PL PL3.1

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### CAUTION

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

#### Procedure

- 1. Remove the following parts.
  - Platen Glass(REP3.1.1)
  - Cable(IIT-IOT)(PL3.1)
  - Cable(IIT-DADF)(PL10.1)
  - PWB Cover(PL3.1)
- 2. Disconnect the connectors. (Figure-1) 1) Disconnect the connectors (5).



- 3) Remove the screws (8).



Installation Procedure

1. Perform the removal steps in reverse order.

3. Remove the IIT/IPS PWB. (Figure-2) 1) Remove the screw. 2) Remove the Stopper.

- 4) Remove the IIT/IPS PWB.

4.2 Disassembly and Assembly

#### REP 3.2.1 Lens Assembly and CCD PWB Ref. PL PL3.2

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

#### CAUTION

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

Procedure

- 1. Remove the following parts.
  - Platen Glass(REP3.1.1)
  - CCD Cover(PL3.2)

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-10 03/02 4.2 Disassembly and Assembly

- 2. Remove the Lens Assembly and CCD PWB. (Figure-1)
- 1) Disconnect the connectors (2).
- 2) Remove the screws and washers (4).
- 3) Remove the Lens Assembly and CCD PWB.



(Figure-1) j0hn4305

#### Installation

Procedure

1. Perform the removal steps in reverse order.

#### REP 3.3.1 Timing Pulley Ref. PL PL3.3

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

# power cord.

#### Procedure

- 1. Remove the following parts.

  - (REP10.1.1)

  - 4) Top Cover(PL3.6)
- - 1) Remove the spring.

  - 3) Remove the Damper.

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

## WARNING

#### Switch off the machine and disconnect the

1) Platen Cover( PL3.5) or DADF Assembly 2) Platen Glass(REP3.1.1) 3) Control Panel(REP3.6.1) 2. Remove the Timing Pulley. (Figure-1) 2) Loosen the Screw of the Motor. 4) Remove the Timing Pulley.





Installation

#### Procedure

- 1. Perform the removal steps in reverse order with the following notes in mind.
- Note While pressing the Shaft to Rear, reserve a clearance of about 0.4 mm between the Timing Pulley and Bearing. (Figure-2)



j0hn4307

(Figure-2) j0hn4307

#### REP 3.3.2 Carriage Cable Ref. PL PL3.3

#### Removal

- Note Since the replacement procedure is the same for the Front and Rear Carriage Cables, the procedure is given for the rear only.
- Note Replace one Carriage Cable at a time. Do not remove the Front and Rear Carriage Cables together.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the following parts.
  - Platen Cover (PL3.5) or DADF Assembly (REP10.1.1)
  - Platen Glass(REP3.1.1)
  - Control Panel(REP3.6.1)
  - Top Cover(PL3.6)
  - Cover(PL3.1) or DADF Platen Glass(REP10.1.2)



Cable.



WorkCentre Pro 432/428

# 4.2 Disassembly and Assembly

(Figure-2) j0hn4309

1) Remove the spring and auxiliary Carriage

3. Remove the Carriage Cable. (Figure-2)

Carriage Cable j0hn4308 (Figure-1) j0hn4308

REAR Carriage Cable

2. Release the Full Rate Carriage from the Carriage Cable. (Figure-1) 1) Remove the screws (2).

#### WorkCentre Pro 423/428

#### Installation

#### Procedure

- 1. Wind the auxiliary Carriage Cable around the Pulley. (Figures- 3, -4, and -5)
  - 1) Put the ball of the Carriage Cable in the groove of the Pulley.
  - 2) Wind the Cable in the spring hook side one and a half times.
  - 3) Secure the Cable on the spring hook side to the Frame with gummed tape.
  - 4) Wind the Cable on the ball side twice.
  - 5) Secure the pulley-wound cable with gummed tape.



(Figure-4) j0hn4311

j0hn4311

Reference

Color : Silver

j0hn4313

2. Install the ball side of the Carriage Cable. (Figure-7) 1) Hook the Carriage Cable on the Left Pulley of the Half Rate Carriage. 2) Hook the ball on the Frame notch.





(Figure-5) j0hn4312

South

j0hn4310

(Figure-3) j0hn4310

CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-12 03/02

# 4.2 Disassembly and Assembly

Indicate the number of windings about the Front and Rear Carriage Cables. (Figure-6)



(Figure-6) j0hn4313

(Figure-7) j0hn4314

- 3. Install the spring hook side of the Carriage Cable. (Figure-8)
  - 1) Hook the Cable on the Frame Pulley.
  - 2) Hook the Cable on the Right Pulley of the Half Rate Carriage.
  - 3) Hook the spring and auxiliary Cable on the Frame Hook.
  - 4) Secure the Full Rate Carriage on the Cable temporarily.



(Figure-8) j0hn4315

- The Front Carriage Cable is routed as Reference shown here. (Figure-9)
  - 1) Secure the Full Rate Carriage Cable on the Cable temporarily.



(Figure-9) j0hn4316

- 4. Peel off the gummed tape securing the Cable.
- 5. Adjust the position and parallelism of Full Rate/Half Rate Carriage. (ADJ 3.4.1)
- 6. Move the Full Rate Carriage by hand to check its smooth movement.

#### REP 3.4.1 Exposure Lamp Ref. PL PL3.4

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

# power cord.

Procedure

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the

1. Remove the Platen Glass. (REP3.1.1)

4.2 Disassembly and Assembly

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-14 03/02 4.2 Disassembly and Assembly

- 2. Remove the Exposure Lamp. (Figure-1)
  - 1) Disconnect the connector.
  - 2) Remove the screws (2).
  - 3) Remove the Exposure Lamp.



Installation

Procedure

1. Perform the removal steps in reverse order.

#### REP 3.4.2 Lamp Wire Harness

Ref. PL PL3.4

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

1. Remove the following parts. □ Platen Glass(REP3.1.1) □ PWB Cover(PL3.1)

2. Remove the screws that secure the Full Rate Carriage Cable. (Figure-1) 1) Remove the screws (2).



(Figure-1) j0hn4308
- 3. Remove the Holder. (Figure-2)
  - 1) Remove the screw.
  - 2) Remove the Stopper.
  - 3) Remove the screw.
  - 4) Remove the Holder.
  - 5) Disconnect the connector.
  - 6) Release the Clamp.



- 4. Remove the Lamp Wire Harness. (Figure-3)
  - 1) Turn over the Full Rate Carriage.
  - 2) Remove the screw.
  - 3) Remove the Guide.
  - 4) Remove the Lamp Wire Harness.



Installation

#### Procedure

- 1. Perform the removal steps in reverse order.
- 2. After installation, adjust the position and parallelism of the Full Rate Carriage. (ADJ 3.4.2)

#### REP 3.5.1 Platen Cushion Ref. PL PL3.5 Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

### power cord.

Note

Procedure



• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the

The Platen Cushion is affixed with doublesided adhesive tape.

1. Peel off the Platen Cushion. (Figure-1) 1) Peel off the Platen Cushion.



(Figure-1) j0hn4320

# 4-16 CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT03/02 4.2 Disassembly and Assembly

#### Installation

Note After peeling off the Platen Cushion, remove the remaining tape cleanly from the Platen Cushion.

#### Procedure

- 1. Install the Platen Cushion. (Figure-2)
  - 1) Peel off the Seal.
  - 2) Push the Platen Cushion gently in the direction of the arrows.
  - 3) Lower the Platen Cover gently and press it against the Platen Cushion.

# 

(Figure-2) j0hn4321

### REP 3.6.1 Control Panel

Ref. PL PL3.6

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### CAUTION

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

#### Procedure

- 1. Remove the Control Panel. (Figure-1)
  - 1) Remove the screws (4).
  - 2) Move the control panel to the right a little and lift up to release the Panel Hook from the Frame.
  - 3) 2) Disconnect the connector.
  - 4) 3) Remove the Control Panel.

Installation Procedure 1. Perform the



(Figure-1) j0hn4322

1. Perform the removal steps in reverse order.

4. ROS

#### REP 4.1.1 ROS Ref. PL PL4.1

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### CAUTION

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

#### Procedure

- 1. Remove the following parts.
  - 1) Front Right Cover(PL8.2)
  - 2) Front Left Cover(PL8.2)
  - 3) Top Cover(REP8.1.1)

#### 2. Remove the Cover. (Figure-1)

- 1) Remove the screws (2).
- 2) Remove the Bracket.
- 3) Remove the screws (4).
- 4) Remove the Cover.



(Figure-1) j0hn4401

#### 3. Remove the ROS. (Figure-2)

- 3) Remove the ROS.



Installation Procedure

j0hn4401

1) Remove the screws (4). 2) Disconnect the connectors (2).

1. Perform the removal steps in reverse order.

6. Fuser

REP 6.1.1 Fuser Assembly Ref. PL: PL6.1

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### WARNING

After switching off the machine the fuser surfaces are still hot. Allow to cool, or avoid contact while working near the fuser.

Procedure

- 1. Pull out the R/H Unit.
- 2. Remove the Fuser Assembly. (Figure-1)
  - 1) Release the Handle.
  - 2) Remove the Fuser Assembly in the arrow direction.



(Figure-1) j0hn4606

Installation

#### Procedure

1. Perform the removal steps in reverse order.

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-18 03/02 4.2 Disassembly and Assembly

#### REP 6.2.1 Pressure Roll Ref. PL: PL6.2

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

Switch off the machine and disconnect the power cord.

- Procedure
- 1. Pull out the R/H Unit.
- - Fuser Assembly. (REP6.1.1)
- - 1) Remove the screw.
  - 2) Remove the Inlet Chute.
  - 3) Remove the screws (4).

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

### WARNING

After switching off the machine the fuser surfaces are still hot. Allow to cool, or avoid contact while working near the fuser.

2. Release the Handle toward front and lift up the

3. Remove the Decurler Chute Assembly. (Figure-1)

4) Remove the Decurler Chute Assembly.



- 4. Remove the Pressure Roll. (Figure-2)
  - 1) Remove the Nip Screw.
  - 2) Remove the Nip Spring.
  - 3) Remove the Nip Screw.
  - 4) Remove the Nip Spring.
  - 5) Remove the Front Lever and Bearing.
  - 6) Remove the Rear Lever and Bearing.
  - 7) Remove the Pressure Roll.



Installation

Note

Tighten the Nip Screws (Front and Rear) up to the position shown below. (Figure-3)



Procedure

1. Perform the removal steps in reverse order.

#### REP 6.2.2 Heater Rod

Ref. PL: PL6.2 Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

power cord.

After switching off the machine the fuser surfaces are still hot. Allow to cool, or avoid contact while working near the fuser.

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

a dry cloth.

Procedure 1. Remove the Pressure Roll. (REP 6.2.1)

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the

#### WARNING

#### CAUTION

#### CAUTION

Do not touch the glass surface of the Heater Rod directly by hand. If the glass has been touched, polish the surface with

- 2. Remove the Exit Chute Assembly. (Figure-1)
  - 1) Remove the screws (3).
  - 2) Remove the Exit Chute Assembly.



#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-20 03/02 4.2 Disassembly and Assembly

- 3. Remove the Heater Rod. (Figure-2)
  - 1) Remove the screws (2).
  - 2) Remove the Heater Rod together with the Heat Roll.
  - 3) Pull out the Heater Rod.



(Figure-2) j0hn4605

Installation

Procedure

1. Perform the removal steps in reverse order.

#### 7. Electrical

#### REP 7.2.1 MCU/SW PWB Assembly Ref. PL: PL7.2

Replacement

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

Note

MCU/SW PWB. PWB.) FAIL/JAM counter.

### power cord.

Ref.

3.Replace the MCU/SW PWB. 4.Extract all the paper trays.

5.Connect the power cable and turn the power on.

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### CAUTION

If the replacement of IIT/IPS PWB (PL3.1) also becomes necessary, do this work first.

1.Before replacement, take a note of the IOT adjustment and setting values stored in NVM of (After replacement, enter the adjustment and setting values into MCU/DSW

2.If necessary, take a note of the contents of IOTrelated HFSI counter, FAIL/JAM history, and

#### WARNING

#### Switch off the machine and disconnect the

This is to prevent printing immediately after power-on.

6.Enter C/E Mode.

- 7.Enter the Chain/Function code "20/67" and press Start button. (Initializing IOT NVM of the new MCU/SW PWB)
- 8. Download the electronic billing counter from IIT/IPS PWB to MCU/SW PWB.
- 9. Enter the Chain/Function code "25/51" and press the Start button.
- 10.The counter value is displayed.
- 11.Press the "Enter Value", enter "91," and press the Start button.
- 12.Enter the adjustment and setting values from the note taken at Step 1.
- 13.Return all the paper trays to their positions.

#### REP 7.5.1 ESS PWB Assembly Ref. PL: PL7.5

#### Replacement

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### CAUTION

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

1. When replacing the ESS PWB Assembly, remove EP ROM from the new ESS PWB Assembly and replace with that of the old ESS PWB Assembly. (Figure-1)

Ref. MAC addresses are stored in EP ROM.



#### 8. Covers

REP 8.1.1 Top Cover Ref. PL PL8.1

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the following parts.
  - 1) Fuser Top Cover(PL8.1)
  - 2) Top Rail Cover(PL8.1)
  - 3) ESS Cover(PL8.2)
  - 4) Left Cover(PL8.2)
- 2. Remove the Top Cover. (Figure-1)
  - 1) Remove the screws (4).
  - 2) Disconnect the connector.
  - 3) Remove the Top Cover.



Installation

Procedure

1. Perform the removal steps in reverse order.

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-22 03/02 4.2 Disassembly and Assembly

#### 9. Cabinet

REP 9.1.1 Drive Joint Ref. PL PL9.1

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

#### Switch off the machine and disconnect the power cord.

Note

The procedure is given for Tray 2 only. However, the procedure also applies to Trays 3 and 4.

Procedure 1. Remove the Rear Cover. (PL9.10)

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

- 2. Remove the Harness Guide. (Figure-1)
  - 1) Remove the Harness from the Wire Guides (7).
  - 2) Push the Hooks (4).
  - 3) Remove the Harness Guide.



- 3. Remove the Bracket. (Figure-2)
  - 1) Remove the screws (2).
  - 2) Remove the Bracket.
  - Ο 67 (2)1 Ο

j0hn4902

(Figure-2) j0hn4902

- 4. Remove the Feed □clutch. (Figure-3)
  - 1) Remove the Bearing.
  - 2) Remove the Feed  $\square$  clutch.



j0hn4903

(Figure-3) j0hn4903



Installation

Procedure

5. Remove the joint drive. (Figure-4) 1) Remove the E-clip and Gear. 2) Remove the joint drive.

1. Perform the removal steps in reverse order.

#### REP 9.5.1 Option Mother PWB Ref. PL:PL9.5

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

#### CAUTION

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

Procedure

- 1. Remove the following parts.
  - 1) Rear Cover(PL9.10)
  - 2) Cover(PL9.5)

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-24 03/02 4.2 Disassembly and Assembly

- 2. Remove the NCU-C PWB. (Figure-1)
  - 1) Remove the PWBs (3).



3. Disconnect the connectors. (Figure-2) 1) Disconnect the connectors (4).





Installation

Procedure

4. Remove the Option Mother PWB. (Figure-3) 1) Remove the screws (8). 2) Remove the Option Mother PWB. 2 <sup>ര</sup> ക ¶Гл i0hn4907 (Figure-3) j0hn4907

1. Perform the removal steps in reverse order.

#### REP 9.7.1 Feed Roll Ref. PL PL9.7

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

Note The procedure is given for Tray 2 only. However, the procedure also applies to Trays 3 and 4.

#### Procedure

- 1. Remove the Tray2. (PL9.6)
- 2. Remove the Feed Roll Assembly. (Figure-1)
  - 1) Remove the E-□lip and Bearing.
  - 2) Remove the Feed Roll Assembly.



- 3. Remove the Feed Roll. (Figure-2)
  - 1) Remove the E- $\Box$ lip.
  - 2) Remove the Feed Roll.



j0hn4909

(Figure-2) j0hn4909

Installation

Procedure

1. Perform the removal steps in reverse order.

#### REP 9.7.2 Retard Roll Ref. PL PL9.7

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

### power cord.

Note Procedure



• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

· Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the

The procedure is given for Tray 2 only. However, the procedure also applies to Trays 3 and 4.

1. Remove the Tray2. (PL9.6)

- 2. Remove the Retard Roll Assembly. (Figure-1) 1) Push the Hooks on both sides.
  - 2) Push the Hooks.
  - 3) Remove the Retard Roll Assembly.



- 3. Remove the Retard Roll with the Clutch. (Figure-2) 1) Push the Holder.
  - 2) Remove the Retard Roll with the Clutch.



- CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-26 03/02
- 4. Remove the Retard Roll. (Figure-3)
  - 1) Push the Hook in the direction of the arrow.
  - 2) Extract the Shaft and remove the Retard Roll.



j0hn4912

(Figure-3) j0hn4912

#### Installation

Procedure

1. Perform the removal steps in reverse order.

#### 10. DADF **REP 10.1.1 DADF Assembly** Ref. PL PL10.1

Installation

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

## power cord.

when lifting.

The set plate (Figure 1 item 3) must be installed.

1. Install the DADF Assembly. (Figure-1) 1) Place the DADF on IOT and press it to the front. 2) Secure the Left Counter Balance with a Screw while pressing it against the Pin, temporarily. 3) Install the Set Plate while pressing the Right Counter Balance to the front. 4) Secure the Right Counter Balance with a Screw

# 4.2 Disassembly and Assembly

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

Switch off the machine and disconnect the

### WARNING

#### The DADF Assembly weighs 8.6kg. Be careful

#### CAUTION

while pressing it against the Pin.

5) Tighten the Screw temporarily installed in 2).



(Figure-1) j0hn4a01

Removal

Perform the installation steps in reverse order.

#### **REP 10.1.2 DADF Platen Glass** Ref. PL PL10.1

Installation

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

#### Switch off the machine and disconnect the power cord.

Procedure

- 1. Install the DADF Platen Glass. (Figure-1)
  - 1) Loosen the Screws (2).
  - 2) Press the Platen Glass in the arrow A direction.
  - 3) Press the DADF Platen Glass in the arrow B direction.
  - 4) Tighten the screws (2).



(Figure-1) j0hn4a02 2. Return the machine to the original position.

#### **REP 10.1.3 DADF Platen Cushion** Ref. PL PL10.1

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

### power cord.

Note

Procedure



03/02 CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-27

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the

The DADF Platen Cushion is attached with magic tape.

1. Peel off the DADF Platen Cushion. (Figure-1) 1) Peel off the DADF Platen Cushion.

j0hn4a03

(Figure-1) j0hn4a03

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-28 03/02 4.2 Disassembly and Assembly

#### Installation

#### Procedure

- 1. Affix the DADF Platen Cushion. (Figure-2)
  - 1) Press the Platen Cushion gently in the direction of the arrow.
  - 2) Lower the DADF Assembly gently and press it against the Platen Cushion.



(Figure-2) j0hn4a04

### **REP.10.2.1 DADF Feeder Assembly**

Ref. PL PL10.2

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the DADF Assembly. (REP10.1.1)
- 2. Remove the following parts.
  - 1) DADF Rear Cover(PL10.2)
  - 2) DADF Front Cover(PL10.2)
  - 3) DADF Document Tray(PL10.2)
- 3. Remove the DADF Feeder Assembly. (Figure-1)
  - 1) Remove the Arm.
  - 2) Remove the screws (6).
  - 3) Remove the screw.
  - 4) Remove the DADF Feeder Assembly.







Installation

Procedure

following notes in mind.

Note



(Figure-1) j0hn4a05

1. Perform the removal steps in reverse order with the

Insert the Arm securely into the Solenoid Pin. (Figure-2)

(Figure-2) j0hn4a06

#### REP 10.3.1 Left/Right Counter Balance Ref. PL PL10.3

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the DADF Assembly. (REP 10.1.1)
- 2. Remove the Counter Balance. (Figure-2)
- Note The figure below shows the DADF Right Counter Balance. The DADF Left Counter Balance is secured with a screw from the upper side.
  - 1) Remove the screws (4).
  - 2) Remove the DADF Right Counter Balance.



(Figure-2) j0hn4a08

#### Installation Procedure

#### 1. Perform the removal steps in reverse order with the following notes in mind:

Note The right and left Counter Balances are labelled because their loads are different. Install the Counter Balances correctly. (Figure-3)

> SERIAL NO.  $\times \times \times \times \times \times$  L

SERIAL NO.  $\times \times \times \times \times \times R$ 

#### REP 10.5.1 DADF Nudger Roll Ref. PL PL10.5

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

### power cord.

Procedure

- 1. Open the Top Cover.
- 2. Remove the chute. (Figure-1)
- (2).
- 2) Remove the chute.



j0hn4a09

(Figure-3) j0hn4a09

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

· Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the

1) Press both sides of the Top Cover in the directions of the arrows to release the Hooks

(Figure-1) j0hn4a10

- 3. Remove the DADF Feed/Nudger Roll Assembly. (Figure-2)
  - 1) Remove the KL-Clip.
  - 2) Remove the Bearing.
  - 3) Remove the DADF Feed/Nudger Roll Assembly.



- 4. Remove the DADF Nudger Roll.
  - 1) Remove the Set Gate.
  - 2) Remove the KL-Clip.
  - 3) Remove the pins (3).
  - 4) Extract the Shaft.
  - 5) Remove the DADF Nudger Roll.



(Figure-3) j0hn4a12

Installation

#### Procedure

- 1. Perform the removal steps in reverse order with the following notes in mind.
- Note When installing the chute, insert the projections (2) securely into the Top Cover holes. (Figure-4)



(Figure-4) j0hn4a13

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-30 03/02 4.2 Disassembly and Assembly

#### REP10.5.2 DADF Feed Roll Ref. PL PL10.5

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

## power cord.

#### Procedure

- 1. Open the Top Cover.
- 2. Remove the chute. (Figure-1)
- 1) Press both sides of the Top Cover in the directions of the arrows to release the Hooks

  - (2).



• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

#### Switch off the machine and disconnect the

2) Remove the Chute.

(Figure-1) j0hn4a10

- 3. Remove the DADF Feed/Nudger Roll Assembly.
  - 1) Remove the KL-clip.
  - 2) Remove the Bearing.
  - 3) Remove the DADF Feed/Nudger Roll Assembly.



- 4. Remove the DADF Feed Roll. (Figure-3)
  - 1) Remove the KL-Clip (3).
  - 2) Remove the E-Clip.
  - 3) Remove the pins (3).
  - 4) Extract the Shaft.

WorkCentre Pro 432/428

5) Remove the DADF Feed Roll.



Note



(Figure-3) j0hn4a14

j0hn4a14

Installation

Procedure

- 1. Perform the removal steps in reverse order with the following notes in mind.
- Install the Feed Roll with the arrow mark Note side to the front. (Figure-4)



j0hn4a15

(Figure-4) j0hn4a15

(Figure-2)

When installing the chute, insert the projections (2) securely into the Top Cover holes. (Figure-5)

(Figure-5) j0hn4a13

#### REP 10.6.1 Reg Roller Ref. PL PL10.6

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### Procedure

- 1. Remove the DADF Assembly. (REP10.1.1)
- 2. Remove the DADF Feeder Assembly. (REP10.2.1)
- 3. Remove the DADF Feed Motor. (Figure-1)
  - 1) Disconnect the connector.
  - 2) Remove the spring.
  - 3) Remove the screws (3).
  - 4) Remove the DADF Feed Motor.



(Figure-1) j0hn4a16

- 4. Disconnect the connector. (Figure-2)
  - 1) Remove the screw.
  - 2) Disconnect the connectors (4).



j0hn4a17

(Figure-2) j0hn4a17

- CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-32 03/02



6. Remove the  $\Box$  hute. (Figure-4) 1) Remove the screw. 2) Remove the Chute.



# 4.2 Disassembly and Assembly

j0hn4a18

(Figure-3) j0hn4a18

(Figure-4) j0hn4a19

- 7. Remove the Read 1/2 Roller. (Figure-5)
  - 1) Remove the KL-clip (2).
  - 2) Remove the Pulleys (2).
  - 3) Remove the Bearings (2).
  - 4) Remove the KL-□lip and Bearing.
  - 5) Remove the Pulley and Bearing.
  - 6) Remove the Read 1/2 Roller.



- 8. Remove the Bracket. (Figure-6)
  - 1) Remove the E- $\Box$ lip.
  - 2) Remove the KL-□lip, Pulley, and E-□lip.
  - 3) Remove the KL- $\Box$ lip and Bearing.
  - 4) Remove the spring.
  - 5) Remove the screw.
  - 6) Remove the Bracket.



(Figure-6) j0hn4a21

- 9. Remove the Holder. (Figure-7)
  - 1) Remove the screws (2).
  - 2) Release the Hooks (2).
  - 3) Remove the Holder.



(Figure-7) j0hn4a22

10.



j0hn4a21

Installation Procedure

Remove the Reg. Roller. (Figure-8) 1) Remove the KL- $\Box$ lip and Bearing. 2) Remove the Reg Roller.

1. Perform the removal steps in reverse order.

#### **REP 10.6.2 Size Sensor Assembly** Ref. PL:PL10.6

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

#### Procedure

- 1. Remove the DADF Assembly. (REP10.1.1)
- 2. Remove the DADF Feeder Assembly. (REP10.2.1)
- 3. Remove the Holder. (REP10.6.1 up to Step 9)

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-34 03/02 4.2 Disassembly and Assembly

#### 4. Remove the Size Sensor Assembly. (Figure-1)

- 1) Disconnect the connector.
- 2) Release the Hook.
- 3) Remove the Size Sensor Assembly.



j0hn4a24

(Figure-1) j0hn4a24

Installation

Procedure

1. Perform the removal steps in reverse order.

#### 11.MSI

#### **REP 11.1.1 MSI Assembly** Ref. PL PL11.1

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

#### Switch off the machine and disconnect the power cord.

Procedure 1. Remove the Rear Cover. (PL11.1)

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

- 2. Remove the MSI Assembly. (Figure-1)
  - 1) Disconnect the connectors (3).
  - 2) Remove the screw.
  - 3) Remove the screws (2).
  - 4) Remove the MSI Assembly.



#### (Figure-1) j0hn4b01

Installation

- Procedure
- 1. Perform the removal steps in reverse order.

#### REP 11.4.1 MSI Feed Roll Ref. PL PL11.4

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the MSI Assembly. (REP11.1.1)
- 2. Remove the MSI Feed Roll. (Figure-1)
  - 1) Remove the ENV Feed Roll.
  - 2) Remove the Hook from the Shaft and move the Roll in the direction of the arrow.
  - 3) Remove the MSI Feed Roll.



### Procedure following notes in mind.

Note

Rear

1. Perform the removal steps in reverse order. with the

When installing the ENV Feed Roll, face the arrow-marked surface to the front. (Figure-2)



j0hn4b03

(Figure-2) j0hn4b03

#### REP 11.4.2 MSI Retard Roll Ref. PL PL11.4

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### Procedure

- 1. Remove the MSI Assembly. (REP11.1.1)
- 2. Remove the MSI Retard Roll Assembly. (Figure-1) 1) Push in the Hooks on both sides in the directions of the arrows.
  - 2) Remove the MSI Retard Roll Assembly.



(Figure-1) j0hn4b04

- Remove the MSI Retard Roll together with the 3. Clutch. (Figure-2)
  - 1) Remove the Holder from the Housing.

- 2) Remove the spring.
- 3) Remove the MSI Retard Roll with the □clutch.



#### (Figure-2) j0hn4b05

- 4. Remove the MSI Retard Roll. (Figure-3)
  - 1) Press the Hook in the direction of the arrow.
  - 2) Remove the spring.
  - 3) Extract the Shaft and remove the Retard Roll.

(Figure-3) j0hn4b06

#### Installation

Procedure

1. Perform the removal steps in reverse order.

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-36 03/02 4.2 Disassembly and Assembly

#### 13. Finisher

**REP 13.1.1 Finisher Assembly** Ref. PL PL13.1

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

### power cord.

### when lifting.

#### Procedure

- 1. Remove the following parts.

1)

- 1) Remove the Clamp.

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

Switch off the machine and disconnect the

### WARNING

The Finisher Assembly weighs 16kg. Be careful

1) Finisher Receiving Tray(PL13.18) 2) Finisher Slide Tray (PL13.19) 3) Right Cover Cap A (PL8.3) 4) Right Cover Cap B (PL8.3) 2. Remove the Clamp from the Stay Rear Cover. (Fig.-



3. Remove the Clamp. (Figure-2) 1) Remove the Screw and Clamp. 2) Disconnect the Connectors (2).



(Figure-2) j0hn4d02

- 4. Remove the Finisher Assembly while moving in the direction of the arrow.
  - 1) Remove the screw.
  - 2) Remove the Finisher Assembly.



(Figure-3) j0hn4d03

#### Installation

#### Procedure

1. Perform the removal steps in reverse order.

#### REP 13.4.1 Stapler Motor Ref. PL: PL13.4

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

### Switch off the machine and disconnect the power cord.

Procedure



WorkCentre Pro 432/428

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

1. Remove the Front Cover. (PL13.17) 2. Staple Holder Cover. (Figure-1) 1) Remove the screws (2). 2) Remove the Staple Holder Cover.

(Figure-1) j0hn4d04

#### WorkCentre Pro 423/428

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-38 03/02 4.2 Disassembly and Assembly

- 3. Remove the Gear Assembly. (The Connector may remain connected.)(Figure-2)
  - 1) Remove the screws (2).
  - 2) Remove the Screw and the Earth Wire.
  - 3) Remove the KL-Clip.
  - 4) Remove the Crank Lever from the Cam.
  - 5) Remove the Gear Assembly.



- 4. Remove the Staple Assembly. (Figure-3)
  - 1) Remove the Screw and the Earth Wire.
  - 2) Disconnect the connector.
  - 3) Remove the Staple Assembly.



(Figure-3) j0hn4d06





5. Remove the Slide Tray. (Figure-4) 1) Remove the screw. 2) Remove the Staple Cover. 3) Remove the screws (2). 4) Remove the Slide Tray.



(Figure-4) j0hn4d07

- 6. Remove the Staple Motor. (Figure-5)
  - 1) Remove the screws (3).
  - 2) Disconnect the connector.
  - 3) Remove the Staple Motor.





#### Installation

Procedure

1. Perform the removal steps in reverse order.

#### REP13.5.1 Reverse Motor Belt Ref. PL:PL13.5

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### Caution

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

#### Procedure

- 1. Remove the Rear Cover. (PL13.17)
- 2. Remove the Finisher LVPS. (Figure-1)
  - 1) Disconnect the connector.
  - 2) Remove the screws (3).
  - 3) Remove the Screw and the Earth Wire.
  - 4) Remove the screw.
  - 5) Remove the Finisher LVPS.



- - 1) Loosen the screw.



(Figure-1) j0hn4d09

3. Disconnect the connectors. (Figure-2)

2) Disconnect the connectors (2).

j0hn4d10

(Figure-2) j0hn4d10

4. Remove the Reverse Motor. (Figure-3) 1) Remove the screws (3). 2) Remove the Reverse Motor.





(Figure-3) j0hn4d11

- 5. Remove the Reverse Motor Belt. (Figure-4)
- 1) Disengage the Gear.
- 2) Remove the Belt.



#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-40 03/02 4.2 Disassembly and Assembly

#### Installation

#### Procedure

- 1. Perform the removal steps in reverse order with the following notes in mind.
- Note Install the Belt as shown below. (Figure-5)



j0hn4d13

(Figure-5) j0hn4d13

#### REP 13.5.2 Feed Motor Belt Ref. PL: PL13.5

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

# power cord.

Procedure

- 2. Remove the Finisher LVPS. (Figure-1)
  - 1) Disconnect the connector.
  - 2) Remove the screws (3).
  - 3) Remove the Screw and the Earth Wire.
  - 4) Remove the screw.
  - 5) Remove the Finisher LVPS.



• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

#### Switch off the machine and disconnect the

1. Remove the Rear Cover. (PL13.17)

(Figure-1) j0hn4d09

- 3. Remove the Feed Motor. (Figure-2)
  - 1) Loosen the screw.
  - 2) Disconnect the connector.
  - 3) Remove the screws (2).
  - 4) Remove the Motor.



(Figure-2) j0hn4d14

4. Remove the Feed Motor Belt. (Figure-3) 1) Remove the Belt.



(Figure-3) j0hn4d15

#### Installation

#### Procedure

1. Perform the removal steps in reverse order. with the following notes in mind.

Note Install the Belt as shown below. (Figure-4)



j0hn4d16

(Figure-4) j0hn4d16

#### REP 13.12.1 Ref. PL PL13.12

Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

# power cord.

Procedure

- 1. Remove the following parts.



#### **Compiler Motor**

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

### WARNING

#### Switch off the machine and disconnect the

1) Finisher Receiving Tray (PL13.18)

2) Rear Cover (PL13.17)

2. Remove the Feed Tray. (The Connector may remain connected.)(Figure-1)

1) Remove the screws (2).

2) Remove the Feed Tray.

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-42 03/02 4.2 Disassembly and Assembly

- 3. Remove the Compiler Motor. (Figure-2)
  - 1) Remove the screws (2).
  - 2) Pull out the Compiler Motor.
  - 3) Remove the Screw and the Earth Wire.
  - 4) Release the Clamp and remove the Wire.
  - 5) Disconnect the connectors (2).



(Figure-2) j0hn4d23

Installation

Procedure

1. Perform the removal steps in reverse order.

REP 13.14.1 Exit Roller Assembly Ref. PL PL13.14

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the Finisher Assembly. (REP13.1.1)
- 2. Remove the Reverse Motor Belt. (REP13.5.1)
- 3. Remove the Front Cover. (PL13.17)
- 4. Remove the Lever. (Figure-1)
  - 1) Remove the spring.
  - 2) Remove the Lever.



j0hn4d24

(Figure-1) j0hn4d24



5. Remove the Bearing. (Figure-2) 1) Remove the Bearing. 2) Slide the Roller in the direction of the arrow.

(Figure-2) j0hn4d25

- 6. Remove the Exit Roller Assembly. (Figure-3)
  - 1) Release the Hook and remove the Pulley.
  - 2) Remove the Bearing.
  - 3) Remove the Exit Roller Assembly.



#### Installation

- Procedure
- 1. Perform the removal steps in reverse order.

#### REP 13.14.2 In-Roller Assembly Ref. PL PL13.14

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the Finisher Assembly. (REP13.1.1)
- 2. Remove the Feed Motor Belt. (REP13.5.2)
- 3. Remove the Front Cover. (PL13.17)
- 4. Remove the Lever. (Figure-1)
  - 1) Remove the spring.
  - 2) Remove the Lever.



j0hn4d24

(Figure-1) j0hn4d24 5. Remove the Bearing. (Figure-2)



03/02 CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-43

1) Release the Hook and remove the Bearing. 2) Slide the Roller in the direction of the arrow.

(Figure-2) j0hn4d27

- 6. Remove the In-Roller Assembly. (Figure-3)
  - 1) Release the Hooks (2) and remove the Pulley.
  - 2) Remove the Bearing.
  - 3) Extract the Pin.
  - 4) Remove the In-Roller Assembly.



#### Installation

- Procedure
- 1. Perform the removal steps in reverse order.

#### REP 13.14.3 Lower Paper Guide

Ref. PL: PL13.14

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the following parts.
  - 1) Finisher Assembly (REP13.1.1)
  - 2) Exit Roller Assembly (REP13.14.1)
  - 3) L/H Upper Cover (PL13.9)
- 2. Remove the Upper Paper Guide. (Figure-1)
  - 1) Remove the screws (2).
  - 2) Disconnect the Connector and extract it from the hole.
  - 3) Remove the Upper Paper Guide.



- - 1) Remove the screw.
- 2) Remove the Guide Pin.



# 4.2 Disassembly and Assembly



(Figure-1) j0hn4d29

3. Remove the L/H Lower Guide. (Figure-2)

3) Remove the L/H Lower Guide.

j0hn4d30

(Figure-2) j0hn4d30

4. Remove the Vertical Paper Guide. (Figure-3) 1) Remove the screws (4).



- 5. Remove the Lower Paper Guide together with Separator Guide. (Figure-4)
  - 1) Remove the screws (2).
  - 2) Release the projections (4) from the Frame and remove the Lower Paper Guide.



- 6. Remove the Separator Guide. (Figure-5)
- 1) Remove the spring.
- 2) Remove the Separator Guide.



(Figure-5) j0hn4d33

#### Installation

#### Procedure

1. Perform the removal steps in reverse order.

#### REP 13.16.1 Finisher Control PWB Ref. PL PL13.16

#### Removal

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

#### Switch off the machine and disconnect the power cord.

Be careful not to damage parts by static electricity. Electronic parts may be damaged by static electricity. Be sure to wear a wristband when handling electronic parts. If no wristband is available, touch the metal frame before work to eliminate static electricity as far as possible.

Procedure 1. Remove the Rear Cover. (PL13.17)

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.

• Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### CAUTION

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-46 03/02 4.3 Adjustment

2. Disconnect the connectors. (Figure-1) 1) Disconnect the connectors (16).



- 3. Remove the Finisher Control PWB. (Figure-2)
  - 1) Remove the Screws (2) and the Earth Wire.
  - 2) Release the Hooks (2) and remove the Finisher PWB.



Installation

Procedure

1. Perform the removal steps in reverse order.

4.3 Adjustment

3. IIT Position in Slow Scan Direction)

Check

- 1. Make a 100% copy of Test Chart 499T247 onto A3 paper using Tray 1.
- 2. (Figure-1) Check that the distance between the lead edge of Copy to the specific point is 10±1.6mm.





- ADJ 3.1.1 IIT Lead Edge Registration (Home
  - Purpose To obtain a proper home position in the IIT lead edge (slow scan) direction.
  - Instruction IIT lead edge registration will affect precision of document size detection, and all other precision related to document, etc.
  - I Inst. When making a copy, do not select "Auto Magnification Selection" or "Auto Paper Selection".

(Figure-1) j0hn4a25

Adjustment

- 3. Enter the C/E mode and enter the Chain/Function Code. "6/30".
- 4. Press the Start button to start Auto Registration Adjustment.
- 5. Open the Platen and press the start button again.
- I "Diag in operation" appears on the LCD and the machine starts adjustment.
- I On completion of adjustment, a new adjustment value is input in NVM[21-71].
  - 6. Make a copy from the Test Chart 499T247 using Tray 1, A3 size paper and 100% magnification to check registration.
  - Perform the fine-tune registration below as required.
  - 7. Enter the C/E mode.
  - 8. Change the set value for Chain/Function Codes "21/71".
- I When the measured value is shorter: Decrease the value.
- I When the measured value is longer: Increase the value

•			
	Min	Nominal	Max.
Set range	120	132	144

#### ADJ 3.1.2 IIT Side Registration (Home Position in Fast Scan Direction)

- Purpose To obtain a proper home position in the IIT side-to-side (or Fast scan) direction.
- Inst. IIT side edge registration will affect precision of document size detection, and all other precision related to document, etc.

#### Check

Inst. When making a copy, do not select "Auto Magnification Selection" or "Auto Paper Selection".

- 1. Make a 100% copy of Test Chart 499T247 onto A3 paper using Tray 1.
- 2. (Figure-1) Check that the distance between the copy side edge and the specific point is 48.5±2.1mm.



- Adjustment
- Code. "6/31".
- Adjustment.
- machine starts adjustment.
- is input in NVM[21-70]. check registration.
- 1. Enter the C/E mode.
- "21/70".
- value.
- value.

[		Min	Nominal	Max
	Set range	32	128	255

1. Enter the C/E mode and enter the Chain/Function

2. Press the Start button to start Auto Registration

3. Open the Platen and press the start button again.

• I "Diag in operation" appears on the LCD and the

• I On completion of adjustment, a new adjustment value

4. Make a copy from the Test Chart 499T247 using Tray 1, A3 size paper and 100% magnification to

Perform the fine-tune registration below as required.

2. Change the set value for Chain/Function Codes

• I When the measured value is shorter: Decrease the

I When the measured value is longer: Increase the

4.3 Adjustment

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-48 03/02 4.3 Adjustment

#### ADJ 3.1.3DADF Registration

Purpose To set up lead edge (in the slow scan direction) and side registration (in the Fast scan direction) for DADF scanning positions (Document scanning positions).

Check

- 1. Load the Test Chart 499T281 on the DADF face up. Make a 100% copy onto A4 paper.
- 2. (Figure-1) Check that the registrations are as follows:
- I Lead Edge Registration : 7.0±1.5mm
- I Side Registration : 7.0±2.1mm



(Figure-1) j0hn4a27

Adjustment

- 1. Enter the C/E mode.
- 2. Change a set value for Chain/Function Codes (for LE or Side) to be adjusted. [Lead Edge Registration: Codes "21/80"]
- I When the measured value is shorter: •
- Decrease the value. •
- I When the measured value is longer:
- Increase the value.

	Min	Nominal	Max
Set range	0	40	79
	-5mm	±0mm	+5mm
Changes	0.127mm/	0.127mm/	0.127mm/
	1Step	1Step	1Step

[Side Registration: Codes "21/82"]

- I When the measured value is shorter: Increase the value.
- I When the measured value is longer: Decrease the value.

		Min	Nominal	Max
Set r	ange	0	45	196
		0mm	1.90mm	8mm
Char	nges	0.04mm/	0.04mm/	0.04mm/
		1Step	1Step	1Step

ADJ 3.1.4 Magnification Adjustment SEF (Slow Scan Direction)

Purpose To obtain a proper magnification in vertical (slow scan) direction on 100% ratio.

<Flow of Magnification Adjustment in vertical (slow scan) direction>

[1.] IOT Vertical Magnification Adjustment (Main Motor speed adjustment)

• I Chain Code 50

[2.] IIT Vertical Magnification Adjustment (Scan Motor speed adjustment)

• I Chain Code 21

[3.] DADF Vertical Magnification Adjustment (Document Feed speed adjustment) (DADF equipped) Function Code 83

• I Chain Code 21

[4.] DADF Vertical Magnification Adjustment on sending Fax (Document Feed speed adjustment on sending Fax) (DADF equipped)

I Chain Code 21 Function Code 84

Function Code 28

Function Code 1

[1.] IOT Vertical Magnification Adjustment (Main Motor speed adjustment)

#### Check

- 1. Enter the C/E mode.
- 2. Enter Test Print.
- 3. In Chain/Function Code "24/15", make two copies of the Grid+Slanting lines (4BIT)

4. (Figure-1) Check that a distance of 202.5±1mm is measured between the first line and 26th line.



(Figure-1) j0hn4a28

Adjustment

- 1. Enter the C/E mode.
- 2. Change the set value for Chain/Function Codes "50/28".
- I When the measured value is shorter: Increase the value.
- I When the measured value is longer: Decrease the value.

	Min	Nominal	Max
Set range	0	11	21
Changes	0.1%	0.1%	0.1%
	/1Step	/1Step	/1Step

[2.] IIT Vertical Magnification Adjustment (Scan Motor speed

#### adjustment)

Inst. The IOT Vertical Magnification Adjustment should have already been adjusted.

Check

- 1. Make two 100% copies of Test Chart 499T247 onto A3 paper.
- 2. (Figure-2) Ensure that a measured value of the specified area on the second copy is 400±3.2mm.



(Figure-2) j0hn4a29

#### Adjustment

- 1. Enter the C/E mode.
- 2. Change the set value for Chain/Function Codes "21/1".
- I When the measured value is shorter: Increase the value.
- I When the measured value is longer: Decrease the value.

	Min	Nominal	Max
Set range	0	5	10
	-1%	±0%	+1%
Changes	Mag.ratio x 0.2% / 1Step		

[3.] DADF Vertical Magnification Adjustment (Document Feed speed adjustment)

already been adjusted.

Check

area is 196±2.4mm.



Adjustment

1. Enter the C/E mode. 2. Change the set value for Chain/Function Codes "21/83". • I When the measured value is shorter: Increase the I When the measured value is longer: Decrease the

- value.
- value.

	Min	Nominal	Max
Set range	0	35	70
	-3.5%	±0%	+3.5%
Changes		0.1% / 1Step	

Note Perform the following adjustment only for the DADF equipped models.

Inst. The IOT Vertical Magnification should have

1. Loading the Test Chart 499T281 on the DADF with its long edge, make its 100% copy onto B4 paper. 2. (Figure-3) Ensure a measured value of the specified

(Figure-3) j0hn4a30

# 4.3 Adjustment

#### WorkCentre Pro 423/428

- [4.] DADF Vertical Magnification Adjustment on sending Fax (Document Feed speed adjustment on sending Fax)
- Inst. This adjustment should be performed when precision of a vertical magnification ratio for a fax receiving machine is required when sending a fax using the DADF.
- I Standard setup:
  - While transmitting to NSC, perform the check/adjustment.
- I Customer Request:
  - While transmitting to a machine that a customer requests a fax to be sent to, perform the check/adjustment.
  - Check
  - 1. Load Test Chart 499T281 on the DADF with its long edge, send a fax with 100% and B4 set to NSC (or a machine a customer requests a fax to be sent to).
  - 2. (Figure-4) Ensure that a measured value of the specified area on the received copy is 196±2.7mm.



(Figure-4) j0hn4a31

#### Adjustment

- 1. Enter the C/E mode.
- 2. Change the set value for Chain/Function Codes "21/84".

4-50 03/02

- I When the measured value is shorter: Increase the value.
- I When the measured value is longer: Decrease the value.

	Min	Nominal	Max
Set range	0	35	70
	-3.5%	±0%	+3.5%
Changes		0.1% / 1Step	

Purpose To obtain a proper magnification ratio in LEF (fast scan) direction when making a 100% copy.

Check A3 paper.

3. (Figure-1) Ensure that a measured value of the specified area on the second copy is 200±1.6mm.



Adjustment

- 1. Enter the C/E mode.
- 2. Enter IIT memory R/W.
- value.
- value.

	Min	Nominal	Max
Set range	0	10	20
	-1%	±0%	+1%
Changes	Mag. Ratio x 0.1% / 1Step		

### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4.3 Adjustment

ADJ 3.1.5 Magnification Adjustment in LEF (Fast Scan Direction)

1. Make two 100% copies of Test Chart 499T247 onto

(Figure-1) j0hn4a32

3. Change a set value for Chain/Function Codes "21/2". • I When the measured value is shorter: Increase the

• I When the measured value is longer: Decrease the
- ADJ 3.4.1 Position of Full/Half Rate Carriage Ref. PL: PL3.4
  - Purpose Optimise the positional relationship of the Full/Half Rate Carriage.

Adjustment

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

Procedure

- 1. Remove the Platen Glass. (REP3.1.1)
- 2. Optimise the positional relationship of the Full/Half Rate Carriage. (Figure-1)
- The Front Stopper of the Half Rate Carriage Note determines the reference position.
  - 1) Loosen two screws securing the Full Rate Carriage to the cables.
  - 2) Move the Half Rate Carriage until it stops at the Stopper.
  - 3) Push the Full Rate Carriage against the IIT Frame and tighten two screws.



(Figure-1) j0hn4323

#### 7. ELECTRICAL

ADJ 7.1 Registration Procedure 1. IOT Lead Edge Registration (Adjustment of IOT (write) in slow scan direction)

2. IOT Side Registration (Adjustment of IOT (write) in fast scan direction)

• I Chain Code 6

3. IIT Lead Edge Registration (Adjustment of IIT (read) in slow scan direction)

I Chain Code 21

4. IIT Side Registration (Adjustment of IIT (read) in fast scan direction)

5. DADF Lead Edge Registration (DADF models) (Adjustment of DADF Document scanning position in slow scan direction)

- I Chain Code 21
  - direction)
- I Chain Code 21

- I Lead Edge
- I Trail Edge
- I Side Rear Edge
- I Side Front Edge (ADJ 7.2.3)

• I Chain Code 20 Function Code 1(ADJ 7.2.1)

Function Code 80 (ADJ 7.2.2)

Function Code 71 (ADJ 3.1.1)

• I Chain Code 21 Function Code 70 (ADJ 3.1.2)

Function Code 80 (ADJ 3.1.3)

6. DADF Side Registration (DADF models) (Adjustment of DADF Document scanning position in fast scan

Function Code 82 (ADJ 3.1.5)

7. Edge Erase Amount Adjustment

Chain 6	Function 93
Chain 6	Function 94
Chain 6	Function 92
Chain 6	Function 91

Caution: Check each magnification before performing.

4.3 Adjustment

#### CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-52 03/02 4.3 Adjustment

#### ADJ 7.2.1 IOT Lead Edge Registration

Purpose To align the copy image on the Drum to the lead edge of the paper.

Check

- 1. Enter the C/E mode and enter the Chain/Function Code, "23/12" to print out the built-in Test Pattern [Grid pattern (4BIT)] onto Tray 1 using A3 size paper.
- 2. (Figure-1) Check that the distance from the lead edge of copy to the specific point is 2.0±0.3mm.



(Figure 1) j0hn4702

Adjustment

- 1. Enter the C/E mode.
- 2. Change the setup value of Chain/Function Codes "20/1".
- I When the measured value is shorter: Decrease the value.
- I When the measured value is longer: Increase the value.

	Min	Nominal	Max
Set range	102	112	142
Changes	0.26mm / 1Step		

#### ADJ 7.2.2 IOT Side Registration

Purpose To align the copy image on the Drum to the side edge of the paper.

#### Check

- 1. Enter the C/E mode and enter the Chain/Function Code, "23/12" to print out the built-in Test Pattern [Grid pattern (4BIT)] onto Tray 1 using A3 size paper.
- 2. (Figure-1) Check that the distance from the side edge of copy to the specific point is 2.0±0.3mm.



Purpose To obtain appropriate distances for the both side edges, the lead edge and the trail edge.

Inst. Lead Edge and Side Registration should have already been adjusted.

Inst. Vertical and horizontal magnification ratios should already be adjusted.

Check

- (front) are 2±1mm.

Adjustment

- 1. Enter the C/E mode.
  - will be increased.)

#### (Figure 1) j0hn4703

Adjustment

- 1. Enter the C/E mode.
- 2. Change the setup value of Chain/Function Codes "6/80". The image is shifted to the front by increasing the set value.
- I When the measured value is shorter: Increase the value.
- I When the measured value is longer: Decrease the value.

	Min	Nominal	Max
Set range	1	50	99
Changes	0.0423mm / 1Step		

#### ADJ 7.2.3 Edge Erase Amount Adjustment

1. Make a solid black copy with the Platen Cover open without placing any document.

3. Ensure that the white areas at the lead edge, the trail edge, the side edge (rear) and the side edge

4. Change set values for the following Chain/Function Codes. (By increasing set values, erase amounts

<ul> <li>I Lead Edge 6/93</li> </ul>			
	Min	Nominal	Max
Set range	0	61	94
	0mm	2mm	4mm
Changes	0.0423mm / 1Step		

#### • I Trail Edge ..... 6/94

	Min	Nominal	Max
Set range	0	94	175
	-17.5mm	2mm	26mm
Changes	0.26mm / 1Step		

I Side Edge (	(Rear) 6/92	2
Min	Nominal	Max
	1	

Set range	0	57	94
Changes	0.0	0423mm / 1Step	

• I Side Edge (Front) 6/91
----------------------------

	Min	Nominal	Max
Set range	1	73	94
Changes	0.0423mm / 1Step		

#### 13. Finisher

ADJ 13.6.1 Adjusting the Paddle Position Ref. PL: PL13.6

Purpose Optimise the positional relationship between the Paddle Guide and Gear.

#### Adjustment

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the con trol panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- · Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

#### Procedure

- 1. Remove the Rear Cover. (PL13.17)
- 2. Remove the Finisher Top Cover. (PL13.8)
- 3. Remove the Paddle Gear. (PL13.6)

(Figure-1)



(Figure-2)

Paddle Solenoid



4. With the Exit Transport Guide up (initial state), align the Paddle Guide (resin section) with the convex.

(Figure-1) j0hn4d51

5. In the status of Figure-1, position the Paddle Gear until the Stopper catches the detent, and secure the Gear at the black Holder projection (PL13.6).

i0hn4d52

(Figure-2) j0hn4d52

4.3 Adjustment

#### WorkCentre Pro 423/428

CHAPTER 4 DISASSEMBLY/ASSEMBLY AND ADJUSTMENT 4-54 03/02

6. After adjustment, check that the dimension from the rubber section of the Paddle Guide to the bottom face of the Exit Transport Guide is about 5.6 mm. (Figure-3)



# 4.3 Adjustment

# CHAPTER 5 PARTS LIST

# Contents

5.1 Preface	. 3
5.1.1 How to Use Parts List	3
5.1.2 Notes on Using Parts List	3
5.1.3 Plate Configuration.	3
5.1.4 Explanation of Terms and Symbols	3
5.2 Parts List	. 5
PL1 Drive	.5
PL 1.1 Drive	. 5
PL 2 Paper Transport	6
PL 2.1 Tray1	. 6
PL 2.2 Tray1 Assembly	.7
PL 2.3 Paper Feed (1/2)	. 8
PL 2.4 Paper Feed (2/2)	. 9
PL 2.5 T/A Chute Assembly1	10
PL 2.6 R/H Chute Assembly1	11
PL 2.7 EXIT Assembly	12
PL 2.0 OCT Assembly $(1/3)$	13 17
PL 2.10 OCT Assembly (2/3)	15
PL 2 11 Registration	16
PL 2.12 Registration Chute Assembly	17
PL 3 IIT	18
PL 3.1 Platen Glass and IPS PWB1	18
PL 3.2 Lens Assembly and CCD PWB1	19
PL 3.3 Carriage Motor and Carriage Cable	20
PL 3.4 Full Rate Carriage and Half Carriage	21
PL 3.5 Platen Cover	22
PL 3.6 Top Cover, Control Panel2	23
PL 3.7 Touch Panel, Handset	24
PL 4 ROS	25
PL 4.1 ROS	25
PL 5 XERO/DEVE	26
PL 5.1 XERO/DEVE (1/2)	26
PL 5.2 XERO/DEVE (2/2)	27
PL 6 Fuser	28
PL 6.1 Fuser Assembly (1/2)2	28
PL 6.2 Fuser Assembly (2/2)	29
PL 7 Electrical	30
PL 7.1 IOT Electrical (1/2)	30
PL 7.2 IOT Electrical (2/2)	31
PL 7.3 MF Box (1/2)	32

PL 7.4 MF Box (2/2)	. 33
PL 7.5 ESS Box	. 34
PL 7.6 ESS Option	. 35
PL 8 Cover	. 36
PL 8.1 Cover-Top, Control Panel	. 36
PL 8.2 Cover-Front	. 37
PL 8.3 Cover-Rear/Right	. 38
PL 9 Cabinet	. 39
PL 9.1 Feed Motor, PWB	. 39
PL 9.2 T/A Roller	. 40
PL 9.3 Switch PWB, Sensor	. 41
PL 9.4 Right Cover Assembly	. 42
PL 9.5 Option Box Assembly	. 43
PL 9.6 Tray 2/3/4 Assembly	. 44
PL 9.7 Tray (1/3)	. 45
PL 9.0 I fay (2/3)	.46
PL 9.9 ITay (3/3)	.47 مر
	. 40
	. 49
PL 10.1 DADF Assembly	. 49
PL 10.2 DADF Feeder Assembly	. 50
PL 10.3 Base Cover, Counter Balance	. 51
PL 10.4 Top Cover Assembly (1/2)	. 52
PL 10.5 Top Cover Assembly (2/2)	. 33 57
PL 10.0 Gliule, Regi Roller	. 94 55
PL 10.8 DADE Feed/Drive Motor	. JC 56
PL 10.9 Document Tray (DMO-F)	. 57
PL 10.10 Document Tray (DMO-W/OSG)	. 58
PL 11 MSI	50
PI 11 1 MSI Assembly	. 00 50
PL 11 2 MSI Trav	. Je 16
PL 11.3 Base Trav	. 00 61
PL 11.4 Feed/Retard Roller	. 62
Pl 12 Duplex	63
PI 121 Dupley	63
DI 12 Einicher	. 00 64
	. 04
PL 13.1 Finisher Assembly	. 64
PL 13.2 FIUTIL SIDE SWIICH/SETSUT	00. 60
PL 13.0 Staplet Assettibly, Dase Cuvel PL 13.4 Stapler Motor	20. 79
PL 13.5 Reverse/Feed Motor	יט. 88
PL 13.6 Paddle Solenoid Exit Roller Assembly	200. 20
PL 13.7 Transfer Motor, C Paper Guide	. 70
PL 13.8 Top Cover, FT Paper Guide	.71
PL 13.9 L/H Upper Cover	.72

# Contents CHAPTER 5 PARTS LIST

	PL 13.10 Exit Transport Base Guide	73
	PL 13.11 L/H Lower Cover	74
	PL 13.12 Compiler Motor	75
	PL 13.13 R/H Cover	76
	PL 13.14 Exit Roller Assembly	77
	PL 13.15 Upper Paper Guide	78
	PL 13.16 Finisher LVPS	79
	PL 13.17 Front/Rear Cover, Switch PWB	80
	PL 13.18 Finisher Receiving Tray	81
	PL 13.19 Finisher Side Tray	82
	PL 14.1 Consumables and Special Tools	83
5.3	Common Hardware	84

# CHAPTER 5 PARTS LIST Contents

#### 5.1 Preface

#### 5.1.1 How to Use Parts List

This chapter contains information related to spare parts, which is used when ordering replacement parts and entering area codes.

This Parts List is to be read in conjunction with the following description.

#### 5.1.2 Notes on Using Parts List

- The screws are only indicated by alphabetic characters without drawing shapes to supply easy to see illustrations to users.
- If a "Note" is found in the DESCRIPTION column, read the corresponding Note before proceeding.
- Area codes are shown for each plate. Area codes (toner, current value adjustment, etc.) that cannot be expressed with the parts for each plate are shown in the related plate or the area code list at the end of this chapter.

#### 5.1.3 Plate Configuration

158W 36255

252W 31350

354W 24254

354W 27254

354W 29254

413W 79359

Screw M4×12

KL-Ring 4

KL-Ring 6

KL-Ring 8

Bearing

Nylon Washer (10)

(1	) PLATE	:	Module name	Term and symbol	Desc
(2	) SUB F	PLATE NO.:	Parts list reference number shown in each chapter	4	The a descr Asser
(3	) SUB F	LATE name	: Title name of the shown	5002	
			illustration. SUB PLATE is one of submodules into which each module is divided mechanically.	5001	The r proce Chap Adjus
			NAMES AND A STREET AND A STREET AND A STREET	5001	The
(4	)     EIVI:		of the same SUB PLATE NO.	7	adjus descr
(5	) PART	NO.:	Number entered in a parts		Asse
	-		order and service report	5003	
( )				0000	Wher
(6)	) DESC	RIPTION:	Contains part names, V (MOD) codes, and comments.	3{4-10	descr upper This
(7	) AREA	CODE:	Code entered in the fault portion		descr
	(5	5) (6)	column of the service report.		Indica
ITEMI	PART No.		A.C.	(1/4 pieces)	illustr same
23	55E 94210	Baffle Baffle	5315 5316 5317		Indica
4	130K 98291	Paper Feed-in Sensor	(07) 5318 (06) 5314		spare
5 6	22K 88181 35E 85980	Feed-in Idler Roller 0-Ring	5319 5320		PART
7 8	7E 99120 121K 98110	Sprocket Paper Feed-in Clutch	5321 (S0L6) 5312		Indica
9 10	7E 99110 23E 97060	Sprocket Chain	5322 5323	(P/O Item 5)	symb
11 12	13E 98120 13E 98100	Bearing Bearing	5324 5325		mana
13 14	7E 99130 29E 97131	Gear Pin	5326 5327		Asse
15 16	22K 88231 22K 88220	Turn Roller Paper Feed-in Roller	5313 5311		
17 18	32E 96531 32 E7120	Turn Guide (In) Turn Guide (Out)	5328 5329		
19 20	130E 96200 38E 86630	RFC Registration Senso Paper Guide Seal	or (015) 5330 5331	(INEW) (OId)	
21 22	9E 88520 55K 19120	Spring, Corotron Baffle	5332 5333		part
23 24		Spacer Spring	5334 5335		
25	130K 98311	Paper Registration Ser	usor Assembly (0.6) 5336 5337	(Altornata)	
£0 A	1538 10955	Sorow 1/2 3×10	<b>A</b> 3337	(Allemale)	
B	158W 35855	Screw M4X8	/		COIUII



WorkCentre Pro 423/428

03/02 5-3  $(\widehat{7})'$ 

#### 5.1.4 Explanation of Terms and Symbols

#### cription

adjustment procedure of the part is cribed in Chapter 4, "Disassembly, embly, and Adjustment."

removal, installation, and replacement edures of the parts are described in pter 4, "Disassembly, Assembly, and astment."

removal, installation, replacement, and stment procedures of the parts are cribed in Chapter 4, "Disassembly, embly, and Adjustment."

en the assembly of the parts is cribed as an item, it is indicated on the er left or right of the illustration.

example indicates that item 3 cribed the assembly of items 4 to 1. cates that only one part is shown in the ration as a typical one although four e types of parts are installed in all.

cates that the part is not managed as a e when this symbol is marked in the T NO. column.

cates that the part marked by this bol in the DESCRIPTION column is not aged singly as a spare, but the embly is described in item 5 as a spare. cates that the part marked by (New) or ) in the DESCRIPTION column is new Id as a compatible part. Order the old unless especially instructed or there is special reason.

cates that the user should use either of parts described in the DESCRIPTION mn (alternate).

Term and symbol	Description
	When this symbol is indicated in the part number column, a number within a circle shows that the whole and framed areas of the figure are the configurations after the part was changed by the Tag number
5005	within the circle.
	When this symbol is indicated in the part number column, a number within a circle shows that the whole and framed areas of the figure are the configurations before
5006	the part was changed by the Tag number within the circle.
	The symbol shows the part item number within a circle is the configuration after the part was changed by the tag number
4001	within the circle.
	The symbol shows the part item number within a circle is the configuration before the part was changed by the tag number
4002	within the circle.
[with 5V]	When this is indicated in the DESCRIPTION column, the number shows the configuration of the part is the configuration after the part was changed.
[w/o 5V]	When this is indicated in the DESCRIPTION column, the number shows the configuration of the part is the configuration before the part was changed.

# CHAPTER 5 PARTS LIST 5.1 Preface

- 5.2 Parts List
- PL 1 Drive
- PL 1.1 Drive



ITEM	PARTS No.	DESCRIPTION	AC
1	7K87410	Main Drive Motor Assembly (Items 2-18)	30B4
2		Drive Plate Assembly	30B5
3		Gear	30B6
4		Spring	30B7
5		Arm Assembly	30B8
6		Gear	30B9
7		Plate	30BB
8		Motor Bracket Assembly	30BC
9		Gear	30BD
10		Gear	30BE
11		Gear	30BF
12		Gear	30BG
13		Gear	30BH
14		Gear	30BJ
15		Screw	30BK
16		Gear	30BL
17		Gear	30BM
18	127K32301	Main Drive Motor	3011
19	7E67880	Gear	301N
20	7E67890	Gear	30BP
21	59E96810	Collar	30BQ
22	7E67331	Gear	30BR

PL 2 Paper Transport

PL 2.1 Tray1



ITEM	PART No.	DESCRIPTION	A.C.
1	130E82740	Tray 1 Near End Sensor	50R1
2	802K29710	Tray 1 Size Switch Assembly (Items 3-5)	50R2
3		Bracket	50R3
4		Actuator	50R4
5		Tray1 Size Switch	50R5
6	15K51432	Sensor Assembly (Items 7-10)	50R6
7		Bracket	50R7
8	130E82740	Tray 1 No Paper Sensor	50R8
9	120E20812	Actuator	50R9
10		Support	50RB
11	3E55970	Stopper (Front)	50RC
12	3E56061	Stopper (Rear)	50RD
13	14E43711	Slider	50RE
14	32K94925	Tray 1 Guide	50RF
	50K47155	Tray 1 Assembly (PL 2.2) (FX)	5012
	50K47125	Tray 1 Assembly (PL 2.2) (FXA)	5012
15	50K47135	Tray 1 Assembly (PL 2.2) (TFX)	5012
	50K47145	Tray 1 Assembly (PL 2.2) (FXK)	5012
	50K47542	Tray 1 Assembly (PL 2.2) (DMO)	5012
16	892E41850	Size Label	50RG
17	962K4170	Wire Harness (DC12)	50RH
18		Bracket	50RI
19	830E94110	Bracket	50RJ
20	962K4181	Wire Harness (DC13)	50RK

#### PL 2.2 Tray1 Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1		Tray	50C1
2	802K29704	Retard Roller Assembly (Items 3-8)	5033
3		Housing	50C2
4		Holder	50C3
5		Shaft	50C4
6	5K6110	Friction Clutch	50C5
7	59K21960	Retard Roller	50C6
8		Spring	50C7
9		Shaft	50C8
10	809E33030	Earth Spring	50C9
11		Bearing	50CB
12	59K21970	Feed Roller	5032
13		Retard Lever	50CC
14	809E33450	Spring	50CD
15		Bottom Plate Assembly (Upper)	50CE
16	11E12262	Lever Lock	50CF
17	809E14793	Spring	50CG
18	809E18760	Spring (Center)	50CH
19		Bottom Plate (Lower)	50CJ
20		Cover	50CK
21		Latch (Rear)	50CL
22		Latch (Front)	50CM
23		Spring	50CN
24		Latch	50CP
25	809E18771	Spring	50CQ
26	38K85904	Side Guide (Front)	50CR
27	38K85913	Side Guide (Rear)	50CS
28	38K85921	End Guide	50CT
29		Plate	50CV
30		Screw	50CW
31		Sector	50CX
32		Gear	50CY
33		Lock Pin	50D1
34	8E93990	Size Cam	50D2
35	809E33481	Earth Plate	50D3
36	120E20821	Actuator	50D4
37	892E43611	Label (1)	50D5
38	15K53422	Plate	50D6

#### PL 2.3 Paper Feed (1/2)



ITEM	PART No.	DESCRIPTION	A.C.
1		Bracket	50S4
2		Bearing	50S5
3	121K23840	Feed Clutch	5092
4	11K96900	Coupling	50S6
5	7E71460	Gear	5093
6	54K19786	T/A Roller Chute Assembly (PL 2.5)	50S7
7		Earth Plate	50S8
8	54K18701	Lower Chute	50S9
9	113K82474	Connector Assembly	50SB
10	110E98300	R/H Interlock Switch	50SC
11		Spacer	50SD
12	11E10992	Handle (Fuser)	50SE
13			
14	162K65211	Wire Harness (Interlock)	50SG
15	162K65062	Wire Harness (AC2) (FX,TFX)	50SH
15	962K4270	Wire Harness (220V)	
16	962K4221	Wire Harness (DC17)	50SK
17	162K65203	Front Door Interlock Switch	50SL
18		Bracket	50SM
19	162K65191	Main Switch	50SN

j0hn5203

#### PL 2.4 Paper Feed (2/2)



ITEM	PART No.	DESCRIPTION	A.C.
1	802E26673	R/H Lower Cover	50B1
2	3E54131	Handle	50B2
3		Label	50B3
4		Label	50B4
5	802E26610	Blind Cover	50B5
6	1K76831	Front Lower Rail	50B6
7	1K76841	Rear Lower Rail	50B7
0	22K62678	Exit Assembly (PL 2.7)	5411
0	22K65170	OCT Assembly (PL 2.8, PL 2.9, PL 2.10)	5412
9			50B8
10	54K19792	R/H Chute Assembly (PL 2.6)	50B9
11	127K32513	Exit Motor Assembly (Items 12-19)	50BB
12	127K33471	Exit Motor	50BC
13		Bracket	50BD
14	5E16041	Collar	50BE
15		Case	50BF
16		Gear	50BH
17		Damper	50BJ
18		Cover	50BK
19		Screw	50BL
20	1K76851	Rear Upper Rail Assembly (Items 21-24)	50BM
21		Rear Upper Rail	50BN
22	32E17170	Guide	50BP
23		Spring	50BQ
24		Screw	50BR
25		Plate	50BS
26	50E17462	Side Tray (Base)	50BT
27	50E17472	Side Tray (Extension)	50BV
28	19E50061	Holder	50BW
29	36K91520	Paper Weight	50BX

#### PL 2.5 T/A Chute Assembly

PL2.5



ITEM	PART No.	DESCRIPTION	A.C.
1		T/A Roller Chute	50E1
2	120E20651	Actuator	50E2
3	22K62541	T/A Roller	50E3
4	22K62551	T/A Roller 1	50E4
5		Pulley	50E5
6		Nylon Washer	50E6
7		Belt	50E7
8	130E81970	T/A Roller 2 Sensor	50E8
9	121K26220	T/A Roller Clutch	50E9
10		Bearing	50EB
11	809E15241	Spring	50EC
12	962K4200	Wire Harness (DC15)	50ED

j0hn5205

#### PL 2.6 R/H Chute Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1		R/H Chute Assembly	50F1
2		Connector	50F2
3		Shaft	50F3
4	3E54090	Latch (Front)	50F4
5	3E54100	Latch (Rear)	50F5
6	809E29990	Spring (Front)	50F6
7	809E30001	Spring (Rear)	50F8
8	809E30011	Earth Spring	50FB
9	103E26381	Film	50FD
10	54K19804	T/A Pinch Chute Assembly (Items 11-13, 19)	50FF
11		T/A Pinch Chute	50FG
12	22E87802	Pinch Roller	50FH
13		Spring (Out)	50FJ
14	22E87822	Pinch Roller	50FK
15	809E11080	Spring	50FL
16		Spacer	50FM
17		Bracket	50FN
18	162K65131	Wire Harness (DC6)	50FP
19		Spring (in)	50FQ

j0hn5206

PL 2.7 Exit Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1		Exit Assembly (Items 2-32)	5411
2	802E26070	Top Exit Cover	54B1
3	802E26091	Exit Cover	54B2
4	54E18722	Exit Upper Chute	54B3
5	105E10890	Eliminator-IN	54B4
6		Eliminator Plate	54B5
7		Eliminator Plate	54B6
8	54K18753	Exit Lower Chute Assembly (Items 9-17)	54B7
9		Exit Lower Chute	54B8
10	22E87810	Exit Roller	54B9
11		Roller Holder	54BB
12		Roller Holder	54BC
13	59E93712	Corrugation Roller	54BD
14	59K15590	Pinch Roller	54BE
15	22E19722	Pinch Roller	54BF
16		Spring	54BG
17		Spring	54BH
18	54E18743	Gate	54BJ
19	809E29761	Spring	54BK
20	59K19610	Exit Roller	54BL
21	59K19620	Pre Exit Roller	54BM
22		Gear (Z20)	54BN
23		Gear (Z22)	54BP
24		Gear (Z22/20)	54BQ
25		Gear (Z37)	54BR
26		Gear (Z20/20)	54BS
27		Plate	54BT
28		Gear Assembly	54BV
29	809E34110	Spring	54C1
30	13E84800	Bearing	54C2
31		Bracket	54C3
32	105E10900	Eliminator-OUT	54C4



ITEM	PART No.	DESCRIPTION	A.C.
1	802E26070	OCT Top Cover	54D1
2	802E29112	OCT Cover	54D2
3	802E29121	Blind Cover	54D3
4	127K33320	Offset Motor	54D4
5		Bracket	54D5
6		Gear (Z22)	54D6
7		Gear( Z37)	54D7
8		Gear( Z20/20)	54D8
9		Gear (Z18) (One Way)	54D9
10		Gear (Z22/18) (One Way)	54DB
11		Gear (Z25)	54DC
12		Gear (Z19)	54DD
13	809E34110	Spring	54DE
14		Gear	54DF
15	121K26362	Exit Gate Solenoid	54DG
16	162K65220	Wire Harness	54DH
17	59K20880	F/U Pre Exit Roller	54DJ
18		Bearing	54DK
19	59K20870	F/U Exit Roller	54DL
20		Bracket (Front)	54DM

PL 2.9 OCT Assembly (2/3)



ITEM	PART No.	DESCRIPTION	A.C.
1	54K19952	Lower Chute Assembly (Items 2-5)	54F1
2		Lower Chute	54F2
3		Holder	54F3
4	59K15590	Pinch Roller	54F4
5		Spring	54F5
6		Holder	54F6
7		Bearing	54F7
8		Bearing	54F8
9		Gear (Z20)	54F9
10		Gear (Z22/20)	54FB
11	41K94333	CRG Assembly (Items 12-25)	54FC
12	54K19942	OCT Lower Chute Assembly (Items 13-19)	54FD
13		OCT Lower Chute	54FE
14		Holder	54FF
15		Holder	54FG
16	22E19722	Pinch Roller	54FH
17	59E93712	Corrugation Roller	54FJ
18		Spring	54FK
19		Spring	54FL
20	41K94342	CRG	54FM
21		Rack	54FN
22	59K20861	OCT Exit Roller	54FP
23	59K19620	OCT Pre Exit Roller	54FQ
24		Bearing	54FR
25		Bearing	54FS





ITEM	PART No.	DESCRIPTION	A.C.
1	54K19933	F/U Exit Lower Chute Assembly (Items 2-6)	54E1
2		F/U Exit Lower Chute	54E2
3		Holder	54E3
4	59K15590	Pinch Roller	54E4
5	22E19722	Pinch Roller	54E5
6		Spring	54E6
7		Bracket (Rear)	54E7
8	54E18722	OCT Upper Chute	54E8
9	54E19402	F/U Exit Upper Chute	54E9
10	105E10900	Eliminator (out)	54EB
11		Eliminator Plate	54EC
12		Eliminator Plate	54ED
13	54E18743	Gate	54EE
14	809E29761	Spring	54EF
15	105E10631	Eliminator	54EG
16	105E10890	Eliminator (in)	54EH

j0hn5210

PL 2.11 Registration



ITEM	PART No.	DESCRIPTION	A.C.
1	32K94833	Registration Front Guide	53B1
2	32K94842	Registration Rear Guide	53B2
3	22E87782	Registration Roller (Metal)	5313
4	15K51562	Plate Inlet	53B4
5	7E55450	Gear	53B5
6	13E87020	Bearing	53B6
7	13E87030	Bearing	53B7
8	54E18771	Trans Chute	53B8
9		Earth Plate	53B9
10		Earth Plate	53BB
11	121E84300	Registration Clutch	53BC
12	22K62442	BTR Roller Assembly (Items 13-16)	53BD
13		BTR Roller	53BE
14		Gear	53BF
15		Pin	53BG
16		Tracking Roller	53BH
17	54K19779	Registration Chute Assembly (PL 2.12)	53BJ
18	962K4160	Wire Harness (DC11)	53BK

#### PL 2.12 Registration Chute Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1	54E18762	Registration Chute	53C1
2	22K62533	Registration Roller	53C2
3	13E20590	Bearing	53C3
4	7E55440	Gear	53C4
5	809E36010	Spring	53C5
6		Earth Plate	53C6
7		Earth Plate	53C7
8		Out Plate	53C8
9		Earth Plate	53C9
10		BTR Plate	53CB
11		Earth Plate	53CC
12		In Lower Plate	53CD
13		Film	53CE
14		Diode	53CF
15	130E82740	Registration Sensor	53CG
16	120E20641	Actuator	53CH
17	809E15241	Spring	53CJ
18	809E22970	Spring	53CK
19	105E10521	Eliminator	53CL
20	105K19785	Eliminator	53CM
21	117K31981	Code(TR)	53CN
22	117K31991	Code (DTS)	53CP
23	32E16541	Link Guide	53CQ
24	32E16551	Link Guide	53CR
25	809E29961	Spring	53CS
26	12K94140	Link	53CT
27	12K94151	Link	53CV
28		Spacer	53CW

j0hn5212

PL 3 IIT

PL 3.1 Platen Glass and IPS PWB



5-18	
03/02	

ITEM	PART No.	DESCRIPTION	A.C.
	90K92811	Platen Glass Assembly (Items 2-4)(FX)	1021
4	90K92962	Platen Glass Assembly (Items 2-4)(ECK)	1021
1	90K92951	Platen Glass Assembly (Items 2-4)(DMO)	1021
	90K2242	Platen Glass Assembly (Items 2-4)(PRC)	1021
2		Platen Glass	12B1
3		Side Guide	12B2
4		Lead Guide	12B3
5	15E74730	Right Side Plate	12B4
6		Screw	12B5
7	802E26340	Cover	12B6
8	130K62162	Platen Angle Sensor	1063
9		PWB Cover	12B7
10	160K87581	IIT/IPS PWB (DMO-E)	1066
10	160K74854	IIT/IPS PWB (DMO-W/OSG)	
11	110K11110	Platen Open Switch	12B8
12	130K62150	IIT Registration Sensor	12B9
13	19E50510	Pad	12BB
14	830E80890	Support	12BC
15	160K74830	Carriage Motor Drive PWB	1121
16	162K20483	IIT Wire Harness	12BD
17		Core	12BE
18	3E55820	Stopper	12BF
19	117E94760	Cable (IIT-IOT)	12BG
20		Spacer	12BH
21		Screw	12BJ
22	802E23210	Cover	12BK
23	809E29040	Spring	12BL

#### PL 3.2 Lens Assembly and CCD PWB



ITEM	PART No.	DESCRIPTION	A.C.
1	117K29920	FPC CCD Assembly	12C1
2	802K29130	CCD Cover	12C2
3	130K62930	IIT Size Detect Sensor (DMO-E))	1061
	62K10680	Lens Assembly and CCD PWB (DMO-E)	1031
4	62K11290	Lens Assembly and CCD PWB (DMO- W/OSG)	
5	809E27890	Spring	12C2
6		Screw	12C3
7	160K77220	CCD PWB	1110
8	130K62930	IIT Size Detect Sensor (DMO-W/OSG)	

j0hn5302

PL 3.3 Carriage Motor and Carriage Cable



ITEM	PART No.	DESCRIPTION	A.C.
1		Capstan Shaft	12D1
2		Pulley	12D2
3	12K94190	Front Carriage Cable	12D3
4	12K94200	Rear Carriage Cable	12D4
5	809E34730	Spring	12D5
6		Timing Pulley	12D6
7	4E6461	Damper	12D7
8		Pulley (Idler)	12D8
9		Bearing (Ball)	12D9
10	23E8690	Belt	12DB
11	127K32971	Carriage Motor Assembly (Items 12-14)	1042
12		Bracket	12DC
13		Damper	12DD
14	127K35510	Carriage Motor	1041
15	809E34750	Spring	12DE
16	17E94750	Foot	12DF

#### PL 3.4 Full Rate Carriage and Half Carriage



ITEM	PART No.	DESCRIPTION	A.C.
1	41K94190	Full Rate Carriage Assembly (Items 2-10)	10B1
2	122K93290	Exposure Lamp	1013
3	105E10430	Lamp Ballast PWB	1065
4		Insulator	10B2
5	117E94752	Lamp Wire Harness	10B3
6		Guide	10B4
7		Guide	10B5
8	62E93781	No.1 Mirror	1022
9		Spring	10B6
10		Full Rate Carriage	10B7
11	41K94170	Half Rate Carriage Assembly (Items 12-16, 18)	10B8
12	62E98160	No.2 Mirror	10B9
13	62E98170	No.3 Mirror	10BB
14	809E34640	Spring	10BC
15	809E34650	Spring	10BD
16		Half Rate Carriage	10BE
17		Holder	10BF
18	20E99590	Pulley	10BG
19	3E55810	Stopper	10BH
20		Screw	10BJ
21	63E92581	Tape (Half Rate)	10BK
22	63E92571	Tape (Full Rate)	10BL
23		Front Rail	10BM
24		Rear Rail	10BN

j0hn5304

PL 3.5 Platen Cover

PL3.5

1{2-4

5-22 03/02

ITEM	PART No.	DESCRIPTION	A.C.
1	802K26013	Platen Cover (Items 2-4)	2001
2		Platen Cover	20B2
3	36K91511	Counter Balance	2005
4		Screw	20B3
5	4E12330	Platen Cushion	2003



j0hn5305

PL 3.6 Top Cover, Control Panel



ITEM	PART No.	DESCRIPTION	A.C.
	802K37280	Top Cover Assembly (Items 2,3)(OSG HM)	75B1
	802K31840	Top Cover Assembly (Items 2,3)(FX)	75B1
	802K31500	Top Cover Assembly (Items 2,3)(FXA)	75B1
4	802K31480	Top Cover Assembly (Items 2,3)(FXK)	75B1
1	802K31490	Top Cover Assembly (Items 2,3)(TFX)	75B1
	802K33920	Top Cover Assembly (Items 2,3)(DMO-E)	75B1
	802K33340	Top Cover Assembly (Items 2,3)(PRC)	75B1
	802K36400	Top Cover Assembly (Items 2,3)(DMO-W)	75B1
2		Top Cover	32B1
	802K26766	Control Panel (Items 4-12)(FX)	7510
	802K31224	Control Panel (Items 4-12)(FXA)	7510
	802K31233	Control Panel (Items 4-12)(FXK)	7510
0	802K31243	Control Panel (Items 4-12)(TFX)	7510
3	802K33683	Control Panel (Items 4-12)(DMO-E)	7510
	802K33273	Control Panel (Items 4-12)(PRC)	7510
	802K35963	Control Panel (Items 4-12)(DMO-W)	7510
	802K36742	Control Panel (Items 4-12)(OSG)	7510
4		Case Assembly	75B1
5	160K75612	UIPWB	7522
	537K60253	UI ROM (FX)	75B2
5	537K61083	UI ROM (FXA)	75B2
	537K61091	UI ROM (FXK)	75B2
	537K61101	UI ROM (TFX)	75B2
6	537K61491	UI ROM (PRC)	75B2
	537K61842	UI ROM (DMO-W)	75B2
	537K61852	UI ROM (DMO-W/OSG)	75B2
	537K62350	UI ROM (DMO-E)	75B2
	537K62361	UI ROM (OSG)	
7	160K78220	INV PWB	7513
8	123K94000	LCD Display Assembly	7511
9	162K63731	INV Wire Harness	75B3
10	160K75831	Base 10Key	7512
11	162K63740	One Touch Wire Harness	75B4
12		Display	75B5
13	802E25061	Panel	32B2
14	802E24240	Cover	32B3
15		Screw	32B4
16	830E92720	Panel-Hook	32B5
		]	-

PL 3.7 Touch Panel, Handset

PL3.7



ITEM	PART No.	DESCRIPTION	A.C.
1		Top Cover	32B1
2		Case Assembly	32C6
	802K26791	One Touch Panel (FX)	75C1
	802K32610	One Touch Panel (FXA)(DMO)	75C1
3	802K32620	One Touch Panel (TFX)	75C1
	802K32630	One Touch Panel (FXK)	75C1
	802K33281	One Touch Panel (PRC)	75C1
4	110K7050	Handset (Option)	9023
5	68E86163	Support (Option)	90B1
6	19K93090	Holder (Option)	90B2
7	152K68650	W/H Branch Tel. (Option)	90B3

j0hn5307

#### PL 4 ROS

PL 4.1 ROS

PL4.1



ITEM	PART No.	DESCRIPTION	A.C.
1	62K10901	ROS	1310
I	62K11080	ROS (DMO)	1310
2	162K65102	Wire Harness	13B1
3	802E27131	ROS Cover	13B2

PL 5 XERO/DEVE

PL 5.1 XERO/DEVE (1/2)

PL5.1

2 {3-7



5-26 03/02

ITEM	PART No.	DESCRIPTION	A.C.
1		CRU	4510
2	1K74274	CRU Frame Assembly (Items3-7)	44B1
3		CRU Frame	44B2
4	802E24882	Cover	44B3
5	15E74801	Bias Plate	44B4
6	117K31950	Wire Harness (DEVE)	44B5
7	117K31940	Wire Harness (XERO)	44B6
8	105E10661	HVPS	7321
9	962K4190	Wire Harness (DC14)	44B7
10	130K61612	Toner Empty Sensor	4533
11		PWB Support	44B8

j0hn5501

# PL 5.2 XERO/DEVE (2/2)



ITEM	PART No.	DESCRIPTION	A.C.
1	127K33073	Main Fan	3301
2	55E19870	Guard	33C1
3	54E18983	Duct	33C2
4	12K94251	Link Assembly (Items 5, 6)	33C3
5		Link	33C4
6		Spring	33C5
7	12E10221	Link	33C6
8	32E16441	Guide	33C7
9		Screw	33C8

PL 6 Fuser

PL 6.1 Fuser Assembly (1/2)

PL6.1



5-28 03/02

ITEN	A PART No.	DESCRIPTION	A.C.
	126K14250	Fuser Assembly (Items 2-26)(PL 6.2)(100V)(FX)	43AA
	126K14271	Fuser Assembly (Items 2-26)(PL 6.2)(220V)(FXA, FXK, DMO)	43AA
1	126K14261	Fuser Assembly (Items 2-26)(PL 6.2)(110V)(TFX)	43AA
	126K14172	Fuser Assembly (Items 2-26)(PL 6.2) (120V)(DMO)	43AA
	126K13755	Fuser Assembly (Items 2-26)(PL 6.2) (220V)(PRC)	43AA
2	54K19982	Decurler Chute Assembly (Items 3-9)	43B2
3		Decurler Chute	43B3
4	7E51960	Gear	43B4
5		Bearing	43B5
6		Bearing	43B6
7	22K63030	Decurler Roller	43B7
8		Plate	43B8
9		Screw	43B9
10		Spacer	43BB
11	54K18582	Bottom Chute Assembly	43BC
12	54E19650	Inlet Chute	43BD
13		Screw	43BE
14	54K20543	Exit Chute Assembly (Items 15-21)	43BF
15	22K62100	Pinch Roller	43BG
16	809E34970	Spring	43BH
17		Spring	43BJ
18	19E48670	Finger	4313
19	120E13053	Actuator	43BK
20		Spring	43BL
21		Exit Chute	43BM
22		Сар	43BN
23	130E81970	Fuser Exit Sensor	4331
24	7E51941	Gear	43BP
25		Shaft	43BQ
26		Frame Assembly	43BR
L	i	J	I

#### PL 6.2 Fuser Assembly (2/2)



ITEM	PART No.	DESCRIPTION	A.C.
1	26E79982	Nip Screw	4344
2	809E35870	Nip Spring	43C1
3		Lever (Rear)	43C2
4		Lever (Front)	43C3
5	13E18860	Bearing	43C4
6	22K62701	Pressure Roller	4322
7		Rod Holder	43C5
	126K11702	Heater Rod (100V)(FX)	4311
0	126K12591	Heater Rod (220V)(FXA,FXK,DMO)	4311
8	126K12302	Heater Rod (110V)(TFX)	4311
	126K12370	Heater Rod (120V)(DMO)	4311
9	7E51950	Gear	43C6
10	13E88180	Bearing	4316
11		Sleeve	43C7
12		Sleeve	43C8
13		Spacer	43C9
14	22E87691	Heat Roller	4318
15	130K59680	Fuser Thermistor	4314
16	130K60380	Fuser Thermostat (Rear)	4315
17	130K62390	Fuser Thermostat (Front)	43CB
18		Plate	43CC
10	962K5860	Wire Harness (FX,TFX)	43CD
19	962K5870	Wire Harness (FXA,FXK,DMO)	43CD

PL 7 Electrical

PL 7.1 IOT Electrical (1/2)



ITEM	PART No.	DESCRIPTION	A.C.
1		Electrical Cover	73B1
2	105K19235	Circuit Breaker Assembly	73B2
3	104E93960	Choke Coil	73B3
Λ	105E10405	Power Unit (FX,TFX,DMO)(100V)	7310
4	105E10463	Power Unit (FXA,FXK,DMO)(220V)	7310
5	160K75902	Exit Drive PWB	73B4
6	162K65141	Wire Harness(DC7)	71B1
7	162K65053	Wire Harness(AC1)	71B2
8	162K65092	Wire Harness(DC2)	71B3
9	917W00727	Power Code(FX,TFX)	7122
10	962K4234	Wire Harness(DC18)	71B4
## PL 7.2 IOT Electrical (2/2)



ITEM	PART No.	DESCRIPTION	A.C.
1	162K65083	Wire Harness(DC1)	71C1
2	162K65112	Wire Harness(DC4)	71C2
3	162K65150	Wire Harness(DC8)	71C3
4	162K65160	Wire Harness(DC9)	71C4
5	162K65170	Wire Harness(DC10)	71C5
6	160K28160	Page Memory PWB(Option)	76B1
7			
o	160K84180	MCU/SW PWB(DC230/235,WCP423)	7210
0	160K84170	MCU/SW PWB(DC280/285,WCP428)	7210
0	537K60064	MSU DIMM	72B1
9	537K62310	MSU DIMM (DMO-W)	
10	962K4210	Wire Harness(DC16)	71C6
11		Spacer(Option)	71C7
12	162K21521	Wire Harness(Option)	71C8
13	962K5771	Wire Harness(Option)	71C9
14		Core(Option)	
15	121K24653	HDD(Option)	7811
16	160K76701	HDC PWB(Option)	72B1

PL 7.3 MF Box (1/2)

PL7.3



j0hn5703

ITEM	PART No.	DESCRIPTION	
1		MF Box Frame	31E1
2	160K84572	MF Main PWB	72E1
	537K60410	MF System ROM(FX)	72E2
	537K61151	MF System ROM(FXA)	72E2
2	537K61920	MF System ROM(FXA,DMO-W)	72E2
3	537K61170	MF System ROM(FXK)	72E2
	537K61160	MF System ROM(TFX)	72E2
	537K62242	MF System ROM(DMO-E)	72E2
4	160K29731	G3M0 PWB	72E3
5	537K60420	G3M0 ROM	72E4
6	160K76240	MMB-A PWB	72E5
6	160K76250	MMB-B PWB(Speed Dial Expansion Kit)	72E6
	160K70752	NCU-A PWB(FX)	72E7
	160K82600	NCU-A PWB(FXA,DMO)	72E7
	160K84730	NCU-A PWB(DMO-W)	72E7
	160K82620	NCU-A PWB(FXK)	72E6 72E7 72E7 72E7 72E7 72E7 72E7 72E7
	160K82610	NCU-A PWB(TFX)	
7	160K70762	NCU-B PWB(FX)(Option)	72E7
1	160K87080	NCU-A PWB(RUS)	72E7
	160K87070	NCU-A PWB(SA)	72E7
	160K87090	NCU-A PWB(TUR)	72E2     72E2     72E2     72E2     72E2     72E3     72E4     72E3     72E4     72E7     72E8     71E1     71E3     72E8     72E9     72E7 <t< td=""></t<>
	160K87100	NCU-A PWB(IND)	72E7
	160K87110	NCU-A PWB(MOR)	72E7
	160K83830	NCU-A PWB(PRC)	72E7
8		Spacer	72E8
9	162K64240	Wire Harness(MF)	71E1
10	10 162K21450 Wire Harness(DC)		71E2
11 Screy		Screw	72E9
12	177K94030	Data Cable(Option)	71E3
13 160K62760 OM3 PWB(C		OM3 PWB(Option)	72EB
14		Plate	72EC

PL 7.4 MF Box (2/2)

PL7.4 14 11 6 Q 13 2 10 15 { 7–14 13  $\bigcirc$ C 2 लि  $\Im$ 8 7 Br F q U, É 9 60 10 0 10 E Ø E CÔ .3 PL7.3 Τ 5nE 4

ITEM	PART No.	DESCRIPTION	A.C.
4	105E10530	Battery (Alternate)	76B1
I	105E10670	Battery (Alternate)	76B1
2		Spring	72F1
3	162K21480	Wire Harness (AC)	71G1
Λ	105E98970	LVPS (FX,TFX)	73C1
4	105E6320	LVPS (FXA,FXK,DMO)	73C1
5		Cover	31D1
6	130K83240	Speaker	72F2
7		HDD	78B2
8		Bracket (Option)	78B3
9		Damper (Option)	78B4
10		Screw (Option)	78B5
11	162K64250	Wire Harness	71G2
12		Spacer (Option)	78B6
13		Screw (Option)	78B7
14	160K70270	HD I/F PWB (Option)	72E1
15	160K76401	HDD Assembly (Items 7-14)	78B1

j0hn5704

PL 7.5 ESS Box



ITEM	PART No.	DESCRIPTION	A.C.
1	962K3390	Cable(ESS-MF)	71H1
2		ESS Box Frame	31F1
3		Cover	31F2
4		ROM Cover	31F3
5		Screw	31F4
6		Slot Cover	31F5
7		Plate	31F6
8		Rear Plate	31F7
9		Screw	31F8
	160K77340	ESS PWB Assembly (Items 11-13)(FX)	7610
	160K82372	ESS PWB Assembly (Items 11-13)(FXA)	7610
10	160K82381	ESS PWB Assembly (Items 11-13) (TFX,FXK)	7610
	160K86073	ESS PWB Assembly (Items 11-13) (DMO- E)	7610
	160k86020	ESS PWB Assembly (Items 11-13) (DMO- W/OSG)	
11		ROM	76B1
12		Battery	76B2
13		ESS PWB	76B3
14		Screw	76B4
15	962K3380	Cable (ESS-IOT)	71H2
16	962K3400	Wire Harness (UI)	71H3
17	962K3410	Wire Harness( AC)	
18	962K3420	Wire Harness (DC)	71H5
19	105E10680	LVPS	7660

PL7.6



ITEM	PART No.	DESCRIPTION	A.C.
1	160K78520	HDD(Option)	
2	160K69780	Font M2(FX)(Option)	76C1
2	160K69790	Font H3(FX)(Option)	76C2
	537K60940	PS ROM(FX)(Option)	76C3
2	537K61140	PS ROM(FXA,FXK,TFX,PRC)(Option)	76C3
3	537K62250	PS ROM(DMO-E)(Option)	76C3
	537K62260	PS ROM (DMO-W/OSG) (Option)	
	537K60950	I/FAX ROM(FX)(Option)	76C4
1	537K61481	I/FAX ROM(FXA,FXK,TFX,PRC)(Option)	76C4
4	537K62271	I/FAX ROM(DMO-E)(Option)	76C4
	537K62280	I/FAX ROM(DMO-W/OSG)(Option)	76C4
5	133K21100	RAM(64MB)(Option)	7640
6	160K69860	Token Ring(Option)	76C5
7	160K48020	Mother PWB	76C6
8		Bracket	76C7
9		PWB Guard	76C8

j0hn5706

# WorkCentre Pro 423/428

PL 8 Cover

PL 8.1 Cover-Top, Control Panel

PL8.1



ITEM	PART No.	DESCRIPTION	A.C.
1	802E26104	Top Cover	32E1
2	802E28101	Stopper	32E2
3	802E27341	Top Rail Cover	32E3
4	802E27365	IIT Front Cover	32E4
5	802E27163	Fuser Top Cover	32E5
6	802E27202	Blind Cover	32E6
	802K26413	Control Panel (FX)	75H1
7	802K31271	Control Panel (FXA)(DMO)	75H1
1	802K31331	Control Panel (TFX)	75H1
	802K31301	Control Panel (FXK)	75H1
8	802E29511	Handle Cover	32E7
9	830E79574	Bracket	32E8

j0hn5801





ITEM	PART No.	DESCRIPTION	A.C.
1	802K29675	Front Right Cover Assembly	32F1
2	802E26384	Front Left Cover	32F2
3	802E26393	Left Cover	32F3
4	802E27321	ESS Cover	32F4
5	802E27385	IIT Left Cover	32F5
6	802E27450	Connector Cover	32F6
7	26E67850	Screw	32F7
8	802E27512	Front Right Cover	32F8
	892E42670	Plate Badge 230	32F9
	892E47940	Plate Badge 230CF	32F9
	892E47960	Plate Badge 230FS	32F9
	892E42700	Plate Badge 280	32F9
0	892E47990	Plate Badge 280CF	32F9
9	892E48020	Plate Badge 280FS	32F9
	892E50600	Plate Badge WCP423(DMO)	32F9
	892E50620	Plate Badge WCP428(DMO)	32F9
	892E49400	Plate Badge DC235(AP)	32F9
	892E49570	Plate Badge DC285(AP)	32F9
10	892E42660	Badge-X	32FA
10	892E50610	Badge-X(DMO)	32FA
11	830E80971	Bracket-ESS	32FB

## PL 8.3 Cover-Rear/Right



ITEM	PART No.	DESCRIPTION	A.C.
1	802E27155	Rear Cover	32G1
2	802E28143	Right Inner Cover	32G2
3	802E27406	IIT Right Cover	32G3
4	802E28123	Inner Cover	32G4
5	26P63574	Screw	32G5
6	802E28180	Right Cover Cap B	32G6
7	802E28161	Right Cover Cap A	32G7
8	802E27421	Finisher Blind Cover	32G8
9	802E27443	Top Plate	32G9
10	802E26403	IIT Rear Cover	32GB





ITEM	PART No.	DESCRIPTION	A.C.
1	127K32751	Cabinet Feed Motor Assembly (Items 2-4)	50G1
2		Bracket	50G2
3		Damper	50G3
4		Feed Motor	50G4
5	7E66790	Gear (T29)	50G5
6		Collar	50G6
7	7E66800	Gear (T27/26)	50G7
8	7E71240	Gear (T37)	50G8
9	7E66810	Gear (T40/18)	50G9
10	7E66820	Gear (T38/26)	50GB
11	11K96820	Drive Joint	50GC
12	121K24410	Tray 2 Feed Clutch	50GD
13	121K24410	Tray 3 Feed Clutch	50GE
14	121K24410	Tray 4 Feed Clutch	50GF
15		Bracket	50GG
16		Bracket	50GH
17		Bearing	50GJ
18	160K75942	Cabinet Drive PWB	50GK
19	162K63983	Wire Harness	71J1
20	162K64001	Wire Harness	71J2

PL 9.2 T/A Roller

PL9.2



ITEM	PART No.	DESCRIPTION	A.C.
1	54E14861	Upper Chute	50H1
2	54E18652	Lower Chute	50H2
3	22K62430	T/A 2 Roller	50H3
4	22K62630	T/A 3,4 Roller	50H4
5		Bearing	50H5
6		Bearing	50H6
7	7E60720	Gear (T22)	50H7
8		Right Cover Assembly (PL9.4)	50H8

j0hn5902



ITEM	PART No.	DESCRIPTION	A.C.
1	110K10960	Tray 2 Size Switch PWB	50J1
2	110K10960	Tray 3 Size Switch PWB	50J2
3	110K10960	Tray 4 Size Switch PWB	50J3
4	15K50090	Near End Bracket Assembly (Items 5-8)	50J4
5		Bracket	50J5
6	130E82740	Tray 2 Near End Sensor	50J6
7	130E82740	Tray 3 Near End Sensor	50J7
8	130E82740	Tray 4 Near End Sensor	50J8
9		Bracket	50J9
10		Support Actuator	50JB
11	120E18901	Sensor Actuator	50JC
12	130E82740	Tray 2 No Paper Sensor	50JD
13	130E82740	Tray 3 No Paper Sensor	50JE
14	130E82740	Tray 4 No Paper Sensor	50JF
15	162K63991	Wire Harness	71K1

5-42 03/02

PL	9.4	Right	Cover	Assem	nbly



ITEM	PART No.	DESCRIPTION	A.C.
1	68K20793	Pinch Bracket Assembly (Items 2-10)	50K1
2		Bracket	50K2
3	59K19520	Pinch Roller	50K3
4		Spring	50K4
5	13E20620	Bearing	50K5
6	13E88351	Bearing	50K6
7	59K20460	Pinch Roller	50K7
8		Spring	50K8
9		T/A Roller 3 Sensor	50K9
10		Wire Harness	50KB
11	802E26335	Right Cover	50KC
12	54E19302	R/H Feed Chute	50KD
13	830E68470	Support	50KE
14	3K11871	Handle Assembly	50KF
15	830E45710	Support Cover	50KG
16	809E32940	Plate Spring	50KH
17	802K27278	R/H Cover Assembly (Items 1-16)	50KJ

#### PL 9.5 Option Box Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1	101K26690	Chassis Assembly	31J1
0	105E98970	LVPS BS2 (110-127V)(FX, TFX,DMO)	73E1
2	105E6320	LVPS B2 HS (220-240V)(FXK)(FXA)(DMO)	73E1
3	160K74600	Option Mother PWB	72G1
4		PWB Support	31J2
5	162K64271	Wire Harness	71L1
6	152K65500	Wire Harness	71L2
7	162K64261	Wire Harness	71L3
8	162K64281	Wire Harness	71L4
9		Bracket	31J3
10	152K65730	Wire Harness	71L4
11		Bracket	31J4
12	101K37130	Cover	31J5
13	160K29751	G3M1 PWB (Option)	72G2
14	537K60420	G3MF ROM	72G3
15	160K74450	G4M3 PWB	72G4
16	537K60440	G4M3 ROM	72G5
17	160K74430	G4/ICM PWB	72G6
18	537K60430	G4/ICM ROM	72G7
19	152K78220	INS 64 Cable	72G8
	160K70772	NCU-C PWB (FX)	72G9
	160K82631	NCU-C PWB (FXA)	72G9
20	160K82640	NCU-C PWB (TFX)	72G9
	160K82650	NCU-C PWB (FXK)	72G9
	160K83840	NCU-C PWB (PRC)	72G9
21	177K94030	Data Cable	71L5
22		Screw	31J6
23	9E68410	Earth Spring	31J7

5-44 03/02

PL 9.6 Tray 2/3/4 Assembly	
PL9.6	
3 (4-7	
	-PL9.9)
4- 5	ゝ
	₹ <sub>2</sub>
4	
	<b>1</b> 7-PL9.9)
4 I (PL9./-PL9.9) 2	
jol	าn5906

ITEM	PART No.	DESCRIPTION	A.C.
	50K43655	Tray 2/3/4 Assembly (PL 9.7-PL 9.9)(FX)	50L1
1	50K46901	Tray 2/3/4 Assembly (PL 9.7-PL 9.9)(AP)	50L1
	50K46564	Tray 2/3/4 Assembly (PL9.7-PL9.9)(DMO-E)	50L1
	892E40580	Tray 2 Label	50L2
2	892E40590	Tray 3 Label	50L2
		Tray 4 Label	50L2
3	32K94852	Guide Cassette Assembly (Items 4-7)	50L4
4		Guide Cassette	50L5
5		Arm	50L6
6		Spring	50L7
7		Spring	50L8
8	3E55943	Front Stopper	50L9
9	3E53931	Rear Stopper	50LB
10	14E42671	Right Spacer	50LC
11	14E39031	Left Spacer	50LD





ITEM	PART No.	DESCRIPTION	A.C.
1		Tray Assembly	50L1
2	50K43627	Feeder Assembly (Items 3-8,19)	50M2
3	54E18864	Chute	50M3
4	59K21970	Feed Roller	5042
5		Shaft Assembly	50M4
6		Bearing	50M5
7		Roller	50M6
8		Earth Plate	50M7
9		Screw	50M8
10	809E33160	Spring	50M9
11	31E94074	Holder	50MB
12	19K97497	Retard Holder Assembly (Items 13-18)	50MC
13		Retard Housing	50MD
14	59K21960	Retard Roller	5043
15		Shaft	50ME
16	5K6110	Friction Clutch	50MF
17		Retard Holder	50MG
18	809E29570	Spring	50MH
19		Bearing	50MJ

# WorkCentre Pro 423/428

5-46 03/02

PL 9.8 Hay (2/3)	ΡL	8 Tray (2/3)
------------------	----	--------------

PL9.8



ITEM	PART No.	DESCRIPTION	A.C.
1		Housing	50N1
2		Label (Instruction)	50N2
3		Label (End Guide)	50N3
4	38E24751	End Guide	50N4
5	38E24280	Plate End Guide	50N5
6	38E24300	Guide	50N6
7	809E14810	Spring	50N7
8	7E71051	Gear	50N8
9	7E55290	Idler Gear	50N9
10	8E93921	Size Cam	50NB
11		End Guide Lock	50NC
12		Screw	50ND
13	29E14970	Pin	50NE
14		Cover	50NF
15		Screw	50NG
16		Actuator	50NH
17		Cover	50NJ
18	809E32950	Earth Spring	50NK
19		Latch	50NL
20	3K12122	Rear Latch	50NM
21	809E32960	Spring	50NN
22	3K12111	Front Latch	50NP
23		Screw	50NQ

PL 9.9 Tray (3/3)



ITEM	PART No.	DESCRIPTION	A.C.
1		Bottom Plate Assembly (Upper)	50P1
2	38E24145	Side Guide (Rear)	50P2
3	38E24135	Side Guide (Front)	50P3
4		Bottom Plate (Lower)	50P4
5	7E66834	Rack	50P5
6	7E70743	Rack	50P6
7	7E55261	Pinion	50P7
8		Guide	50P8
9	809E34771	Spring	50P9
10		Spring Plate	50PB
11		Сар	50PC
12	11E10953	Lever	50PD
13		Label (Max)	50PE
14		Label (OHP MAX)	50PF
15	809E19062	Spring	50PG
16	809E18760	Spring	50PH
17		Label (Size)	50PJ
18	809E36360	Spring	50PK
19		Latch	50PL
20		Screw	50PM

5-48 03/02

ITEM	PART No.	DESCRIPTION	A.C.
1	802E26281	Left Cover	50Q1
2	802E26304	Bottom Cover	50Q2
3	802E26293	Right Cover	50Q3
4	802E26313	Rear Cover	50Q4
5	110E10620	Cabinet Interlock Switch	50Q5
6	809E21630	Spring	50Q6
7	802E26323	Front Blind Cover (2 Tray Type)	50Q7
8	17K92840	Caster (Stopper)	50Q8
9	17K92850	Caster	50Q9
10	673K79752	TM Foot	50QB







PL 10.1 DADF Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1	90E91601	DADF Platen Glass	22B1
2	49E8410	Plate Glass Support (Rear)	22B2
3	49E11650	Plate Glass Support (Front)	22B3
	22K62502	DADF Assembly (PL10.2-PL 10.9)(FX)	22AA
1	22K6961	DADF Assembly (PL10.2-PL 10.9)(AP)	22AA
4	22K63120	DADF Assembly (PL10.2-PL10.9)(DMO-E)	22AA
	22K63130	DADF Assembly (PL10.2-PL10.9)(DMO-W)	22AA
5	3K91881	Knob	22B4
6	15E47381	Set Plate	22B5
7	117E94781	Cable (DADF-IIT)	22B6
8	90K92920	DADF Platen Cushion	22B7

PL 10.2 DADF Feeder Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1		DADF Feeder Assembly (PL10.4-PL 10.8)	2240
2	50K44800	DADF Document Tray	2210
2	50K47970	DADF Document Tray (DMO-W/OSG)	
3	19E52950	Tray F Holder	22B1
4	802K32920	DADF Front Cover	22B2
5	802K32930	DADF Rear Cover	22B3

PL 10.3 Base Cover, Counter Balance



ITEM	PART No.	DESCRIPTION	A.C.
1	802E31920	DADF Base Cover	22D1
2	36K91530	Left Counter Balance (DADF)	2271
3	36K01440	Right Counter Balance (DADF)	2273
1	160K84221	DADF Control PWB	2281
4	160K89030	DADF Control PWB (DMO-W/OSC)	
5		Bracket	22D2
6		Screw	22D3
7	121E90620	Inter Lock Magnet	22D4
8	802E31930	Stamp Cover	22D5
9	32E17910	Read U Mylar	22D6
10		Shaft	22D7
11		Roller	22D8
12		Holder	22D9
13	809E34960	Exit Tension Spring	22DB
14	13E20520	Rear Bush	22DC
15	13E20530	Front Bush	22DD
16		Holder	22DE
17		Roller	22DF
18	802E31940	Under Cover	22DG
19	802E31950	Connector Cover	22DH
20	962K7980	Wire Harness	22DJ
21	121K12390	Stamp Solenoid	22DK
22	11E12320	Link	22DL
23	59K22580	Read Roller Assembly (Items 16,17)	22DM
24	59K21660	Exit Roller Assembly (Items 11,12)	22DN

PL 10.4 Top Cover Assembly (1/2)



ITEM	PART No.	DESCRIPTION	A.C.
1		Top Cover Assembly (PL10.5)	2220
2	19E52940	F-Feed Holder	22E1
3	38K86062	Chute	22E2
4	32E17920	Reverse Registration Mylar	22E3
5		Holder	22E4
6	809E35430	Pad Spring	22E5
7	19K5801	DADF Retard Pad Assembly	2223
8	19E52930	Pad	22E6
9	130K62500	DADF Feed in Sensor	22E7
10	130K62500	DADF Empty Sensor	22E8
11	160K83520	DADF LED PWB	22E9
12	113E36150	Wire Guide	22EB
13	19K97912	Pad Assembly (Items 5-8)	22EC
14	962K8030	Wire Harness (LED PWB)	22ED

PL 10.5 Top Cover Assembly (2/2)



ITEM	PART No.	DESCRIPTION	A.C.
1	802K32900	Top Cover	22F1
2	3K12190	Handle Assembly	22F2
3	809E35480	Spring	22F3
4	802K32910	Feed U Cover	22F4
5		Shaft	22F5
6	22E87990	DADF Pickup Roller	22F6
7	121K27390	Clutch F Spring Assembly	22F7
8	121K27380	Clutch R Spring Assembly	22F8
9	20E35510	Pulley	22F9
10	11E12310	Fe-Stopper Lever	22FB
11		Shaft	22FC
12	22E87980	DADF Feed Roller (One Way)	2222
13	11E12290	Front Shutter Lever	22FD
14	11E12300	Rear Shutter Lever	22FE
15	120E21070	EMP Actuator	22FF
16		Bearing	22FG
17		Plate	22FH
18	7E72970	Gear	22FJ
19	120E21080	Feed Actuator	22FK
20	809E35440	Plate Spring	22FL
21	59E97120	Registration-L Roller	22FM
22	59E97110	Registration-R Roller	22FN
23		Shaft	22FP
24	59K21690	Feed/Pickup Roller Assembly (Items 5-12)	22FQ

j0hn5a05

PL 10.6 Chute, Regi Roller



ITEM	PART No.	DESCRIPTION	A.C.
1	32K3651	Platen Guide Assembly	22G1
2	120K91900	Registration Actuator	22G2
3	120K91910	Exit Actuator	22G3
4	6K22030	Registration Roller	2226
5		Bearing	22G4
6	20K9980	Pulley (One Way)	22G5
7	120K91890	Read Actuator	22G6
8	809E35400	Spring	22G7
9	130K62500	Registration Sensor	22G8
10	130K62500	Read Sensor	22G9
11	130K62520	Exit/Reverse Sensor	22GB
12	113E36140	Holder	22GC
13	130K62510	Size Sensor Assembly	22GD
14	120K91941	Size Sensor Actuator	22GE
15	121K27090	Exit/Reverse Solenoid	22GF
16	110K11280	Top Cover Interlock Switch	22GG
17			22GH
18	962K8000	Wire Harness (DADF Sensor)	22GJ
19	962K7990	Wire Harness (Solenoid)	22GK

j0hn5a06

PL 10.7 Exit Roller, Read Roller



ĺ	ITEM	PART No.	DESCRIPTION	A.C.
	1	6K22040	Exit Roller	22H1
	2	38E24850	Flap Guide	22H2
	3			22H3
	4	59K21670	Read 1 Roller	22H4
	5	59K21680	Read 2 Roller	22H5
	6	13E20350	Bearing	22H6
	7	20K9990	Pulley	22H7
	8	20E35490	Pulley	22H8
	9	20E35490	Pulley	22H9
	10	7E72950	Drive Gear	22HB
	11	7E72940	Drive Gear	22HC
	12	7E72930	Drive Gear	22HD
	13		Bush	22HE

5-56 03/02

ΡL	10.8	DADF	Feed/Drive	Motor
----	------	------	------------	-------



ITEM	PART No.	DESCRIPTION	A.C.
1	127K33650	DADF Feed In/Registration Motor	2291
2	127K33660	DADF Read/Exit Motor	2293
3	809E35420	Spring	22J1
4		Side Frame	22J2
5	23E20510	Belt (S2M106060)	22J3
6	23E20230	Belt	22J4
7	7K12770	DADF Gear Assembly (Spring CL)	22J5
8	809E35410	Spring	22J6
9	30K74840	Bracket	22J7
10	23E20210	Belt	22J8
11	23E20490	Belt (S2M079040)	22J9
12	20E35500	Drive Pulley	22JB
13	23E20220	Belt	22JC
14	7E72390	Gear	22JD
15	20K10000	Tension Pulley	22JE

PL 10.9 Document Tray (DMO-E)



ITEM	PART No.	DESCRIPTION	A.C.
1	50K44810	Document Tray	22K1
2	38E24860	Side Guide	22K2
3	130E84140	Document TE Size Sensor	22K3
4	130E84140	Last Document Sensor	22K4
5		Bracket	22K5
6	802K34190	Tray Under Cover	22K6
0	802K45480	Tray Under Cover (DMO-W/OSG)	
7	802K34180	Tray Clear Cover	22K7
/	802K45470	Tray Clear Cover (DMO-W/OSG)	
0	962K9080	Wire Harness	22K8
0	962K9070	Wire Harness (DMO-W/OSG)	
9	50K44800	Tray Assembly (Items 1-8)	22K9
10	892E58650	Label	22KB

j0hn5a09

5-58 03/02

## PL 10.10 Document Tray (DMO-W/OSG)



ITEM	PART No.	DESCRIPTION	A.C.
1	50K47970	Tray Assembly (Items 2-10)	22K9
2	50K47980	Document Tray	22K1
3	38E24860	Side Guide	22K2
4	130E84140	Document Sensor	22K4
5	130E84140	Document Sensor	22KC
6	130E84140	Document Sensor	22KD
7	120K91920	Document Tray Flag Actuator	22KE
8		Bracket	22K5
9	802K45480	Tray Under Cover	22K6
10	962K9070	Wire Harness	22K8
11	892E58650	Label	22KB



ITEM	PART No.	DESCRIPTION	A.C.
	59K23700	MSI Assembly (PL 11.2-PL 11.4) (FX)(DMO)	51AA
1	59K23611	MSI Assembly (PL 11.2-PL 11.4) (FXAP)	51AA
I	59K22504	MSI Assembly (PL 11.2-PL 11.4) (DMO)	51AA
	59K22788	MSI Assembly (PL 11.2-PL 11.4) (PRC)	51AA
2	802E28281	Cover Rear	51B1
3	4E8050	Oil Damper	51B2

j0hn5b01

PL 11 MSI

PL 11.2 MSI Tray

PL11.2



ITEM	PART No.	DESCRIPTION	A.C.
1	802E28262	Cover Front	51C1
2	19E49791	Holder MSI	51C2
3		Tray MSI	51C3
4	50E17370	Tray END	51C4
5	809E7490	Spring COMP	51C5
6		Pin	51C6
7		Frame MSI (PL 11.3)	51C7

j0hn5b02



ITEM	PART No.	DESCRIPTION	A.C.
1	802E28301	Top Cover	51D1
2		Cover	51D2
3	120E21101	Actuator	51D3
4	130E81970	MSI No Paper Sensor	51D4
5		Wire Harness	15D5
6		Label	51D6
7	32E16993	Front Guide	51D7
8	32E17013	Rear Guide	51D8
9	50E17333	Base Tray	51D9
10	15K51992	Bottom Plate	51DB
11	22E86840	Roller	51DC
12		Front Rack	51DD
13		Rear Rack	51DE
14		Gear	51DF
15	130K62041	MSI Size Sensor	51DG
16		Plate	51DH
17		Link	51DJ
18		Spring	51DK
19	809E33420	Spring	51DL
20		Lower Base Tray (PL 11.4)	51DM

j0hn5b03

PL 11.4 Feed/Retard Roller



ITEM	PART No.	DESCRIPTION	A.C.
1	121K26211	MSI Feed Solenoid	5136
2	830E80792	Bracket	51E1
3	7E71421	Gear	51E2
4	7E71411	Gear	51E3
5	15E76121	Earth Plate	51E4
6	809E15351	Spring	51E5
7	22K62662	Feed Roller Assembly (Items 8-12)	51E6
8		Shaft	51E7
9	59K20570	ENV Feed Roller	51E8
10		Roller	51E9
11	59K20561	MSI Feed Roller	5132
12		Bearing	51EB
13		Bearing	51EC
14	8E93980	Cam	51ED
15	19K97804	Retard Assembly (Items 16-21)	51EE
16		Housing	51EF
17		Holder	51EG
18	59K11921	MSI Retard Roller	5233
19	5K6110	Friction Clutch	51EH
20		Shaft	51EJ
21	809E11091	Spring	51EK
22	7E71390	Gear	51EL
23		Frame	51EM
24	7E71400	Gear	51EN
25	6E74600	Shaft Gear	51EP



PL 12.1 Duplex



IT	ЕМ	PART No.	DESCRIPTION	A.C.
	1	892E47601	Label	52B1
	2	22K62935	Duplex Assembly(Items 3-25)	52AA
	3	1E59952	Chute	52B3
	4	130K62330	Duplex Path Sensor	52B4
	5	160K75913	Duplex PWB	5261
	6	162K69501	Wire Harness	52B5
	7	15K51351	Bracket	52B6
	8	59K20581	Upper Roller	52B7
	9	59K20592	Lower Roller	52B8
	10	13E88770	Bearing	52B9
	11	13E84800	Bearing	52BB
	12	20E35110	Pulley	52BC
	13	23E15680	Belt	52BD
	14	7E73070	Gear(Z45/17)	52BE
	15	7E54340	Gear(Z16)	52BF
	16	7E54350	Gear(Z15)	52BG
	17	59E93850	Pinch Roller	52BH
	18	6E76000	Shaft	52BJ
	19	809E20322	Spring	52BK
	20	127K24041	Duplex Motor	5251
	21	802E28362	Holder	52BL
	22	809E33430	Spring	52BM
	23	802E28352	Cover	52BN
	24	19K97623	Cover	52BP
	25	32E18020	Guide	52BQ

PL 13 Finisher

PL 13.1 Finisher Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1		Finisher Assembly (PL 13.2-PL 13.19)	62AA
2		Base Frame	62B1
3		Slide Frame	62B2
4	1E61740	Slide Rail	62B3
5		Front Stay Frame	62B4
6		Rear Stay Frame	62B5
7	802E31430	Front Stay Cover	62B6
8	802E31440	Rear Stay Cover	62B7
9	802E31460	Rail Cover	62B8
10	32E17660	Entrance Chute	62B9
11	32E17670	Lower Chute	62BB
12	3E56780	Side Latch	62BC
13	809E35100	Spring	62BD
14	3E56790	Latch Stopper	62BE
15	3E56770	Side Stopper	62BF
16	802E31280	Front Rail Cover (2)	62BG
17			62BH
18	32E17640	Link U Guide	62BJ
19	32E17650	Link L Guide	62BK
20	826E2270	Screw	62BL
21	15K55400	Fix Plate Assembly (Items 3,4,14,15)	62BM

PL 13.2 Front Side Switch/Sensor

PL13.2



ITEM	PART No.	DESCRIPTION	A.C.
1		Bracket	62C1
2	110E10980	Stapler Cover Switch	62C2
3	130E85360	Stapler Unit HP Sensor	62C3
4	19E52830	Bracket	62C4
5	11E12200	Actuator	62C5
6	130E85360	Top Cover Open Sensor	62C6
7	11E12190	Actuator	62C7
8	110E10970	Exit Unit Switch	62C8
9	962K4640	Switch Wire Harness	62C9
10	962K4550	TCS Wire Harness	62CB
11	962K4720	STH Wire Harness	62CC
12	962K4730	Earth Wire	62CD

j0hn5d02

PL 13.3 Stapler Assembly, Base Cover



ITEM	PART No.	DESCRIPTION	A.C.
1	1E61730	Front Frame	62E1
2	1E61720	Base Frame	62E2
3	19E50620	Staple Holder Cover	62E3
4	11E12040	Actuator	62E4
5	809E35090	Spring	62E5
6	11E12020	Lever	62E6
7	809E35010	Spring	62E7
8			
9	604K4690	Stapler Assembly (PL 13.4)	6202
10		Cam Assembly (PL 13.4)	6203
# PL 13.4 Stapler Motor



ITEM	PART No.	DESCRIPTION	A.C.
1	127E83070	Stapler Motor	62F1
2	962K4650	ST Wire Harness	62F2
3		Bracket	62F3
4	36E91400	Paper Weight (Front)	62F4
5		Holder	62F5
6		Slide Tray	62F6
7	802E31410	Staple Cover	62F7
8		Slide Foot	62F8
9	12E10270	Link	62F9
10	11E12070	Crank Lever	62FB
11		Bracket	62FC
12		Plate	62FD
13	130E85360	Docking Sensor	62FE
14	7E72440	Gear	62FF
15	7E72450	Cam	62FG
16	12K5530	Staple Crank Assembly (Items 10-15)	62FH

j0hn5d04

PL 13.5 Reverse/Feed Motor



ITEM	PART No.	DESCRIPTION	A.C.
1	127E83050	Reverse Motor	62G1
2		Bracket	62G2
3		Bearing	62G3
4	962K4710	AC Wire Harness	62G4
5	23E20250	Reverse Motor Belt	62G5
6	22E88020	Tension Pulley	62G6
7	19E50770	Bracket	62G7
8	809E35070	Spring	62G8
9	20E35370	Gear	62G9
10	20E35360	Gear	62GB
11	7E72470	Gear	62GC
12	127E83050	Feed Motor	62GD
13		Bracket	62GE
14	23E20260	Feed Motor Belt	62GF
15	20E35390	Idler Gear	62GG
16	20E35380	Gear	62GH
17		Bearing	62GJ

PL 13.6 Paddle Solenoid, Exit Roller Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1	121E88660	Exit Unit Up/Down Solenoid	62H1
2		Link	62H2
3	809E35170	Spring	62H3
4	7K87490	Gear Assembly	62H4
5	809E35150	Spring	62H5
6	7E72560	Cam	62H6
7	12E10300	Guide	62H7
8	7E72550	Gear	62H8
9	121E88650	Paddle Solenoid	62H9
10	809E35160	Spring	62HB
11	7E72540	Paddle Gear	62HC
12	19E50730	Holder	62HD
13		Bearing	62HE
14	16E93250	Bush	62HF
15		Bearing	62HG
16	22K63080	Exit Roller Assembly	62HH
17		Bearing	62HJ

j0hn5d06

PL 13.7 Transfer Motor, C Paper Guide



ITE	EM	PART No.	DESCRIPTION	A.C.
1	1	127E83040	Transfer Motor	6271
2	2	23E20240	Belt	62K1
3	3	22E88020	Tension Pulley	62K2
2	1	19E50770	Bracket	62K3
5	5	809E35070	Spring	62K4
6	6	20E35400	Pulley	62K5
7	7		Plate	62K6
8	3		Bearing	62K7
ç	9	38K86390	C Paper Guide	62K8
1	0	22K63090	Roller	6274
1	1	59K24180	Roller Belt Assembly	62K9
1	2	36E91410	Paper Weight (Center/Rear)	62KB
1	3	19E50760	Support	62KC
1	4	36E91440	Paper Weight (Front)	62KD
1	5	16E93230	Bearing	62KE
1	6	103E27510	Mylar	62KF
1	7	103E27520	Mylar	62KG





ITEM	PART No.	DESCRIPTION	A.C.
1	802K42860	Top Cover	62L1
2	32E17630	FT Paper Guide	62L2
3	130E85360	Timing Sensor	62L3
4	120K02540	Actuator Assembly	62L4
5	11K97090	Actuator Assembly	62L5
6		Mylar	62L6
7	809E35140	Spring	62L7
8	19E50710	Holder	62L8
9	22E88030	Pinch Roller	62L9
10	22E26300	Pinch Roller	62LB
11			62LC
12	962K4570	TMS Wire Harness	62LD
13		Top Cover Assembly (Items 1-12)	62LE
14	38K86380	FT Guide Assembly (Items 2-10)	62LF

5-72 03/02

PL 13.9 L/H	Upper	Cover
-------------	-------	-------



ITEM	PART No.	DESCRIPTION	A.C.
1	38K86360	L/H Upper Cover	62M1
2	3E56820	Handle	62M2
3	11E12010	L/H Lower Cover Guide	62M3
4	22E88000	Pinch Roller	62M4
5	809E35050	Spring	62M5
6	809E35040	Spring	62M6
7	32E17600	Vertical Paper Guide	62M7
8		Belt Stopper	62M8





ITEM	PART No.	DESCRIPTION	A.C.
1	32E17710	Exit Transport Base Guide	62N1
2	32E17730	Holder	62N2
3	6E75360	Shaft Paddle	62N3
4	12E10280	Stopper	62N4
5	12E10290	Stopper	62N5
6		Bearing	62N6
7	103E27530	Mylar	62N7
8	6E75420	Shaft	62N8
9		Lever	62N9
10	22E26290	Roller	62NB
11	42E91100	Brush	62NC
12	42E91110	Brush	62ND
13	15E77640	Plate Spring	62NE
14	809E35120	Spring	62NF
15	6E75430	Shaft	62NG
16	20E35430	Pulley	62NH
17		Belt	62NJ
18	13E20390	Bearing	62NK
19	15E77630	Plate Spring	62NL
20	809E35130	Spring	62NM
21	16E93240	Guide Pin	62NN
22	38K86370	TH Guide Assembly(Items 1-13,17,23)	62NP
23		Paddle	62NQ

PL 13.11 L/H Lower Cover



5-74	
03/02	

ITEM	PART No.	DESCRIPTION	A.C.
1	32E17590	L/H Lower Chute	62P1
2	802K42850	L/H Lower Cover	62P2
3	11E12010	L/H Lower Cover Guide	62P3
4	809E35000	Pinch Roller Spring	62P4
5	22E88000	Pinch Roller	62P5
6	809E35040	Spring	62P6
7	11E12050	Actuator	62P7
8	809E35020	Spring	62P8
9	19E50630	Sensor Holder	62P9
10	130E85360	Paper Path Cover Sensor	62PB
11	130E85360	Paper In Sensor	62PC
12	11E12000	In Sensor Actuator	62PD
13	809E35020	Spring	62PE
14	962K4560	PCS Wire Harness	62PF
15	29E31840	Guide Pin	92PG
16	19K98210	In Sensor Holder Assembly(Items 9-14)	62PH

PL 13.12 Compiler Motor



ITEM	PART No.	DESCRIPTION	A.C.
1	50E17610	Compiler Tray	62R1
2	127E83030	Compiler Motor	62R2
3		Bracket	62R3
4	130E85360	Paper Exit Sensor	62R4
5	130E85360	Tamper HP Sensor	62R5
6	802E31420	Rack	62R6
7	32E17720	Guide	62R7
8	11K97110	Actuator	62R8
9	809E35180	Spring	62R9
10	38K86400	Flap Guide	62RB
11			
12		Mylar	62RD
13	3E56810	Stopper	62RE
14		Shaft	62RF
15	16E93240	Pin	62RG
16	962K4580	AHPS Wire Harness	62RH
17	962K4660	A-MOT Wire Harness	62RJ
18	962K4680	Earth Wire	62RK
19	38K86400	F-Flap Guide Assembly (Items 10,12)	62RL

5-76 03/02

ITEM	PART No.	DESCRIPTION	Α.C.
1	38K86410	R/H Cover	62T1
2	121K28700	Lever Solenoid	62T2
3		Screw	62T3
4	130E85360	Stack Height Sensor	62T4
5	130E85360	Lever Sensor	62T5
6	11K97100	Lever	62T6
7		Stopper	62T7
8		Spring	62T8
9	962K4590	SVS Wire Harness	62T9



PL 13.14 Exit Roller Assembly



ITEM	PART No.	DESCRIPTION	A.C.
1	22K63050	Exit Roller Assembly	62V1
2	38K86420	Lower Paper Guide	62V2
3	32E17680	Separator Guide	62V3
4	809E35030	Spring	62V4
5	16E93220	Bush	62V5
6	22K63040	In-Roller Assembly	62V6
7	22K63060	Lower Transport Roller Assembly	62V7
8	22K63070	Upper Transport Roller Assembly	62V8
9	7E72460	Gear (One Way)	62V9
10		Bearing	62VB
11	19E50640	Holder	62VC
12		Bearing	62VD

5-78 03/02

PL 1	13.15	Upper	Paper	Guide
------	-------	-------	-------	-------



ITEM	PART No.	DESCRIPTION	A.C.
1	32E17580	Upper Paper Guide	62W1
2	11E12080	Side Tray Paper Weight	62W2
3	6E75370	Shaft	62W3
4	19E50570	Holder	62W4
5	809E35060	Spring	62W5
6	22E88030	Roller	62W6
7	12E10260	Link	62W7
8		Bearing	62W8
9		Bracket	62W9
10	16E93220	Bush	62WB
11	130E85360	Full Stack Sensor	62WC
12	11E12030	Actuator	62WD
13	130E85360	Reverse Sensor	62WE
14	115E7500	Eliminator	62WF
15	962K4610	RVS2 Wire Harness	62WG
16	962K4530	Tray 1 Cable	62WH
17	962K4600	RVS1 Wire Harness	62WJ
18	8E94090	Cam	62WK
19	809E35080	Spring	62WL
20	6E75380	Shaft	62WM
21		Bearing	62WN
22	22K65280	Rikan Roller Assembly (Items 3-6)	62WP
23	12K5540	Link Assembly (Items 7-9)	62WQ

# PL 13.16 Finisher LVPS





ITEM	PART No.	DESCRIPTION	A.C.
1	160K83600	Finisher LVPS	6234
2		Bracket	62Q1
3	962K4700	Power Cable	62Q2
4	160K83580	Finisher Control PWB	6261
5		Bracket	62Q3
6		PWB Support	62Q4
7		Cable Cover	62Q5
8	962K4670	MOT Wire Harness	62Q6
9	962K4690	I/F Wire Harness	62Q7

5-80 03/02



ITEM	PART No.	DESCRIPTION	A.C.
	802K42870	Front Cover(FX)	
1	802K42880	Front Cover(AP)	62X1
	802E31240	Front Cover(DMO-E/DMO-W/OSG)	
2	802K42890	Front Door Cover	62X2
3	160K83590	Pause Switch	62X3
4	3E56800	Button	62X4
5	802E31310	Switch Cover	62X5
6	962K4630	Pause 2 Wire Harness	62X6
7	802E31250	Rear Cover	62X7
8	802E31270	Rear Top Cover	62X8
9	962K4620	Pause 1 Wire Harness	62X9

# PL 13.18 Finisher Receiving Tray



ITEM	PART No.	DESCRIPTION	A.C.
1	50E17630	Finisher Receiving Tray	62Y1
2		Bush	62Y2
3	19E50600	Clip	62Y3
4	50E17640	Link U Guide	62Y4
5			62Y5
6		Holder	62Y6
7	127E83060	Tray Elevator Motor	62Y7
8	962K4540	Tray 2 Cable	62Y8
9	130E85360	Near Full Sensor	62Y9
10	130E85360	Upper Limit Sensor	62YB
11	802E31310	Front Cover	62YC
12		Rear Cover	62YD
13		Gear	62YE
14		Gear	62YF
15		Gear	62YG
16		Housing	62YH
17		Stopper	62YJ
18		Guide	62YK
19		Harness Cover	62YL
20		Gear Cover	62YM
21	604K4680	Finisher Receiving Tray Assembly (Items 1-20)	62YN

WorkCentre Pro 423/428

5-82 03/02

PL 13.19 Finisher Side Tray

PL13. 19

ITEM	PART No.	DESCRIPTION	A.C.
1	50E17620	Finisher Side Tray	62A1
2	50E17640	Link U Guide	62A2
3	802E31330	Guide	62A3



j0hn5d19

PL 14.1 Consumables and Special Tools

ITEM	PART No.	DESCRIPTION	A.C.
1	499T247	A3 Test Pattern	
2	499T281	A4 Fax Test Pattern	
3	70E90000	Lubricant	

# **No Illustration Provided**

# 5.3 Common Hardware

ITEM	PART NO.	DESCRIPTION
А	112W 27851	SCREW SEMS (M3X8)
В	112W 28251	SCREW SEMS (M3X12)
С	113W 20457	SCREW (M3X4)
D	113W 20557	SCREW (M3X5)
Е	113W 20657	SCREW (M3X6)
F	113W 20851	SCREW (M2.5X8)
G	113W 20857	SCREW (M3X8)
Н	113W 27651	SCREW (M3X6)
J	113W 35851	SCREW (M4X8)
K	113W 35857	SCREW (M4X8)
L	141W 35651	SETSCREW (M4X6)
М	153W 17655	TAPPING SCREW (M3X6)
Ν	153W 17855	TAPPING SCREW (M3X8)
Р	153W 18055	TAPPING SCREW (M3X10)
Q	153W 18255	TAPPING SCREW (M3X12)
R	153W 27850	TAPPING SCREW (M3X8)
S	158W 27655	SCREW (M3X6)
Т	158W 27663	SCREW (M3X6)
U	158W 27855	SCREW (M3X8)
V	158W 27863	SCREW (M3X8)
W	158W 28255	SCREW (M3X12)
Х	158W 35655	SCREW (M4X6)
Y	252W 27350	NYLON WASHER (6)
Z	252W 27450	NYLON WASHER (6)
AA	271W 28650	DOWEL PIN (3X16)
AB	285W 28751	SPRING PIN
AC	354W 15251	E-CLIP (2)

ITEM	PART NO.	DES
AD	354W 24251	E-CLIP (4)
AE	354W 24254	KL-CLIP (4)
AF	354W 27251	E-CLIP (6)
AG	354W 29251	E-CLIP (8)
AH	271W 16250	DOWEL PIN (2X12)
AJ	359W 31250	L-CLIP (10)
AK	158W 36255	SCREW (M4X12)
AL	354W 26251	E-CLIP (5)
AM	180W 16850	WING SCREW
AN	354W27254	KL-CLIP (6)
AP	113W 21057	SCREW (M3X10)
AQ	153W 27650	TAPPING SCREW (M3X6)
AR	252W29250	NYLON WASHER (8)

# CHAPTER 5 PARTS LIST 5.3 Common Hardware

CRIPTION	
	-
	-
	-
	-

WorkCentre Pro 423/428

# CHAPTER 6 GENERAL

Contents 6.1 Specifications	2
6.1.1 Product Name/Prod. Code/Model Code/Serial No	2
6.1.2 Machine Size/Weight/Space Requirement	2
6.1.3 Copy Features	5 5
6 1 4 Fax Features	
6.1.5 Direct FAX Specification/Functions	8
6.1.6 Printer feature	9
6.1.7 System feature – Memory	10
6.1.8 Electrical feature	10
6.1.9 Input area features	11
6.1.10 DADF Specification	12
6.1.11 Scanner specifications/functions	12
6.1.12 Output area feature	13
6.1.13 Stapler Finisher (Option) Specification	13
6.1.14 Environmental requirement	13
6.1.15 Optional specifications	
6.2 Tools and Service Consumables	14
6.2.1 Tools	14
6.2.2 Service Consumables	14
6.3 Consumables	14
6.4 Modification	15
6.4.1 Symbology	15
6.4.2 Modification List	15
6.5 Installation	17
6.6 Removal	24
6.7 Custom Presets	25
6.7.1 Custom Presets Chain-Function Code List	25
6.7.2 How to change Custom Presets in User mode	28
6.8 General Information	29
6.8.1 Forced polling of documents stored in memory	29
6.8.2 How to By-pass the IOT Password Protection	29
6.8.3 Location of Serial Number Plate	29
6.8.4 How to Read Emergency History	30
6.8.5 Copy features list	31
6.8.6 Fax features list	31

# 6.1 Specifications

# 6.1.1 Product Name/Prod. Code/Model Code/Serial No.

#### XE

Product Name	Prod. Code
WorkCentre Pro 423	LKN
WorkCentre Pro 423i	LKP
WorkCentre Pro 423Pi	LKU
WorkCentre Pro 428	LKR
WorkCentre Pro 428i	LKT
WorkCentre Pro 428Pi	LKV

#### DMO 110V

Product Name	Prod. Code
WorkCentre Pro 423	LNY
WorkCentre Pro 423i	LTL
WorkCentre Pro 423P	LTT
WorkCentre Pro 423Pi	LPC
WorkCentre Pro 423Si	LUC
WorkCentre Pro 428Pi	LPD
WorkCentre Pro 428i	LTM
WorkCentre Pro 428Si	LUD

#### DMO 220V

Product Name	Prod. Code
WorkCentre Pro 423	LTN
WorkCentre Pro 423i	LTP
WorkCentre Pro 423P	LTU
WorkCentre Pro 423Pi	LTW
WorkCentre Pro 423Si	LTV
WorkCentre Pro 428Pi	LTY
WorkCentre Pro 428i	LTR
WorkCentre Pro 428Si	LUE

# CHAPTER 6 GENERAL 6.1 Specifications

# 6.1.2 Machine Size/Weight/Space Requirement

#### a. Machine Size(Figure-1)

Product name	Width(mm)	Depth(mm)	Height(mm)
Platen model	755±5 <sup>*1</sup>	669±5	1039±25* <sup>2</sup>
DADF model	755±5 <sup>*3</sup>	669±5	1108±25* <sup>4</sup>
(with DADF, Dup, MSI, and OCT)			1125±25* <sup>5</sup>
With Side Tray Kit installed	845±5* <sup>3</sup>	669±5	1108±25* <sup>4</sup>
With Stapler/Finisher installed	1107±5	669±5	1234±25* <sup>3</sup>

\*1 Stabilizing (Fall Prevention) Foot included

\*2 Up to the top face of the Platen Document Cover

\*3 MSI Tray folded

\*4 Up to the top face of the DADF document cover

\*5 Up to the DADF Top Document Input Tray







j0hn6101

#### 1. DADF equipped model (Figure-2) (with DADF, Duplex, MSI, OCT)

b. Machine Weight		
Product name	Weight(kg)	Remarks
WorkCentre Pro 423/428	95.6 or less	IOT+IIT+2Tray Cabinet
WorkCentre Pro 423/428DD	106.9 or less	IOT+IIT+2Tray Cabinet+DADF+MSI+Duplex+OCT
WorkCentre Pro 423/428CF	105.6 or less	IOT+IIT+2Tray Cabinet+FaxKit
WorkCentre Pro 423/428CFDD	109.4 or less	IOT+IIT+2Tray Cabinet+ DADF+MSI+Duplex+OCT+FaxKit
WorkCentre Pro 423/428FS	108.7 or less	IOT+IIT+2Tray Cabinet+FaxKit+Printer
WorkCentre Pro 423/428FSDD	112.5 or less	IOT+IIT+2Tray Cabinet+DADF+MSI+Duplex+OCT+FaxKit+Printer
IOT DC	45.5 or less	
IIT + Platen	17.2 or less	
IIT + DADF	23.5 or less	
Option		
2Tray	34.2 or less	Fall Prevention Foot included
DADF	8.6 or less	I/F Cable included
Duplex	1.0 or less	
MSI	2.5 or less	
OCT	2.4 or less	
Finisher	16 or less	
Offset & Face Up Trav	1.0 or less	



(Figure-2) j0hn6102b

# c. Floor Space occupied (Minimum floor space)

Product name	Width (mm)* <sup>1</sup>	Depth (mm)
DC423/428	755	670
Model Equipped with Face-up Tray* <sup>2</sup>	930	670
Finisher equipped model* <sup>3</sup>	1396	1573

\*1 Stabilising (Fall Prevention) foot included

\*2 Side Tray and MSI extended

\*3 Finisher tray extended



# 2. Platen model (Figure-3)

# CHAPTER 6 GENERAL 6.1 Specifications

j0hn6102B



j**0hn6103**B



### 6.1.3 Copy Features

1. Warm up time

Within 30 sec (Requirements: Temperature: 20°C, Humidity: 60%, Standard rate input voltage)

- 2. First copy output time (FCOT) Within 4.5 sec (Requirements: Tray1, A4LEF)
- 3. Continuous copying speed at 100% magnification (Unit: sheet/min)

		Copy Paper feed tray					
and Iray		Mode	Tray 1		Tray 2 - Tra	ay 4	MSI
			Normal	Thick paper	Normal	Thick paper	
A4 LEF	ſ	Simplex	23/28	23/28	23/28	23/28	19/19
l		Duplex	22.5/22.5	-	22.5/22.5	-	-
8.5"x11" LEF		Simplex	23/28	23/28	23/28	23/28	19/19
L		Duplex	22.5/22.5	-	22.5/22.5	-	-
A4 SEF		Simplex	-	-	17/21.5 *1	14/14	14/14
8.5"x11" SEF		Duplex	-	-	14/14	-	-
B5 SEF		Simplex	-	-	17/21.5 *1	14/14	14/14
		Duplex	-	-	14/14	-	-
B4 SEF		Simplex	-	-	12/15.5	12/15.5	12/12
		Duplex	-	-	12/12	-	-
8.5"x13" SEF		Simplex	-	-	12/15.5	12/15.5	12/12
8.5"x14" SEF		Duplex	-	-	12/12	-	-
A3 SEF		Simplex	-	-	12/15.5	12/15.5	12/12
11"x17" SEF		Duplex	-	-	11/11	-	-
8-kai							
B5 LEF		Simplex	23/28	18/22	23/28	18/22	19/19
		Duplex	22.5/22.5	-	22.5/22.5	-	-
A5 LEF	ſ	Simplex	23/28	18/22	-	-	19/19
l		Duplex	22.5/22.5	-	-	-	-
Postal card LEF		Simplex	-	18/22	-	-	19/19
		Duplex	-	-	-	-	-
Envelope (Long 3)		Simplex	-	18/22	-	-	19/19
		Duplex	-	-	-	-	-

How to use the Copy feature Table

- a) For any paper feed entry:
  - The upper row shows values for Simplex operation
  - The lower row shows values for Duplex operation
- b) For any Tray column:
  - The left hand-figures are the values for WCP 423.
  - The right-hand figures are values for the WCP 428.

#### 4. Magnification

- (1) Preset magnification (6 types)
- 70%, 81%, 86%, 115%, 122%, 141% (can be adjusted by changing system data)
- (2) Variable magnification
  - 25 to 400%(1% increment)
- (3) Magnification error margin (on system operation)

MagnificationPlatenDADFIOTIITDADF+IIT(%)(system)(system)IITDADF+IIT*70.7Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ *81.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ *86.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 100Within $\pm 0.8\%$ Within $\pm 1.2\%$ Within $\pm 0.6\%$ Within $\pm 0.5\%$ Within $\pm 1.0\%$ *141.4Within $\pm 1.8\%$ Within $\pm 2.5\%$ -Within $\pm 1.7\%$ Within $\pm 2.4\%$ 25 to 70Within $\pm 1.7\%$ Within $\pm 2.1\%$ -Within $\pm 1.6\%$ Within $\pm 2.0\%$ 71 to 99Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 101 to 122Within $\pm 1.6\%$ Within $\pm 2.0\%$ -Within $\pm 1.5\%$ Within $\pm 1.9\%$						
(%)(system)(system)*70.7Within $\pm 1.3\%$ Within $\pm 1.7\%$ Within $\pm 1.1\%$ Within $\pm 1.6\%$ *81.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ Within $\pm 1.1\%$ Within $\pm 1.6\%$ *86.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ Within $\pm 1.1\%$ Within $\pm 1.6\%$ 100Within $\pm 0.8\%$ Within $\pm 1.2\%$ Within $\pm 0.6\%$ Within $\pm 0.5\%$ Within $\pm 1.0\%$ *141.4Within $\pm 1.8\%$ Within $\pm 2.5\%$ Within $\pm 1.7\%$ Within $\pm 2.4\%$ 25 to 70Within $\pm 1.7\%$ Within $\pm 2.1\%$ Within $\pm 1.6\%$ Within $\pm 2.0\%$ 71 to 99Within $\pm 1.3\%$ Within $\pm 1.7\%$ Within $\pm 1.1\%$ Within $\pm 1.6\%$ 101 to 122Within $\pm 1.6\%$ Within $\pm 2.0\%$ Within $\pm 1.5\%$ Within $\pm 1.9\%$	Magnification	Platen	DADF	IOT	ΙΙТ	DADF+IIT
*70.7Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ *81.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ *86.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 100Within $\pm 0.8\%$ Within $\pm 1.2\%$ Within $\pm 0.6\%$ Within $\pm 0.5\%$ Within $\pm 1.0\%$ *141.4Within $\pm 1.8\%$ Within $\pm 2.5\%$ -Within $\pm 1.7\%$ Within $\pm 2.4\%$ 25 to 70Within $\pm 1.7\%$ Within $\pm 2.1\%$ -Within $\pm 1.6\%$ Within $\pm 2.0\%$ 71 to 99Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 101 to 122Within $\pm 1.6\%$ Within $\pm 2.0\%$ -Within $\pm 1.5\%$ Within $\pm 1.9\%$	(%)	(system)	(system)			
*81.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ *86.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 100Within $\pm 0.8\%$ Within $\pm 1.2\%$ Within $\pm 0.6\%$ Within $\pm 0.5\%$ Within $\pm 1.0\%$ *141.4Within $\pm 1.8\%$ Within $\pm 2.5\%$ -Within $\pm 1.7\%$ Within $\pm 2.4\%$ 25 to 70Within $\pm 1.7\%$ Within $\pm 2.1\%$ -Within $\pm 1.6\%$ Within $\pm 2.0\%$ 71 to 99Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 101 to 122Within $\pm 1.6\%$ Within $\pm 2.0\%$ -Within $\pm 1.5\%$ Within $\pm 1.9\%$	*70.7	Within ±1.3%	Within ±1.7%	-	Within ±1.1%	Within ±1.6%
*86.6Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 100Within $\pm 0.8\%$ Within $\pm 1.2\%$ Within $\pm 0.6\%$ Within $\pm 0.5\%$ Within $\pm 1.0\%$ *141.4Within $\pm 1.8\%$ Within $\pm 2.5\%$ -Within $\pm 1.7\%$ Within $\pm 2.4\%$ 25 to 70Within $\pm 1.7\%$ Within $\pm 2.1\%$ -Within $\pm 1.6\%$ Within $\pm 2.0\%$ 71 to 99Within $\pm 1.3\%$ Within $\pm 1.7\%$ -Within $\pm 1.1\%$ Within $\pm 1.6\%$ 101 to 122Within $\pm 1.6\%$ Within $\pm 2.0\%$ -Within $\pm 1.5\%$ Within $\pm 1.9\%$	*81.6	Within ±1.3%	Within ±1.7%	-	Within ±1.1%	Within ±1.6%
100         Within ±0.8%         Within ±1.2%         Within ±0.6%         Within ±0.5%         Within ±1.0%           *141.4         Within ±1.8%         Within ±2.5%         -         Within ±1.7%         Within ±2.4%           25 to 70         Within ±1.7%         Within ±2.1%         -         Within ±1.6%         Within ±2.0%           71 to 99         Within ±1.3%         Within ±1.7%         -         Within ±1.1%         Within ±1.6%           101 to 122         Within ±1.6%         Within ±2.0%         -         Within ±1.5%         Within ±1.9%	*86.6	Within ±1.3%	Within ±1.7%	-	Within ±1.1%	Within ±1.6%
*141.4         Within ±1.8%         Within ±2.5%         -         Within ±1.7%         Within ±2.4%           25 to 70         Within ±1.7%         Within ±2.1%         -         Within ±1.6%         Within ±2.0%           71 to 99         Within ±1.3%         Within ±1.7%         -         Within ±1.1%         Within ±1.6%           101 to 122         Within ±1.6%         Within ±2.0%         -         Within ±1.5%         Within ±1.9%	100	Within ±0.8%	Within ±1.2%	Within ±0.6%	Within ±0.5%	Within ±1.0%
25 to 70         Within ±1.7%         Within ±2.1%         -         Within ±1.6%         Within ±2.0%           71 to 99         Within ±1.3%         Within ±1.7%         -         Within ±1.1%         Within ±1.6%           101 to 122         Within ±1.6%         Within ±2.0%         -         Within ±1.5%         Within ±1.9%	*141.4	Within ±1.8%	Within ±2.5%	-	Within ±1.7%	Within ±2.4%
71 to 99         Within ±1.3%         Within ±1.7%         -         Within ±1.1%         Within ±1.6%           101 to 122         Within ±1.6%         Within ±2.0%         -         Within ±1.5%         Within ±1.9%	25 to 70	Within ±1.7%	Within ±2.1%	-	Within ±1.6%	Within ±2.0%
101 to 122 Within ±1.6% Within ±2.0% - Within ±1.5% Within ±1.9%	71 to 99	Within ±1.3%	Within ±1.7%	-	Within ±1.1%	Within ±1.6%
	101 to 122	Within ±1.6%	Within ±2.0%	-	Within ±1.5%	Within ±1.9%
123 to 150 Within ±1.8% Within ±2.5% - Within ±1.8% Within ±2.4%	123 to 150	Within ±1.8%	Within ±2.5%	-	Within ±1.8%	Within ±2.4%
151 to 400 Within ±3.4% Within ±7.5% - Within ±3.3% Within ±7.4%	151 to 400	Within ±3.4%	Within ±7.5%	-	Within ±3.3%	Within ±7.4%

At 100% magnification, an error can be adjusted to less than 0.1% in the fast scan line direction or less than 0.2% in the slow scan line direction. (For DADF, when docked with IIT) \* Actual set value when the preset (fixed) magnification is set.

(4) Magnification switchover Within 0.3 sec.

#### 5. Density adjustment

- (1) Manual density adjustment: 5 levels
- (2) Auto density adjustment AE Disabled at Text/Photo and Photo modes

\*1 For DC28, copy speed is lowered to 17sheet/min from the 21<sup>st</sup> sheet.

#### 6. Copy quality adjustment

(1) Text mode (2) Photo mode (3) Text/Photo mode

#### 7. Copy alignment (system) (Unit: mm)

Item	PLATEN	PLATEN	PLATEN	DADF	DADF
	1 to 4Tray	Duplex	MSI	1 to 4Tray	Duplex
Lead edge	±1.60	±2.00	±2.20 *1	±2.20	±3.00
registration				±3.00 * <sup>2</sup>	±4.10 * <sup>2</sup>
Side edge	±2.10	±2.50	±3.00 *1	±2.90	±3.20
registration					
Lead skew	±1.60	±2.10	±2.00 *1	±2.30	±2.70
(against 200mm)					
Side skew	±3.20	±4.20	±4.00	±4.60	±5.40
(against 400mm)					
Right angle rate	±2.00	±2.80	-	±3.40	±4.00
(against 400mm)					
Linearity	±0.80	-	-	±1.00	-
(against 400mm)					

Document: STP4301 \*1: At 100% mag. ratio\* 2: 300 to 400% enlarge

#### 8. Copy alignment (DADF only/ DADF+IIT) (Unit: mm)

Item	Attly to	DADF only	DADF+IIT	IIT
Lead edge registration	Lead edge	±1.5mm	±1.6mm	±0.50mm
		±2.2mm* <sup>1</sup>	±2.3mm* <sup>2</sup>	
Side edge registration	Side edge	±2.1mm	±2.2mm	±0.50mm
Lead skew	200mm	±1.6mm	±1.7mm	±0.50mm
Side skew	400mm	±3.2mm	±3.4mm	±0.90mm
Right angle rate	400mm	±2.6mm	±2.8mm	±1.35mm
Linearity (Fast scan)	400mm	±0.8mm	±0.8mm	±0.30mm
Linearity (Slow scan)	400mm	±0.8mm	±0.8mm	±0.30mm

\*1: 300 to 400%: ±2.2mm or less \*2: 300 to 400%: ±2.3mm or less

#### 9. Image loss

100% mag./Red. Within 4	0mm * Within 4.0mm * Within 4.0mm	*
Enlarged Within 6	0mm Within 4.0mm Within 4.0mm	

\*: C/E adjustable

Image loss for paper fed from Manual Tray should be within 5mm to prevent the lead edge stain on thick paper.

#### **10.** Applicable sizes of copy paper (Detectable sizes) are:

- Tray 1: A5LEF, B5LEF, A4LEF, 8.5"×11", Postal card, Envelope (Long, 3)
- Tray 2 to 4: B5, A4, B4, A3, 8.5"x11", 11"x17", 8.5"x13", 8.5"x14"

Ref. Applicable size to APS: A5LEF, B5, A4, B4, A3

# CHAPTER 6 GENERAL 6.1 Specifications

ostal card, Envelope (Long, 3) 7", 8.5"x13", 8.5"x14"

### 6.1.4 Fax Features

#### 1. Applicable lines

	HANA CF	HANA CF	HANA-AP	HANA-AP CF
		+ISDN (option)	CF	+ISDN (option)
Public telephone line	У	У	У	У
network (PSTN)				
PBX	У	У	-	-
Fax communication	У	У	-	-
network (PSTN)				
Fax communication	-	У	-	-
network (ISDN)				
L line (3.4kHz/2-wire type)	у	У	-	-
ISDN network 56k/64k	-	У		у

#### 2. Compatibility (G3)

Remote		Re	solution		Comm.	Compression
terminal	Standard	Fine res.	Super-fine	Super-fine	mode	method
			(400dpi)	(600dpi)		
HANA CF	8x3.85	8x7.7	400x400	600x600	SG3/G4	JBIG
Louise CF	8x3.85	8x7.7	400x400	400x400	SG3/G4	MMR
MASHU2 CF	8x3.85	8x7.7	400x400	400x400	SG3/G4	MMR
Mashu CF	8x3.85	8x7.7	400x400	400x400	ECM/G4	MMR
Able3200G	8x3.85	8x7.7	400x400	400x400	ECM/G4	MMR
Able300G	8x3.85	8x7.7	400x400	400x400	ECM/G4	MMR
Able3010	8x3.85	8x7.7	400x400	400x400	ECM/G4	MMR
7033	8x3.85	8x7.7	300x300	300x300	ECM	MMR
7036C	8x3.85	8x7.7	12x11.55	12x11.55	ECM	MMR
7017	8x3.85	8x7.7	8x15.4	8x15.4	ECM	MMR
7021C	8x3.85	8x7.7	8x7.7	8x7.7	ECM	MR
7036/37/38	8x3.85	8x7.7	12x11.55	12x11.55	G3	MR
7008	8x3.85	8x7.7	8x15.4	8x15.4	G3	МН
Non-FX M/Cs	1) 8x3.85	1) 8x7.7	1) 400x400	1) 600x600	1) SG3	1) JBIG
(Selected	2) 200x100	2) 200x200	2) 16x15.4	2) 400x400	2) ECM	2) MMR
of priority			3) 300x300	3) 16x15.4	3) G3	3) MR
indicated			4) 8x15.4	4) 300x300	4) G4	4) MH
on the				5) 8x15.4		
capability)						

#### 3. Communication mode

- 0. FX Unique G4
- 1. ITU-T G4
- 2. FX Unique SG3(super G3)
- 3. FX Unique ECM
- 4. FX Unique G3
- 5. ITU-T SG3
- 6. ITU-ECM
- 7. ITU-G3

Ref. Priority is as numbered above.

- 4. Picture sizes communicated A3W(SEF), B4W(SEF), A4W(SEF) B5 SEF is transmitted as A4 SEF. When the machine detects A4 for A5 SE, B4 for B5 SE, or A3 for A4 SE in slow scan direction, paper sizes of A5LEF, B5LEF or A4LEF will be selected respectively.
- 5. Compression method MH/MR/MMR/JBIG
- 6. Communication control ITU-T recommendation, T.30 procedure is used for fax communication for documents.
- 7. Non-Standard feature Non-Standard Feature (NSF), Non-Standard Feature Control (NSC), and Non-Standard Feature Setup (NSS) are available.
- 8. Transmission speed
  - G4 (Optional): Up to 64kbps
  - G3:
- 9. Transmission time
  - 1) Minimum transmission time 0ms/1, 5ms/1, 10ms/1, 20ms/1, 40ms/1
  - 2) Transmission time for picture data G3 transmission time (TP) for picture data is as shown below. (with the standard density. Resolution is normally not changed during send operations.)

33.6K, 31.2K, 28.8K, 26.4K, 24.0K, 21.6K, 19.2K, 16.8K, 14.4K, 12.0K, 9600, 7200, 4800, 2400bps (At G3 comm, auto fallback is available.)

Note	when	Fax a	nd Prir	nter fu	Inctions	installed	at
Speci	ficatio	ns					

Item		Specifications
Send doc. size	A3, B4, A4, B5(LE	F), A5(LEF)
Transmission speed	G3: 33.6/3 <sup>2</sup>	1.2/28.8/26.4/24.0
	14.4/12	2.0/9.6/7.2/4.8/2.4
	G4(option): 64kbp	os max
Transmission Time	2 sec*1	
Resolution	Standard:	200x100dpi
	Fine resolution:	200x200dpi
	Super fine:	400x400dpi, 6
Applicable line	Public switched Te	elephone network
	Net	
	64 (G3/G4 * <sup>2</sup> )	
Band Compression	MH, MR, MMR, JE	BIG
method		
Client	PC98, DOS/V	
OS	Windows 95/98/M	e, Windows NT 4
	Note: For Window	s XP, we will infor

\*1 When being equipped with ISDN Kit in optional accessories \*2 When an A4 document of about 700 characters is sent in the standard image quality mode (8x3.85 lines /mm (28.8 kbps or more: JBIG) Functions

ltem	
Fax number	<ul> <li>Full dial:100 digits max</li> <li>F Code, P Code (each m</li> <li>Speed Dial (Number that</li> <li>Available signs (apart from "-" Pause (not available "S" Specify Password "&lt;", "&gt;" Specify Password "&lt;", "&gt;" Specify Password "&lt;", "&gt;" Specify Password "&lt;", "&gt;" Specify Port "F" Specify F Code "P" Specify Password for ":" Send push tones</li> </ul>
Speed Dialling	Input speed dial numbe WCP423/428
Broadcast Transmission	Max: 50 stations
Confidential Transmission	Choose a destination's confi
Delayed send	Program to send a documer

Chart	Mode		Transmiss	ion time (Tp)	
		9600BPS	14.4KBPS	28.8KBPS	33.6KBPS
Image electronic	Super fine	Within	Within	Within	Within
assoc. NO.4	(600dpi)	70 sec.	<b>48</b> sec.	25 sec.	23 sec.
Image electronic	Super fine	Within	Within	Within	Within
assoc. NO.4	(400dpi)	48 sec.	33 sec.	18 sec.	15 sec.*
Image electronic	Fine	Within	Within	Within	Within
assoc. NO.4	resolution	25 sec.	17 sec.	10 sec.	9 sec.*
Image electronic	Standard	Within	Within	Within	Within
assoc. NO.4		18 sec.	13 sec.	8 sec.	7 sec.*
ITU-T(old	Super fine	Within	Within	Within	Within
CCITT)NO.1	(600dpi)	40 sec.	27 sec.	15 sec.	13 sec.
ITU-T(old	Super fine	Within	Within	Within	Within
CCITT)NO.1	(400dpi)	26 sec.	18 sec.	10 sec.	9 sec.*
ITU-T(old CCITT)	Fine	Within	Within	Within	Within
NO.1	resolution	13 sec.	10 sec.	6 sec.	5 sec.*
ITU-T(old CCITT)	Standard	Within	Within	Within	Within
NO.1		9 sec.	7 sec.	4 sec.	4 sec.*
FX English	Standard	Within	Within	< 3 sec.	< 3 sec.
		8 sec.	6 sec.		
FX Japanese	Standard	Within	Within	Within	Within
		9 sec.	7 sec.	4 sec.	3 sec.*
Image electronic	Standard	Within	Within	Within	Within
assoc. NO.1	(Halftone)	50 sec.	20 sec.	10 sec.	10 sec.*

Conditions: ECM (No DATA ERROR), JBIG, On Platen input

\* Reference value

10. Protocol control time (Unit: sec.)

- When no data errors occur, Protocol Control Time per phase is as shown in the table below.
- Definition of individual control time:

Tm: Between the line closure and the time the first message training arrives.

Tn: Between the end of the previous message and the arrival of the next message training.

Tu: Between the end of the final message and the clearing of the line.

#### V.17, V29, V27ter

Mode	Before	During	After message:	Total
	message: Tm	message: Tn	Tu	
Protocol	13.9 to 16.4	3.2	4.4	21.5 to 24.0

#### V.34/V.8

Mode Before		During	After message:	Total
	message: Tm	message: Tn	Tu	
Standard Proto	8.7 to 9.9	1.0	0.9	10.6 to 11.8

# **CHAPTER 6 GENERAL** 6.1 Specifications

#### the same time

- 0/21.6/19.2/16.8/
- 4kbps
- 600x600dpi
- (PSTN), PBX, INS

.0, Windows 2000 rm in the near future

#### Description

ax: 20 digits) is programmed in WCP main unit) m numbers 0-9) are as follows: in ISDN)

for F Code

er that is programmed in the

dential box No. and the password

nt at specified time

ltem	Description	
Command to relay	Choose destinations by using the group designations, or	
broadcast sending	memory dial, which is programmed in the broadcast station.	
Sender's	• Max: 50 users can be registered. Registration deletion can	
Information	be done by "Fax sending tab"	
	Sender's name 14 characters (28 byte)	
	Sender's department, address 20 characters (40 byte)	
	Sender's telephone No. 15 characters (30 byte)	
	Sender's fax No. 15 characters (30 byte)	
	• When transmission sheet is chosen, sender's information	
	that is registered on the above will be reflected to the	
	transmission sheet.	
Sender record	Possible to set to print sender record whether it is programmed	
	in WCP423/428 or not.	
Transmission	• Possible to input a destination's name, a title, a comment,	
Sheet	No. of pages and an attention	
	• Possible to select whether the same transmission sheet or	
	individual transmission sheet is attached to each broadcast	
Magnification	<ul> <li>Zoom (Variable R/E): 50 to 400% (1% increment)</li> </ul>	
	Auto R/E	
Other functions	2/4/8-up, Form overlay etc	
SW alliance	CenterWare: Document Monitor	
Report	Non-transmission report, Broadcast report, Relay broadcast report	
Extension/Outside	Available when the extension/outside line changeover kit is	
line port	installed	
List of address	• Able to program a list of addresses on a PC. Possible to	
	connect with other PC because of a separate file.	
	Max: 9999 cases can be input	
	<ul> <li>Writing/reading to CSV file is possible</li> </ul>	
	It allows the import of the speed dial number, programmed into	
	the WCP423/428 main unit, into a list of addresses via EP-	
	TRESS, or to store registration data in list of address into CSV	
Mail notification	Notify the result of registered addresses by mail	

# 6.1.6 Printer feature

ltem	C
Printing method	Laser Xerography
Warm-up time	within 48sec (full configuration, fac
Printing speed	DC235:23ppm(A4LEF), 12ppm(B
(supplied from	DC285:28ppm(A4LEF), 15.5ppm(
standard tray)	
Resolution	23.6dot/mm (600dpi)
Smoothing function	(equivalent to 2400dpi)
Paper size	Tray1: A5 LEF, B5 LEF, A4 LEF
	(Long type3 LEF)
	Tray2-4: B5, A4, B4, A3, Letter, Le
	MSI: Max.11"x17", Min. Postcard (
Paper supply (using	Tray3/Tray4 (option), MSI(M-DD s
80gsm paper)	1,500sheets(500x3)/2,000sheets(5
	(MSI:standard)
Max. paper supply	2,100sheets
(using FXA 80gsm	
paper)	
Paper output	Standard: 500sheets
	Option: Side tray: 200sheets
Duplay printing	. Staple Finisher. 500sheets
Capacity of momony	(option) Standard: 22MP (Lingradable up t/
Capacity of memory	Option: additional SDRAM module
Fonts	
PCL6	81 Roman Outline Fonts
PostScript Fonts	136 Roman Fonts
(option)	
PDL	Standard : PCL6
	Option: PostScript3
Emulation	TIFF image Print
Interface	Standard: Ethernet (100Base
	(IEEE1284), USB* <sup>1</sup>
	Option: TokenRinG* <sup>2</sup>
Protocol	Centro: Compatible, Nibble, ECP
	Ethernet: TCP/IP, NetWare, Ether
OS	Windows95/98/Me, Windows 200
	PostScript)

\*1 Only for Windows2000

\*2 Ethernet doesn't operate when connected to Tol

	Contents
CHAPTER 6	GENERAL

Description
ctory default 20°C)
34). 11ppm(A3)
n(B4), 15.5ppm(A3)
F, Letter LEF, Postcard LEF, Envelope
egal (13"-14")-11"x17"
(B6  only  I EF)
standard)
(500x4)(option),100sheets
s+200sheets
to 96MB)
e (64MB)
e-TX/10Base-T). Two-way Parallel
,,,
Talk, SMB, DHCP, IPP, HTTP
00, Windows NT4.0, MacOS (only for

03/02 6-10

#### 6.1.7 System feature – Memory

#### **1. Memory for Fax**

This machine has a standard memory of 2MB embedded. Additional 8MB memory and 1GB HDD (10MB memory is necessary) are optionally available. These are used to accumulate image information at transmission and reception.

2M memory (standard)					
Memory capacity	Corresponding number of sheets storable for				
	Send/receive operations (Using PLATEN and SEF)				
	Standard Fine res. Super fine Super fine				
			(400dpi)	(600dpi)	
2Mbyte (MMR)	101	66	37	23	
2Mbyte (JBIG)	129	84	45	29	

8M memory (FXAP Standard)						
Memory capacity	Send/receive operations (Using PLATEN and SEF)					
	Standard Fine res. Super fine Super fine					
			(400dpi)	(600dpi)		
10Mbyte (MMR)	590	369	210	131		
10Mbyte (JBIG)	756	473	259	165		

1GB HHD(OPTION)	
Memory capacity	Send/receive operations
(MMR)	960 documents max/960 pages max
	Or until memory becomes full
(JBIG)	Same as above

Ref. On Send/receive operations

ITU-T No.1 Chart is used as the document. The figure indicates the number of sheets storable before being switched to Immediate Send/Receive operation. (Actually, over the indicated number can be sent/received by the Immediate Send/Receive operations.) (threshold: 20%)

#### 2. Memory for Copy

With the optional electronic sort kit (1GB HDD) added Number of sheets sortable: 100 (A4)

#### 6.1.8 Electrical feature

1. Operational power supply Single phase 2 wire line

Input voltage	Current capacity	Frequency
100VAC10%	15A	50/60Hz±2%
110VAC±10%(TFX)	13A	60Hz±2%
220-240VAC±10%(FXA)	7A	50/60Hz±2%

#### 2. Power cord

To be plugged into the main processor and prepared by each Opco (exceptTFX).

- 3. Leakage breaker
  - Leakage breaking current: 10A or below
  - Leakage breaking response time: within 100msec
- 4. Billing Counter
- Electronic billing counter is embedded.
- Individual counter is equipped in each mode.
  - 1) Copy counter
  - 2) Fax counter
- 3) Printer counter
- 5. Count up is made as follows:
  - Simplex copy:
    - 1) Outputting onto the Face Down Tray When the trail edge passes through the Fuser Exit Sensor
    - 2) Outputting onto the Face Up Tray When the trail edge passes through the Fuser Exit Sensor
    - 3) Outputting onto the Finisher When the trail edge passes through the Fuser Exit Sensor
  - Duplex copy:
  - The second side is in the same way as Simplex copy. • Number of Count up

Simplex copy:	1
Duplex copy:	the first side a
Test Print (Simplex):	1
Transparency interleaf:	0 for blank

# **CHAPTER 6 GENERAL** 6.1 Specifications

When the first side trail edge passes through the Fuser Exit Sensor

and second side, each 1

#### 6. Power consumption (FX measurement) Power and Energy Star for each mode

Power and Energy Star for each mode					
Mode	WCP423/428	WCP 423P	WCP 423Si		
	WCP 423i/428i	WCP 423Pi	WCP 428Si		
		WCP 428P			
		WCP 428Pi			
Sleep mode	2.2W/4.6W	2.4W/4.7W	9.3W/10.0W		
(Off mode)					
Low Power mode	74W/75W	90W/88W	95W/100W		
Copying	1500W or less				

#### 7. Battery backup

- The Vanadium battery accumulator retains memory contents such as system • data/user data. (Guarantees 200 hours storage under the room temperature of 22 deg. C, by 72 hour charging)
- Also, the battery retains the contents of stored picture data. (Guarantees 3 hours ٠ storage under room temperature of 22 deg. C, by 158 hour charging)

#### 6.1.9 Input area features

- 1. Scanning method
  - 1) Fast scan direction: CCD solid scanning with reduced optic method.
  - 2) Slow scan direction: Moving Full/Half Rate Carriage
    - Face-up/Top-feed document moving (DADF)
- 2. Input parameter
  - 1) Pixel density in fast scan direction 7296pels/308.86mm±1%(600ppi)
  - 2) The density in slow scan direction 600pels/25.4mm(600ppi)
    - \* When DADF is used, densities below 50% can be reduced to the setup rate by electrically composing/decomposing between the adjoining pixels.
  - 3) Scanning speed
    - Fast scan direction: 264.5µs/line (regardless of magnification)
    - Slow scan direction: magnification 130.0mm/sec
- 3. Document
- 1) Document size
  - Platen
    - Maximum: A3 (297x420mm), 11"x17"
  - DADF
  - Maximum: A3 (297x432mm), 11"x17"
- 2) Registration
  - Registration position for Document on the Platen is at the left inside corner.
  - Registration position for Document on the DADF is at the inside (inboard).
- 4. Document size sensing
  - 1) At Platen mode
    - The document size (width) in the fast scan direction is scanned by the CCD Size Detect Sensor.
    - The sensors scans the document immediately before/after closing the IIT Platen Cover.

If the Start button is pressed with the Platen Cover open, the document will be scanned immediately after the button is pressed. However, when the document loaded has black edges, improper sensing or no sensing may result.

: reduce/enlarge Xmm/sec where X=130x100+Red/Enl. Rate (%)

Minimum: Unrestricted

Minimum: A5 (100x148mm)

Sensor while the size (length) in the slow scan direction is scanned by the IIT

Document size	Fast scan direction (mm)	Slow scan direction (Size Detect Sensor)
No document	0 to 50	OFF
A5 SEF	144 to 153	OFF
B5 SEF	178 to 187	OFF
A5 LEF	206 to 215	OFF
A4 SEF	206 to 215	ON
B5 LEF	253 to 262	OFF
B4 SEF	253 to 262	ON
A4 LEF	293 to 302	OFF
A3 SEF	293 to 302	ON

Note Inapplicable sizes may be sensed as the standard size depending on the environment or image status.

#### 2) DADF mode

Determined by the combination of scanning by the DADF Size Sensor (for document width) and the DADF Pick Up Sensor (for length) in the DADF.

Document	Size SNR	Size SNR	Size SNR	Pick Up Sensor
size	A4	B4	A3	Signal level
A3 SEF	ON	ON	ON	Lo (detected)
A4 LEF	ON	ON	ON	Hi (not detected)
B4 SEF	ON	ON	OFF	Lo
B5 LEF	ON	ON	OFF	Hi
A3 SEF	ON	ON	ON	Lo
A4 SEF	ON	OFF	OFF	Lo
A5 LEF	ON	OFF	OFF	Hi
B5 SEF	OFF	OFF	OFF	Lo

#### 6.1.10 DADF Specification

Item	Description		
Original feeding method	Stack and automatic paper supply		
Warm-up time	within 48sec (full configuration, factory default 20°C)		
Original sizes	A5LEF, B5SEF/LEF, A4SEF/LEF, B4, A3,		
	11"x17", 8.5"x13", 8.5"x14", 8.5"x11"SEF/LEF, 5.5"x8.5"		
G.S.M	1-sided: 35-120 g/m <sup>2</sup>		
	2-sided: 50-120 g/m <sup>2</sup>		
Capacity of storing	Thin paper 35-50m <sup>2</sup> : 50sheets		
documents	Standard (Plain) paper 50-100m <sup>2</sup> : 50sheets		
	Thick paper 100-120m <sup>2</sup> : 45sheets		
Scanning speed	<1-sided> A4(LEF): 30.2sheets/min, A4(SEF): 22.3sheets/min,		
	B4: 18.5sheets/min, A3:16.0sheets/min		

	<2-sided> A4(LEF): 8.5she
	B4: 5.9sheets/min, A3: 5.3s
	*2-sided->1-sided mode / 2-
Outputting speed	Size for size: 130mm/sec F
Weight	8.0kg
Dimensions(mm)	555(W)x510(D)x102(H)mm
not guaranteed	Heat-sensitive paper, Coat
	Rough surface documents I
	Folded in two or Z folde
	Irregular size documents, T
	Document that are pasted to
Not allowed	- Paper-clipped or stapled d
	- Documents are pasted tog
	- Folded, torn, wrinkled or c
	- Thin documents less than
Others	- Long-sized document (whe
	- Passage stamp kit(option)
	Outputting speed Weight Dimensions(mm) not guaranteed Not allowed Others

## 6.1.11 Scanner specifications/functions

Note with Fax/Printer/Network functions

Specifications	
Item	Description
Scanning sizes	A3, B4, A4, B5LEF, A5L
Scanning system	Fixed using CCD image
Interface	TWAIN Ver.1.6 (32/16bit)
Data compression	MH, MR, MMR (does no
Resolution	600dpi, 400dpi, 300dpi, 2
Half tones	256 tones
Scanning speed	49 sheets/min (A4LEF:20
Client	PC98, DOS/V
OS	Windows95/98/Me, Wind
	(for XP, we'll be inform of
Protocol	TCP/IP
Scanning mode	Text, Text/Photo, Halfton
Duplex	Possible by a duplex unit
Density	1-5steps
Enlarge/Reduce	50-400%(each1%):
Viewer of a confidential box	Scanning, Display, Del
	renewal data
Spec. of other machines	Enable by selecting IP a

# CHAPTER 6 GENERAL 6.1 Specifications

eets/min, A4(SEF): 6.8sheets/min, sheets/min 2-sided ->2-sided mode(Sorting mode) R/E: X=130x100÷ magnification(%)

ing paper, Punched-hole documents,
ke letter head,
d documents, Paste-up documents,
acing Paper except (GT65),
ogether with glue
ocuments,
ether with glue
urled documents,
35g/m <sup>2</sup>
en scanning a faxed document)
can be installed.

EF
sensor
) compatible
t support JBIG)
200dpi
00dpi :to a confidential box)
dowsNT4.0, Windows2000
f in the near future.)
e
t
eting of a document, Informing a
ddress

### 6.1.12 Output area feature

<ol> <li>Recording/Developing m</li> <li>Photoreceptor:</li> <li>Copying method:</li> <li>Developing method:</li> <li>Exposure method:</li> <li>Fusing system:</li> </ol>	ethod OPC(Organic Photo Conductor) Indirect electrostatic method Dry development method Semi conductor laser beam scanning Heat roll
2. Paper capacity (Max. 210	00 sheets: (500x3+500+100))(FX P paper)
Trays: 500 sheets Tray 4	4: 500 sheets(option) MSI: 100 sheets
3. MSI	
Paper size:	Max.: A3, 11"x17" Min.: A6(postal card)
<ul> <li>Weight of paper:</li> </ul>	55 to 156g/m <sup>2</sup> , 190g/m <sup>2</sup> (Postal card)
4. Auto Duplex Unit (Option	)
Paper size:	Max.: A3, 11"x17" Min.: A5LEF(5.5"x8.5")
Paper weight:	60 to 105g/m <sup>2</sup>
5. Offsetting	
Paper size:	Max.: A3, 11"x17" Min.: A5
<ul> <li>Metric weight, capacit</li> </ul>	ty: 60 to 105g/m <sup>2</sup> 500 sheets (FX P paper)
Offset amount:	40mm
Variance:	20mm or below
6. Output tray (FX P paper)	
1) Face Down Tray (Star	ndard) : 500 sheets

2) Face Up Tray (Optional) : 200 sheets

# 6.1.13 Stapler Finisher (Option) Specification

Item		Description	
Stack trays		2 levels	
		Stacker tray top: output when staplir	
		Stacker tray lower: Side tray (face u	
	Available paper sizes	A5LEF, B5SEF/LEF, A4SEF/LEF, E	
		8.5"x14", 8.5"x11" SEF/LEF, 5.5"×8.	
	G.S.M	60g/m <sup>2</sup> to 105g/m <sup>2</sup>	
	Capacity in trays	Max: 700sheets(standard paper)	
		Stacker tray top: 500sheets	
		Stacker tray lower: 200sheets	
Full stack detection		Detect when height of output paper	
	Variety of modes	Only Stacker tray top (without staplir	
	Available quantity of	30sheets	
	papers to staple (using		
	80gsm paper)		
	Number of pages/number	2-9sheets/50-70copies,	
	of copies can be stapled	10-30sheets/16-45copies	
Positions to staple		Single/(Corner: Left top, Right top, L	
	Power supply	AC220-240V(16A 50/60H	
		AC100V(16A 50/60Hz, below85VA)	
	Weight	Less than 15.5kg	
	Dimensions (mm)	560(W)x554(D)x470(H)mm	

# 6.1.14 Environmental requirement

1. Temperature/Humidity/	/Altitude
Temp.: 10°C to 35°C	Humidity: 15% to 85%
2. Safety regulations	
1) Electrical noise:	VCCI Class 2 regulatio
	(Class 1 with Printer ne
2) Ozone emission:	Less than 0.01ppm(0.0
<ol><li>Noise (Unit: dbA)</li></ol>	

Note Figures indicate, 1st figures: 23CPM models, 2nd figures: 28CPM models

	At standby	Continuous to the main processor	Impulse to main process or	Continuous to full system	Impulse to full system
Surface noise pressure level	25.4/34	46/50.7	59/59	52.1/56.5	65/65
Acoustic power level	40/50	63/68	60.6/61. 4	69.9/71.8	63.7/64.6

when stapling, stackin	ng (face down)
tray (face up)	
4SEF/LEF, B4, A3, 1 <sup>2</sup>	1"x17", 8.5"x13",
LEF, 5.5"×8.5", 8-kai	
rd paper)	
eets	
sheets	
utput paper becomes	70mm.
ithout stapling/stapling	g)
es	
, Right top, Left bottom	n, Right bottom)
50/60Hz	below110VA),

Altitude: 0 to 2,500m (ref. value)

on applies. network connected) )2mg/m<sup>2</sup>)

The existing sound pressure level used for measuring the noise level is the mean sound level of a part of noise variance by time, whereas the acoustic power level, a new method, is indicated by the measurement of entire acoustic energy emitted by time.

Ref. Full system:

Main Unit+DM+DADF+OCT(+MSI)+Finisher

#### 6.1.15 Optional specifications

#### 1. Additional G3/Additional G4

Additional G3

By installing this kit, up to 3 lines of G3 communication will be available, as long as the number of G3 lines plus No. of G4 lines are within 4 lines.

- Outside line and extension switchover is available with this KIT.
- An external handset will not be installed to this Kit.
- Additional G4

With this kit installed, up to 2 lines can be used by G4 communication, as long as the number of G3 lines plus G4 lines are within 4 lines. For the first line, use G4/ICM and for the second line, use G4 board only.



Additional G3/G4

#### 2. FAX Operation Management

The function previously implemented by the "FAX department management kit," e.g., FAX sending management and account management, are replaced by CopyLyzer 610N.

#### 3. Internet FAX

The Internet FAX function transfers data by attaching FAX transmission data to an e-mail as a TIFF file.

Note: Internet Fax operates when 8M memory, additional SDRAM module(64MB), builtin hard disk are installed in addition to FS model or equal option.

#### **Specifications**

Item		Description
Scanning	document	Max:297x420mm(A3) $\Box$ (depends on the services)
size		
Recording	document	Max: 297x420mm(A3)

size	
Scanning density	<fast scan=""> 600/400/3</fast>
	<slow scan=""> 600/400/3</slow>
	15.4/11.55/7.7/3.85line
Scanning system	CCD fixed scan
Support of format	TIFF (MH, MR, MMR, J
Profile	TIFF-S,F,J, □Independ
Protocol	Transmission: SMTP, R
Compatibility	ITU-T Advice: T.37, T.
	Internet FAX method:
	Independent expansion
	DSN function: RFC18
	SMTP function: RFC82
	POP3 reception: RFC1
	MIME version: Version
Services provided	Scan to Email: Email se
	Email to Print/BOX:
	received TEXT, image of
	Email to FAX: FAX tran
	FAX to Email: Email tra

# 6.2 Tools and Service Consumables

#### 6.2.1 Tools

No	Tool No	Tool Name
1	499T281	Facsimile Test Patter
2	499T247	Test Pattern(A3)
3		Multinational Metric 7

#### 6.2.2 Service Consumables

There are no service consumables unique to this model. Any unique service consumables will be notified of if necessary.

# 6.3 Consumables

Consumables	Product code	Ref. life	
Drum/Toner Cartridge		24,000 sheets *1	
Staples	CWAA0383	3000 staples – 3pcs per	
pack			
*1: For an A4 LEF FX test pattern whose black ratio is 6%			

# **CHAPTER 6 GENERAL** 6.3 Consumables

00/200dpi, 16/12/8lines/mm
00/200/100dpi,
s/mm
BIG)
ent expansion 600x600dpi
eception: SMTP, POP3
30, F.185, E.164
RFC2301 (TIFF profile S/F/J), □and
600x600dpi
91, 1894
1, 822, 1869
939
1.0 (RFC2049)
ending of scan image data
Print/storing to the Mailbox of Email
lata
smission of Email received document
nsmission of FAX received document

m		
Tool Klt		

# 6.4 Modification

#### 6.4.1 Symbology

When description contents vary by modification, the modification code is indicated using the following symbols:

[Tag 1V]: Indicates that the description is applied to machines after Tag 1.

[w/o Tag 1V]: Indicates that the description is applied to machines before Tag 1.

Symbol	Description
	Indicates a specific part which has been modified by the tag number within the circle.
	Indicates that the specific part is illustrated as it appears before it has been modified by the change identified by the number within the circle.

# 6.4.2 Modification List

V code	Title and description	Product code	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

V code	Title and description	Product code	Remarks
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
V code	Title and description	Product code	Remarks
--------	-----------------------	--------------	---------
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			

V code	Title and description	Product code	Remarks
94			
95			
96			
97			
98			
99			
100			

# CHAPTER 6 GENERAL 6.5 Installation

# 6.5 Installation

**Unpacking and Assembling** 

Note Unpack 2-Tray Module, IOT, then IIT.

#### CAUTION

When opening the package and taking the IOT out of the carton, extract Tray 1 first to make room at the handles. (Figure-1).



- 1. Check Accessories
- This procedure below is based on WorkCentre Pro 423/428. Procedures for other Note models, which are different from WorkCentre Pro 423/428 are also included here.
  - Accessories for 2-Tray Module (Figure-2)

1

1

- 1. Main Unit
- 2. Size & Label 1 set
- 3. Bracket (for fixed) 2 pieces 2
- 4. Screw
- 5. Fall Prevention Foot 1 2
- 6. Screw (silver)
- 7. Screw (black)



(Figure 2) j0hn6502



Note IOT and IIT should be installed by a service engineer.

- Accessories for IOT (Figure-3) •
  - 1. Main Unit
  - 2. Power Cord
  - 3. Line Cable
  - 4. Service Call Log 1 sheet
  - 5. User's Guide 1 set
  - 6. NVM List (IOT) 1 sheet
  - 7. Installation procedure 1 sheet



Accessories for IIT (Figure-4)  $\bullet$ 

1

- 1. Main Unit
- 2. NVM List (IIT) 1



j0hn6504

(Figure-4) j0hn6504

- 2. Peel off packaging tape.
  - Check external appearance for dirt, each cover for positioning or for damages.

03/02 6-18

- Remove tapes and packaging materials.
- 3. Lock the 2-Tray Module casters and place the IOT. (Figure-5)

### WARNING

#### The weight of the IOT assembly is 46 kg (101 lb). Two persons will be required to lift this assembly. Use great care when lifting.

- 1) Press down the levers of the two castors to lock.
- 2) Lower the IOT by aligning with the pins of the 2Tray Module.



- 4. Secure the 2-Tray Module and IOT with the accessory brackets (2). (Figure-6)
  - 1) Pull out Tray 2.
  - 2) Hook the brackets in the square holes of the 2-Tray Module.
  - 3) Tighten the Screw.



(Figure-6) j0hn6506

# **CHAPTER 6 GENERAL** 6.5 Installation

#### CAUTION

Be sure to secure the IOT with the brackets to prevent its fall.

- 5. Reinstall the Tray 1 removed when unpacking the IOT.
- 6. Mount the IIT on the IOT.

### WARNING

The weight of the IIT assembly is 24 kg (53 lb). Two persons will be required to lift this assembly. Use great care when lifting.

- 7. Secure the IIT and IOT. (Figure-7)
  - 1 Tighten the Screw.



(Figure-7) j0hn6507

CAUTION

Ensure that the IIT is secured with the Screw to prevent the IIT from falling.

- 8. Connect the 2-Tray Module connector to the IOT connector. (Figure-8)
  - 1) Remove the Right Cover Cap B.
  - 2) Connect the connector. (The light blue end should be on the right side.)

Note Make sure that the connector is connected securely. A contact failure will cause a paper detection error at Trays 2 to 4.



(Figure-8) j0hn6508

9. Connect the IIT to IOT using cable. (Figure-9)



Note After plugging the cable in, tighten the screws (locking knobs) securely. If the connection is not secure, there may be no messages displayed on the IIT UI panel.

10. Install the Fall Prevention Foot. (Figure-10).

### CAUTION

- Be sure to install the Fall Prevention Foot to prevent Main Unit from falling.
  - 1) Remove the Lids (2) from the 2-Tray Module Right Cover.
  - 2) Install the Foot.
  - 3) Tighten the Screws (2).
  - 4) Tighten the Screw (black)(1).



- 03/02 6-20
  - 11. Connect the line. (Fax equipped models only) (Figure-11) 1) Connect "LINE1" of the IOT Rear Cover with the line cable and another with the line rosette.



(Figure-11) j0hn6511

12. Unlock the castors once.

13. Move the machine to the installation place and lock the castors. (Figure-12) 1) Pull down the front caster levers (2) to lock.



# **CHAPTER 6 GENERAL** 6.5 Installation





j0hn6512

#### Install the CRU.

14. Pull out the R/H Unit to the right, and open the Front Right Cover. (Figure-13)



(Figure-13) john6413

- 15. Install the CRU. (Figure-14)
  - 1) Take the CRU out of the packaging material and shake several times horizontally.
  - 2) Push in the CRU securely.
    - Note If the Front Right Cover is closed without the CRU handle being latched, damage of the Right Cover or the Drum Cover on the CRU will result.
  - 3) Pull off the toner seal. (Pull it off when the CRU handle is latched.)

#### Loading paper

16. Load paper. (Figure-15)

Load each tray with paper.

- Tray 1 A4 (LEF)
- Tray 2 Β4
- Tray 3 A3

Changing the tray paper size

• Adjust the End Paper Guide and Side Paper Guide of the tray to match the desired paper size. (Paper size is shown at the bottom of the tray.)



(Figure-15) j0hn6515

17. Set up the size label.(Figure-16)

• Set up the size label of the tray based on the paper loaded.





(Figure-16) j0hn6516

(Figure-14) john6514

j0hn6514

j0hn6515



j0hn6516

#### Turn the power on.

- 18. Plug in the power cord in the main processor.
- 19. Plug in the power cord.

The power source must be used exclusively for the WCP423/428.

Ensure to install the ground wire.

20. Turn the power on. (Figure-17)

Turn on the power supply (circuit breaker) and the power switch. "Ready to copy" appears in approx. 30 seconds.

- Leave the circuit breaker generally turned on. Ensure to check the followings Note before executing the operation test.
- "Pending Jobs" and "On Line" are off on the IIT Control Panel.
- "Ready to print or fax" is displayed on the IOT Control Panel.
- How to test: Turn the power switch off and press the breaker <TEST> button. After check, press <RESET> button and turn the power switch on.



#### Storage and setup

21. Custom presets for communication feature

Set up "Date" and "Clock".

Set up "Local Name", "Send Header", "Tel. ID", "Dial Type" and "Line Type".

• Set up the above items.

<Notes on storing Speed Dial for G4 communication>

Do not include "Space" or "Pause", etc. when storing a Fax number of the remote terminal. The telephone number may not be correctly recognized and transmission impeded.

• Enter the C/E mode.

- How to enter C/E mode: Press the Start with the "0" key being pressed for 5 seconds. The LCD screen turns to negative-like images indicating that the display has entered into the C/E mode. For exiting the C/E mode, press the Start with the "0" key being pressed. The LCD screen turns to negative-like images again indicating that the display has exited the C/E mode.

• Clear memory. Custom Presets->Diagnostics->Clear memory->User->Start button

Note Do not press buttons other than User.

- Set up "Date" and "Clock". Custom Presets->Timers->1. Date
  - 2. Clock
- Set up the Local name, Sender Header, Tel. ID, Dial Type, and Line Type. Setup->Local Fax Info.-> 1. Local name
  - 2. Sender Header
  - 3. Tel. ID
  - 4. Dial Type
    - 5. Line Type
- Set up Items 6 to 20 based on the line connection status. [Setting up G4 ISDN]

Note For ISDN ID, enter TEL No. Enter numbers only, with no hyphen. Ex.) 0331234567

 Set up Items from 21 based on the line connection status. 22. Setting up Added feature keys for Panel Default Mode

- Custom Presets -> Screen Defaults
  - Copy Screen ->
  - Fax Screen ->
  - Scanner Default Screen ->
- 23. Perform "Auto Diagnostics" to check that no problems with the board. Custom Presets->Diag->Auto Diagnostics->Start button

#### **Check functions**

24. Checking paper feed

1. Record the copy meter count.

# **CHAPTER 6 GENERAL** 6.5 Installation

- Select Billing meter on the menu.
- 2. Load A3 size original and make 3 copies using each tray.
- 3. Check for paper jam, folded, wrinkled or multi-fed paper.
- 4. Check features of Auto Paper Selection and Auto Magnification Selection.
- 25. Check copy quality

Check the following:

- 1. Density is normal.
- 2. Images are clear which is not skipped or distorted.
- 3. No high background is included.
- 4. The image has no black spots or streaks.
- 26. Checking communication mode (fax)

Load A3 or B4 size document on the DADF.

Test communication with other models of Able/Telecopier to check the following feature:

• Auto receive

When a transmission is sent from other Able/Telecopiers, the machine automatically receives it.

#### **User's Reports and Lists**

27. Output users' reports and lists.

Output users' reports and lists.

- Print Report/List
- -> Dial Directory Report
- 28. Other checking

Noise or odor is not sensed during operation.

The copy meter is operating normally, and counts up the number.

-> Options Report

(Figure-18) j0hn6518

30. Affix Quick Reference. (Figure-19)



(Figure-19) j0hn6519

29. Storing Service Call Log and NVM List(Figure-18)



j0hn6518



Peel off the seal on the back and affix the "Quick Reference" on the DADF Top Cover.

# 6.6 Removal

- The machine is removed basically by the service engineer, excluding field arrangement. The procedures described below is the field arrangement procedure. Removal of the DADF and other options, however, is conducted by the C/E.
- Handling of removed machine and the return classification are determined by the C/E after category check and a call is made for field arrangement.
- The following items must be prepared at removal:
  - 1. Category Check List
  - 2. Return Destination Sticker
  - 3. Installation Procedure Sheet
  - 4. Packing Tape
  - 5. Cleaning Cloth

#### **Removal Procedure**

1. Check to see if consumables or worn components should be replaced, referring to the history log. (Refer to TRIM)

Return to the original operating condition if the machine was used in a Note modified way or options were installed.

- 2. Return the machine to the default values if custom adjustments were made by customer's request.
- 3. Conduct the TRIM work and clean inside the machine.
- 4. Turn the power on and make test copies to check copy quality, paper feeding characteristics and meter operation.
- 5. Turn the power off and disconnect the Power Plug from the socket.
- 6. Remove the CRU (Drum Cartridge) from the machine.
- 7. Remove paper remaining in Paper Trays.
- 8. Disconnect the circuit and telephone line.

#### CAUTION

Never use solvent-based Cleaner or similar, which dissolves plastics.

- 9. Clean outside the machine.
- 10. Enter the necessary items on the history log and store it in the bottom plate case under the 2-Tray Module together with the Category Check-list.
- 11. Protect the Machine by taping and attach the Return Destination Sticker at the location shown in Figure 1.
- 12. Prepare a service report.

13. Packing of the Main Processor unit is performed by the service engineer (Figure-1).



(Figure-1) j0hn6601

# **CHAPTER 6 GENERAL** 6.7 Custom Presets

j0hn6601

# 6.7 Custom Presets

# 6.7.1 Custom Presets Chain-Function Code List

## Custom Presets Chain-Function Code List (DC Area)

Chain	Func	Item	Description	Default
028	1	Default setting on the Control Panel	0: Auto 1: Tray1 2: Tray2 3: Tray3 4: Tray4 9: MSI	0: Auto
028	2	<ul> <li>1) Initial setting of tray priority</li> <li>Default setting on the Control</li> <li>Panel</li> <li>2) Initial setting of</li> <li>magnification priority</li> </ul>	0: Auto 1: Mag.1 2: Mag.2 3: Mag.3 4: Mag.4 5: Mag.5 6: Mag.6 7: 100%	7: 100%
028	3	Default setting on the Control Panel 3) Initial setting of copy density	0: Auto 1: Lighter 2: Light 3: Normal 4: Dark 5: Darker	0: Auto
028	4	Default setting on the Control Panel 4) Initial setting of document size	0: Text 1: Photo 2: Text/Photo	0: Text
028	5	Default setting on the Control Panel 5) Output Tray priority	0: Center Tray 1: Side Tray	0: Center Tray
028	6	Default setting on the Control Panel 6) Initial setup of copy display	0: Basic Features 1: Use Customise Features 2: Feature Menu	0: Basic Features
028	10	Preset magnification 1 values	Changing the preset magnification value (86.6%) Available between 25% and 400% with 0.1% increment	866 (86.6%)
028	11	Preset magnification 2 values	Changing the preset magnification value (81.6%) Available between 25% and 400% with 0.1% increment	816 (81.6%)
028	12	Preset magnification 3 values	Changing the preset magnification value (70.7%) Available between 25% and 400% with 0.1% increment	707 (70.7%)
028	13	Preset magnification 4 values	Changing the preset magnification value (141.4%) Available between 25% and 400% with 0.1% increment	1414 (141.4%)
028	14	Preset magnification 5 values	Changing the preset	1225

				magnification value (122.5%)	(122.5%)
				Available between 25% and 400% with 0.1% increment	
ĺ	028	15	Preset magnification 6 values	Changing the preset	1154
			C C	magnification value (115.4%)	(115.4%)
				Available between 25% and	
				400% with 0.1% increment	
	028	20	Valid Input Tone	0: Disable 1: Enable	1: Enable
	028	21	Invalid Input Tone	0: Disable 1: Enable	1: Enable
	028	22	Valid End Tone	0: Disable 1: Enable	1: Enable
	028	23	End of Copying Tone	0: Disable 1: Enable	0: Disable
	028	24	Invalid End Tone	0: Disable 1: Enable	1: Enable
	028	25	Ready to Copy Tone	0: Disable 1: Enable	1: Enable
	028	26	Drum/Cartridge Alert	0: Disable 1: Enable	1: Enable
	028	30	Tray 1 priority	1: priority 1 2: priority 2	1
				3: priority 3 4: priority 4	
	028	31	Tray 2 priority	1: priority 1 2: priority 2	2
				3: priority 3 4: priority 4	
	028	32	Tray 3 priority	1: priority 1 2: priority 2	3
				3: priority 3 4: priority 4	
	028	33	Tray 4 priority	1: priority 1 2: priority 2	4
				3: priority 3 4: priority 4	
	028	36	Enabling the OCT feature for	0: Disable 1: Enable	1: Enable
			stacking		
	028	37	Quantity Limit (setting up the	0: Disable 1 to 99: 1 to 99	0: Disable
			max. number of copies)	sheets (in 1 increment)	
	028	38	Auto 90 deg. Rotation	0: Disable 1: Enable	1: Enable
	028	39	Auto tray switchover	0: Disable 1: Enable	1: Enable
	028	40	Tray to selected when APS is	1: Tray 1 2: Tray 2	1: Tray 1
			automatically disabled.	3: Tray 3 4: Tray 4	
	028	41	Auto Clear	0: Disable 1: Enable	1: : Enable
	028	42	Auto Clear Timer	1: 1 min. to 4: 4 min. (1 min.	1: 1 min.
				increment)	
	028	43	Auto Power Save	15: 15 min. to 255: 255 min.(1	15: 15 min.
			(Selecting the value to set to	min. increment)	
			Auto Power Save timer)	CE mode 15: 15 min. to 255:	
				255 min.	
	028	44	ROS Power Save	0: Disable	9: 9 sec.
				9 to 30 sec.	

## Custom Presets Chain-Function Code List (DC Area) continued

Chain	Func	Item	Description	Default
028	46	Centering	0: Disable 1: Enable	0: Disable
028	47	ROS Power Save Mode	0: Slow rotation 1: Stop	0: Slow
		(CE mode)		rotation
028	48	Auto Power Off Selection	45: 45 min. to 105: 105 min.	
		(Low power to Sleep)		
028	49	DADF JAM sensing during	0: Standard	0: Standard
		copying	1: Max. size preset (doc. long	
			side sensed as 17 in.)	
028	50	Border Erase (Top/Bottom)	0: 0mm to 50: 50mm(1mm	5: 5mm
			increment)	
028	51	Border Erase (Right/Left)	0: 0mm to 50: 50mm(1mm	5: 5mm
			increment)	
028	52	Border Erase (Center)	0: 0mm to 50: 50mm(1mm	10: 10mm
			increment)	
028	54	Added FAX display 1	0: None 1: Paper tray	1
			2: Reduce/Enlarge	
			3: Light/Darker 4: margin	
			5: XY Reduce/Enlarge	
			6: Document Type	
			7: Border Erase	
			8: Auto Center 9: Not used	
			10:Bound doc.	
			11: Duplex copying	
			12: Collate 13: N in 1	
			14: Transparence interleaf	
			15: Copy Output	
			16: Mix size document	_
028	55	Added FAX display 2	Same as above	2
028	56	Added FAX display 3	Same as above	3
028	57	Added FAX display 4	Same as above	6
028	58	Added FAX display 5	Same as above	10
028	59	Added FAX display 6	Same as above	4
028	60	Job setting in Finisher Tray	0: All disable 1: Copy enable	
		1(Upper)	2: FAX enable	
			3: Copy and Fax enable	
			4: Printer enable	
			5: Copy and Printer enable	
			6: FAX and Printer enable	
			/: All enable	
028	61	Job setting in Finisher Tray	0: All disable 1: Copy enable	

		2(Lower)	2: FAX enable	
			3: Copy and Fax enable	
			4: Printer enable	
			5: Copy and Printer enable	
			6: FAX and Printer enable	
			7: All enable	
028	70	Setting to delayed printing 1	0: 0 sec. to 240: 240 sec.	10: 10 sec.
028	71	Setting to delayed printing 2	0: 0 sec. to 240: 240 sec.	6: 6 sec.
028	90	Default copying initial display	0: OFF F1: ON	0: OFF
		(Collate)		
028	91	Default display selection	0=MENU 1=FAX 2=COPY	0: MENU
		mode		

Custom Presets Chain-Function Code List (MF Area)					
Chain	Func	Item	Description	Default	
028	101	Memory Receive Alert	0: Disable 1: Enable	1: Enable	
028	102	Adjusting Line Monitor Volume	1(Low) to 3(High)	2: Medium	
028	103	Adjusting Alarm Tone	1(Low) to 3(High)	2: Medium	
028	104	Adjusting tel bell volume	0: OFF 1(Low) to 3(High)	3: High	
028	105	Line monitoring	0: Disable 1: Enable	1: Enable	
028	108	DTMF to be monitored by Line Monitor Speaker during Off-Hook dialing. * CE mode	0: Line Monitor Off 1: Line Monitor On	0: Off	
028	111	FAX default display Communication Mode	1: G4 Auto 2: G3 Auto 3: 4800bps 4: Super G3	2: G3Auto	
028	112	FAX default display Resolution	1: Super fine 2: Fine 3: Standard	3: Standard	
028	113	FAX default display Density	1 to 5: Lighter to Darker	3: Normal	
028	115	FAX default display Document Type	0: Text 1: Photo 2: Text/Photo	0: Text	
028	116	FAX Panel Default Storing Send Header Name	0: OFF 1: ON	1: ON	
028	117	FAX Panel Default Halftone	0: Test 1: Photo 2: Text/Photo	0: Text	
028	118	FAX Panel Default Stamp	0: OFF 1: ON	0: OFF	
028	119	FAX Panel Default Monitor pinging	0: OFF 1: ON	0: OFF	

# CHAPTER 6 GENERAL 6.7 Custom Presets

## Custom Presets Chain-Function Code List (MF Area) continued

#### Custom Presets Chain-Function Code List (MF Area) continued

Chain	Func	Item	Description	Default
028	120	FAX Default display	0: Basic Features	0: Basic
			1: User Customise Features	
			2: Feature Menu	
			3: Dial directory	
028	130	Disable the copy feature	0: Cannot copy	1: Can copy
		(for the customers who use	1: Can copy	
		the M/C only as FAX)		
028	131	Delayed Power Save Mode	0: Disable Power Save Mode	0: Disable
			1: Enable Power Save Mode	
028	132	Disable/Enable Power Save	0: Disable	0: Disable
		inhibition. *CE mode	1: Enable	
028	134	Power Save time	00: 00 to 23: 59(BCD display)	21:00
028	135	Stand-by time	00: 00 to 23: 59(BCD display)	8: 00

Chain	Func	Item	Description	Default
028	140	Added FAX display 1	0: None 1: Resolution	1
			2: Document Type	
			3: Send density	
			4: Communication Mode	
			5: Document Size	
			6: Multi-Pages in One	
			7: Cover Note	
			8: Send Header	
			9: Delayed Start	
			10: Mailbox Communication	
			11: Store for poll	
			12: Polling	
			13: Monitor Report	
			14: Stamp	
			15: Duplex document	
			18: On-hook	
028	141	Added FAX display 2	Same as above	2
028	142	Added FAX display 3	Same as above	3
028	143	Added FAX display 4	Same as above	4
028	144	Added FAX display 5	Same as above	7
028	145	Added FAX display 6	Same as above	13
028	150	To display "Sending"	0: Off	0: Off
			1: On	
028	151	Starting No. to display remote terminal table	1 to 500	001
028	152	Unit of charge used for	0.0 units n to 255.9 units	10.0 yen
		calculating the number of	(0xFF09)	(0A00)
		operator management calls	1st byte should be the	
		when informed by ISDN	integral No. omitting	
		network	decimals.	
			2nd byte should be a	
			decimal integral number.	
028	153	Storing 90 deg rotation on	0: Off	1: Off
		Fax transmission or delayed	1: On	
		polls.		

Mixed size

	Custom Presets Chain-Function Code List (MF Area) continued						
Chain	Func	Item	Description	Default			
028	154	Selection to store reduced or	0: To store 100% mag.	0: 100% mag.			
		100% to A4SEF when Letter	1: To store reduced mag.				
		(LEF) size doc. is transmitted					
		by Auto Magnification on FAX					
		or delayed Polls					
028	155	Printing priority selection	0 to 63(0 to 0x3F)	0: Low			
		<ul> <li>Fax received</li> </ul>	bit0, 1: Fax received				
		• Auto output of	bit2, 3: Auto output of				
		reports	reports				
		<ul> <li>Local printing</li> </ul>	0: Low 1: Med. 2: High				
028	160	Scanner Default display	0: Basic Features	0: Basic			
			1: User Customise Features				
			2: Feature Menu				
			3: No display				
028	161	Added Scanner display 1	0: None	1			
			1: Resolution				
			2: Document Type				
			3: Scan density				
			4: Scan size				
			5: Scan Magnification				
			6: Duplex document				
			7: Mixed size document				
028	162	Added Scanner display 2	Same as above	2			
028	163	Added Scanner display 3	Same as above	3			
028	164	Added Scanner display 4	Same as above	4			
028	165	Added Scanner display 5	Same as above	5			
028	166	Added Scanner display 6	Same as above	7			
028	167	Scanner Default display	1: 600dpi 2: 400dpi	4: 200dpi			
		Resolution	3: 300dpi 4: 200dpi				
028	168	Scanner Default display	0: Text 1: Photo	0: Text			
		Document Type	2: Text/Photo				
028	169	Scanner Default display	1 to 5: Light to Dark	3: Normal			
		Scan density					
028	170	Broadcast check display	0: Off 1: On	0: Off			
028	171	FAX Default display	0: Receive 1: Send	0: Receive			
		Manual send/receive					
028	172	FAX Default display	0: Auto receive	0: Auto			
		Receiving mode	1: Manual receive	receive			
028	173	FAX Default display	0: OFF 1: ON	0: OFF			

# 6.7.2 How to change Custom Presets in User mode

- 1. Select "Custom Presets" in menu.
- 2. Select the Item to be changed.
- 3. Select "Enter / Change".
- 4. Select the setting value, then press "Save".
- 5. Press "Clear All" to return the default display.

# **CHAPTER 6 GENERAL** 6.8 General Information

# 6.8 General Information

### 6.8.1 Forced polling of documents stored in memory

When documents stored for the memory send or reserved for delayed send remain without being printed, they can be picked up from a remote terminal using the polling option.

1. Summary of the forced polling feature

All of documents reserved for delayed send and pending jobs can be picked up using the polling option by changing system data.

Requirements for forced polling:

- 1) The terminal must be capable of being set to the diagnostic (C/E) mode. The operation is activated in the Diagnostic (C/E) mode because the system data need to be changed. When the Control Panel is locked or any other status disabling the machine to enter the diagnostic (C/E) mode, you cannot activate forced polling.
- 2) The documents stored in memory for a delayed send or pending jobs are applicable to this feature. Any other irretrievable documents, such as task file, or those whose data were destroyed, will be automatically deleted.
- 3) G3 polling realizes batch polling. G4 polling requires the polling operation to be repeated the number of documents.
- 2. Operation procedure
  - 1) Disconnect all lines. \*1
  - \*1: To disable all incoming calls during operation.
  - 2) Enter CE MODE. \*2
  - \*2: "0" + "Start" (5 sec.)
  - 3) Chain=058 and Func=590 to "1". \*3
  - Select Menu->Custom Presets->Diagnostics-> Chain Func->058/590->Start-\*3: >Enter->1->Restart, then back to the Menu screen.
  - 4) Connect the line. \*4
  - \*4: Connect only the line necessary for polling.
  - 5) Active polling and pick up documents. \*5 (should be in CE MODE)
  - When polling is complete, documents stored in memory are deleted. \*5: After polling is complete, return system data Chain=058, Function=590 to the original "0" to exit the CE MODE. Connect the lines, if any.
- 3. Notes on Forced Polling

1) Ensure you have the customer's approval. (Ask the customer to attend the operation if possible.)

- 2) Percentage of recovery is not necessarily 100%. Explain to the customer that there are documents that cannot be deleted by forced polling because of the conditions in which they have been stored.
- 3) After documents are output by polling, the terminal automatically deletes the documents one by one. In case any problem or accident occurs at the remote terminal during this operation, documents may be deleted before being output. Be

sure to activate the operation carefully.

4) Polling from the local station to the local station is prohibited on a machine having additional G3M and additional G4M and containing several lines. This loopback polling will erase all files.

### 6.8.2 How to By-pass the IOT Password Protection

1) In "Ready to Print" mode, hold down the arrow-up button for at least 3 sec. 2) Release the button, then press it three times at short intervals. After this, you should be able to access the menu without needing a password.

### 6.8.3 Location of Serial Number Plate

To access the machine serial number plate, pull out the right-hand cover. The plate is located on the machine frame, just below the fuser.

03/02 6-30

### 6.8.4 How to Read Emergency History

#### Summary

When some errors occur with the FAX function, the machine is rebooted automatically to clear errors such as communication failure between the internal modules of the machine. The machine logs the errors that indicate the reason for rebooting.

The error log is called Emergency History.

#### Contents

The internal error codes logged in Emergency History provides the information about the trouble causes. They help to diagnose and repair faults such as:

- A machine repeats rebooting
- A problem is not reproduced while visiting the customer
- A control panel displays "Error"

The following describes how to output and read Emergency History.

#### Installation Procedure

1. Enter CE mode while the machine starts up.

Note: If the machine does not start but repeats rebooting, power off the machine and disconnect the modules (such as MF, DADF and cabinet), then power on the machine to operate using the control panel and perform the following procedures. However, Memory Dump List can not be printed out if MF is not connected.

- 2. Select Memory Dump List by pressing the output button of "Report/List"
- 3. Input the address 318780 (in hexadecimal) to output a dump list.
- 4. Analyze the dump list.

#### Notes

In some error cases, machine keeps on rebooting for several times before it runs.

If it is rebooted for several times, wait until it starts.

When the machine is booted, there are cases or possibilities that the system recovers normally, or the LCD shows "System Error. Press any button to recover".

If the machine recovers after rebooting for several times, it disconnects the module where the error occurs.

If a machine is rebooted for more than 5 times, refer to the Note in procedure 1 to start the machine with other modules (MF, DADF & cabinet) disconnected.

#### **Error Log**

The latest 10 errors are logged and occupy 32Bytes/error (two horizontal rows).

For the error codes, refer to Chapter 2 "Internal Error Code List" in Service Manual and cope with it by referring to the remedy described in the applicable internal code.

2000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000		00000000000000000000000000000000000000	00000000000000000000000000000000000000		******	000000000000000000000000000000000000000
E	Error Co	de : scr	7C			ence: 	004	
MOQUIE: ACOR		· · · · ·	,	IU.ZIL	Jecemb	er iz, zu	JU   	
AUDA		1	r	<b>1</b>	× ۷	/		
318780:	0000	5 36 4	0003	9CB4	$\lambda$	474B	0000	0009
318790:	0000	8670	5040	4F45	ะไม่ใจ อ	7882	0000	0000
3187A0:	0000	0000	0000	D112	1210	2146	00000	0000
processions	0000	BC7C	6040	4 F 4 5	<b>2</b> 8 9 9 9	7882	0000	0000
	6666	0000	0000	6112	1210	2235	00000	00000
1 error		0670	504D	4 F 4 E	3330	7832	0000/7	
provincentration	3 0 0 <b>D</b> C	0000	0000	0112	1815	1195	00000	9000c (
3187FD;	0000	5772	5040	4 7 4 7	0000	7832	0000	ODDC
							a	
318800:	0000	0000	DDDD	D112	3109	5925	0000	Yocee .
:018815		8C7C	504D	474E	0000	7832	0000/	.00:::
318820:	ខ្ខុខ្ម	0000	0000	2112	9110	4059	20000	Vcc:::
3188300	1100	enserenses 9070	504D	4 F 4 E	0000	7332	00007	5 C O O O O
318840:	0000	0000	0000	0201	0610	0557	0000	<sup>ບ</sup> ່ວວດບ :
សម្រិសភ្វែ៖	1100	8676	564C	4F4E	0000	7832	0000	70000
318830:	0000	0000	6666	8201	0619	1825	00664	ับบาวอ
3188/0:	0000	8070	524D	4F4F	0000	7832	0000	0000
	1						(E	8)
318880:	0000	0000						
318890:	30000	8070	ธิอุงก	4 F 4 E	0000	7832	0000	00000
3168A0:	10000		0000	0201	0619	4136	20000	9 <u>0000</u>
318880;	່ດດດດ	SCYC	50 <b>4</b> 0	4 1 4 E	0000	7532	0000	0000
9188C0:	:0000	2200	0000	020:	0710	2415	00000	00000
316800:	0000	aaaa	0000	0000	0000	0000	0000	0000
3788E0:	0000	0000	FF7F	FFF7	FFFD	527D	FFFF	əFF3
9 · 00 C N ·	0100	A G A 1	<u>.</u>	3353	0 0 0 0 N			8 6 6 6 A

# CHAPTER 6 GENERAL 6.8 General Information

# 6.8.5 Copy features list

Feature	Description
Text mode	y
Photo mode	y
Text/Photo mode	y y
Auto Paper selection	y
Auto mag. selection	у
Preset magnification	6 levels (Reduce, 5/Enlarge 5)
Variable magnification	25% to 400%
Copy density: Auto	У
Copy density: Manual	5 levels
Margin	У
Edge erase	У
(Lead/Trail/sides: 0 to 50mm)	
Book mode	У
DADF	Option (Mixed size)
Auto Duplex output	Option
Electronic Sort	Option
Offset Output	Option
Staple Finisher	Option (Finisher)
90 degree rotation	У
MSI	Option
Transparency Interleaf	У
Job memory	5 jobs
User customize copy key	У
Centering	y Standard size of A5 or more
X-Y zoom	У
Side Tray (Face up output)	Option
Copy setting check	У
Interrupt button	У
Delayed start *1	У
Number of copies	0 to 99 sheets
2 in 1/4 in 1 *2	У
Booklet *3	У
Postcard, Envelope	y Feed from Tray 1
Thick Paper	Up to 190 g

\*1: Delayed operation can be activated after the display shows default setting.

\*2: for only machine with DADF, Upgrade Kit x 2

\*3: for only machine with Electronic Sort Kit, Auto Duplex Unit Kit, Upgrade Kit x 2

# 6.8.6 Fax features list

Feature	Description
Dual Access	у
Full Dial Access	У
Interrupt copy	у
Max. doc. size to be scanned	A3
Max. size of recording paper	A3
Sending book document	У
Sending mixed size document	Y (Duplex Do
Registration position: Platen	Inside left
Registration position: DADF	Inside left
Image loss width (LE/TE)	4mm
Image loss width (sides/total)	4mm
Outputting from Side Tray	Option (Side
Tray ejection by ports	Option (Side
Memory capacity	2MB
Additional memory	8MB Memor
,	10MB memo
fax below 3 sec. transmission	y (G3, 28.8k
Band compression method	MMR, MR, M
G3 mode	V
Super G3 mode	V
G4 mode	Option (ISD)
F code	y v
Immediate send/receive	y
Max. scan line density (dpi)	400dpi(400 p
	400dpi(16x1
Photo mode	y
Text/Photo mode	y
Receiving paper size	y
90 deg. rotation receive	y
Manual send/receive	y
Converting resolutions	V
Converting resolutions Smoothing	y y
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst.	y y v
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst. Remote relay broadcast inst.	y y y v
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst. Remote relay broadcast inst. Remote relay broadcast	y y y y y
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst. Remote relay broadcast inst. Remote relay broadcast Simultaneous broadcast (G4/G3 mixed)	y y y y y Option (up to
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst. Remote relay broadcast inst. Remote relay broadcast Simultaneous broadcast (G4/G3 mixed) Broadcast priority (G4/G3 mixed)	y y y y Option (up to Option (up to
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst. Remote relay broadcast inst. Remote relay broadcast Simultaneous broadcast (G4/G3 mixed) Broadcast priority (G4/G3 mixed) Multi poll priority	y y y y Option (up to Option (up to
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst. Remote relay broadcast inst. Remote relay broadcast Simultaneous broadcast (G4/G3 mixed) Broadcast priority (G4/G3 mixed) Multi poll priority Transmission priority	y y y y Option (up to Option (up to y y
Converting resolutions Smoothing Relay broadcast/Relay broadcast inst. Remote relay broadcast inst. Remote relay broadcast Simultaneous broadcast (G4/G3 mixed) Broadcast priority (G4/G3 mixed) Multi poll priority Transmission priority Changing priority for delayed send	y y y y Option (up to Option (up to y y

03/02 6-31

ocument Feeder)
Tray Kit)
Tray Kit, Finisher)
y (10MB max) or 1GB HDD (with ry)
ops, JBIG)
1H, JBIG
N/G4 Kit)
bixel/25.4mm)x 5.4 lines/mm)
9 399/1,198 addresses)
9 399/1,198 addresses)

Feature	Description
Duplex send/receive	V
Number of transmissions	v (Compatible only with the same models)
Delayed start from memory	v
Mailbox send	y v
Mailbox receive	v(Mailbox: max. 200)200 messages in MBox
Mailbox poll	V
Paperless fax reception	Option (FS model)
Keypad dialing	Up to 120 digits
One touch dialing	Up to 70 addresses
Speed Dial	Up to 200 addresses (999: Option )
Group dial	Up to 50 groups (Up to 20 addresses/group)
Sub dial	Up to 10 types
Telephone directory feature	200 (Up to 999 addresses)
Auto redial	Up to 9 redials
Auto page resend	Up to 5 resends
Continuous memory receive	V
Additional port	Up to 4 ports
	Option (Additional G3 port, Additional G4 port)
Max. No. of G4 ports	2 ports (with options)
Max. No. of G3 ports	3 ports (with options)
Call restriction with plural ports	y (setting in CE mode)
Mailbox Command (Save)	
Mailbox Command (Print)	
Mailbox Command (Forward)	
Box selector	у
Send with port designated	Option (Additional G3 or G4 port)
Fraction Page Printing	y
Printing comments	y
Page Printing	y
Send header sheet	y
Long document send	y (600mm/3600mm)
Combined send	y
B5/A4 cut paper receive	у
Multi pages in 1 (send)	y (Sending from DADF)
Multi pages in 1 (receive)	у
Page border receive	У
Keypad inhibit	y (setting in CE mode)
G3Auto fall back	33600->31200->28800->26400->24000->
	21600->19200->16800->14400->12000->
	9600->7200->4800->2400(bps)
G4/G3Auto fall back	Option

Feature	Description
ISDN G3-F network	у
G4-F network	Option
International Communication mode	у
56kbps rate (North America)	Option
Reception tray rejection	(CE mode se
Minimizing cut paper (Auto reduce)	y
Job memory	20 jobs (Up t
Platen+DADF mixed send	у
Scan density	y 5 levels
Zoom transmission	y 50% to 400
Password feature	y
ID selected receive (DM inhibit)	y (selected in
ECM	y
Letter/A4 Auto receive	y (setting in C
Paper trays	3 tray/4 tray
Checking communication	y
Forced output of document received in	y
memory	-
Division management	y Option (Co
Monitor report	y (including i
Non transmission report	y (including ir
Activity report	у
Broadcast/Multi-Poll report	y (including i
Relay Broadcast report	y (No images
Mailbox report	у
Pending Jobs report	у
Speed Dial list	у
Options list	у
Stored document list	у
Mailbox report	У
Mailbox box list	у
Box selector list	У
Billing data list	у
Account report	у
Power off report	у
Operating status report	TRESS
Stamp	Option (Stam
Self Diagnostics	У
Send header name	у
Printing addresses	у

# CHAPTER 6 GENERAL 6.8 General Information

Feature	Description
Memory backup (Stored documents)	y (3 hours: 45-hour or longer continuous
	charge)
On hook dialing	У
Standby mode	У
Setup checking	У
Display of remaining memory capacity	У
Delayed start (Delayed job)	У
FAX/TEL switchover	y (RING)
Handset	Option
External telephone connection	y (Not an answering machine)
Default panel setting	У
Line Monitor	У
Tone transmission	у

# 6.9 Function Flow (Function Tree)

#### Menu





# CHAPTER 6 GENERAL 6.9 Function Flow (Function Tree)

WorkCentre Pro 423/428

#### 3. Setup









#### 5. Custom Presets



5-2 Copy Screen

1. Customized 1	2. Customized
Paper Tray	Reduce / Er
4. Customized 4	5. Customized
Original Type	Bound Orig
7. R/E Variable % 1	8. R/E Variable
86%	81%
10.R/E Variable % 4	11. R/E Variab
141%	122%
13.Border Erase-L&R	14.Border Era
5mm	5mm

#### **5-1 Screen Defaults**

5-3 Fax Screen



	1. Customized 1 Resolution	2. Customized Original Typ
ſ	1 Overteening of 1	
	4. Customized 4	5 Customized
	Communication Mode	Cover Note
	Dial Directory Default	Delaved Start
	001	900 (PM)

# **CHAPTER 6 GENERAL** 6.9 Function Flow (Function Tree)





#### 5-4 Reports

1. Activity Report	2. Trans. Report Undelivered	3. Trans. Report Canceled
On	On	Off
4. Broadcast / Multi-poll On	5. Relay Broadcast Report To Originator	

#### 5-5 Copy Features

1. Paper Supply	2. Reduce / Enlarge	3. Lighter / Darker
Auto	100%	Auto
4. Original Type	5. Auto Center	6. Collated
Text	Off	Off
7. Output	8. Quantity Limit	9. Auto Tray Switch
Center Output Tray	Off	On
10. Paper Tray Priority	11. Auto Paper	12.Rotate 90°
1, 2, 3, 4	1	On
13.Offset Output On	14.Copy Inhibit Off	

#### 5-6 Fax Features

1. Resolution	2. Original Type	3. Lighter / Darker
Standard	Text	Normal
4. Communication	5. Send Header	6. Send Header Polling
Mode	On	On
7. Mixed Size Originals	8. Transmission Report	9. Polled Document
Off	Off	Auto Delete Off
10. Stamp	11. Long Document	12.Rotate 90°
Off	600mm	On

#### 5-6 Features (continue)

13. Sender's ID On	14.Redial Att
16.Auto Resend	17. Transmissi
3	8
19. Manual Send / Receive Receive	20. Auto Swite
22.Border Limit	23. Auto Reduce
16mm	On
25.2Up on Receipt	26.2 Sided P
Off	Off
28.Report / List Output	29. Auto Repo
Center Output Tray	Center Ou
31.Extension 1Output	32.Line 2-Ou
34. Line 3-Output	35. Extension
37. iFAX Output	38.ID Line-G Off
40. (Not available)	41. (Not avail
43. Selector-Line Setup Off	44. (Not avail
46.IFAX Profile	47.IFAX Sen
TIFF-S	Off
49.TDT Size	50.Packet Si
2048	51.
52. Net Modulo	53.No Comn
Modulo 8	60
55. Trace Channel	56. Session V
First	3



#### 5-10 Scan Screen



#### 5-11 Scan Features

200dpi	2. Original Ty Text
--------	------------------------

1. Date (D / M / Y)	2. Clock	3. Auto Clear 1min.	
4. Auto Job Release 10min.	5. Auto Print 10sec.	6. Standby Mode 9sec.	
7. Auto Power Saver 15+45min.	8. Power Saver Start Time Off	9. Power Saver End Time Off	
10. Auto Print at Start 6sec.			

#### 5-8 Audio Tones

1.Control Panel	2.Control Panel Alert	3. Machine Ready
Select	On	On
4. Copy Job Complete	8. Memory Receive Alert	6.Alert Tone
Off	On	On
7. Low Toner Alert On	·	9. Line Monitor Volume 2
10. Ringing Volume 3		

#### 5-9 Diagnostics



# CHAPTER 6 GENERAL 6.9 Function Flow (Function Tree)

3. Customized 3 Lighter / Darker

6. Customized 6 Mixed Size Originals

/pe

3. Lighter /Darker Normal

# CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

# Contents

7.1 Pl	ug/Jack Information	2
7.1.1	How to Use Plug/Jack Information	. 2
7.1.2	Plug/Jack Index	. 2
7.2 Pl	ug/Jack Location Diagrams	6
7.2.1	Control Panel	. 6
7.2.2	IIT	. 6
7.2.3	HVPS/Printer Panel	. 7
7.2.4	ROS	. 7
7.2.5	IOT Right Location	. 8
7.2.6	T/A Chute Assembly	. 8
7.2.7	Fuser/CRU	. 9
7.2.8	Tray 1No Paper Sensor/Low Paper Sensor	. 9
7.2.9	RH Unit 1	10
7.2.10	RH Unit 2	10
7.2.11	MSI	11
7.2.12	Power Unit	11
7.2.13	MF Box	12
7.2.14	ESS	12
7.2.15	IOT Rear Location	13
7.2.16	MCUSW PWB	13
7.2.17	Cabinet(No Paper Sensor/Low Paper Sensor)	14
7.2.18	Cabinet(Interlock Switch/Tray 3 T/A Sensor)	14
7.2.19	Cabinet Rear	15
7.2.20	Option Box	15

7.2.21	DADF 1	16
7.2.22	DADF 2	16
7.2.23	Finisher Front	17
7.2.24	Finisher(TM Guide)	17
7.2.25	Finisher Rear 1	18
7.2.26	Finisher Rear 2	18

# 7.1 Plug/Jack Information CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

#### 7.1.2 Plug/Jack Index

P/J No.	Fig. No.	Item No.	Remarks (destination)
1	7.2.12	1	Power Unit
1	7.2.14	6	ESS
J1	7.2.13	8	MF Box
P1	7.2.14	7	ESS
2	7.2.12	10	Power Unit
2	7.2.21	9	DADF
J2	7.2.13	7	MF Box
3	7.2.12	14	Power Unit
3	7.2.14	8	ESS
ЗA	7.2.13	18	MF Box
J3B	7.2.14	7	ESS
3C	7.2.20	17	Option Box
3	7.2.21	5	DADF
P4	7.2.12	13	Power Unit
4	7.2.21	4	DADF
5	7.2.12	11	Power Unit
5	7.2.21	2	DADF
6	7.2.21	1	
7	7.2.21	12	
8	7.2.12	12	Power Unit
8	7.2.21	13	DADF
9	7.2.21	14	
10	7.2.12	9	Power Unit
P10	7.2.21	11	DADF
11	7.2.19	3	
P11	7.2.21	3	
12	7.2.5	14	
J13	7.2.15	25	
P13	7.2.25	6	
14	7.2.15	8	
15	7.2.14	12	
J16	7.2.15	24	
51	7.2.14	4	
100	7.2.5	11	
101	7.2.6	1	
102	7.2.8	2	
103	7.2.8	1	
105	7.2.15	6	
106	7.2.4	4	
J107	7.2.10	4	
P107	7.2.11	4	
108	7.2.11	1	
109	7.2.7	1	

### 7.1 Plug/Jack Information

7.1.1 How to Use Plug/Jack Information

- To know the connector location, see the Fig. No. and Item No. listed in Section 7.1.2," Plug/Jack Index," and Figures in Section 7.2, "Plug/Jack Location Diagrams."
- The P/J numbers in Section 7.1.2, "Plug/Jack Index," are expressed in the following four ways:
  - "J250" indicates Jack 250.
  - "P250" indicates Plug 250.
  - Number without P or J indicates both Plug and Jack.
  - CN 1 indicates Connector 1.





#### Part Name List

Example:



j0hn7000

j0hn7000

# CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.1 Plug/Jack Information

P/J No.	Fig. No.	Item No.	Remarks (destination)
110	7.2.18	2	
111	7.2.18	1	
112	7.2.17	1	
113	7.2.4	3	ROS
113	7.2.17	5	Tray 3 No Paper Sensor
114	7.2.17	2	
115	7.2.17	6	
116	7.2.17	4	
117	7.2.17	3	
118	7.2.19	5	
119	7.2.19	6	
120	7.2.19	7	
141	7.2.5	8	
154	7.2.7	2	
182	7.2.3	1	
185	7.2.3	2	
186	7.2.3	5	
187	7.2.3	6	
188	7.2.3	3	
200	7.2.5	9	
201	7.2.6	3	
202	7.2.15	13	
204	7.2.12	7	
205	7.2.15	2	
207	7.2.4	1	
J208	7.2.10	5	
P208	7.2.11	3	
209	7.2.10	1	
210	7.2.19	1	
211	7.2.19	14	
212	7.2.19	12	
213	7.2.19	2	
300	7.2.13	2	MF Box
300	7.2.14	9	ESS
301	7.2.13	9	MF Box
301	7.2.14	3	ESS
302	7.2.13	16	
303	7.2.13	4	MF Box
303	7.2.14	11	ESS
304	7.2.13	5	
305	7.2.13	19	
308	7.2.13	17	
309	7.2.13	3	
310	7.2.13	11	MF Box

P/J No.	Fig. No.	Item No.	
310	7.2.14	5	ESS
P311	7.2.14	10	
J311	7.2.14	1	
P313	7.2.13	10	
J313	7.2.13	6	
315	7.2.13	14	
318	7.2.13	15	
319	7.2.13	13	
320	7.2.20	16	
322	7.2.20	4	
323	7.2.20	1	
324	7.2.20	2	
J330	7.2.14	18	ESS
330	7.2.20	14	Option B
J331	7.2.14	20	ESS
331	7.2.20	3	Option B
332	7.2.13	12	MF Box
J332	7.2.14	19	ESS
332	7.2.20	10	Option B
332	7.2.20	11	Option B
332	7.2.20	18	Option B
J333	7.2.14	21	
J340	7.2.14	15	ESS
340	7.2.20	13	Option B
J341	7.2.14	17	ESS
341	7.2.20	5	Option B
J342	7.2.14	16	ESS
J342	7.2.20	19	Option B
343	7.2.14	14	
360	7.2.20	6	Option B
360	7.2.20	12	Option B
J361	7.2.20	8	
366	7.2.20	7	Option B
366	7.2.20	9	Option B
P370	7.2.13	8	
P390	7.2.1	6	Control F
J390	7.2.2	11	IIT
392	7.2.1	3	
393	7.2.1	7	
394	7.2.1	4	
395	7.2.1	5	
396	7.2.1	8	
397	7.2.1	9	
400	7.2.16	24	

Remarks (destination)
OX
OX
ox (G3M)
ox (G3M1 PWB)
ox (NCU-C PWB)
OX
OX
OX
ov (C 4142)
0X (G4IVI3)
08
$\alpha x (G4M3)$
0^
Panel

# 7.1 Plug/Jack Information CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

)		P/J No.	Fig. No.	Item No.	
		604	7.2.14	2	
		J606	7.2.7	3	
		P606	7.2.5	6	
		J611	7.2.9	5	
		P611	7.2.5	10	
		J612	7.2.15	15	
		P612	7.2.25	7	
		613	7.2.15	16	
		J614	7.2.10	3	
		P614	7.2.11	2	
		615	7.2.9	6	
		616	7.2.10	2	
		617	7.2.19	4	
		620	7.2.5	5	
		621	7.2.5	12	
		622	7.2.15	22	
		623	7.2.15	14	
		624	7.2.5	13	
		625	7.2.6	2	
		626	7.2.15	11	
		627	7.2.15	12	
		628	7.2.15	9	
		629	7.2.15	10	
		700	7.2.21	10	
		710	7.2.3	7	
		730	7.2.2	4	
		731	7.2.2	15	
		732	7.2.2	7	
		733	7.2.2	17	
		734	7.2.2	9	
		735	7.2.2	10	
		736	7.2.2	3	
		742	7.2.2	14	
		743	7.2.2	16	
		744	7.2.2	1	
		745	7.2.2	13	
		746	7.2.2	2	
		747	7.2.2	12	
		748	7.2.2	5	
		749	7.2.2	6	
		751	7.2.2	8	
		830	7.2.26	6	
		J905	7.2.15	21	
		4401	7.2.14	13	
	1				

P/J No.	Fig. No.	Item No.	Remarks (destination)
402	7.2.16	16	
403	7.2.16	3	
404	7.2.16	13	
406	7.2.16	18	
407	7.2.4	2	
410	7.2.16	1	
411	7.2.16	5	
412	7.2.16	8	
414	7.2.16	19	
415	7.2.16	10	
416	7.2.16	14	
417	7.2.16	15	
418	7.2.16	4	
419	7.2.16	7	
420	7.2.16	17	
421	7.2.16	21	
430	7.2.16	6	
456	7.2.16	11	
457	7.2.16	9	
458	7.2.16	23	
459	7.2.16	12	
460	7.2.16	22	
461	7.2.16	2	
462	7.2.16	20	
480	7.2.19	8	
482	7.2.19	9	
483	7.2.19	10	
484	7.2.19	13	
485	7.2.19	11	
500	7.2.3	4	
501	7.2.15	4	
502	7.2.15	3	
503	7.2.5	7	
504	7.2.9	1	
507	7.2.13	1	MF Box
507	7.2.20	15	Option Box
508	7.2.9	7	
512	7.2.9	4	
513	7.2.9	2	
519	7.2.9	3	
521	7.2.12	5	
523	7.2.12	4	
524	7.2.12	6	
J530	7.2.12	8	

# CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.1 Plug/Jack Information

Remarks (destination)

P/J No.	Fig. No.	Item No.	Remarks (destination)
CN1	7.2.1	1	Control Panel
CN1	7.2.15	5	HDD
CN1	7.2.26	10	Finisher PWB
CN1	7.2.26	14	Finisher LVPS
CN2	7.2.1	2	Control Panel
CN2	7.2.15	7	HDD
CN3	7.2.26	9	
CN4	7.2.26	3	
CN5	7.2.26	4	
CN6	7.2.26	12	
CN7	7.2.26	20	
CN8	7.2.26	19	
CN9	7.2.26	1	
CN10	7.2.26	8	
CN11	7.2.26	17	
CN12	7.2.26	18	
CN13	7.2.26	2	
CN14	7.2.26	7	
CN15	7.2.26	13	
CN16	7.2.26	5	
CN51	7.2.26	11	
FS11	7.2.12	3	
FS12	7.2.12	2	
FS231	7.2.15	19	
FS232	7.2.15	18	
FS233	7.2.15	17	
FS234	7.2.15	20	
FS235	7.2.5	2	
FS236	7.2.5	3	
FS237	7.2.5	1	
FS238	7.2.5	4	
FS243	7.2.15	1	
FS244	7.2.15	23	

□Parts name list Parts name Fig.No. Item No. Remarks (destination) 7.2.22 DADF Cover Interlock Switch 2 **Docking Sensor** 7.2.23 12 Document Size Sensor 7.2.22 3 Document TE Size Sensor 7.2.22 9 Double Plug 7.2.23 3 Pause Switch/Finisher PWB(relay) Double Plug 7.2.23 7 Face up Tray/Finisher PWB(relay) **Double Plug** 7.2.23 9 Stapler Unit/Finisher PWB(relay) Reverse Sensor/Finisher PWB 10 Double Plug 7.2.23 (relay) Paper Path Cover Sensor/Finisher Double Plug 7.2.23 13 PWB (relay) Face up Tray/Finisher PWB(relay) Double Plug 7.2.24 7 **Empty Sensor** 7.2.21 7 Exit/Reverse Sensor 7.2.22 7 Exit/Reverse Solenoid 7.2.22 1 Feed in Sensor 7.2.21 8 Feed Motor 15 7.2.26 Full Stack Sensor 7.2.25 2 LED PWB 7.2.21 6 Lever Sensor 7.2.24 1 Lever Solenoid 7.2.24 2 Last Document Sensor 8 7.2.22 Near Full Sensor 7.2.24 5 Compile Motor 7.2.23 6 Paper in Sensor 7.2.25 5 Paper Path Cover Sensor 7.2.25 3 Paper Exit Sensor 7.2.23 8 Pause Switch 7.2.23 2 **Read Sensor** 7.2.22 4 Regi.Sensor 7.2.22 5 **Reverse Motor** 7.2.26 16 **Reverse Sensor** 7.2.25 4 Stack Height Sensor 7.2.24 3 Stamp Solenoid 7.2.22 6 Stapler Unit HP Sensor 7.2.23 11 Stepler Unit 7.2.23 1 Tamper HP Sensor 7.2.23 5 **Timing Sensor** 7.2.25 1 Top Cover Open Sensor 7.2.23 4 **Tray Elevator Motor** 7.2.24 6 Upper Limit Sensor 7.2.24 4

# 7.1 Plug/Jack Information CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

## 7.2 Plug/Jack Location Diagrams

7.2.1 Control Panel



(Figure-1) j0hn7001





(Figure-2) j0hn7002



# CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.2 Plug/Jack Location Diagrams

7.2.2 IIT



WorkCentre Pro 423/428

7.2.4 ROS



03/02

7-7

j0hn7004

# 7.2 Plug/Jack Location Diagrams CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

## 7.2.5 IOT Right Location

7.2.6 T/A Chute Assembly







(Figure-5) j0hn7005

(Figure-6) j0hn7006

# CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.2 Plug/Jack Location Diagrams

j0hn7006

7.2.8 Tray 1No Paper Sensor/Low Paper Sensor





j0hn7007

(Figure-8) j0hn7008

(Figure-7) j0hn7007

# 7.2 Plug/Jack Location Diagrams CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

7.2.9 RH Unit 1

7.2.10 RH Unit 2





j0hn7009

(Figure-9) j0hn7009

(Figure-10) j0hn7010

# CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.2 Plug/Jack Location Diagrams

j0hn7010



(Figure-11) j0hn7011

(Figure-12) j0hn7012

(8) J530

FS11

3

2



j0hn7012

# 7.2 Plug/Jack Location Diagrams CHAPTER 7 ELECTRICAL WIRING DIAGRAMS
#### CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.2 Plug/Jack Location Diagrams

7.2.13 MF Box

7.2.14 ESS





(Figure-13) j0hn7013

(Figure-14) j0hn7014

7.2.16 MCUSW PWB



(Figure-15) j0hn7015



(Figure-16) j0hn7016

j0hn7016

#### 7.2 Plug/Jack Location Diagrams CHAPTER 7 ELECTRIČAL WIRING DIAGRAMS



7.2.17 Cabinet(No Paper Sensor/Low Paper Sensor)

P/J112 1

Þ റ Ø A CAR 0

j0hn7017

(Figure-17) j0hn7017





P/J111 1

7.2.18 Cabinet(Interlock Switch/Tray 3 T/A Sensor)

## CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.2 Plug/Jack Location Diagrams







(Figure-19) j0hn7019

(Figure-20) j0hn7020

# 7.2 Plug/Jack Location Diagrams CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

#### WorkCentre Pro 423/428

7-16 03/02

## CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.2 Plug/Jack Location Diagrams

#### 7.2.21 DADF 1

7.2.22 DADF 2



(Figure-21) j0hn7021

(Figure-22) j0hn7022

#### 7.2.23 Finisher Front

7.2.24 Finisher(TM Guide)



(Figure-23) j0hn7023



(Figure-24) j0hn7024

7.2 Plug/Jack Location Diagrams CHAPTER 7 ELECTRICAL WIRING DIAGRAMS

7.2.25 Finisher Rear 1

7.2.26 Finisher Rear 2



(Figure-25) j0hn7025

(Figure-26) j0hn7026

## CHAPTER 7 ELECTRICAL WIRING DIAGRAMS 7.2 Plug/Jack Location Diagrams

# CHAPTER 8 ACCESSORIES

#### Contents

8.1 Additional Tray Kit	2
8.1.1 Product Code	2
8.2 Upgrade Kit A(4MB) FX Only	2 4
8.2.1 Product Outline	4
8.2.2 Product Code	4
8.2.3 Installation Procedure	4 6
8.3.1 Product Outline	0 6
8.3.2 Product Code	6
8.3.3 Installation Procedure	6
8.4 Offset Output Kit	8
8.4.1 Product Outline	88 م
8.4.3 Installation Procedure	8
8.5 MSI Kit	11
8.5.1 Product Code	
8.5.2 Installation Procedure	
8.6.1 Product Outline	
8.6.2 Product Code	13
8.6.3 Installation Procedure	13 15
8.7.1 Product Outline	13
8.7.2 Product Code	15 15
8.7.3 Installation Procedure	15
8.8 Stapler Finisher	17
8.8.1 Product Outline	17 17
8.8.3 Installation Procedure	
8.9 English Kit	22
8.9.1 Product Code	
8.9.2 Installation Procedure	22 23
8.10.1 Product Outline	23
8.10.2 Product Code	23
8.10.3 Installation Procedure	23
9.11 1 Product Outline	∆∠
8.11.2 Product Code	∠ð 28
8.11.3 Installation Procedure	

8.12 G3 Port
<ul> <li>8.12.1 Product Outline</li></ul>
<ul> <li>8.13.1 Product Outline</li> <li>8.13.2 Product Code</li> <li>8.13.3 Installation Procedure</li> <li>8.14 G4 Port</li> </ul>
<ul><li>8.14.1 Product Code</li><li>8.14.2 Installation Procedure</li><li>8.15 Line/Ext Switching Kit</li></ul>
<ul> <li>8.15.1 Product Outline</li> <li>8.15.2 Product Code</li> <li>8.15.3 Installation Procedure</li> <li>8.16 Fax Hard Disk Kit</li> </ul>
<ul> <li>8.16.1 Product Outline</li> <li>8.16.2 Product Code</li> <li>8.16.3 Installation Procedure</li> <li>8.17 8MB Memory</li> </ul>
8.17.1 Product Outline 8.17.2 Product Code 8.17.3 Installation Procedure 8.18 Printer Kit
<ul><li>8.18.1 Product Code</li><li>8.18.2 Installation Procedure</li><li>8.19 Internet FAX</li></ul>
<ul><li>8.19.1 Product Outline</li><li>8.19.2 Product Code</li><li>8.19.3 Installation Procedure</li><li>8.20 Token Ring</li></ul>
<ul> <li>8.20.1 Product Outline</li> <li>8.20.2 Produce Code</li> <li>8.20.3 Installation Procedure</li> <li>8.21 Duplex Auto Document Feeder</li> </ul>
8.21.1 Product Outline 8.21.2 Product Code 8.21.3 Installation Procedure 8.22 Stamp Kit (Red)
8.22.1 Product Outline 8.22.2 Product Code 8.22.3 Installation Procedure

 29
 29
 29
 29
 32
 32
 32
 32
 35
35
 35
 . 36
36
 36
 . 38
38
00
00
 40
 10
 40 10
 40 10
 40 42
 42 12
 42 46
 +0
 46
 46
 40 ⊿ג∕
 40
 48
 48
 48 51
 .51
 51
 51
 51
 . 56
 56
 56
 56

# Contents CHAPTER 8 ACCESSORIES

#### 8.1 Additional Tray Kit

#### **Product Code** 8.1.1

Additional Tray Kit: EL200122 (FX) : EL200150 (FXA,FXK,TFX,PRC) : EL200190 (DMO-E)

#### 8.1.2 Installation Procedure

1. Check the accessories. (Figure-1) 1) Tray Unit.....1



(Figure-1) j0hn8001 2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer ٠ control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Remove the Tray 3.
- 4. Remove the Front Blind Cover. (Figure-2)
  - 1) Release the Hook.
  - 2) Remove the Front Blind Cover.

8-2 03/02



(Figure-2) j0hn8002

- 5. Return Tray 3 to the original position.
- 6. Install the Tray Unit (Tray 4).
- 7. Load paper on Tray 4.
- 8. When installing the Tray 4, press the Tray Front/Rear Latch to the rear to hook, and then install the Tray 4.



11. Check whether Tray 4 use is set.

1) Enter C/E Mode.

#### **CHAPTER 8 ACCESSORIES** 8.1 Additional Tray Kit

2) Set the Chain/Function code "50/62" and press the Start button.

3) Change the set value to 1.

4) Press the "Restart".

12. Check the number of Trays.

1) Enter C/E Mode.

2) Set the Chain/Function code "50/33" and press the Start button.

3) Check that the set value is 3.

4) Press the "Restart".

13. Ensure that Tray 4 is displayed on the display of IIT.

14. Check that the machine operates normally.

15. Store the Front Blind Cover removed in Step 4.

#### 8.1 Additional Tray Kit CHAPTER 8 ACCESSORIES

#### 8.2 Upgrade Kit A(4MB) FX Only

#### 8.2.1 Product Outline

This kit makes A4 Page Memory available for 90-degree rotation and other functions using Memory. Up to A3 Page Memory is available.

#### 8.2.2 Product Code

Upgrade Kit A (4MB): WF11

#### 8.2.3 Installation Procedure

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 1. Check the accessories. (Figure-1)
  - 1) Page Memory PWB..... 1



(Figure-1) j0hn8003

- 2. Remove the Screws (3) and the Rear Cover.
- 3. Remove the Screws (7) and the Electrical Cover.
- 4. Install the Page Memory PWB. (Figure-2, Figure-3)

#### CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

8-4 03/02

- Install the Page Memory PWB on A4MEM-1 of MCU/SW. - When installing two Page Memory PWBs, install the second one to A4MEM-2.



#### **CHAPTER 8 ACCESSORIES** 8.2 Upgrade Kit A(4MB) FX Only



- 5. Return the Electrical Cover and Rear Cover to their original positions.
- 6. Connect the power cord and turn on the power.
- 7. Check whether the 90-degree rotation function is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/9" and press the Start button.
  - 3) Change the set value to 1.
- 8. Check whether Page Memory is connected.
  - 1) Set the Chain/Function code "50/40" and press the Start button.
    - If one Page Memory PWB is added, check that the set value is 1.
    - If two Page Memory PWBs are added, check that the set value is 2.
    - Check that the set value is 2.

#### 8.2 Upgrade Kit A(4MB) FX Only CHAPTER 8 ACCESSORIES

#### 8.3 Electronic Sort Kit

#### 8.3.1 Product Outline

This kit enables the electronic sort function.

#### 8.3.2 Product Code

Electronic Sort Kit: EL200127

#### 8.3.3 Installation Procedure

#### WARNING

#### Switch off the machine and disconnect the power cord.

1.	Check the accessories. (Figu	ıre-1)
	1) HDD Assembly	1
	2) HDC PWB	1
	3) Spacer	2
	4) Core	2
	5) Screw	6
	6) Wire Harness	1
	7) Flat Cable	1



(Figure-1) j0hn8006

- 2. Remove the Screws (3) and the Rear Cover.
- 3. Remove the Screws (7) and the Electrical Cover.
- 4. Install the HDD Assembly. (Figure-2)

8-6 03/02

#### CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

1) Install the HDD Assembly.

2) Tighten the screws (4).



(Figure-2) j0hn8007

- 5. Install the HDC PWB. (Figure-3)
  - 1) Install the Spacers (2).
  - 2) Install the HDC PWB.
  - 3) Tighten the screws (2).

#### **CHAPTER 8 ACCESSORIES** 8.3 Electronic Sort Kit



- 6. Connect the Wire Harness and Flat Cable. (Figure-4)
  - 1) Connect the Wire Harness.
  - 2) Attach the Cores (2) to the Flat Cable.
  - 3) Connect the Flat Cable.



- 7. Return the Electrical Cover and Rear Cover to their original positions.
- 8. Connect the power cord and turn on the power.
- 9. Check whether the Hard Disk is connected. 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/52" and press the Start button.
  - 3) Check that the set value is 1.
  - 4) Exit C/E Mode.

8.3 Electronic Sort Kit **CHAPTER 8 ACCESSORIES** 

#### 8.4 Offset Output Kit

#### **Product Outline** 8.4.1

This kit enables copy offset output to the Top Tray.

#### 8.4.2 Product Code

Offset Output Kit: EL200126

#### 8.4.3 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) OCT Assembly..... 1
  - 2) Paper Weight..... 1
  - 3) Holder..... 1
  - 4) Screw..... 1
  - 5) Tapping Screw..... 4



(Figure-1) j0hn8010

8-8 03/02

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer • control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Pull out the R/H Unit.
- 4. Remove the R/H Lower Cover. (Figure-2)
  - 1) Remove the screws (2).
  - 2) Remove the Handle.
  - 3) Remove the screws (2).
- 4) Remove the R/H Lower Cover.



(Figure-2) j0hn8011

- 5. Remove the Exit Assembly. (Figure-3)
- 1) Remove the screw.
- 2) Push in the Rear Upper Rail.
- 3) Loosen the Screws (2).
- 4) Remove the Screws (2).
- 5) Remove the Exit Assembly.

#### **CHAPTER 8 ACCESSORIES** 8.4 Offset Output Kit





(Figure-3) j0hn8012

- 6. Install the OCT Assembly. (Figure-4)
  - 1) Install the OCT Assembly.
  - 2) Pull out the Rear Upper Rail.
  - 3) Tighten the Screw.
  - 4) Tighten the Screws (2).
  - 5) Tighten the Screws (2).
  - 6) Connect the Connectors (2).

(Figure-4) j0hn8013

8.4 Offset Output Kit CHAPTER 8 ACCESSORIES

- 7. Return the R/H Lower Cover to the original position.
- 8. Push in the R/H Unit.
- 9. Install the Holder and Paper Weight. (Figure-5)
  - 1) Install the Holder.
  - 2) Install the Paper Weight.



(Figure-5) j0hn8086

- 10. Connect the power cord and turn on the power.
- 11. Check whether the OCT is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/11" and press the Start button.
  - 3) Check that the set value is 1.
  - 4) Exit C/E Mode.
- 12. Check that the Offset operates normally.
- 13. Explain to the key operator how to use Offset function.

#### CHAPTER 8 ACCESSORIES 8.4 Offset Output Kit

#### 8.5 MSI Kit

#### 8.5.1 Product Code

MSI Kit: EL200123(FX)

: EL200204 (DMO-E)

#### 8.5.2 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) MSI Assembly..... 1
  - 2) Rear Cover..... 1
  - 3) Damper..... 1
  - 4) Screw(silver)..... 1
  - 5) Screw(black)..... 2
  - 6) Tapping Screw..... 1



(Figure-1) j0hn8014

Turn the main unit power off. 2.

> On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer ٠ control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Remove the Blind Cover. (Figure-2)
  - 1) Remove the screws (2).
  - 2) Remove the Blind Cover.



- Using the screws (2) removed in step 3, secure the OCT Cover. 4.
- 5. Install the MSI Assembly. (Figure-3)
  - 1) Install the MSI Assembly.
- 2) Tighten the Tapping Screw.
- 3) Tighten the Screws (black)(2).



(Figure-3) j0hn8016

- 6. Connect the Connectors (3) and install the Damper. (Figure-4) 1) Connect the Connectors (3).
  - 2) Install the Damper.

03/02 8-11

#### 8.5 MSI Kit **CHAPTER 8 ACCESSORIES**



(Figure-4) j0hn8017

- 7. Install the Rear Cover. (Figure-5)
  - 1) Install the Rear Cover.
  - 2) Tighten the screw (silver).



- Connect the power cord and turn on the power. 8.
- Check whether the MSI is installed. 9.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function "50/6" and press the Start button.
  - 3) Check that the set value is 1.
  - 4) Exit C/E Mode.
- 10. Correct the play of the Side Guide.

8-12 03/02

- 1) Set the Side Guide to the Min. width position.
- 2) Set Chain/Function "20/5" and press the Start button.
- 3) Select "Save" and press the Start button.
- 4) Press the Start button again.
- 5) Set the Side Guide to the Max. width position.
- 6) Set Chain/Function "20/6" and press the Start button.
- 7) Select "Save" and press the Start button.
- 8) Press the Start button again.
- 9) Exit C/E Mode.
- 11. Ensure that the "Bypass Tray" is displayed on IIT display.
- 12. Store the Blind Cover removed in Step 3.
- 13. Check the MSI operation.
- 14. Explain to the key operator how to use MSI.

#### **CHAPTER 8 ACCESSORIES** 8.5 MSI Kit

#### 8.6 Duplex Unit Kit

#### 8.6.1 Product Outline

This kit copies two document sheets on both sides of a single sheet.

When installing this kit on DocuCentre230/280, the following kits are necessary. Prepare the kits and install them at installation.

- (1) Electronic Sort Kit(Product Code: EL200127)(8.3)
- (2) Offset Output Kit (Product Code: EL200126)(8.4)

#### 8.6.2 Product Code

Duplex Unit Kit: EL200124

#### 8.6.3 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) Duplex Assembly..... 1
  - 2) Label..... 1
  - 3) Screw..... 1



(Figure-1) j0hn8019

- Turn the main unit power off. 2. On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.
  - FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
  - Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Pull out the R/H Unit.
- Install the Duplex Assembly. (Figure-2) 4. 1) Install the Duplex Assembly.
  - 2) Tighten the screw.
  - 3) Connect the Connector.



(Figure-2) j0hn8020

8.6 Duplex Unit Kit **CHAPTER 8 ACCESSORIES** 

5. Install the Label. (Figure-3)



- 6. Push in the R/H Unit.
- 7. Connect the power cord and turn on the power.
- 8. Check whether Duplex is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/10" and press the Start button.
  - 3) Check that the set value is 1.
  - 4) Exit C/E Mode.
- 9. Check the following of IIT display.
  - [DADF uninstalled]
  - "2 Sided" is displayed.
  - [DADF installed]
  - When "2 Sided" is selected, "1•2 sided", "2•2 sided" and "2•1 sided" are displayed.
- 10. Check the Duplex operation.
- 11. Explain to the key operator how to use Duplex.

#### CHAPTER 8 ACCESSORIES 8.6 Duplex Unit Kit

#### 8.7 Side Tray Kit

#### 8.7.1 Product Outline

This kit enables the copies to be output face up.

- When installing this kit on DocuCentre230/280, the following kits are necessary. Prepare the kits and install them at installation.

(1) Electronic Sort Kit (Product Code: EL200127)(8.3)

- (2) Offset Output Kit (Product Code: EL200126)(8.4)
- When installing this kit on DocuCentre230/280CF or 230/280FS, an Offset Output Kit (Product Code: EL200126)(8.4) is necessary. Prepare the kit and install it at installation.

#### 8.7.2 Product Code

Side Tray Kit: EL200125

#### 8.7.3 Installation Procedure

- 1. Check the accessories. (Figure-1). 1) Side Tray..... 1
  - j0hn8022

(Figure-1) j0hn8022

- Turn the main unit power off. 2. On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.
  - FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
  - Printer machines: Ensure that "Ready to print or fax" is indicated on the printer • control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Remove the Right Blind Cover. (Figure-2)
  - 1) Remove the screws (2).
  - 2) Remove the IIT Right Cover.



Secure the OCT Cover with the Screws (2) removed in Step 3. 4.

8.7 Side Tray Kit CHAPTER 8 ACCESSORIES

8-16 03/02

5. Install the Side Tray. (Figure-3)







- Connect the power cord and turn on the power. 6.
- 7. Perform the setting that the Face Up Tray is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/7" and press the Start button.
  - 3) Change the set value to 1.
  - 4) Exit C/E Mode.
- 8. Check that "Side Output Tray" is displayed on IIT display.
- 9. Ensure that copy is ejected to the Side Tray.
- 10. Explain to the key operator how to eject copy to the Side Tray.

#### **CHAPTER 8 ACCESSORIES** 8.7 Side Tray Kit

#### 8.8 Stapler Finisher

#### 8.8.1 Product Outline

Copies are delivered facing up and they will be stapled.

- This kit is installed on machines with an OCT.

- If an OCT is not already installed, the following kit is necessary. Obtain the kit and install it before installing the finisher. Offset Output Kit (Product Code: EL200126)(8.4)

#### 8.8.2 Product Code

Staple Finisher: QL200057 (FX) : QL200134 (FXA, FXK, TFX, PRC, DMO-E) : QL200203 (DMO-W)

#### 8.8.3 Installation Procedure

1. Check the accessories. (Fig	ure-1)
1) Link Guide	1
2) Rail Cover	1
3) Rear Stay Cover	1
4) Clip	2
5) Screw(Large)	2
6) Base Frame	1
7) Finisher	1
8) Screw(Small)	1
9) Side Tray	1
10) Finisher Receiving Tray	1
11) User Guide	1



(Figure-1) j0hn8066

8.8 Stapler Finisher **CHAPTER 8 ACCESSORIES** 

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Remove the Blind Cover from the right side of the printer (Figure-2).
  - 1) Remove the screws (2).
  - 2) Remove the Blind Cover.



(Figure-2) j0hn8023

4. Remove the Finisher Blind Covers (4). (Figure-3) 1) Remove the Finisher Blind Covers (4) with a flat mini driver or similar tool.

8-18

03/02



j0hn8142

(Figure-3) j0hn8142

5. Install the Link Guide. (Figure-4)

1) Install the Link Guide and secure it with the Screws (2).



(Figure-4) j0hn8067

#### **CHAPTER 8 ACCESSORIES** 8.8 Stapler Finisher

- 6. Install the Base Frame and secure it with the screws (L)(2) enclosed.(Figure-5)
  - 1) Engage the hooks of the rack with the square holes (2) of the main unit.
  - 2) Tighten the screws (L)(2).



7. Install the Rail Cover. (Figure-6) 1) Slide the Rail Cover to install.



8. Install the Rear Stay Cover. (Figure-7) 1) Install the Rear Stay Cover.



(Figure-7) j0hn8071

- 9. Install the Finisher. (Figure-8)
  - 1) Mount the Finisher by aligning the bottom Studs (4) with the Base Frame holes.
  - 2) Secure the Finisher with the Screw (S) enclosed.



(Figure-8) j0hn8072

8.8 Stapler Finisher CHAPTER 8 ACCESSORIES

- 10. Install the Finisher Receiving Tray. (Figure-9)
  - 1) Insert the Finisher Receiving Tray into the opening of the Finisher.
  - 2) Secure it with the Clips (2).



(Figure-9) j0hn8074

11. Install the Side Tray. (Figure-10) 1) Align the bosses with the holes.



(Figure-10) j0hn8073

(Figure-11) j0hn8075 13. Connect the AC Wire Harness. (Figure-12) 1) Remove the screw. 2) Remove the Right Cover Cap(Upper).

1

- 3) Connect the connector.
- 4) Secure the AC Wire Harness using the existing Clamp.



12. Secure the Wire Harness on the Rear Stay Cover with a Clamp. (Figure-1-11) 1) Secure the Wire Harness.

8-20 03/02

#### **CHAPTER 8 ACCESSORIES** 8.8 Stapler Finisher



- 14. Return the Right Cover Cap (Upper) to its original position.
- 15. Connect the Wire Harness. (Figure-13)
  - 1) Remove the screw.
  - 2) Remove the Right Cover Cap (Lower).
  - 3) Connect the Connector.



19. Check whether the Finisher is installed.

- 1) Enter C/E Mode.
- 2) Set the Chain/Function code "50/51" and press the Start button.
- 3) Check the set value is 1.
- 4) Exit C/E Mode.
- 20. Ensure that the "Output" is displayed on the IIT display.
- 21. Check the Finisher operation.
- 22. Store the Blind Cover and Screws (2) removed in Steps 4 and 5.
- 23. Explain to the key operator how to use the Finisher.

- 16. Return the Right Cover Cap (Lower) to its original position.
- 17. Open the Finisher Front Door and remove the screw that secures the Stapler. (Figure-
  - 14)
  - Note If the screw is not removed, "Finisher Error"... H5 fault occurs at power on.



18. Connect the power cord and turn on the power.

8.8 Stapler Finisher **CHAPTER 8 ACCESSORIES** 

#### 8.9 English Kit

8.9.1 Product Code

English Kit: EL200128(FX,FXA,FXK,TFX)

#### 8.9.2 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) Control Panel..... 1
  - 2) User Guide (Copy)..... 1
  - 3) User Guide (FAX)...... 1
  - 4) Additional Features User Guide.. 1



(Figure-1) j0hn8087

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

Switch off the machine and disconnect the power cord.

8-22 03/02

- 3. Replace the IIT Control Panel. (Figure-2)
  - 1) Remove the screws (4).
  - 2) Move to the right a little and lift up to release the Panel Hook from the IIT Frame.
- 3) Disconnect the Connector.
- 4) Remove the Control Panel.
- 5) Install the Control Panel in the kit.





- 4. Connect the power cord and turn on the power.
- 5. Store the Control Panel you have removed.

#### **CHAPTER 8 ACCESSORIES** 8.9 English Kit

#### 8.10 FAX Unit

#### 8.10.1 Product Outline

- This kit is installed on the machine with A3 Page Memory.

- When installing this kit on DocuCentre230/280, the Upgrade Kit A(4MB) (Product Code: WF11)(8.1) is necessary. Prepare the kit and install it at installation. [DocuCentre230]: Two sets [DocuCentre280]: One set

#### 8.10.2 Product Code

FAX Unit: EL200106(FX) : EL200135(FXA) : EL200137(FXK) : EL200136(TFX)

#### 8.10.3 Installation Procedure

#### WARNING

#### Switch off the machine and disconnect the power cord.

1. Check the accessories. (Figure-1) FAX Unit 1) MF Box...... 1 2) Data Cable (FX Only).....1 3) KL-Clip ...... 1 4) Screw ...... 4 5) One Touch Panel .....1 6) Label, JATE (FX Only) ..... 1 7) User Guide, Facsimile......1 8) NCU PWB (DMO) ..... 1

Δ Ŷ Ð, 7 8

(Figure-1) j0hn8026



8.10 FAX Unit **CHAPTER 8 ACCESSORIES** 

2. DMO E Only: Refer to Figure 2 and set the jumpers for the area using the data supplied in Table 1.

Jumper	Country				
	S. Africa	Russia	Turkey	India	Morocco
JP 1	2-3	2-3	2-3	Х	Х
JP 2	Х	Х	2-3	Х	Х
JP 3	0	0	0	0	0
JP 4	0	Х	0	0	Х
JP 5	0	0	0	0	0
JP 6	3-5	2-5	4-5	3-5	2-5
JP 7	2-3	2-3	2-3	2-3	2-3
JP 8	2-3	2-3	2-3	2-3	2-3
JP 9	2-3	2-3	2-3	2-3	Х
JP 10	2-3	2-3	2-3	2-3	Х
JP 11	Х	Х	0	0	Х
JP 12	0	0	0	0	0
JP 13	0	0	0	0	0
JP 14	0	0	Х	Х	0
JP 15	0	0	Х	0	0
JP 16	1-2	1-2	2-3	1-2	1-2
JP 17	2-3	2-3	1-2	2-3	2-3
JP 18	2-3	2-3	1-2	2-3	2-3

#### Table 1 DMO E Jumper Settings

#### **DMO E Only:** Adjust the jumper settings (Figure-2). 3.



#### (Figure-2) p1-002-A

4. Install the new NCU PWB (Figure 3).

- 1) Install the DMO NCU PWB from the kit.
- 2) Tighten the 2 screws.



#### **CHAPTER 8 ACCESSORIES** 8.10 FAX Unit

P-1-002-A

- 5. Remove the Screws (3) and the Rear Cover.
- 6. Remove the Screws (7) and the Electrical Cover.
- 7. Install the MF Box. (Figure-4)
  - 1) Install the MF Box.
  - 2) Secure it with the KL-Clip.
  - 3) Open the MF Box.





8. Connect the Connectors (2). (Figure-5)



1) Close the MF Box.

2) Tighten the screws (2).





10. Provide an access hole in the Rear Cover for a modular jack. (Figure-7) 1) Remove the blind plate of LINE 1.



(Figure-7) j0hn8030

9. Close the MF Box. (Figure-6)

WorkCentre Pro 423/428

#### 8.10 FAX Unit **CHAPTER 8 ACCESSORIES**

- 11. Return the machine to its original state.
- 12. Remove the IIT Control Panel. (Figure-8)
  - 1) Remove the screws (4).
  - 2) Move to the right a little and lift up to release the Panel Hook from the IIT Frame.
  - 3) Disconnect the connector.
  - 4) Remove the Control Panel.



- (Figure-8) j0hn8025
- 13. Install the One Touch Panel. (Figure-9)
  - 1) Remove the Panel.
  - 2) Install the One Touch Panel.
  - 3) Connect the Connector.



(Figure-9) j0hn8031

8-26 03/02

- 14. Return the IIT Control Panel to its original position.
- 15. Connect the phone line to the "LINE1" on the Rear Cover.
- 16. Install the Label (JATE). (Figure-10) 1) Install the Label.



(Figure-10) j0hn8096

17. [FX Only] For the machine with DADF, put the Quick Reference Book on the DADF Top Cover. (Figure-11).



- 18. Store the removed panel.
- 19. Connect the power cord and turn on the power.

#### **CHAPTER 8 ACCESSORIES** 8.10 FAX Unit

20. Perform the Country Setting as follows:

- 1. Enter C/E mode by holding down "0" and "Start" for 5 sec.
- 2. Select Menu>Custom Presets>Diagnostics>Chain Function.
- 3. Select Chain 999, Function 1 and press "Start".
- 4. Select Enter Data and enter a country value from Table 2 and press "Start"
- 5. Select Chain Function, Chain 20, Function 92
- 6. Press "Start"

Country	Area	Selector Value
Brazil	DMO-W	1 (Default)
Argentina	DMO-W	2
Chile	DMO-W	3
Mexico	DMO-W	4
S Africa	DMO-E	1 (Default)
Russia	DMO-E	2
Turkey	DMO-E	3
India	DMO-E	4
Morocco	DMO-E	5

#### Table 2 Country Selector Table

21. Confirm the setting as follows:

- 1. Enter C/E mode by holding down "0" and "Start" for 5 sec.
- 2. Select Menu>Custom Presets>Diagnostics>Chain Function.
- 3. Select Chain50, Function 120 and press "Start".
- 4. Confirm that the Country Code is as shown in Table 3.

#### Table 3 Country Code Table

Country	Area	Country Code
Brazil	DMO-W	22
Argentina	DMO-W	7
Chile	DMO-W	37
Mexico	DMO-W	115
S Africa	DMO-E	159
Russia	DMO-E	184
Turkey	DMO-E	174
India	DMO-E	83
Morocco	DMO-E	119

#### 8.10 FAX Unit CHAPTER 8 ACCESSORIES
## 8.11 Speed Dial Expansion Kit

## 8.11.1 Product Outline

This kit is used to expand the number of Speed Dial destinations from 200 to 999.

## 8.11.2 Product Code

Speed Dial Expansion Kit: EL200115

## 8.11.3 Installation Procedure

1. Check the accessories. (Figure-1) 1) MMB-B PWB...... 1



(Figure-1) j0hn8089

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer • control panel.

## WARNING

Switch off the machine and disconnect the power cord.

8-28 03/02

- 3. Remove the Cables from the Rear Cover.
- 4. Remove the Screws (3) and the Rear Cover.
- 5. Remove the Screws (7) and the Electrical Cover.
- 6. If the machine has a FAX Hard Disk (8.16), remove it.

## CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

- 7. Replace the MMB PWB. (Figure-2)
  - 1) Remove the Screws (2).
  - 2) Remove the MMB-A PWB.
  - 3) Remove the MMB-B PWB.
  - 4) Tighten the Screws (2).



(Figure-2) j0hn8090

- 8. Return the machine to its original state.
- 9. Connect the power cord and turn on the power.

# **CHAPTER 8 ACCESSORIES** 8.11 Speed Dial Expansion Kit

## 8.12 G3 Port

#### 8.12.1 Product Outline

This kit adds a G3 port for the simultaneous processing of transmission and receiving.

- When installing this kit for the first time, prepare also the Option Box Kit (Product Code: EL200111) for installation at the same time.



A machine with the ISDN/G4 kit does not require the Option Box Kit because the Option Box is already mounted.

#### 8.12.2 Product Code

G3 Port: EL200109 (FX) : EL200139 (FXA) : EL200141 (FXK) : EL200140 (TFX) Option Box Kit: EL200111 (FX) : EL200144 (220V:FXA,FXK) : EL200143 (110V:TFX)

#### 8.12.3 Installation Procedure

1. Check the accessories. (Figure-1) Additional G3 Port 1) G3M PWB.....1 2) NCU-C PWB......1 3) Data Cable.....2 4) Screw ......4 Option Box Kit (a) Option Box.....1 (b) Lower Bracket .....1 (c) Upper Bracket .....1 (d) Screw......8



(Figure-1) j0hn8032

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

#### WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Remove the Screws (3) and the Rear Cover.
- 4. Remove the Screws (7) and the Electrical Cover.
- 5. Remove the Screws (2) and remove the Rear Cover from the Cabinet.
- 6. Install the Upper Bracket. (Figure-2)

## 8.12 G3 Port **CHAPTER 8 ACCESSORIES**

## WorkCentre Pro 423/428

8-30 03/02

#### CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

1) Install the Upper Bracket.

2) Tighten the screws (2).



- 7. Install the Lower Bracket. (Figure-3)
  - 1) Install the Lower Bracket.
  - 2) Tighten the screws (2).



- 8. Install the Option Box. (Figure-4)
  - 1) Install the Screws (3) on the Stud.
  - 2) Install the Option Box.
  - 3) Tighten the screws (3).
  - 4) Tighten the screw.



(Figure-4) j0hn8035

9. Connect the Connectors (2) and Flat Cable. (Figure-5) 1) Connect the Connectors (2).





(Figure-5) j0hn8036

## **CHAPTER 8 ACCESSORIES** 8.12 G3 Port

∕jÓhn8036

10. Remove the Screws (6) and the Option Box Cover.

- 11. Install the G3M PWB and NCU-C PWB. (Figure-6)
  - 1) Connect the G3M PWB to J330 and J331.
  - 2) Connect the NCU-C PWB to J332.

If another G3M PWB and NCU-C PWB are installed, connect them to the following Connectors.

G3M PWB: J340, J341

NCU-C PWB: J342



12. Return the Option Box Cover removed in Step 10 to its original position and secure G3M PWB and NCU-C PWB using the Screws (4) in the Kit.

- 13. Provide an access hole in the Rear Cover of the Cabinet for a modular jack. (Figure-7)
  - 1) Remove the blind plate of HAND SET. (Machine with handset only)
  - 2) Remove the blind plate of EXT.LINE2/LINE2.

When installing another G3M PWB, bore the following hole for a modular jack. EXT.LINE3/LINE3



(Figure-7) j0hn8038

14. Return the machine to its original state.

If the machine has a handset, change the handset modular jack connection from Note the TEL terminal on the IOT Rear Cover to the HANDSET terminal on the Cabinet Rear Cover.

15. Connect the phone lines (2) to the "EXT.LINE2/LINE2" on the Cabinet Rear Cover. 16. Connect the power cord and turn on the power.

- 17. Check whether the G3M is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/108" and press the Start button.
  - 3) Check that the set value is 3.

Note If another G3M PWB was installed, the set value should be 7. 18. Set the [Local Fax Information] items 6 to 8 and 15 to 17. If another G3M PWB was installed, set the [Local Fax Information] information

Note

items 9 to 11 and 18 to 20.

j0hn8038

## 8.12 G3 Port **CHAPTER 8 ACCESSORIES**

## 8.13 ISDN/G4 Kit

#### 8.13.1 Product Outline

This kit enables communicating in G4 mode through NTT INS64 Net.

- When installing this kit, prepare also the Option Box Kit (Product Code: EL200111) for installation at the same time.
- Ref. A machine with the Additional G3 Port does not require the Option Box Kit because the Option Box is already mounted.

#### 8.13.2 Product Code

ISDN/G4 Kit: EL200108 (FX) : EL200138 (FXA,FXK,TFX) Option Box Kit: EL200111 (FX) : EL200144 (220V: FXA,FXK) : EL200143 (110V:TFX)

#### 8.13.3 Installation Procedure

1. Check the accessories. (Figure-1) ISDN/G4 Kit 1) G4/ICM PWB .....1 2) INS64 Cable.....1 3) Earth Spring .....2 4) Screw.....2 Option Box Kit (a) Option Box.....1 (b) Lower Bracket.....1 (c) Upper Bracket .....1 (d) Screw.....8





- 2. Turn the main unit power off. On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.
  - FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
  - Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

## WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Remove the Screws (3) and the Rear Cover.
- 4. Remove the Screws (7) and the Electrical Cover.
- 5. Remove the Screws (2) and remove the Rear Cover from the Cabinet.
- 6. Install the Upper Bracket. (Figure-2)

#### CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

# CHAPTER 8 ACCESSORIES 8.13 ISDN/G4 Kit

1) Install the Upper Bracket. 2) Tighten the screws (2).



- 7. Install the Lower Bracket. (Figure-3)
  - 1) Install the Lower Bracket.
  - 2) Tighten the screws (2).



- 8. Install the Option Box. (Figure-4)
- 1) Install the Screws (3) on the Stud.
- 2) Install the Option Box.
- 3) Tighten the screws (3).
- 4) Tighten the screw.



(Figure-4) j0hn8035

9. Connect the Connectors (2) and Flat Cable. (Figure-5) 1) Connect the Connectors (2).

2) Connect the Flat Cable.



(Figure-5) j0hn8036

# 8.13 ISDN/G4 Kit **CHAPTER 8 ACCESSORIES**



- 10. Remove the Screws (6) and the Option Box Cover.
- 11. Install the G4/ICM PWB. (Figure-6)
  - 1) Connect the G4/ICM PWB to J360.



(Figure-6) j0hn8040

12. Place the Earth Spring gently with the holes (2) on the side. (Figure-7)



8-34 03/02

- 13. Return the Option Box Cover removed in Step 10 and secure the G4/ICM PWB using the Screws (2) in the Kit.
- 14. Provide an access hole in the Rear Cover of the Cabinet for a modular jack. (Figure-8)
  - 1) Remove the blind plate of HANDSET. (Machine with handset only)
  - 2) Remove the blind plate of ISDN/ISDN LINE.



(Figure-8) j0hn8042

- 15. Return the machine to its original state.
- Note Cabinet Rear Cover.
- 16. Connect the phone line to ISDN/ISDN LINE on the Cabinet Rear Cover with INS64 Cable.
- 17. Connect the power cord and turn on the power.
- 18. Check that the "G4" is displayed on the IIT display.
- 19. Check whether the G4M is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/107" and press the Start button. 3) Check that the set value is 1.
- 20. Check whether the ICM is installed.
  - 1) Set the Chain/Function code "50/109" and press the Start button.
  - 2) Check that the set value is 1.
- 3) Exit C/E Mode.
- 21. Set the [Local Fax Information] items 21 and 23 to 38.

# **CHAPTER 8 ACCESSORIES** 8.13 ISDN/G4 Kit

j0hn8042

If the machine has a handset, change the handset modular jack connection from the TEL terminal on the IOT Rear Cover to the HANDSET terminal on the

## 8.14 G4 Port

#### 8.14.1 Product Code

Additional G4 Port: EL200110

#### 8.14.2 Installation Procedure

- 1. Check the accessories. (Figure-1) G4 Port 1) G4M PWB.....1
  - 2) Screw ......2



(Figure-1) j0hn8043

2. Turn the main unit power off.

[Printer unequipped]

Ensure that "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm the broadcasting job is not at "Current Jobs" folder, then power off and disconnect the power cord.

[Printer equipped]

Ensure that "Ready to print or fax" is indicated on the printer control panel, then turn the power off and disconnect the power cord.

- 3. Disconnect the Cables from the Cabinet Rear Cover.
- 4. Remove the Screws (2) and remove the Rear Cover from the Cabinet.
- 5. Remove the Screws (8) and the Option Box Cover.
- 6. Install the G4M PWB. (Figure-2)

#### CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

1) Connect the G4M PWB to J340.



(Figure-2) j0hn8044

- 7. Return the Option Box Cover removed in Step 5 and secure the G4M PWB using the Screws (2) in the Kit.
- 8. Return the machine to its original state.
- 9. Connect the power cord and turn on the power.
- 10. Check whether the G4M is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/107" and press the Start button.
  - 3) Check that the set value is 3.
  - 4) Exit C/E Mode.

11. Set the [Local Fax Information] items 22 and 23 to 38.

## 8.14 G4 Port **CHAPTER 8 ACCESSORIES**

## 8.15 Line/Ext Switching Kit

## 8.15.1 Product Outline

This kit is used to connect an extension and a line.

## 8.15.2 Product Code

Line/Ext Switching Kit: EL200112

## 8.15.3 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) NCU-B PWB .....1
  - 2) Data Cable .....1



(Figure-1) j0hn8045

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

## WARNING

Switch off the machine and disconnect the power cord.

8-36 03/02

- 3. Remove the Cables from the Rear Cover.
- 4. Remove the Screws (3) and the Rear Cover.
- 5. Remove the Screws (7) and the Electrical .
- 6. Replace the NCU PWB. (Figure-2)

## CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

- 1) Remove the screws (2).
- 2) Remove the NCU-A PWB.
- 3) Install the NCU-B PWB.
- 4) Tighten the screws (2).



(Figure-2) j0hn8046

## **CHAPTER 8 ACCESSORIES** 8.15 Line/Ext Switching Kit

j0hn8046

- 7. Provide an access hole in the Rear Cover of the Cabinet for a modular jack. (Figure-3)
  - 1) Remove the blind plate of EXT.LINE.





(Figure-3) j0hn8047

- 8. Return the machine to its original state.
- 9. Connect the phone line to the "EXT.LINE" on the Rear Cover.
- 10. Connect the power cord and turn on the power.
- 11. Perform the setting that the MCU built-in option is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/106" and press the Start button.
  - 3) Change the set value to 1.
  - 4) Exit C/E Mode.
- 12. Set the [Local Fax Information] items 12 to 14.
- 13. Store the removed NCU-A PWB.

## 8.15 Line/Ext Switching Kit CHAPTER 8 ACCESSORIES

## 8.16 Fax Hard Disk Kit

#### 8.16.1 Product Outline

This kit is used to accumulate a large volume of document data.

## 8.16.2 Product Code

FAX Hard Disk Kit: EL200113

#### 8.16.3 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) HDD Assembly.....1
  - 2) Screw......3



(Figure-1) j0hn8088

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status:Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

## WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Disconnect the Cables from the Rear Cover.
- 4. Remove the Screws (3) and the Rear Cover.
- 5. Remove the Screws (7) and the Electrical Cover.

8-38 03/02

6. Remove the Screw securing the G3M0 PWB. (Figure-2)

### CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

1) Remove the screw.



## CHAPTER 8 ACCESSORIES 8.16 Fax Hard Disk Kit (Figure-2)

- 7. Install the HDD Assembly. (Figure-3)
  - 1) Install the HDD Assembly.
  - 2) Tighten the Screws (3).
  - 3) Tighten the screw removed in step 6.



- 8. Return the Electrical Cover and the Rear Cover to their original position.
- 9. Connect the power cord and turn on the power.
- 10. Perform the setting that the Fax Hard Disk is installed.
  - 1) Enter C/E Mode.
  - 2) Set the Chain/Function code "50/91" and press the Start button.
  - 3) Check that the set value is 1.
  - 4) Exit C/E Mode.

8.16 Fax Hard Disk Kit CHAPTER 8 ACCESSORIES

## 8.17 8MB Memory

#### 8.17.1 Product Outline

This kit adds 8MB to the memory capacity.

## 8.17.2 Product Code

8MB Memory: EM100008

## 8.17.3 Installation Procedure

- 1. Check the accessories.
  - 1) OM3 PWB ..... 1
  - 2) Screw...... 1



(Figure-1) j0hn8050

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

## WARNING

Switch off the machine and disconnect the power cord.

8-40 03/02

- 3. Disconnect the Cables from the Rear Cover.
- 4. Remove the Screws (3) and the Rear Cover.
- 5. Remove the Screws (7) and the Electrical Cover.
- 6. Remove the G3M0 PWB. (Figure-2)

## CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

- 1) Remove the screws (2).
- 2) Remove the G3M0 PWB during releasing the stud.



(Figure-2) j0hn8051

## **CHAPTER 8 ACCESSORIES** 8.17 8MB Memory

- 7. Install the OM3 PWB. (Figure-3)
  - 1) Install the OM3 PWB.
  - 2) Tighten the screw.



- 8. Reinstall the G3M0 PWB.
- 9. Reinstall the Electrical Cover and Rear Cover.
- 10. Connect the power cord and turn on the power.

# 8.17 8MB Memory CHAPTER 8 ACCESSORIES

#### 8.18 Printer Kit

#### 8.18.1 Product Code

Printer Kit: EL200116 (FX)

- : EL200145 (FXA)
- : EL200147 (FXK)
- : EL200146 (TFX) : EL200160 (PRC)

## 8.18.2 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) ESS Box.....1(FX, FXA, FXK, TFX, PRC)
  - 2) Control Panel ......1(FX, FXA, FXK, TFX, PRC)
  - 3) Cable ......1(FX, FXA, FXK, TFX, PRC)
  - 4) Screw......4(FX, FXA, FXK, TFX, PRC)
  - 5) CentreWare Driver & Network Utility CD-ROM...1(FX, FXA, FXK, TFX)
  - 6) Software licence approval ... 1(FX, FXA, FXK, TFX)
  - 7) User Guide (Printer).....1(FX, FXK, TFX, PRC)
  - 8) User Guide (Scanner) ......1(FX, FXK, TFX, PRC)
  - 9) DocuWorks Ver.4. CD-ROM...1(FXA, FXK, TFX)



(Figure-1) j0hn8053

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

• FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared

8-42 03/02

j0hn8053

from the "Current Jobs" folder.

Printer machines: Ensure that "Ready to print or fax" is indicated on the printer control panel.

## WARNING

## Switch off the machine and disconnect the power cord.

- 3. Disconnect the Cables from the Rear Cover.
- 4. Remove the Screws (3) and the Rear Cover.
- 5. Remove the Screw and the ESS Cover.
- 6. Remove the Screws (3) and the Left Cover.
- 7. Remove the Screws (2) and the Top Rail Cover.
- 8. Remove the Screws (2) and the Fuser Top Cover.
- 9. Remove the Screws (4) and the Top Cover.
- 10. Remove the Screws (7) and the Electrical Cover.
- 11. For FAX equipped, remove the Screws (2) and open the MF Box.
  - 12. Remove the mounting Bracket for the ESS Cover. (Figure-2)
    - 1) Remove the Screws (2).
    - 2) Remove the Bracket.



(Figure-2) j0hn8054

## CHAPTER 8 ACCESSORIES 8.18 Printer Kit

#### 13. Install the Cable. (Figure-3)

#### CAUTION

Electric parts may be damaged by static electricity. Be sure to wear a wrist strap when handling electric parts. If no wrist strap is available, touch a metal section before work to eliminate static electricity as far as possible.

## 1) Connect the Connector.

2) Secure it with the Clamps (2).







14. Install the ESS Box. (Figure-4)

1) Install the ESS Box.

2) Tighten the screws (4).



8.18 Printer Kit **CHAPTER 8 ACCESSORIES** 

- 15. Connect the Connector. (Figure-5)
  - 1) Secure the Control Panel Wire Harness with the Clamps (3).
  - 2) Connect the Connector.





- (Figure-5) j0hn8057 16. Remove the ROM Cover. (Figure-6)
  - 1) Loosen the screws (4).
  - 2) Remove the ROM Cover.







18. Remove the Blind Cover from the Top Cover and install the Control Panel. (Figure-8) 1) Remove the Blind Cover.

2) Install the Control Panel.



(Figure-8) j0hn8060

## **CHAPTER 8 ACCESSORIES** 8.18 Printer Kit

j0hn8060

19. Install the Top Cover. (Figure-9)

- 1) Connect the Connector to the Control Panel.
- 2) Install the Top Cover.



- 20. Remove the Connector Cover (PL8.2) from the Left Cover and store.
- 21. Return the machine to its original state.
- 22. Connect the power cord and turn on the power.

8.18 Printer Kit CHAPTER 8 ACCESSORIES

## 8.19 Internet FAX

## 8.19.1 Product Outline

This kit is used to enable Internet FAX function.

- This kit is installed on the followings: DocuCentre230/280FS(FS-DD) (FX) 235/285FS-DD (FXA) 235FS, 285FS-DD (FXK) 285FS-DD(PRC)

- When installing this kit, the following kits are necessary. Prepare the kits and install them at installation.

(1) Printer HDD (Product Code: EL200119)

(2) 64MB SDRAM (Product Code: EL200120)

## 8.19.2 Product Code

Internet FAX: EL200121 (FX) : EL200149 (FXA, FXK, TFX)

: EL200195 (PRC)

#### 8.19.3 Installation Procedure

1. Check the accessories. (Figure-1) 1) IFAX ROM (ROM1) .....1(FX, FXA, FXK, TFX, PRC) 2) Label ......1(FX) 3) User Guide (Book) .....1(FX, PRC) 4) User Guide (CD-ROM)......1(FXA, FXK, TFX)

3

(Figure-1) j0hn8091

- 2. Turn the main unit power off. On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.
  - FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
  - Printer machines: Ensure that "Ready to print or fax" is indicated on the printer • control panel.

## WARNING

#### Switch off the machine and disconnect the power cord.

- 3. Remove the Screw and ESS Cover.
- 4. Loosen the Screw and remove the ROM Cover.





# **CHAPTER 8 ACCESSORIES** 8.19 Internet FAX



j0hn8091

5. Insert the IFAX ROM in "ROM1" slot. (Figure-2)



(Figure-2) j0hn8092

- 6. Return the machine to its original state.
- 7. Connect the power cord and turn on the power.
- 8. Set the iFAX function "enabled."

1) Enter C/E Mode.

2) Set the following Chain/Function codes and press the Start button.

"57/30": Scan to Email

"57/31": Email to Print

"57/32": Email to Fax Gateway ON ramp

"57/33": Email to Fax Gateway OFF ramp

3) Change the set value to 1.

4) Exit C/E Mode.

9. Put the Label on the Front Right Cover.

# 8.20 Token Ring CHAPTER 8 ACCESSORIES

## 8.20 Token Ring

#### 8.20.1 Product Outline

Install the interface port for Token Ring

- This kit is installed on the Printer equipped machine.
- When installing this kit, the following kits are necessary. Prepare the kits and install them at the beginning.
  - (1) Token Ring Installation Kit (Product Code: EL200079)

## 8.20.2 Produce Code

Token Ring: EL200043

## 8.20.3 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - Token Ring Interface Board 1. 1) Interface Board.....1 2) User Guide .....1
  - 2. Token Ring Installation Kit a. Mother PWB Assembly b. Screw ......2



1

(Figure-1) j0hn8099

8-48 03/02

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer • control panel.

## WARNING

## Switch off the machine and disconnect the power cord.

3. Disconnect the Cable and remove the Screws (2). (Figure-2)



(Figure-2) j0hn8104

## **CHAPTER 8 ACCESSORIES** 8.20 Token Ring

- 4. Remove the Slot Cover. (Figure-3)
  - 1) Remove the Screws (2).
  - 2) Remove the Slot Cover.



- 5. Install the Mother PWB Assembly with the Screws (2) in the kit and the Screws (2) removed in Step 3. (Figure-4)
- 1) Install the Mother PWB Assembly.
- 2) Tighten the Screws (2).
- 3) Tighten the Screws (2).



(Figure-4) j0hn8101

8.20 Token Ring CHAPTER 8 ACCESSORIES

- 6. Insert the Interface Board and secure it. (Figure-5)
  - 1) Insert the Interface Board.
  - 2) Tighten the Screws (2).



Network/Port Token Ring Transmit Rate Max Packet Size

Source Routing

- 7. Return the machine to its original state.
- 8. Connect the Interface Cable.
- 9. Connect the power cord and turn on the power.

11. Store the Slot Cover removed in Step 4.

\* default

10. If necessary, change the setting on the Printer UI. (Figure-6)\*

# **CHAPTER 8 ACCESSORIES** 8.20 Token Ring



j0hn8103

(Figure-6) j0hn8103

## 8.21 Duplex Auto Document Feeder

#### 8.21.1 Product Outline

One document sheet (1-sided or 2-sided document) is fed at a time and ejected after scanning.

#### WARNING

#### The weight of the DADF assembly is 8.6 kg (18.6 lb). Use great care when lifting.

- When installing this kit on DocuCentre230/280, the Upgrade Kit A(4MB) (Product Code: WF11)(8.1) is necessary. Prepare the kit and install it at installation. [DocuCentre230]: Two sets [DocuCentre280]: One set

#### 8.21.2 Product Code

Duplex Auto Document Feeder: QL200052

#### 8.21.3 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) DADF Assembly......1 2) Support (Front).....1
  - 3) Support (Rear) ...... 1
  - 4) DADF Platen Glass .... 1
  - 5) Serial Plate.....1
  - 6) Set Plate ..... 1
  - 7) IIT/DADF Cable.....1
  - 8) Platen Cover ......1
  - 9) Knob ......2
  - 10) A3 Chart.....1



(Figure-1) j0hn8078

- 2. Turn off the power of the main unit and disconnect the power cord.
- 3. Remove the Platen Cover.
- 4. Remove the Top Cover Assembly. (Figure-2) 1) Remove the screws (6).
- 2) Disconnect the Connector from the Control Panel.
- 3) Remove the Top Cover Assembly.

Note Open the lower side of the Top Cover Assembly to the right and left and turn the assembly around the front.

8.21 Duplex Auto Document Feeder CHAPTER 8 ACCESSORIES





(Figure-3) j0hn8080

- 5. Remove the Screws (2) and remove the Left Cover from the Platen Glass.
- 6. Install the DADF Platen Glass. (Figure-3)
- 1) Temporarily secure the DADF Platen Glass with the Supports (Front and Rear) in the kit and the Screws (2) removed in Step 5.
- 2) With the Platen Glass pressed against the left side, press the DADF Platen Glass against the Platen Glass and the Supports (Front and Rear) against the DADF Platen Glass to secure.

Note Face the white tape on the DADF Platen Glass inboard and upward.







## **CHAPTER 8 ACCESSORIES** 8.21 Duplex Auto Document Feeder





- 8. Reinstall the Top Cover Assembly removed in Step 4.
- 9. Install the DADF Assembly. (Figure-5)
  - 1) Place the DADF Assembly on the IIT. While pressing the Assembly to the front, secure the Left Counter Balance with the Knob.
  - 2) Place the Set Plate on the Right Counter Balance.
  - 3) Press the Right Counter Balance to the rear, stop the Set Plate at the positioning pin and secure it with the Knob.



(Figure-5) j0hn8082

- 10. Put the Platen Cushion. (Figure-6)
  - 1) Place the Platen Cushion on the Platen Glass with a clearance of 0.5  $\pm$  0.2 mm each from the Regi. Guide and Platen Guide.
  - 2) Close the DADF Assembly gently and affix the Platen Cushion.

Note Face the notch side of the Platen Cushion to the right.



(Figure-6) j0hn8083

# 8.21 Duplex Auto Document Feeder **CHAPTER 8 ACCESSORIES**

11. Connect the IIT/DADF Cable. (Figure-7)



(Figure-7) j0hn8084

- 12. Adjust the DADF Assembly height. (Figure-8)
  - 1) The protrusions at the rear of the Under Cover of the DADF Assembly (1) should gently contact the DADF Platen Glass. If there is any clearance, adjust the DADF Assembly height.
  - 2) The protrusions at the front of the Under Cover of the DADF Assembly (2) should not be more than 0.5 mm from the DADF Platen Glass. If the clearance is 0.5 mm or more, adjust the DADF Assembly height.
  - For adjustment, loosen the Counter Balance Nut and turn the Screw. After adjustment, tighten the Nut securely.





(Figure-8) j0hn8085

13. Connect the power cord and turn on the power. 14. Check the DADF operation.

1) Load several sheets of document on the DADF to see that one sheet is fed at a time and copied.

Note If "Document load indicator light" is not lit and Document miss feed has occurred, check the Platen Open SW (PL3.1) detection error by DADF miss alignment. 2) Load a 2-sided document to see that each side is copied onto one sheet.

3) Check that no document skew occurs. If an adjustment is necessary, perform the DADF document skew adjustment according to Adjustment 10.xx in Chapter 4.

15. Adjust the DADF read position.

1) Enter C/E Mode.

2) Take a note of the value of Chain/Function code "21/71."

- 3) Take a note of the balance after the value in Step 2 is deducted from 143.
- 4) Set Chain/Function code "21/87" and press the Start button.

5) Enter the value calculated in Step 3 as the set value.

16. Perform the DADF side registration adjustment. - Check

1) Load the A3 Chart from the kit on the DADF and make one copy. 2) Check that the difference between registrations on the copy and A3 Chart is  $\pm 2.0$ mm or less.

## **CHAPTER 8 ACCESSORIES** 8.21 Duplex Auto Document Feeder

- Adjustment
  - 1) Enter C/E Mode.
  - 2) Change the set value of Chain/Function code "21/82."
    - Change rate : 0.0423mm/1Step
    - Reducing the value causes image cutting..
- 17. Perform the DADF lead edge registration adjustment.

- Check

- 1) Load the A3 Chart from the kit on the DADF and make one copy.
- 2) Check that the difference between lead edge registrations on the copy and A3
- Chart is  $\pm$  1.3 mm or less.

- Adjustment

- 1) Enter C/E Mode.
- 2) Change the set value of Chain/Function code "21/80."
  - Change rate : 0.127mm/1Step
  - Reducing the value causes image cutting..

# 8.21 Duplex Auto Document Feeder CHAPTER 8 ACCESSORIES

## 8.22 Stamp Kit (Red)

#### 8.22.1 Product Outline

This kit stamps each document sheet on a DADF-mounted machine to check a multisheet feed occurrence.

This kit can be installed only on a machine with a FAX function.

#### 8.22.2 Product Code

-

Stamp Kit (Red): WF34

#### 8.22.3 Installation Procedure

- 1. Check the accessories. (Figure-1)
  - 1) Stamp Solenoid.....1
  - 2) Stamp Replacement Kit (Consumable) ......1
    - Spare Stamps (3)
    - Pin (1)



(Figure-1) j0hn8062

8-56 03/02

2. Turn the main unit power off.

On printer or Fax-equipped machines, ensure that outstanding jobs have cleared before servicing or interrupting the power to the machine as follows:.

- FAX equipped machines: Ensure that the "Job in Memory" indicator on the control panel goes out. Press "Job Status: Stop" button and confirm that the job has cleared from the "Current Jobs" folder.
- Printer machines: Ensure that "Ready to print or fax" is indicated on the printer • control panel.

## WARNING

#### Switch off the machine and disconnect the power cord.

3. Open the DADF Top Cover and Chute. (Figure-2)

**DADF** Top Cover



(Figure-2) j0hn8063

## **CHAPTER 8 ACCESSORIES** 8.22 Stamp Kit (Red)

- 4. Remove the Stamp Cover. (Figure-3)
  - 1) Remove the screw.
  - 2) Remove the Stamp Cover.



- 5. Install the Stamp Solenoid. (Figure-4)
  - 1) Install the Stamp Solenoid.
  - 2) Connect the Connector.



- 6. Reinstall the Stamp Cover removed in Step 4.
- 7. Put a stamp into the Stamp Solenoid.
- 8. Close the DADF Top Cover and Chute.
- 9. Connect the power cord and turn on the power.
- 10. Check the stamp operation and position.
  - If necessary, adjust the stamp position. 1) Enter C/E Mode.
- 3) Change the set value of Chain/Function code "21/86."

	Min	Nominal	MAX
Setting	0	15	30
range	-5mm	10mm	25mm
Change rate	1mm/1Step	1mm/1Step	1mm/1Step

11. Store the accessory stamp replacement kit (consumable).

8.22 Stamp Kit (Red) **CHAPTER 8 ACCESSORIES**  8-58 03/02

# CHAPTER 8 ACCESSORIES 8.22 Stamp Kit (Red)

CHAPTER 9 BSD (Block Schematic Diagram)

#### CONTENTS

9.1	Overview		
	9.1.1	How to Use the BSD	9-3
	9.1.2	Reference Symbology	9-3
	9.1.3	Signal Name Designation	9-3
	9.1.4	DC Voltage	9-3
9.2	BSD (Bloc	ck Schematic Diagram)	
	CHAIN1	STANDBY POWER	
	CH1.1	MAIN POWER ON	9-4
	CH1.2	DC POWER GENERATION (IOT/IIT LVPS)	9-5
	CH1.3	STBY+5VDC/RET DISTRIBUTION	9-6
	CH1.4	+5VDC DISTRIBUTION	9-7
	CH1.5	DC COM (+5VRTN) DISTRIBUTION	9-8
	CH1.6	+24VDC/RET DISTRIBUTION	9-9
	CH1.7A	INTERLOCK SWITCHING	9-10
	CH1.7B	INTERLOCK SWITCHING	9-11
	CH1.8	MONITORING	9-12
	CHAIN2	MODE SELECTION	
	CH2.1	CONTROL PANEL (UI)	9-13
	CH2.2	CONTROL PANEL (PRINTER)	9-14
	CHAIN3	MACHINE RUN CONTROL	
	CH3.1A	PWBS COMMUNICATION (IIT/IPS)	9-15
	CH3.1B	PWBS COMMUNICATION (UI)	9-16
	CH3.1C	PWBS COMMUNICATION (HDC&ROM)	9-17
	CH3.1D	PWBS COMMUNICATION (DADF)	9-18
	CH3.1E	PWBS COMMUNICATION (FINISHER)	9-19
	CH3.2A	ACCESSORY (Directly Installed On M/C) (1 OF 4)	9-20
	CH3.2B	ACCESSORY (Installed Via EP-SV) (2 OF 4)	9-21
	CH3.2C	ACCESSORY (COPYLYZER & SW) (3 OF 4)	9-22
	CH3.2D	ACCESSORY (Parallel) (4 OF 4)	9-23
	CH3.3	ELECTRIC BILLING	9-24
	CH3.4A	MONITORING	9-25
	CH3.4B	MONITORING	9-26
	CH3.4C	MONITORING	9-27
			03/02
	WorkCer	ntre Pro 423/428	9-1

CHAIN4	START PRINT POWER	
CH4.1	MAIN DRIVE CONTROL	9-28
CH4.2	MONITORING	9-29
CHAIN5	DOCUMENT TRANSPORTATION (DADF)	
CH5.1	DOCUMENT SET AND FEEDING	9-30
CH5.2	DOCUMENT SIZE SENSING	9-31
CH5.3	DOCUMENT TRANSPORT DRIVE	9-32
CH5.4	DOCUMENT EXPOSURE AND EXIT OR INVERSION	9-33
CH5.5	MONITORING	9-34
CHAIN6	OPTICS (IIT/ROS)	
CH6.1A	IMAGE INPUT CONTROL (PLATEN SWITCH AND SENSOR)	9-35
CH6.1	IMAGE INPUT CONTROL (CCD)	9-36
CH6.2	CARRIAGE SCAN	9-37
CH6.3	LASER CONTROL AND LASER SCANNING	9-38
CH6.4	ROS MOTOR CONTROL	9-39
CH6.5	MONITORING	9-40
CHAIN7	PAPER SUPPLYING	
CH7.1	TRAY1 PAPER STACKING	9-41
CH7.2	TRAY2 PAPER STACKING	9-42
CH7.3	TRAY3 PAPER STACKING	9-43
CH7.4	TRAY4 PAPER STACKING	9-44
CH7.5	MSI PAPER STACKING	9-45
CH7.6	MONITORING	9-46
CHAIN8	PAPER TRANSPORTATION	
CH8.1	TRAY 1 to 4 FEED CONTROL	9-47
CH8.2	MSI FEED CONTROL	9-48
CH8.3	CABINET FEED DRIVE CONTROL	9-49
CH8.4	CABINET AND MSI TRANSPORTATION	9-50
CH8.5	REGISTRATION	9-51
CH8.6	MONITORING	9-52

## 9-2

#### 03/02

#### CHAPTER 9 BSD (Block Schematic Diagrams Contents

CHAIN9	XEROGRAPHICS	
CH9.1	CRU SETTING AND DRIVING	9-53
CH9.2	CRU CONTROL	9-54
CH9.3	MONITORING	9-55
CHAIN10	FUSING AND COPY TRANSPORTATION	
CH10.1	FUSING	9-56
CH10.2	FUSING HEAT CONTROL	9-57
CH10.3	FUSER EXIT TRANSPORTATION	9-58
CH10.4	DUPLEX TRANSPORTATION	9-59
CH10.5	EXIT DRIVE CONTROL	9-60
CH10.6	DUPLEX DRIVE CONTROL	9-61
CH10.7	OFFSET MOTOR DRIVE CONTROL (OPTION)	9-62
CH10.8	MONITORING	9-63
CHAIN12	FINISHER	
CH12.1	FINISHER DC POWER GENRATION AND SWITCHING	9-64
CH12.2	FINISHER DOCKING AND COVER SENSING	9-65
CH12.3	FINISHER FEED IN AND REVERSE DRIVE CONTROL	9-66
CH12.4	FINISHER TRANSPORT DRIVE CONTROL	9-67
CH12.5	FINISHER TRANSPORTATION	9-68
CH12.6	RECEIVING TRAY TRANSPORTATION	9-69
CH12.7	EXIT UNIT CONTROL	9-70
CH12.8	COMPILING	9-71
CH12.9	STAPLE POSITIONING	9-72
CH12.10	STAPLE CONTROL	9-73
CH12.11A	RECEIVING TRAY ELEVATOR CONTROL (1 OF 2)	9-74
CH12.11B	RECEIVING TRAY ELEVATOR CONTROL (2 OF 2)	9-75
CH12.12A	MONITORING (1 OF 2)	9-76
CH12 12B	MONITORING (2 OF 2)	9-77

#### CHAIN19 ESS

CH19.1	ESS DC POWER GENERATION	9-78
CH19.2	ESS (FAX MODULE)	9-79

CH19.3	ESS (PRINTER)	9-80
CH19.4	BLOCK DIAGRAM (FAX)	9-81
CH19.5	MONITORING	9-82

#### 9.1 Overview

#### 9.1.1 How to Use the BSD

- 1. Enter the chain indicated in "Section 2 Troubleshooting."
- 2. Another method of entering the chain is to see Contents.
- 3. In the chain you have entered, analyze the test data and problem.
- Once the fault has been located, check \_ the parts list (PL) number or adjustment -(ADJ) number and go to the part indexes or the specified ADJ section.

#### WARNING

Disconnect the power cord from the outlet while performing any tasks that do not need electricity. Contact with electricity can cause death or injury..

#### 9.1.2 Reference Symbology

This symbol usually refers to a note on the same page.

This symbol refers to an adjustment procedure in "Section 4 Repair/ Adjustment Procedures." "7.7.1" means <sub>CH8.5</sub>( that the necessary adjustment procedure ZN H4) is given in 7.7.1.

This symbol represents a variable resistor VR3 that can be adjusted in field.

This symbol represents a signal test point.

This symbol indicates where the input to he function comes from. "1.3" indicates that the input comes from group function 3 of chain 1.

1.3

)ZONE

- 6.1 This symbol indicates where the output from the function is going e.g. "6.1" indicates that the output is going to group function 1 of chain 6.
  - This symbol indicates that the signal line is connected vertically.

This symbol indicates that the signal line is connected horizontally.

- This symbol indicates that the signal line is connected within the same function. "ZONE E3" means that the destination of the signal line is indicated in zone E-3.
- This symbol indicates that the signal line is connected within the same function. "ZONE A4" means that the source of the signal is indicated in zone A-4.
- This symbol indicates that the signal line is connected to another sheet (written in the lower right corner of the BSD). "CH8.5 ZN A2" means that the destination of the signal line is indicated in CH8.5 zone A-2.

This symbol indicates that the signal line is connected to another sheet (written in the lower right corner of the BSD). "CH8.5 ZN H4" means that that the source of the signal line is indicated in CH8.5 zone H-4.

This symbol represents the output power line of Chain 1.

\_ This symbol indicates that the signal flows in the opposite direction, from left to right. \_\_\_\_ This symbol represents a feedback signal.

- This symbol represents a mechanical connection to a part.
- This symbol identifies a mechanical drive signal and indicates the signal direction.

This symbol identifies a document or paper and indicates the signal direction.

This symbol identifies a heat, light, or air signal and indicates the signal direction.

This symbol indicates that the part pointed by this symbol has been changed by the tag number within the circle.

This symbol indicates that the part pointed by this symbol has not yet been changed by the tag number within the circle.

This symbol indicates that the whole part or only the framed part of the illustration has been changed by the tag number within the circle.

This symbol indicates that the whole part or only the framed part of the illustration has not yet been changed by the tag number within the circle.

#### 9.1.3 Signal Name Designation

#### Signal Name Composition

REGI SENSOR	SENSED	(L)	+5VDC
Parts name	Operating status	Logical value	Voltage at high signal level (H)

This signal goes low (L) when the registration sensor detects paper, and it goes high (H) (+5 VDC) when the registration sensor does not detect paper.

#### 9.1.4 DC Voltage

Measure the DC voltage between each test point and the frame unless specified in Note. DC voltage ranges are as follows: +5VDC + 4.5 to + 5.3VDC $\pm 12VDC + 11.0$  to + 12.6VDC+ 24VDC + 22.0 to + 25.7VDC

1
## 9-4 WorkCentre Pro 423/428

#### 03/02

## Chapter 9 CHAIN1 STANDBY POWER





CHAIN 1 STANDBY POWFR

9-5

9-6 WorkCentre Pro 423/428

## 03/02

Chapter 9 CHAIN1 STANDBY POWER





9-7

9-8 WorkCentre Pro 423/428

03/02

## Chapter 9 CHAIN1 STANDBY POWER



6

\_



CHAIN 1 STANDBY POWER

9-9

9-10 WorkCentre Pro 423/428

## 03/02

Chapter 9 CHAIN1 STANDBY POWER





\_



#### WorkCentre Pro 423/428 9-12



# Chapter 9 CHAIN1 STANDBY POWER

1

J

1

Н



4

\_

5

6

\_



9-13

9-14 WorkCentre Pro 423/428

## 03/02

Chapter 9 CHAIN2 MODE SELECTION





9-16 WorkCentre Pro 423/428

03/02

Chapter 9 CHAIN3 MACHINE RUN CONTROL



 $\left< \frac{5}{5} \right>$  This is a virtual line.

—



9-17 WorkCentre Pro 423/428

CHAIN3 MACHINE RUN CONTROL Chapter 9 9-18 WorkCentre Pro 423/428 03/02

Chapter 9 CHAIN3 MACHINE RUN CONTROL



 $\langle 2 \rangle$ D SCAN START: Signal used to request DADF action start at scanning.

 $\langle 4 \rangle$ This is a virtual line.

6



9-19 WorkCentre Pro 423/428

9-20 WorkCentre Pro 423/428

 $\langle 1 \rangle$ 

6

This is a virtual line.

#### 03/02

Chapter 9 CHAIN3 MACHINE RUN CONTROL







CHAIN3 MACHINE RUN CONTROL Chapter 9

9-22 WorkCentre Pro 423/428

#### 03/02

Chapter 9 CHAIN3 MACHINE RUN CONTROL





9-23 WorkCentre Pro 423/428

03/02

9-24 WorkCentre Pro 423/428

## 03/02

## Chapter 9 CHAIN3 MACHINE RUN CONTROL



 $\langle 1 \rangle$  This is a virtual line.

4

\_

5

\_

6

\_



9-25 WorkCentre Pro 423/428

03/02

J

## 9-26 WorkCentre Pro 423/428

03/02

## Chapter 9 CHAIN3 MACHINE RUN CONTROL

	А	I	В	I		С	I	D	E	I	F	I	G	Ι	н	I	J	I
	3.4B MONITORING																	
1			MCU PL7.:	I/SW PWB 2	IIT/IPS PWB PL3.1	CON PL3.	NTROL PANEL(UI) 6											
3.1		E DRY FAIL SIGI		ONTROL IGIC			— H8-2	H8-2	PAGE MEMORY	COMMUNIC	ATION FAIL							
_							H8-65 `68	H8-65 `68	PAGE MEMORY	′ R/W FAIL								
2	A 1 EPS	/ FAIL SIGNAL					UE-01	UE-01	EPSV LOGIN FA	AIL								
							UE-02	UE-02	EPSV-ACCESS	ORY COMMU	INICATION F	AL.						
_							<del>UE-</del>	UE- 10`14	EPSV SOFTWA	RE FAIL								
3							UE- 71.`75	UE- 71 `75	MCU/SW-EPSV	COMMUNIC	ATION FAIL							
_							L6-1	L6-1	KEY COUNTER	FAIL								
4																		
			L															

 $\langle 1 \rangle$  This is a virtual line.

—

5

\_

6

—



5

\_

6

\_

9-28 WorkCentre Pro 423/428

## 03/02

Chapter 9 CHAIN4 START PRINT POWER





9-30 WorkCentre Pro 423/428

#### 03/02

Chapter 9 CHAIN5 DOCUMENT TRANSPORTATION (DADE)





9-31 WorkCentre Pro 423/428

1

9-32 WorkCentre Pro 423/428

#### 03/02

Chapter 9 CHAIN5 DOCUMENT TRANSPORTATION (DADE)





9-33 WorkCentre Pro 423/428

9-34 WorkCentre Pro 423/428

#### 03/02

Chapter 9 CHAIN5 DOCUMENT TRANSPORTATION (DADE)

J



 $\langle 1 \rangle$  This is a virtual line.

5

6



9-35 WorkCentre Pro 423/428

CHAIN6 OPTICS(IIT/ROS) Chapter 9

### 03/02

## Chapter 9 CHAIN6 OPTICS(IIT/ROS)





9-37 WorkCentre Pro 423/428

03/02

CHAIN6 OPTICS(IIT/ROS) Chapter 9 9-38 WorkCentre Pro 423/428

#### 03/02

## Chapter 9 CHAIN6 OPTICS(IIT/ROS)





5

\_

6
## 9-40 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN6 OPTICS(IIT/ROS)



 $\langle 1 \rangle$  This is a virtual line.

5

6



CHAIN7 PAPER SUPPLYING Chapter 9

9-42 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN7 PAPER SUPPLYING





9-43 WorkCentre Pro 423/428

CHAIN7 PAPER SUPPLYING Chapter 9 9-44 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN7 PAPER SUPPLYING





9-45 WorkCentre Pro 423/428

03/02

CHAIN7 PAPER SUPPLYING Chapter 9 9-46 WorkCentre Pro 423/428

# Chapter 9 CHAIN7 PAPER SUPPLYING



 $\langle 1 \rangle$  This is a virtual line.

6



CHAIN8 PAPER TRANSPOTATION Chapter 9 9-48 WorkCentre Pro 423/428

## 03/02

Chapter 9 CHAIN8 PAPER TRANSPOTATION



\_



-	Test data	Signal	Point	Method	Output	Frequency	
	$\left< \begin{array}{c} \mathbb{D} \\ \mathbb{1} \end{array} \right>$	CABINET FEED MOTOR ON CLOCK	+:J417-B9 -:Frame	Input a diag code [8-2].	ON:2.5VDC OFF:5VDC	ON:2.1HZ	
5	$\left< \begin{array}{c} D \\ 1 \end{array} \right>$	CABINET FEED MOTOR ON CLOCK A/B AN/BN	+:J213-2 `5 -:Frame	Input a diag code [8-2].	ON:24VDC OFF:24VDC	ON:2.8HZ	

—

9-50 WorkCentre Pro 423/428

## 03/02

Chapter 9 CHAIN8 PAPER TRANSPOTATION





 $\langle 1 \rangle$  This is a virtual line.

9-51 WorkCentre Pro 423/428

5

6

9-52 WorkCentre Pro 423/428

# Chapter 9 CHAIN8 PAPER TRANSPOTATION

	A I		В	I	С	I	D	E	Ι	F	I	G	Ι	н	I	J	T
		[	3.6 MONITO	DRING													
1			MCU/SW PW PL7.2	/B IIT/IPS PWB PL3.1	CONTI PL3.6	ROL PANEL(UI)											
8.5	(1) REGI SENSO SENSED SIO	DR SNAL				- C1-3	C1-3	REGI SENSOR	ON JAM (TR)	AY 1)							
_						- C2-3 - C3-3	C2-2	T/A ROLL 2 SE	INSOR ON JA	M (TRAY 2)							
2						- C4-3	C2-3	REGI SENSOR	on Jam (TR/	AY 2)							
_						- C6-1	C3-1	T/A ROLL 3 SE	INSOR ON JA	M (TRAY 3)							
_						- C9-3 - E1-1	C3-2	T/A ROLL 2 SE	INSOR ON JA	M (TRAY 3)							
	T/A ROLL 2					E1-6	C3-3	REGI SENSOR	on Jam (Tr/	AY 3)							
3						- C2-2	C4-1	T/A ROLL 3 SE	INSOR ON JA	M (TRAY 4)							
						- C3-2	C4-2	T/A ROLL 2 SE	INSOR ON JA	M (TRAY 4)							
-						C8-2	C4-3	REGI SENSOR	on Jam (Tr/	AY 4)							
4	T/A ROLL 3					- C9-2	C6-1	REGI SENSOR	on Jam (Dui	PLEX)							
8.4		BNAL				- C3-1	C8-2	T/A ROLL 2 SE	NSOR STATI	C JAM							
_						C4-1	C8-3	T/A ROLL 3 SE	NSOR STATI	C JAM							
							C9-2	T/A ROLL 2 SE	INSOR ON JA	M (MSI)							
5							C9-3	REGI SENSOR	on Jam (ms	1)							
_							E1-1	REGI SENSOR	off Jam								
							E1-6	REGI SENSOR	STATIC JAM								
6		L	1 This is a v	rirtual line.													

1 This is a virtual line.

—



9-53 WorkCentre Pro 423/428

CHAIN9 XEROGRAPHICS Chapter 9 9-54 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN9 XEROGRAPHICS





\_

6

\_

9-56 WorkCentre Pro 423/428



Chapter 9 CHAIN10 FUSING AND COPY TRANSPORTATION



 $\langle 2 \rangle$  In Diag. mode, FAN operates in SLOW mode.



9-57 WorkCentre Pro 423/428

Chapter 9

9-58 WorkCentre Pro 423/428

03/02

Chapter 9 CHAIN10 FUSING AND COPY TRANSPORTATION







# Chapter 9 CHAIN10 FUSING AND COPY TRANSPORTATION



 $\stackrel{(TD)}{\rightharpoonup}$  Measured value of each signal line when diag is executed is shown below. All signal is +5VDC when diag is OFF.

5

			Points					
_	Diag code	Motor action	+:J461-7 -:Frame	+:J461-8 -:Frame	+:J461-9 -:Frame			
	[8-60]	FRD(FAST)	ON:0VDC	ON:+5VDC	ON:0VDC			
	[8-61]	FRD(SLOW:NORMAL	ON:+5VDC	ON:0VDC	ON:0VDC			
	[8-62]	RVS(FAST)	ON:0VDC	ON:+5VDC	ON:+5VDC			
G	[8-63]	RVS(SLOW:NORMAL	ON:+5VDC	ON:0VDC	ON:+5VDC			
0								

—





\_



\_

1

J

9-64 WorkCentre Pro 423/428



# Chapter 9 CHAIN12 FINISHER





9-66 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN12 FINISHER

can not be measured with a tester.





—

9-68 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN12 FINISHER





\_

9-70 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN12 FINISHER





9-71 WorkCentre Pro 423/428

Chapter 9

9-72 WorkCentre Pro 423/428

# 03/02

# Chapter 9 CHAIN12 FINISHER





03/02

9-74 WorkCentre Pro 423/428

## 03/02

# Chapter 9 CHAIN12 FINISHER





9-75 WorkCentre Pro 423/428

CHAIN12 FINISHER Chapter 9
#### 9-76 WorkCentre Pro 423/428

03/02

## Chapter 9 CHAIN12 FINISHER



(1) This is a virtual line.

6



4

5

\_

6

\_

## 9-78 WorkCentre Pro 423/428

03/02

# Chapter 9 CHAIN19 ESS





9-79 WorkCentre Pro 423/428

CHAIN19 ESS Chapter 9 9-80 WorkCentre Pro 423/428

## 03/02

## Chapter 9 CHAIN19 ESS





#### 9-82 WorkCentre Pro 423/428

4

5

6







 $\langle 1 \rangle$  This is a virtual line.

n-nn shows inner code that corresponds to the status code. Refer to Chapter 2 "Troubleshooting" for details of inner code.