# RZ9xx RV9xx series

# **TECHNICAL MANUAL**

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# CHAPTER 1: MAINTENANCE

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### Preface

This manual provides Technical Service Information for the RISO PRINTER model RZ9 series.

This manual provides procedures for removing and installing major components. Following these procedures will minimize machine malfunctions. This information and format will also increase technical representatives' awareness and experience regarding repairs necessary to insure end-user satisfaction.

### CAUTION [Handling of Lithium Battery] - Never fail to follow the following instructions when you discard the used lithium battery. 1. Never let the battery short-circuited. If the (+) and (-) terminals contact each other or metal materials, the battery will be short-circuited. If the batteries are collected and stored inorderly or one upon another, the above-mentioned case will occur. - DANGER -If the battery is short-circuited, it will heat up and may in some cases explode into fire. 2. Never heat up the battery. - DANGER -If you heat the battery up to more than 100 degrees Celsius or put it into the fire, it may burn dangerously or explode. 3. Never disassemble the battery or press it into deformation. - DANGER -If you disassemble the battery, the gas pouring out of the inside may hurt your throat or the negative lithium may heat up into fire. If the battery is pressed into deformation, the liquid inside may leak out of the sealed part or the battery may be short-circuited inside an explode. 4. Never fail to keep the battery out of reach of children. If you put the battery within reach of children, they may swallow it down. Should they swallow the battery, immediately consult the doctor. [Replacement of the Lithium Battery] 1. The lithium battery must be replaced by a trained and authorized service technician. 2. The battery must be replaced only with the same or equivalent type recommended by the manufacturer. 3. Discard used batteries according to the manufacturer's instructions.

# **!! WARNING !!**

### **Important Safety Precautions**

# 1. Always disconnect electrical supply before placing hands in the machine.

#### I. To avoid injuries:

Be sure to disconnect the electrical power before disassembling, assembling, or when making adjustments on the machine.

#### II. Protection of the machine:

Make sure to turn OFF the power to the machine before plugging or unplugging the electrical connectors, or when connecting a Meter.

### 2. WARNING:

The back light tube of LCD of the Control Panel on this Model contains mercury which must be recycled or disposed of as hazardous waste.

### 3. Always connect electrical connectors firmly.

#### I. To avoid electrical failure:

The connectors must be connected firmly together and onto the PCBs. Press on the ends of the connectors and then on the middle to ensure a firm fit.

#### II. Protection of the electrical components:

The electrical components may be damaged due to short circuits caused by a loose connector.

FIRST

Wire harness connector



THEN

Press the center, firmly.

0116

### **1. Work Precautions**

When conducting maintenance work, be careful to avoid injury caused by springs or the sharp edges of sheet metal.

### Inspection

If you discover any defects or problems during an inspection, fix the problems or if necessary take steps such as replacing a part.

### Removal

Check the problem area. At the same time, examine the cause of the problem and determine whether the part needs to be removed or disassembled. Next proceed according to the procedures presented in the Technical Manual. In cases where, for example, it is necessary to disassemble areas with large numbers of parts, parts which are similar to each other, or parts which are the same on the left and right, sort the parts so that you do not mix them up during reassembly.

- (1) Carefully sort the removed parts.
- (2) Distinguish between parts which are being replaced and those which will be reused.
- (3) When replacing screws, etc., be sure to use the specified sizes.

### Assembly and Installation

Unless specified otherwise, perform the removal procedures in reverse during assembly and installation. In cases where protrusions or holes are provided to assist in positioning parts, use them for accurate positioning and securing.

# (Protrusions and holes for positioning parts → Half pierced section)

#### Tools

Using tools other than those specified can lead to injury or damage screws and parts. Have all the tools necessary for the work available.



[Standard Tool list]

Туре	Tip size	Shaft length, etc.	
Phillips screw driver	No. 2 No. 2 No. 2 No. 1	(250 mm) (100 mm–150 mm) (stubby type) (75 mm–100 mm)	
Standard screw driver	6 mm         (100 mm-150 mm)           3 mm         (100 mm-150 mm)           1.8 mm         (precision type)		
Nut driver (box driver)	8 mm 7 mm	(100 mm–150 mm) (100 mm–150 mm)	
Hgh frequency driver	2.5 mm		
Spanners	5 mm 8 mm	5.5 mm 7 mm 10 mm 13 mm Monkey	
Hex w renches	5.0 mm 2.5 mm (For 3.0m	4.0 mm 3.0 mm 2.0 mm 1.5 mm m, 2 pieces required )	

Туре	Remarks		
Steel scale	150 mm		
Feeler gauge			
Radial cutting pliers			
Pliers			
Npper			
Small flashlight			
Multimeter			
Soldering iron	20 W-30 W		
File	Flat, round		

0103

#### **Electrical system work**

- After removing wire bundles, fasten them with wire bundle bands (bar lock ties) so that they will not sag.
- When installing parts, be careful to avoid pinching or damaging the wire bundles.
- If a fuse blows, always replace it with one with the specified capacity.
- Using a fuse with a larger capacity can not only damage parts, but may cause fires.
- Be careful not to drop image scanners, thermal print heads, and other sensors as they can be easily damaged.



#### Sensor types

- Photoelectric sensors may be broadly divided into the following four types: interrupt types (Ushaped), actuator types, reflective types, and transmittive types.
- Magnetic sensors use Hall ICs, which react to the magnetic force in magnets.
- Always turn off the power before plugging or unplugging sensor connectors.





#### Switch types

 Microswitches may be divided between normally open (N.O.) types and normally closed (N.C.) types.
 With an N.O. connection, an internal contact is connected when the switch actuator is pressed.
 With an N.C. connection, an internal contact is disconnected when the switch actuator is pressed.



#### Note

The machine is comprised of many gears. When inspecting or replacing parts, apply grease to the gears. If they are not properly greased, the gears may make abnormal sounds, and malfunctions or mechanical problems may occur.

### Installation location

### Do not install the machine in any of the following locations.

- (1) Those subject to direct sunlight or any bright location such as by a window (If you must install in such a location, put a curtain or the like over the window.).
- (2) Those where the temperature changes drastically.
- (3) Those that are too hot, cold, humid, or dry.

**RECOMMENDED:** 

Temperature range: 15 degrees Celsius - 30 degrees Celsius

Humidity range: 40% - 70% No condensation allowed

- (4) Those with radiant heat sources and any locations in the direct path of air from air conditioners or heaters.
- (5) Any poorly ventilated location.
- (6) Dusty atmosphere.
- (7) Any tilted location.

(Installation height difference: 10 mm max. front - rear, 10 mm max. left - right).

### **Electrical connection**

- Plug the plug securely into the socket so that there is no problem with the contact in the power supply plug section.
- Do not use any triplets or extension cords.
- Do not allow any other machine to stand on or crush the power cord.

### **Ground connection**

- Always ground this machine to prevent electrical shock in case of an electrical leakage.

### 2. JIGs



**021-16007-005** Spring; Screen (2 pieces required) Cut the ring end to make into hook, as shown on the photograph, and attach wire tie bar on the other end.



016-16141-003 8mm Dia. x 160mm Shaft (JIG) (2 pieces required)



Jig: 4 mm (Dia.) x 120 mm (Length) 024-75064-006

Note: The part numbers are subject to change without notice.

Shock absorbing sheet

### **3. Installation Procedures**

# Notice

The following procedures are required when installing the printer.

1. Open the Master loading unit and remove the Shock absorbing sheets.

2. Attach the User Guide Case and Pen Case

Remove the adhesive cover sheet on the backside and affix the case on the printer. Be sure to consult your customer for the attachment position.







045-36021-006 **1** 

### Attach the Pen case to the printer.

Remove the adhesive cover sheet on the back side and affix the case on the right side of the printer. Be sure to consult your customer for the attachment position.

# 3. Install the Noise absorbers

Push the six(or two) pieces of Noise Absorber into the printer. Push the Noise Absorber squashing into the gap suitable to the shape of space.

NOTE: Although the Paper receiving tray is not written on the illustration, attach the Noise absorber in actual work, without removing the receiving tray.





2

# **Multi Tray Paper Feeder Installation Procedure**

### Types of Applicable Printers

The following printer models are the intended basic units for installing the Multi Tray Paper Feeder.

RISO KAGAKU CORPORATION Models

RISO RZ977

RZ997

RV9698

Nobody but Riso-authorized service representatives is allowed to install this unit.

### Packing List

This package contains the following items.

- 7. Installation guide (This manual) ..... 1 copy





- 1. Open the Front Cover and remove the Locking Lever with a screw.
- 2. Remove the Inner Front Cover. (9 screws)
- 3. Remove the Rear Cover. (4 screws)

- 4. Take Four Noise Absorbing Blocks out from the Paper Trays of the Multi Tray Paper Feeder.
- 5. Fit the Noise Absorbing Block; Top-Rear and the Top-Front on the top board as illustrated.

### Important !

Set the Noise absorbing Blocks in accordance with the hole of the block and the Positioning Pin on the top board.

**NOTE** : Rest of blocks is required at the procedure 7.



6. Mount the printer on the Multi Tray Paper Feeder, placing the Positioning Pins in the reception holes on the bottom plate of the printer.

### Important !

If there is any unexpected object on the top board, remove it in advance.



- 7. Put the Noise Absorbing Block; Side into the gap between the printer and the top board of the Paper Feeder.
  - **NOTE** : Push the blocks into the gap with squashing them in the direction of the form as illustrated.





Wire saddle

8. Secure the bottom plate of the printer and top board of the Paper Feeder (Front side).

Fasten a MTPF Special screw using a Hexagonal wrench.

- 9. Remove the screws which lock the PCB Bracket and open it.
- 10. Secure the bottom plate of the printer and top board of the Paper Feeder (Rear side).

Fasten two screws on the both side of connectors. (Double-washered screw M4x2)

11. Close the PCB Bracket and secure it with the screws.

12. Remove the adhesive tape from the rear side of the bottom plate of the printer and release the wire harnesses from the wire saddle.

- 13. Connect three kinds of wire harnesses to each connector.
- 14. Secure the wire harness to the bottom plate of the printer with the wire saddle.



Tray base plate

- 15. Stick the corresponding labels on the released paper trays as illustrated.
- 16. Replace the Rear Cover on the printer with the screws.
- 17. Replace the Inner Front Cover on the printer with the screws.
- 18. Replace the Locking Lever with a screw.

- 19. Confirm that the Multi Tray Paper Feeder functions correctly in normal operation of the printer.
- 20. If the horizontal print position is not the same as when feeding sheets from the Standard paper feed tray, adjust the base position of the paper trays as follows.
  - 1) Loosen two securing screws on the base plate of the paper tray.
  - 2) Hold the Side paper guides and shift the Tray base plate as much as required, checking the scale indication given in the hole located at the front left corner of the paper tray.
  - 3) Tighten the securing screws on the base plate.
  - **NOTE** : Always check the horizontal print position for both paper trays.

# RISO Printer Network Interface Card RISORINC-NET-D:G/GII Installation Procedure

Types of Applicable Printers	Packing List
The following printer models are the intended basic units for installation.	This package contains the following items.
RISO KAGAKU CORPORATION Models RISO MZ, MV Series RISO RZ9 Series *1	1. RISORINC-NET-D:G/GII board       1 unit         2. Binding screw       1 pc.         3. Installation procedure (This manual)       1 copy         4. Installation sheet       1 copy         5. CD-ROM       1 pc.         6. RISORINC-NET-D:GII User's Guide*2       1 copy
Nobody but Riso-authorized service representatives is allowed to install this unit.	<ul> <li>*1 RZ9 Series include the Interface card as standard equipment. Please perform only Setup procedure (p.3). The installation procedure (p1-2) is unnecessary.</li> <li>*2 This is contained only in the package of NET-D:GII</li> </ul>

### =RISO MZ, MV series models=



- 1. Turn off the printer and unplug the power cord.
- 2. Remove the Rear cover;L from the printer.



3. Remove the Noise filter cover from the printer.







4. Remove the Blind plate from the Connector mount.

**NOTE**: The removed Blind plate and screw are not reused.

- 5. Remove the screws of parallel connector.
  - **NOTE**: In case of the model which a parallel connector isn't attached to, this procedure is unnecessary.
- 6. Remove the Connector mount from the printer.
- 7. Insert the connector of the RISORINC-NET-D board into [NIC] on the SH4F-PCB.

- 8. Replace the Connector mount, inserting the free connectors into the connector socket holes.
- 9. Secure the RISORINC-NET-D board to the Connector mount. (Binding screw M3x6, 1pc.)
- 10. Fix the screws of parallel connector to secure the Connector mount.
- 11. Replace the Noise filter cover.
- 12. Replace the Rear cover;L.
- 13. Connect the printer and your computer with the LAN cable.
- 14. Plug the power cord and turn on the printer. Then check if the RISORINC-NET-D functions properly.

NOTE: Check the green LED of LAN is on.

When installing the NET-D:GII, the functional setup is required. Proceed to p3.

2

### 《RISORINC-NET-D: GII Setup Procedure》

Explain about two mail functions to the user and ask the user which function to use. Set up only the functions which the user chose.



- 1. Turn on the printer in the test mode.
- 2. Input the test item code "178" and select "0" or "1", then press the Start key.
  0: Indicate the "Counter Display"
  1: Indicate the "Digital Counter Display"
- 3. Turn off the printer once and turn it on again.
- 4. Select "Copy Count Mail" on the Admin. screen and touch "ON" button.
- 5. Check that the "Counter Info. Mail" button is indicated on the "Functions" screen.

For Stock Info. Mail

- 1. Turn on the printer in the test mode.
- 2. Input the test item code "170" and select "1", then press the Start key.
- 3. Input the test item code "0182" and select "1", then press the Start key.
- 4. Turn off the printer once and turn it on again.
- 5. Select "Copy Count Mail" on the Admin. screen and touch "ON" button.
- Select "Stock Management" on the Admin. screen and select the amount of supplies, then touch "<C" button.
- 6. Check that the "Stock Info. Mail" button is indicated on the "Functions" screen.

# RISO Printer Network Interface Card RISORINC-NET-D;G Installation Procedure

### **Types of Applicable Printers**

The following printer models are the intended basic units for installation.

### RISO KAGAKU CORPORATION Models RISO RZ9, RV9 Series

RISO MZ, MV Series

Nobody but Riso-authorized service representatives is allowed to install this unit.

### This package contains the following items.

Packing List

1. RISORINC-NET-D;G board1 unit2. Binding screw1 pc.3. Installation guide (This manual)1 copy4. CD-ROM1 pc.

### =RISO RV9 series models=



- 1. Turn off the printer and unplug the power cord.
- 2. Remove the Rear cover from the printer.

3. Remove the Noise filter cover from the printer.









4. Remove the Blind plate from the Connector mount.

**NOTE**: The removed Blind plate and screw are not reused.

- 5. Remove the Connector mount from the printer.
  - **NOTE:** When installing wireless LAN simultaneously, it is necessary to carry out before Procedure 6. Refer to the Installation Procedure of Network kit;wireless.
- 6. Insert the connector of the RISORINC-NET-D;G board into [NIC] on the SH4F-PCB.

- 7. Replace the Connector mount, inserting the free connectors into the connector socket holes.
- 8. Secure the RISORINC-NET-D;G board to the Connector mount. (Binding screw M3x6, 1pc.)
- 9. Replace the Noise filter cover.
- 10. Replace the Rear cover.
- 11. Connect the printer and your computer with the LAN cable.
- 12. Plug the power cord and turn on the printer. Then check if the RISORINC-NET-D;G functions properly.

NOTE: Check the green LED of LAN is on.

# Document Storage Card DM-128CF;Z Installation Procedure

# Types of Applicable Printers

The following printer models are the intended basic units for installation.

RISO KAGAKU CORPORATION Models

**RISO MZ Series** 

**RISO RZ9 Series** 

## Packing List

This package contains the following items.

1. Document Storage Card DM-128CF;Z  $\hdots$  1 pc.

2. Installation guide (This manual) ..... 1 copy

Nobody but Riso-authorized service representatives is allowed to install this unit.

### Important !

Unplug the power cord of the printer before installation.



1. Remove the cover plate on the Interface port terminal, which is located on the paper feed side.



2. Insert the Document storage card into the slot until it stops.

- 3. Replace the cover plate.

# Auto-Control Stacking Tray Installation Procedure

Types of Applicable Printers	Packing List
The following printer models are the intended basic units for installing the Auto-Control Stacking Tray. RISO KAGAKU CORPORATION Models RISO RZ9 Series	This package contains the following items.1. Auto stacking tray
Nobody but Riso-authorized service representatives is allowed to install this unit.	12. Installation guide (This manual)       1 copy         13. Declaration of Conformity (for EU only)       1 copy







- 1. Turn off the power switch of the printer and unplug the power cord.
- 2. Remove both the standard paper stacking tray and the standard stacking tray supports.

**NOTE** : If they are not installed on your printer, skip this step.

 Attach a thin damper to the Auto stacking tray support R. (Binding screw M5x10, 2pcs.)

4. Fix the Auto stacking tray support F on the front side frame.

(Double-washered screw M4x10, 2pcs.)

5. Fix the Auto stacking tray support R (with a damper) on the rear side frame.(Double-washered screw M4x10, 3pcs.)

1





- 6. Remove the Rear cover; ML from the printer.
- 7. Remove the Side cover; R.

- 8. Remove the standard stacking tray storage catch.
  - **NOTE** : The standard stacking tray storage catch may not be fixed on certain models.
- Fix the Auto stacking tray storage catch in place. (Double-washered screw M4x10, 1 pc.)



- 10. Remove the Rear side cover.
- 11. Make a circle cutting as illustrated.
- 12. Remove the screws of the PCB mount cover.

Cable protection Positioning mark cap; KR-61 (wire clamper) Auto stacking control cable





- 13. Put the cable protection cap; KR-61 on the Auto stacking control cable as illustrated.
  - **NOTE** : Take care not to put it in the opposite direction.
- 14. Put the Auto stacking control cable through the hole of the rear side cover.

- 15. Open the PCB mount cover and lead the smaller connector of the Auto stacking control cable through the hole on the rear side frame on the paper ejection side and extend the cable to behind the PCB mount cover. Then fit the Cable protection cap in the hole on the side frame.
- 16. Replace the Rear side cover.
- 17. Secure the Auto stacking control cable on the PCB mount cover with wire saddles as illustrated.

### Important!

- Lead the cable along the hinge not to catch the cable between the covers.











18. Lead the Auto stacking control cable onto PCB mount cover as illustrated.

### Important!

- Make sure the cable should not slacken.

- 19. Connect the connector of Auto stacking control cable to CN16 on the Mechanical control PCB.
- 20. Remove one of the mounting screws of the Mechanical control PCB near the CN16 and secure the ground wire coming from the Auto stacking control cable to the Mechanical control PCB with removed screw.
- 21. Secure the Auto stacking control cable with existing wire saddles.
- 22. Close the PCB mount cover and secure with the screws.
- 23. Fix the Auto stacking tray arms; RZ to the Auto stacking tray.(Binding screw M4x6, 2pcs.)
- 24. Hang the arms of the Auto stacking tray on the tray supports. Then insert the Auto stacking tray arm locks on the respective tray arms and secure them with screws (Binding screw M4x6, 2pcs).

### Important!

- Attach the Auto stacking tray arm lock marked with "F" to the front side and the one with "R" to the rear side.
- Be sure not to drop the Auto stacking tray until the Auto stacking tray arm locks are secured with screws.
- 25. Connect the connector of the Auto stacking control cable to the Auto stacking tray and secure it by tightening the locking screws.
- 26. Replace the Rear cover; ML.
- 27. Replace the Side cover; R.

# Auto Document Feeder AF-VI : II Installation Procedure

### **Types of Applicable Printers**

The following printer models are the intended basic units for installing the Auto Document Feeder AF-VI: II.

### RISO KAGAKU CORPORATION Models

RISORZ9/RV9 seriesRISOMZ/MV seriesRISORN25 seriesRISORP seriesRISOS37 seriesRISOV8000 seriesRISOS8000

Nobody but Riso-authorized service representatives is allowed to install this unit.

### **Required parts**

Check the parts required to install in the corresponding printer.

Printer model	DN/25	DD/ \$27	D70/DV0	M77/ MN7	V2000/ 82000	
Required parts	KIN25	KP/ 55/	KZ9/KV9	IVIZ/ IVI V	V 8000/ S8000	
ADF unit	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0	
ADF control wire harness	$\bigcirc$	0	$\bigcirc$	$\bigcirc$	0	
ADF connector mount	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	0	
ADF original stopper	$\bigcirc$	0	0	0	0	
Stage pad	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
Wire clamper	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
Control panel key label	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
Wire clamper	$\bigcirc$	0	$\bigcirc$	$\bigcirc$	$\bigcirc$	
Screws	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	
AF-VI Inner Extension Wire Harness	×	×	$\bigcirc$	×	×	
Actuator; 3	×	×	0	$\bigcirc$	×	
Blind Plate; ADF	×	×	$\bigcirc$	$\bigcirc$	×	
Following parts are additionally required.						
ADF control wire harness; V8	N/A	N/A	N/A	N/A	$\bigcirc$	
ADF scanner control wire harness	N/A	N/A	N/A	N/A	$\bigcirc$	
Scanner table base cushion	$\bigcirc$	N/A	N/A	N/A	N/A	

# Packing List

This package contains the following items.

1. ADF unit1 unit2. ADF control wire harness1 pc.3. ADF connector mount1 pc.4. ADF original stopper1 pc.5. AF-VI Inner Extension Wire Harness1 pc.6. Blind Plate; ADF1 pc.7. Actuator; 31 pc.8. Stage pad1 pc.9. Wire clamper2 pcs.10. Screws1 set11. Instruction labels1 set12. Installation guide (This manual)1 copy13. Declaration of Conformity (for EU only)1 copy

### Installation Procedure = For RISO RZ9/RV9 series models =









- 1. Plug the power cord of the printer, start up the test mode on the printer and activate the test mode No.289.
- 2. Turn off the main power switch of the printer and unplug the power cord.
- 3. Open the Stage cover and remove the securing screws on the hinges.

Important: Retain the removed screws as they will be reused at procedure 29.

4. Dismount the Stage cover.

NOTE: The Stage cover is not reused.

5. Remove the Gauge cover after putting a marking at the right-hand position adjusting point, when the Gauge cover is attached to the printer.

- 6. Remove the Scanner rear cover.(four screws)
- 7. Remove the Scanner cover; P-Feed.(two screws)
- 8. Remove the Rear cover of the printer.

9. Remove the securing screws on the Original stopper.

NOTE: Retain the removed screws.

The Original stopper is not reused.

- 10. Secure the ADF original stopper with the screws which were removed at the step 9.
  - Important: Before securing the ADF original stopper, be sure to clean the shading sheet (a white sheet) on the back side. If it is stained or dusty, unwanted images may appear on prints.









- 11. Lead the ADF control wire harness through the opening of the ADF connector mount and secure the ADF connector at the end of the wire harness to the ADF connector mount with screws (Binding screw M3x8, 2pcs).
- 12. Secure the ADF connector mount to the rear side of Scanner table with screws (Double-washered screw M4x8, 2pcs).
  - Important: Lead the ADF control wire harness under the connector mount before securing the mount with the screws.
- Secure the terminal of the Ground wire coming out of the wire harness as illustrated. (Collar screw M3x6, 1pc)
- 14. Connect the ADF VI Inner Extension wire harness with the ADF Control wire harness.
- 15. Secure the ADF Control wire harnesses with the existing three wire saddles.
- 16. Disconnect the ADF wire harness from Bracket; FB stage cover sensor.
- 17. Remove the Bracket; FB stage cover sensor.
- Replace the Actuator; FB(023-30073) of Bracket; 3(024-30020) stage cover sensor to Actuator; 3.

NOTE: Remove a E ring when replace the Actuator.

Insert the spring into a hole certainly.

19. Secure the Bracket; FB stage cover sensor on an original place.









- 20. Lead the ADF-VI Inner Extension wire harness as shown in illustration.
- 21. Connect the connector of the ADF-VI Inner Extension wire harness to CN08 and CN09 on the Mecha-Control PCB.
- 22. Secure the ADF-VI Inner Extension wire harness with five exiting wire saddles.
- 23. Cut off the illustrated parts (3pcs.) from the Scanner rear cover and replace the cover on the printer.
- 24. Replace the Scanner Cover; P-Feed to the printer.
- 25. Replace the rear cover of the printer.
- 26. Secure the stepped screws (provided in the package) on the Hinge housings.
- 27. Mount the ADF unit on the printer while sliding the stepped screws (added in the previous step) into the slits of the ADF hinge bases, and secure it with two additional screws (Binding screw M4x10, 2pcs).
  - NOTE: When working on the printer with Gauge cover models, replace the Gauge cover with the dedicated pins and screws previously removed instead of Binding screws. Be sure to align the Gauge cover with the marking put when removing it.







28. Split the Blind Plate in three.

Important: The plates of both ends are required. (The middle plate is not necessary.)

- 29. Secure two Blind plates(One is the oblong hole and the other is round hole) with the screws(Binding screws M4x8, 2pcs which were removed at procedure 3).
  - Important: •The Blind plates are pushed and attached to the Hinge housings.
    - Be sure to confirm the shape of holes.
- 30. Connect the ADF unit cable to the ADF connector on the printer.

Proceed to the section "ADF Unit Balance Adjustment" on page 20.

### ADF Unit Balance Adjustment



- 1. Start up the test mode of the printer and input the test code "151" ("281" for MZ/MV series ) using print quantity keys to return the scanner carriage to the original position.
- 2. Input the test code "130" ("260" for MZ/MV series )using print quantity keys to turn on the CCD light of the Scanner Unit.
- 3. Check if the ADF original stopper and the ADF guide plate do not touch each other by looking into the opening between the ADF unit and the Scanner table from the front side. If they touch each other, adjust the position of the ADF unit by following the procedures described in the section "Compensation for slanted printed images" on page 15.
- 4. Close the ADF unit and check if all its feet and bosses evenly touch the Scanner table by looking into the opening between the ADF unit and the Scanner table.
- 5. When the ADF unit is unevenly seated on the printer, make the level even as follows.

If the ADF unit is raised on the front side, rotate the adjusting screws clockwise.



If the ADF unit is raised on the rear side, rotate the adjusting screws counterclockwise.



- 6. After the above adjustment, quit the test mode to turn off the CCD light.
- 7. Check that the ADF unit appropriately works and adjust it with the Riso test chart, following the procedures on the following page.

# Adjustment of Scanning Parameters

If printed images are of a different size and/or by far offset when originals are scanned in the ADF unit, compared with when scanned on the Stage glass, adjust the scanning parameters as follows.

### 1. Compensation for slanted printed images





- Loosen the binding screws (M4x10) on the ADF 1) hinge bases.
- 2) Loosen the nut on the Hinge base sliding screw which is located on the rear side of the hinge on the paper receiving side.
- 3) Turn the Hinge base sliding screw and adjust the position of the ADF Hinge base, referring to the guidelines on it.



Turn the screw clockwise (A) when printed images are slanted as illustrated in the left-hand figure.



Bottom

Turn the screw counterclockwise (B) when printed images are slanted as illustrated in the left-hand figure.

Secure the nut on the Hinge base sliding screw and 4) then the binding screws on the ADF hinge bases.

Check if printed images are squared in the same way 5) as when the original is scanned on the Stage glass.

Repeat the procedure in the above steps 1) to 5) until obtaining squared printed images.

2. Adjustment of scanning start position (Compensation for printing position in vertical direction)



- Start up the test mode of the printer and input the 1) test code "783" ("3073" for MZ/MV series) using print quantity keys.
- Press the Start key twice to make the message "In 2) Action" appear on the display.
- Input a required value with print quantity keys to 3) compensate the vertical scanning start position. The position is shifted 0.1mm per one step.

(ex. To shift the scanning start position by 1mm upward, input "10". To shift the position by 1mm downward, on the other hand, input \* before inputting "10".)

- Press the Start key to confirm the input value, and press the Reset key more than one second to quit the test mode.
- 5) Check if the vertical print position is the same as when the original is scanned on the Stage glass.

Repeat the procedure in the above steps 1) to 5) until obtaining an identical vertical print position.

### 3. Adjustment of scanning position (Compensation for printing position in horizontal direction)

 The printed image scanned on the Stage glass



 The printed image scanned on the ADF unit



- Start up the test mode of the printer and input the test code "782"("3072" for MZ/MV series) using print quantity keys.
- Press the Start key twice to make the message "In Action" appear on the display.
- Input a required value with print quantity keys to compensate the horizontal scanning position. The horizontal scanning position can be changed by 0.5 mm.

(ex. To shift the scanning position to the left by 1mm, input "10". To shift the position to the right by 1mm, on the other hand, input \* before inputting "10".)

NOTE: Be sure to input a multiple of "5 (five)".

- Press the Start key to confirm the input value, and press the Reset key more than one second to quit the test mode.
- 5) Check if the horizontal printing position is the same as when the original is scanned on the Stage glass.

Repeat the procedure in the above steps 1) to 5) until obtaining an identical horizontal print position.

4. Adjustment of scanning speed (Compensation for printed image size in vertical direction)



- 1) Start up the test mode of the printer and input the test code "784" ("3074" for MZ/MV series) using print quantity keys.
- 2) Press the Start key twice to make the message "In Action" appear on the display.
- Input a required value with print quantity keys to compensate the scanning speed for vertical image size. The vertical image size is changed 0.1% per one step.

(ex. To extend 300mm-long images by 3mm (1%), input "10". To shorten them by 3mm, on the other hand, input \* before inputting "10".)
- 4) Press the Start key to confirm the input value, and press the Reset key more than one second to quit the test mode.
- 5) Check if the vertical image size is the same as when the original is scanned on the Stage glass.

Repeat the procedure in the above steps 1) to 5) until obtaining an identical vertical image size.

## Installation procedures after adjustment





After adjusting scanning parameters, proceed to the following steps.

- 1. Remove the screws which secure the ADF hinge stopper on the rear side of the ADF hinges.
- 2. Rotate the ADF hinge stoppers by 180 degrees and secure them with the screws again.
- 3. Stick the instruction labels to the places indicated in the figure.

# Auto Document Feeder DX-1 Installation Procedure

## Type of Connectable Printer

The following printer models are the intended basic units for connection to the Auto Document Feeder DX-1.

**RISO KAGAKU CORPORATION Models** 

**RISO RZ7 Series/RZ9 Series** 

Nobody but Riso-authorized service representatives is allowed to install this unit.







## Packing List

This package contains the following items.

- 1. Auto Document Feeder; DX-1 ...... 1 pc.
- 3. Cushion sheet ......1 pc.
- 4. Screws ...... 1 set
- 5. Installation guide (This manual) .... 1 copy
- 6. \*Declaration of Conformity ...... 1 copy (<sup>\*</sup>for EU only)

You are reguired to prepare "RISO DX-1 Installation kit".

- 1. Plug the power cord of the printer and start up the test mode on the printer. Activate the test mode No.289 continuously.
- 2. Turn off the main power switch of the printer and unplug the power cord.
- 3. Open the Stage cover and remove the securing screws on the hinges. The removed screws should be kept by turning them into the adjoining holes on the hinges.
- Dismount the Stage cover. 4.

NOTE : The Stage cover is not reused.

Remove the Gauge cover after putting a 5. marking at the right-hand position of the adjusting point, when the Gauge cover is attached to the printer.

- 6. Remove the Scanner left cover.
- 7. Remove the securing screws on the Original stopper and slide it off to the left.

**NOTE** : The Original stopper is not reused.

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Scanner rear cover

8. Stick a Cushion sheet on the lower left corner of the platen glass.

## Important !

Be sure to stick the sheet exactly according to the edge of the platen glass.

9. Secure the Scale plate with the screws which were removed in the step 7.

## Important !

When securing the Scale plate, not to put neither dust nor any unexpected object into the scanner unit.

- 10. Remove the Rear cover from the printer.
- 11. Remove the Scanner rear cover.

12. Cut off the illustrated 5parts from the scanner rear cover.









- 13. Disconnect the ADF wire harness from Bracket; FB stage cover sensor.
- 14. Remove the Bracket; FB stage cover sensor.
- 15. Disconnect the ADF wire harness from the pulsmotor.
- 16. Secure the Hinge housing; DX L on the FB Base. (Double-washered screw M4x8, 3pcs)
- 17. Secure the Hinge housing; DX R. (Double-washered screw M4x8, 3pcs)
- 18. Connect the ADF wire harness to the pulse motor.
- 19. Fix the Wire harness; ADF interface to the Holder bracket; ADF interface. (Binding screw, M3x8 2pcs.)
- 20. Fix the Ground wire to the Holder bracket;ADF interface.(Binding screw, M3x8 1pcs.)
- 21. Secure the Holder bracket; ADF interface. (Double-washered screw M4x8, 2pcs)
- 22. Lead the Wire harness to the mechanical control PCB and connect them to CN8 and CN9.







- 23. Secure the Wire harness with the Wire saddles at six points as illustrated.
- 24. Bind the Wire harness and the ADF wire harnness with a wire clamper not to touch the Pulse motor.

25. Replace the Actuator; FB of Bracket; FB stage cover sensor to Actuator; DX.NOTE :

Remove a E ring when replace the Actuator. Insert the spring into a hole certainly.

- 26. Secure the Bracket; FB stage cover sensor on an original place.
- 27. Replace the Scanner rear cover and the Rear cover on the printer.





- 28. Attach the Blind plate; ADF on to the two holes of Scanner rear cover.(Binding screw, M4x8 2pcs.)
- 29. Secure the stepped screws (provided in the package) on the Hinge housings; DX L and R.

- 30. Mount the ADF unit on the printer, sliding the stepped screws (added in the previous step) into the slits of the ADF hinge bases.
- 31. Secure it with two exclusive screws to use the jig (provided in the package).

### NOTE :

There are two holes on the right side of the ADF hinge base, use the width type hole.

- 32. Plug the power cord to the printer and turn on the main power.
- 33. Check that the ADF unit appropriately works.
- 34. Adjust it with Riso Test chart, following the procedures on the next page.

# Adjustment of Scanning Parameters

If printed images are of a different size and/or by far offset when originals are scanned in the ADF unit, compared with when scanned on the Stage glass, adjust the scanning parameters as follows.

## 1. Adjustment of scanning position (Compensation for printing position in horizontal direction)



- 1) Start up the test mode of the printer and input the test code "3072" using print quantity keys.
- 2) Press the Start key twice to make the message "In Action" appear on the display.
- 3) Input a required value with print quantity keys to compensate the horizontal scanning position. The horizontal scanning position can be changed by 0.5 mm.

(ex. To shift the scanning position to the left by 1mm, input "10". To shift the position to the right by 1mm, on the other hand, input # before inputting "10".)

**NOTE** : Be sure to input a multiple of "5 (five)".

- 4) Press the Start key to confirm the input value, and press the Reset key more than one second to quit the test mode.
- 5) Check if the horizontal printing position is the same as when the original is scanned on the Stage glass.

Repeat the procedure in the above steps 1) to 5) until obtaining an identical horizontal print position.

## 2. Adjustment of scanning start position (Compensation for printing position in vertical direction)



- 1) Start up the test mode of the printer and input the test code "3073" using print quantity keys.
- 2) Press the Start key twice to make the message "In Action" appear on the display.
- 3) Input a required value with print quantity keys to compensate the vertical scanning start position. The position is shifted 0.1mm per one step.

(ex. To shift the scanning start position by 1mm upward, input "10". To shift the position by 1mm downward, on the other hand, input # before inputting "10".)

- 4) Press the Start key to confirm the input value, and press the Reset key more than one second to quit the test mode.
- 5) Check if the vertical print position is the same as when the original is scanned on the Stage glass.

Repeat the procedure in the above steps 1) to 5) until obtaining an identical vertical print position.

**3.** Adjustment of scanning speed (Compensation for printed image size in vertical direction)



- Start up the test mode of the printer and input 1) the test code "3074" using print quantity keys.
- Press the Start key twice to make the 2) message "In Action" appear on the display.

Input a required value with print quantity keys to compensate the scanning speed for vertical image size. The vertical image size is changed 0.1% per one step. (ex. To extend 300mm-long images by 3mm (1%), input "10". To shorten them by 3mm, on the other hand, input # before inputting "10".)

- 4) Press the Start key to confirm the input value, and press the Reset key more than one second to quit the test mode.
- 5) Check if the vertical image size is the same as when the original is scanned on the Stage glass.

Repeat the procedure in the above steps 1) to 5) until obtaining an identical vertical image size.

## 4. Compensation for slanted printed images



When the image is slanted, adjust in the following procedure.

- 1)Lossen a screw on the left ADF hinge base(paper feed tray side).
- Once remove a screw from the right side of 2) ADF hinge base(paper receiving tray side) and replace the screw to the next holl(length type), then tighten it up lightly.
- According to the following explanation, 3) adjust the position of the ADF unit and fix with the screws.



Move the ADF unit to the back  $((\widehat{A}))$ .

when printed images are slanted as illustrated in the left-hand Bottom Top figure.

Move the ADF unit to the front ((B)).

when printed images are slanted as illustrated in the left-hand Bottom Top figure.

- Check if printed images are squared in the same 4) way as when the original is scanned on the Stage glass.
- 5) Loosen the exclusive screws and repeat the procedure in the above steps 3) to 4) until obtaining squared printed images.

# **Key/Card Counter IV Installation Procedure**

## Type of Connectable Printer

The following printer models are the intended basic units for connection to the Key/card counter IV. RISO KAGAKU CORPORATION Models

RISOGRAPH GR3770 RISOGRAPH FR series RISOGRAPH CR 1630-AN/C/EN/UP/AW CR 1620-C CR 1610-AS/UI/AW CR 1600-C RISOGRAPH RN series RISO RZ/RV series RISO MZ/MV series RISO RP series RISO S37 series RISO RN25 series RISO RN25 series RISO V8000 series RISO S8000 series

Nobody but Riso-authorized service representatives is allowed to install this unit.

#### NOTE :

- When installing on RZ9,RV9 series models with the Auto-control Stacking Tray, the Bracket RZ9; Counter IV is additionally required.
- When installing on MZ/MV series models, Key/Card Counter IV Attachment Kit :2C is required. For the installation procedure for these models, refer to the guide included in the kit.
- When installing on CR series models, the Interface board IV is required. As for the procedures of leading the Key/card counter wire harnesses inside CR series models, refer to the Interface Board IV Installation Procedure Guide. After that, install the Key/card counter IV referring to steps 16-21 in the page 3 and page 13 in this guide.
- When installing on RP or S37 series models, the Key/ card counter IV Attachment Kit A is required. For the installation procedure for these models, refer to the guide included in the kit.

## Packing List

This package contains the following items.

1. Key/card counter unit 1 uni	t
2. Counter main wire harness III 1 pc.	
3. Counter extension wire harness A (long) 1 pc.	
4. Counter conversion wire harness B (short) 1 pc.	
5. Counter extension ground wire 1 pc.	
6. Counter bracket A 1 pc.	
7. Counter bracket; RZ 1 pc.	
8. Lithium battery (CR-2032) 1 pc.	
9. Battery expiration date label 1 pc.	
10. Ferrite core 1 pc.	
11. NK clamper 2 pcs	
12. Wire clamper 5 pcs	5.
13. Screwed clamper 2 pcs	
14. Wire harness protection tape 1 pc.	
15. Screws 1 set	
16. Installation guide (This manual) 1 cop	yу
17. User's guide 1 cop	yу
18. Control card 1 pc.	
19. Operator card 30 pc	s.
20. Cleaning card 1 pc.	
21. Declaration of Conformity	
(for EU only) 1 cop	Ŋу

- When installing on GR3770 or FR series models (except for FR- $\alpha$  models), the Interface board III(S) is required.
- When installing on V8000 series or S8000 models, following items are additionally required ;
- Counter bracket
- Counter extention wire harness;V8
- Master making unit cover;modified
- Rear cover (right);modified

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## = For RISO RZ9 series models =









- 1. Turn off the power switch of the printer and unplug the power cord.
- 2. Remove the Rear cover from the printer.
- 3. Open the Paper receiving tray and remove the Upper right side cover from the printer.
- 4. Lead the smaller connector of the Counter main wire harness III through the hole located around the upper left corner of the rear side frame from the paper ejecting side.
- 5. Secure the Counter main wire harness III with the wire saddles at three points.

- 6. Connect the Counter extension wire harness A (long) and the Counter main wire harness III.
- 7. Connect the Counter extension wire harness A (long) to the CN6 of the SH4F-PCB.
- 8. Remove the PCB securing screw next to the CN6 and securing it again with the terminal of ground wire coming out of the Counter extension wire harness A (long).
- 9. Secure the Counter extension wire harness A (long) with the wire saddles at five points.
- 10. Bind up the Counter extension wire harness A (long) with a wire clamper as illustrated.
- 11. Remove the case cover from the Key/card counter unit and put a lithium battery into the battery holder.
  - **NOTE** : Be sure to put the battery with the + side facing upward.
- 12. Replace the case cover on the Key/card counter unit.







 Attach bracket on the Key/Card Counter (M3x8 screws; 4 pcs)

Important : If the machine is equipped with optional Auto-control stacking tray, use Counter bracket; MH (ordered as spare part).

- Remove existing cover screw and mount the bracket onto the machine using (M4x16) screw, which came with the unit. (The removed existing screw will not be reused.)
- 15. Use (M4x8) screw, which came with the unit, to mount the bracket onto machine metal frame.
- 16. Connect the wire harness onto the Key/Card Counter and mount it on the machine using a wire saddle.
- 17. Write down the date, two years from now, on the battery replacement sticker and stick it on the unit.
- 18. Attach the side cover back on the machine after cutting off the blind cover for the wire harness.
- 19. Mount the rear cover back on the machine.

(Refer to the next page for the operation check.)

# **Operation check**

- 1. Pressing both "**0**" and "**C**" keys on the Key/ card counter control panel together, turn on the main power switch on the printer.

**NOTE** : If no indication appears when the printer is turned on, return to the step 1.

- 3. After the display message changes to "INSERT CARD", insert the "OPERATOR CARD No. 1" into the Key/card counter and print **5 copies** with a newly made master.
- 4. Insert the "CONTROL CARD" into the Key/ card counter and press the "1" key more than a second. Then press the "**PRINT**" and "**SET**" keys orderly to print out the data of master count and print count.

5. Check that the following data are printed out on copies.

No.	MSTR	PRINTS
1	1	5
ALL	1	5

- 6. To clear the above data, follow the procedures below.
  - 1) Press the "1" key more than a second leaving the "CONTROL CARD" in the Key/card counter.
  - After the indication "TTL- 1- 5" appears on the display, press the "C" and "SET" keys orderly. The panel indication is changed to "TTL- 0 -0" and the data are all cleared.

## Battery replacement





The used battery (normally after two years' operation) can be replaced by the following procedures.

1. **Turn on the main power** of the printer and remove the case cover of the **Key/card counter unit** by removing the securing screws on the bottom of the unit.

#### Important!

Always replace the used battery with the power of the printer turned ON. Otherwise, all memories in the Key/card counter will be cleared out.

- 2. Pick off the used battery from the battery holder and put a new one (CR-2032) there.
- 3. Replace the case cover on the **Key/card counter unit**.
- 4. Write the date of two years later on the **Battery** expiration date label on the side of the Key/card counter unit.

# Sound Reduction Cover Kit RZ/RV Installation Procedure



#### CHAPTER 1: MAINTENANCE



(1) Secure the Magnet Base; SRC to the printer. (Double-washered screw 4x10, 2pcs.)

- 2 Replace the Side Cover to the original position and secure it with two screws.
- 3 Replace the Scanner Cover to the original position and secure it with two screws.
- ④ Secure the Magnet Catch removed in procedure1 to the Magnet Base; SRC.



- Secure the Reinforce Plate; Handle and the Handle; SRC to the top of the Sound Reduction Cover; Paper Feed with two screws. (Double-washered screw 5x15, 2pcs.)
- ② Secure the Magnet Catcher; SRC to the Reinforce Plate; Handle from the inner side of the cover with two screws temporarily. (Double-washered screw 4x10, 2pcs.)
- ③ Stick the Sponge; SRC to the bottom of the Sound Reduction Cover; Paper Feed with a tape. Be sure to stick it between the line marks on the bottom of the Sound Reduction Cover; Paper Feed.



- ① Draw the Carrying Bars from the paper-feed side until they stop.
- ② Secure the Hinge; SRC to each bar with a screw. (Double-washered screw 4x25, 2pcs.) Be sure to secure it at outside hole.
- (3) Attach the Mounting Bracket; SRC to the Hinge; SRC.



- Attach the Sound Reduction Cover; Paper Feed to the arm of the Hinge; Sound Reduction Cover and secure it with PW and E-ring. (PW \u03c6 8, E-ring \u03c6 8, 2pcs.;EA)
- (2) Secure the Sound Reduction Cover; Paper Feed to Mounting Bracket; Sound Reduction Cover with two screws. (Double-washered screw 4x10, 4pcs.)



(1) Loosen the screw and adjust the position of the Magnet Catcher; SRC so that the gap between the Sound Reduction Cover; Paper Feed and the side cover of the printer is 2mm or less.

The gap on the front side cannot be adjusted to 2mm or less.

# Wide Stacking Tray Installation Procedure

# **Types of Applicable Printers**

The following printer models are the intended basic units for installing the Wide Stacking Tray.

RISO KAGAKU CORPORATION Models

RISO MZ7, MV7 series

RISO RZ9, RV9 series

RISO RP3700, RP3500, RP3100

When installing on MZ7, MV7, RZ9 or RV9 series models, following items are additionally required;

•Wide stacking tray support; Front (045-22551) •Wide stacking tray support; Rear (045-22552)

Nobody but Riso-authorized service representatives is allowed to install this unit.

## = For RISO RZ9, RV9 series models =







# Packing List

This package contains the following items.

1. Wide stacking tray	1 unit
2. Wide stacking tray arm F	1 pc.
3. Wide stacking tray arm R	1 pc.
4. Wide stacking tray support F	1 pc.
5. Wide stacking tray support R	1 pc.
6. Tray catcher plate	1 pc.
7. Stacking tray arm spacer	2 pcs.
8. Screws	1 set
9. Instruction label (2 types) 1	pc. each
10. Installation guide (This manual)	1 сору

- 1. Turn off the power switch of the printer and unplug the power cord.
- 2. Remove both the standard Paper stacking tray and the Stacking tray supports.
- 3. Secure the Tray catcher plate to the Wide stacking tray. (Binding screw M4x10, 1 pc)
- 4. Secure the Stacking tray arm spacers to the tray with the embossed sides facing up. (Binding screw M4x10, 2 pcs)
- 5. Secure the Wide stacking tray arm F and R to the Wide stacking tray. (Binding screw M4x10, 4 pcs)
- 6. Secure the Wide stacking tray support; Front and Rear with the screws removed in the step 2.
- 7. Fit the Wide stacking tray in the Wide stacking tray supports from above.
- 8. Stick the Instruction labels on the Paper receiving tray and the Paper stop respectively so that each label covers the previously affixed onens.

# Sorter TM2500 Installation Procedure <RZ9/RV9 series>

## **Types of Connectable Printers**

The following printer models are the intended basic units for connection to the Sorter TM2500.

### RISO KAGAKU CORPORATION Models

RISO RZ9 Series RISO RV9 Series

# Package List

The following packages are required for installing the Sorter TM2500. As for the items contained in these packages, refer to the packing list in the respective packages.

- Sorter TM2500 / Main Unit
- Sorter TM2500 / Attachment
- CONNECTION KIT FOR TM2500 (Z/V)

### Important !

When it is connected to the above model, it can be done only in this procedure guide. The procedure guide included in "Sorter TM2500/ Attachment" isn't necessary.

Nobody but Riso-authorized service representatives is allowed to install this unit.





- 1. Turn off the power switch. Then unplug the power cord.
- 2. Remove the Rear cover.

- 3. Remove the Cover; Rear-R.
- 4. Cut off the illustrated part from the Cover; Rear-R.
- 5. Remove five screws of the PCB Bracket.



MECHA-CNTL-PCB CN11

- 6. Open the PCB Bracket and attach the OPTION-PCB with four screws. (Binding screw M3x64pcs.)
- 7. Connect the OPTION-PCB wire harness to CN1, and lead it to the front through the rectangle-hole on the left.

#### Important !

The connector that shuld be led through the hole is marked with a tape.

8. Attach two wire saddles on the PCB Bracket.

9. Connect the OPTION-PCB wire harness to CN11 on the MECHA-CNTL-PCB.





- 10. Lead the TM extension wire harness through the rectangle-hole on the side frame as illustrated.
- 11. Secure the connector of TM extension wire harness at the rectangle-hole as illustrated.

(Hexagonal securing screws x 2, Spring washer x 2, Nut x 2)

- 12. Lead the TM extension wire harness as illustrated.
- 13. Connect the Connector of TM extension wire harness to CN4 on the OPTION-PCB .
- 14. Secure the TM extension wire harness with two wire saddles.

### Important !

Secure the wire harness not to slacken to prevent it from touching the moving parts.

- 15. Replace the PCB Bracket with the screws as before.
- 16. Replace the Cover; Rear-R.
- 17. Replace the Rear Cover.





18. Remove the De-electricity brush.

NOTE : Retain the screws.

 Attach the Transfer Unit Assist Plate; TM25 on the Cover; P-Ejection. (Binding screw M3x6 2pcs.)
 Important !

The position to hook the Transfer Unit Assist Plate; TM25 on the tab is different between the normal stand and the Multi Tray Paper Feeder. Attach it in accordance with the illustration.

20. Attach the De-electricity brush with the screws removed at procedure 19.

- 21. Remove the Tray holders with screws.
- 22. Attach the Joint Bracket F; TM25 with a screw removing at procedure 21.
- 23. Attach the Joint Bracket R; TM25 with a screw removing at procedure 21.
- 24. Attach the Joint plate with screws. (Doublewashered screw M4x10 4pcs.)
- 25. The subsequent procedures are different with the type of the stand.

When the printer is loaded on the Multi Tray Paper Feeder, Proceed in 7 page. For another case, proceed in the next page.

# Connecting the TM2500 to the Printer Loaded on Normal Stands









- 1. Stand the TM2500 and remove the transportation securing plate from the bottom of the TM2500.
  - **NOTE** : Retain three screws of the removed ones as they will be reused to attach the Bin paper stopper to the TM2500.
- 2. Unload the printer from the stand if it is loaded there.
- 3. Turn over the stand and attach the Joint rail bracket on the bottom with four binding screws (M4x8).

- 4. Reset the stand on its feet and load the printer on it so that all four feet of the printer may be placed right in the dents on the stand.
- 5. Insert the Joint rail into the Joint rail bracket, which is attached on the bottom of the stand, from the paper feed tray side and slide it further enough for its other end to come out of the bottom of the stand on the other side.
- 6. Place the TM2500 close to the paper receiving side of the printer.
- Pull out the Joint rail further enough for the end to reach the TM2500 and secure the end of the rail to the Joint rail catch at the bottom of the TM2500 with two binding screws (M4x8).



- 8. Insert the connector at an end of the TM-PR interface cable into the connector socket at the lower part of the TM2500 and secure it by tightening the attached screws.
- 9. Move the TM2500 toward the printer until the front end of the Paper transfer unit is locked against the Joint plate, which is attached to the printer, with a click.

Then proceed to the section "Attaching the Stapler" on page 9.

## Note:

Refer to the following pages for the connection to the machines with the Multi-Tray Paper Feeding (MTPF) unit.

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## Connecting the TM2500 to the Printer Loaded on the Multi-Tray Paper Feeder







- 1. Lay down the TM2500 and remove all 4 casters and the Joint rail catch at the bottom.
- 2. Attach the Clearance Bracket F-25; TM25 to the bottom of the TM2500 together for each side using the black Binding screws (M6x12) removed in the previous step. Then secure the free caster on them with Double-washered screws (M5x12). Repeat the same procedure for the other side.
- Attach the Clearance Bracket R-20 and the Clearance Bracket R-5 (2pcs.) to the bottom of the TM2500 together using Double-washered screws (M5x20). Then secure the stable caster on them with the Double-washered screws (M5x8) removed in the step 1.

Repeat the same procedure for the other side.

- 4. Attach the Clearance Bracket C-20 and the Clearance Bracket C-5 (2pcs.) to the bottom of the TM2500 together using the Double-washered screws (M4x20). Then replace the Joint rail catch on it with the Double-washered screws (M4x8) removed in the step 1.
- 5. Stand the TM2500 and remove the transportation securing plate from the bottom of the TM2500.
  - **NOTE** : Retain three screws of the removed ones as they will be reused to attach the Bin paper stopper to the TM2500.
- 6. Unload the printer from the Multi-tray paper feeder if it is loaded there. Then remove the Right side cover from the Multi-tray paper feeder.
- 7. Pull out the Feed trays.









- Attach the TM25 Connecting Plate; L.
  (Double-washered M4x10, 2 pcs.)
- Attach the TM25 Connecting Plate; R.
  (Double-washered M4x10, 2 pcs.)
- 10. Insert the Joint rail bracket under the bottom plate from the paper receiving side of the printer and place the end of the bracket into the rack provided under the bottom plate.
- 11. Secure the Joint rail bracket under the bottom plate with screws (Double-washered M4x10, 2 pcs.) and push back the Feed trays into the Multi-tray paper feeder.
- 12. Replace the Right side cover on the Multi-tray paper feeder.
- 13. Load the printer on the Multi-tray paper feeder and insert the Joint rail into the Joint rail bracket from the Multipurpose feed tray side. Then slide the Joint rail further enough for its other end to come out of the bottom on the other side.

NOTE : Refer to the installation guide of the Multi-tray paper feeder.

- 14. Place the TM2500 close to the paper receiving side of the printer.
- 15. Pull out the Joint rail further enough for the end to reach the TM2500 and secure the end of the rail to the Joint rail catch at the bottom of the TM2500 with two binding screws (M4x8).
- 16. Insert the connector at an end of the TM-PR interface cable into the connector socket at the lower part of the TM2500 and secure it by tightening the attached screws.
- 17. Move the TM2500 toward the printer until the front end of the Paper transfer unit is locked against the Joint plate, which is attached to the printer, with a click. Then proceed to the next page.

## Attaching the Stapler







- 1. Press the green button ("PUSH OPEN") on the Stapler unit and open the Stage base.
- 2. Remove the securing screw of the connector cover attached to the Stapler body and remove the connector cover to uncover the Stapler body connector.

**NOTE** : Retain the removed screw as it will be reused.

- 3. Hitch the hooks of the Stapler base to the slits on the Stapler installation mount in the TM2500 Main body and attach the Stapler base on the Stapler installation mount.
  - **NOTE** : Pull out the Stapler wire harness, whose connector is just out of the hole at the bottom of the Stapler installation mount, and lead it through the bottom rectangular hole of the Stapler base from below beforehand.
- 4. Put the removed connector cover on the Stapler wire harness and connect the connector of the wire harness to the Stapler body connector.
- 5. Insert the hook of the connector cover into the slit in front of the Stapler body connector, and secure the connector cover to the Stapler body with the screw removed in Step 2.
- 6. Secure the Stapler base on the Stapler installation mount with two double-washered screws (M3x6).
- 7. Push up the Stapler body to close the unit.

# Attaching the NonSort Precision Stacking Tray





 Rest the bosses at the front end of the NonSort precision stacking tray on the Tray holders attached on the side frames of the TM2500 Main body, below the Sort bins.

#### Important !

Never forget to lower the Paper ejection guide arms and turn down the Paper stacking guides before attaching the NonSort precision stacking tray. If the Paper ejection guide arms are left raised, they can be damaged.

2. Turn up the Paper stacking guides and let the Paper ejection guide arms flip up by pressing their base. **Important !** 

Lower the Paper ejection guide arms first when turning down the Paper stakcing guides.

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## Checking Function / Attaching the Bin Paper Stopper

- 1. Connect the power cord to the power cord socket at the lower part of the TM2500 and connect the plug to the electrical outlet.
- 2. Connect the power cord plug of the printer to the electrical outlet and turn on the power switch on the printer. (The TM2500 is automatically powered.)
- 3. Verify that the TM2500 functions normally.
- 4. Raise the Sort bins up to the highest position if they are not. Insert the Bin paper stopper into the bracket provided at the top of the Sort bins and secure it to the bracket with three binding screws which were removed when removing the transportation securing plate from the bottom of the TM2500.

# TM5000 Installation Procedure (RZ9/RV9)

Types of Connectable Printers	Package List
The following printer models are the intended basic units for connection to the Sorter TM5000.	The following packages are required for installing the Sorter TM5000. As for the items contained in
RISO KAGAKU CORPORATION Models	these packages, refer to the packing list in the respective packages.
RISO RZ9 Series	(Main Tower)
RISO RV9 Series TM50	TM5000 / Main Unit
	TM5000 / Joint Unit Covers
	TM5000 / Joint Unit & Control Panel
	TM5000 / Attachment (Main)
	TM5000 / Nonsort Precision Stacking Tray
	CONNECTION KIT FOR TM5000 (Z / V)
	(Side Iower)
Nobody but Riso-authorized service	TM5000 / Main Unit
representatives is allowed to install this unit.	CONNECTION KIT FOR TM5000 (Z / V)

# Installation of the OPTION-PCB





- 1. Turn off the power switch. Then unplug the power cord.
- 2. Remove the Rear cover.

- 3. Remove the Cover; Rear-R.
- 4. Cut off the illustrated part from the Cover; Rear-R.
- 5. Remove five screws of the PCB Bracket.

1





- 6. Open the PCB Bracket and attach the OPTION-PCB with four screws.
- 7. Connect the OPTION-PCB wire harness to CN1, and lead it the front through the rectangle-hole on the left.

#### Important !

The connector that shuld be led through the hole is marked with a tape.

8. Attach two wire saddles on the PCB Bracket.

9. Connect the OPTION-PCB wire harness to CN11.





- 10. Lead the TM extension wire harness through the rectangle-hole on the side frame as illustrated.
- 11. Secure the connector of TM extension wire harness at the rectangle-hole as illustrated.

(Hexagonal securing screws, Spring washer x 2, Nut x 2)

- 12. Lead the TM extension wire harness as illustrated.
- 13. Connect the Connector of TM extension wire harness to CN4 on the OPTION-PCB .
- 14. Secure the TM extension wire harness with two wire saddles.

#### Important !

Secure the wire harness not to slacken to prevent it from touching the moving parts.

- 15. Replace the PCB Bracket with the screws as before.
- 16. Replace the Cover; Rear-R.
- 17. Replace the Rear Cover.

## Installation of the NonSort precision stacking tray





 Remove the Precision stacking tray and the Tray holders from the printer.

**NOTE** : Retain the removed screws as they will be reused.

- 2. Attach a Flapper pivot bearing and two of Nonsort Stacking tray pivot bearing on the Fixing bracket; F. ( Double-washered screw M4x8 1EA)
- 3. Attach a Flapper pivot bearing and two of Nonsort Stacking tray pivot bearing on the Fixing bracket; R. (Double-washered screw M4x8 1EA)
- 4. Attach the Fixing bracket; F and R with the screws removed at the procedure 1 (2EA) and Binding screw M4x8 (1EA).



- 5. Attach the Paper guide ass'y F and R to the NonSort precision stacking tray base with screws (Binding M3x8, 2 EA).
- 6. Latch the hooks of the arm plates on both sides of the NonSort precision stacking tray base on the securing studs of the Joint brackets and secure the arm plates with screws.

## For the connection of the printer with the standard stand.

<Installation of the TM5000 Main Tower>

Install it with the process after p.5 of "TM5000 Main Tower Installation procedure" included in the TM5000 Attachment kit (Main).

<Installation of the TM5000 Side Tower>

Refer to "TM5000 Side Tower Installation procedure" included in the TM5000 Attachment kit (Side).

## For the connection of the printer with the Multi Tray Paper Feeder



- 1. Take TM5000 itself out from the packing box, and put sideways as illustrated.
- 2. Remove eight screws from top board of TM5000.
- 3. Attach the Height Adjustment Ass'y; F and R, with the screws removed with the procedure above.



4. Attach four of caster; BWP-50N with the screws.

5. Attach three of Adjustment foot; M10.

<Installation of the TM5000 Main Tower>

Install it with the process after p.5 of "TM5000 Main Tower Installation procedure" included in the TM5000 Attachment kit (Main).

<Installation of the TM5000 Side Tower>

Refer to "TM5000 Side Tower Installation procedure" included in the TM5000 Attachment kit (Side).

## 4. Exterior Cover Removal

#### Front cover

- (1) On RZ977 and RZ997 (with the multi-tray paper feeder), remove first the paper transport path open/close lever by removing screw (M3x8: 1 pc).
- (2) Open the front door, remove screws (M4x10: 5pcs).
- (3) Close the front door, remove screws (M4x8: 2pcs) on the paper feed side and screws (M4x8: 2pcs) on the paper ejection side, and then dismount the front cover with the front door attached.

#### Master-making unit cover; front

- (1) With the machine power on, press the green release button to release the master-making unit and pull out the unit.
- (2) Remove screws (M4x8: 4 pcs) from the master-making unit front cover and remove the cover.



#### Stage cover

(1) Open the stage cover, remove a screw (M4x10: 1pc each) from each of the two hinges (right and left) of the stage cover, and then attach those screws in the screw holes behind. Lift the stage cover off the machine.

### Side cover; paper ejection

(1) Remove screws (M4x8: 2pcs), and dismount the side cover; paper ejection.

#### Rear side cover; paper ejection

- (1) Remove the following covers.
  - Rear cover
  - Stage cover
  - Scanner rear cover
  - Scanner cover;paper ejection
- (2) Remove screws (M4x8: 2pcs), and dismount the rear side cover; paper ejection.



#### Rear cover ; ML

- Remove screws (M4x8: 4pcs), and dismount the rear cover ; ML.

#### Side cover; paper feed

- Remove the scanner cover; paper feed.
- Remove screws (M4x8: 2pcs), and dismount the side cover;paper feed.

#### Rear side cover; paper feed

- (1) Remove the following covers.
  - Rear cover ; ML
  - Stage cover
  - Scanner cover ; rear
  - Scanner cover; paper feed

#### (2) Remove screws (M4x8: 2pcs), and dismount the rear side cover;paper feed.



Rear side cover; paper feed

#### Scanner cover; paper feed

- Remove screws (M4x8: 2pcs), and dismount the scanner cover;paper feed.

#### Scanner cover; paper ejection

- Remove screws( M4x8: 4pcs), and dismount the scanner cover; paper ejection.

#### Scanner cover; rear

- (1) Dismount the stage cover.
- (2) Remove screws(M4x8: 4pcs), and dismount the scanner cover;rear.

#### **Operation panel**

- (1) Remove screws (M4x8: 3pcs)
- (2) Lift up the operation panel after sliding to the front, unplug the connector, and then remove the operation panel.


### 5. Opening the PCB Brackets

### Power Supply PCB & System Control PCB Bracket

- (1) Switch off the power, and dismount the rear cover.
- (2) Remove screws (M4x8: 5pcs) and slowly swing open the PCB bracket on which the power supply and mechanical control PCBs are mounted.

### SH4F PCB Bracket

- (1) Switch off the power, and dismount the rear cover ; ML.
- (2) Remove screws (M4x8: 4pcs) and slowly swing open the PCB bracket on which the SH4F PCB is mounted.



0115

### MEMO

## CHAPTER 2: MACHINE SUMMARY

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### 1. Cross-Sectional Diagram



1 First paper-feed area	:	Sends paper from the paper-feed tray one sheet at a time.
(2) Second paper-feed area	:	Stops the paper sent from the first paper-feed stage, and accurately feeds it to the print drum and pressure section.
③ Printing section	:	The pressure roller presses the paper firmly against the print drum for printing and feeding.
④ Paper-ejection section	:	Removes the printed paper from the print drum using the separator, and sends it to the paper-receiving tray.
5 Print cylinder (drum)	:	Supplies ink from the ink cartridge to the surface of the print drum for printing.
6 Clamp unit	:	Clamps the leading edge of a master.
⑦ Master-removal section	:	Peels the master from the print drum after use, and discharges it into the master disposal box.
(8) Flatbed section	:	The lamp carriage and mirror carriage move, and the CCD unit scans the original on the scanner table.
(9) Master-making section	:	Transports and creates a master using the thermal print head, then sends the produced master to the print drum, and cuts the master material.
<ul><li>Multi-tray paper-feed section (where equipped)</li></ul>	:	Feeds one sheet at a time from the specified paper tray.
1 Multi-tray transfer unit (where equipped)	:	Feeds paper between the multi-tray paper-feed section and the second paper-feed section.

### 2. Operation Outline



### 3. Outline of Paper-feeding, Printing, and Paper-ejection Operations



### 4. Outline of Master-removal, Master-making, and Master-loading Operations



### Master-removal operation

- The clamp plate holding the leading edge of the master opens, and the master-release bar rises to lift the master out from under the clamp plate
- (2) The vertical transport rollers and print drum rotate, thereby separating the master from the print drum and sending it to the master disposal box.
- (3) The motion of the compression plate starts, pressing the master into the master disposal box.

### Master-making operation

(1) The image sensor scans the original, and the thermal print head transfers the image onto a master.

### **Master-loading operation**

- (1) The leading edge of the master is sent to a the clamp plate on the print drum, and the leading edge is clamped.
- (2) The print drum rotates to wind the master around it.
- (3) The cutter cuts the master.

# Optional Accessories < USA, EUROPE & ASIA Models >

A variety of optional accessories are available to enhance the capabilities of the machine. For details about the optional accessories, see your dealer (or authorized service representative).

### Auto Document Feeder AF-VI:II

Feed up to 50 sheets of originals automatically.

### Auto Document Feeder DX-1

Feed up to 50 sheets of originals automatically. Both sides of original can be scanned automatically.

### Color Cylinder (Drum)

Simply change the Cylinder (Drum) to print in multiple colors. (Case included)

### Letter (A4) Cylinder (Drum) W

A special cylinder (drum) for Letter or A4 size landscape paper. (Case included)

### Auto-control Stacking Tray II (for RZ990/RZ970)

The Receiving Tray Paper Guides/Stopper are automatically adjusted according to paper and reproduction size.

### Wide Stacking Tray

This unit can take paper up to  $12^{3}/_{4}$ "  $\times 20^{13}/_{16}$ " (340 mm  $\times$  555 mm) in size.

### Key Card Counter

With a single button press, shows the numbers of printed copies and consumed masters within a given period of time. This can help you manage costs.

### Sorter TM5000/TM2500

The sorters should be directly connected to the machine. TM5000 can sort 50 copies and be connected in four units in total.

TM2500 can sort 25 copies at maximum.

### Job Separator

With the Programed Printing function, allows the machine to print and sort into groups separated by tape.

### Document Storage Card DM-128CF

### Special Paper Feed Kit (for RZ990/RZ970)

This unit allows you to feed thicker paper such as cards and envelopes

### Ink/Master Holder

A rack kit for storing supply such as ink and masters.

### RISO Controller PS7R

A custom controller enabling the machine to be used as a network-connected PostScript 3 printer.

STAND

# **Specifications**

RISO RZ997 < USA Model >

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22 lb (10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : $1^{15}/_{16}$ " $\times 3^{9}/_{16}$ " (50 mm $\times$ 90 mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm) When using Auto Document Feeder AF-VI:II (option) : $3^{15}/_{16}$ " $\times 5^{13}/_{16}$ " (100 mm $\times 148$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm) When using Auto Document Feeder DX-1(option) : $3^{29}/_{32}$ " $\times 4^{25}/_{32}$ " (105 mm $\times 128$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm)
Original Paper Weight	When using the Stage Glass : 22 lb (10 kg) or less When using the Auto Document Feeder AF-VI:II (option) : 13-lb bond (50g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) When using Auto Document Feeder DX-1 (option) : 11-lb bond (40g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) (When "Scanning Side -ADF" is set to "Back Side $\rightarrow$ Simplex" or "Duplex $\rightarrow$ Simplex" : 14-lb bond (52g/m <sup>2</sup> ) - 28-lb bond (105g/m <sup>2</sup> ))
Print Paper Size (max./min.)	When using Standard Feed Tray : $3^{15}/_{16}$ " $\times 5^{13}/_{16}$ " (100 mm $\times$ 148 mm) - 12" $\times$ 17" (320 mm $\times$ 432 mm) When using Multi Tray Paper Feeder : $5^{11}/_{16}$ " $\times 8^{1}/_{32}$ " (182 mm $\times 257$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64 g/m²))
Print Paper Weight	When using Standard Feed Tray : 12-lb bond (46g/m <sup>2</sup> ) - 110-lb index (210g/m <sup>2</sup> ) When using Multi Tray Paper Feeder : 14-lb bond (52g/m <sup>2</sup> ) - 28-lb bond (105g/m <sup>2</sup> )
Image Processing mode	Line, Photo, Duo, Pencil
Master-making Time	Approx. 20 seconds (for A4/landscape/100% reproduction ratio)
Printing Area (max.)	117/ <sub>16</sub> " $ imes$ 163/ <sub>4</sub> " (291 mm $ imes$ 425 mm)
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 200%, 154%, 129%, 121% Standard reproduction ratio (reduction) : 78%, 65%, 61%, 50% Margin+ : 90 - 99 %
Print Speed	Approx. 60 - 180 sheets per minute (six steps variable)
Print Position Adjustment	Vertical : ± <sup>19/</sup> 32" (±15 mm) Horizontal : ± <sup>3</sup> /8" (±10 mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LCD Touch Panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-VI:II, Auto Document Feeder DX-1, Color Cylinder (Drum), Letter (A4) Cylinder (Drum) W, Wide Stacking Tray, Key Card Counter, Sorter TM5000/TM2500, Job Separator, Document Storage Card DM-128CF, Ink/Master Holder, RISO Controller PS7R, STAND
Power Source	RZ997U : 100V-120V/220V-240V AC, 50/60Hz <6.5/2.6A>

### Dimensions

When in use :  $55^{5}/_{16}"(W) \times 27^{9}/_{16}"(D) \times 42^{1}/_{2}"(H) \ (1405 \ mm(W) \times 700 \ mm(D) \times 1080 \ mm(H))$ When in storage :  $30^{1}/_{2}"(W) \ \times 27^{9}/_{16}"(D) \times \ 42^{1}/_{2}"(H) \ (775 \ mm(W) \times 700 \ mm(D) \times 1080 \ mm(H))$ Approx.  $405^{5}/_{8} \ lb \ (184 \ kg)$ 

Weight

- Please note that due to improvements and changes to the machine, some images and explanations in this manual may not correspond to your machine.
- The specifications are subject to change without prior notice.

### RISO RZ990 < USA Model >

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22 lb (10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : $1^{15}/_{16}$ " $\times 3^{9}/_{16}$ " (50 mm $\times$ 90 mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times$ 432 mm) When using Auto Document Feeder AF-VI:II (option) : $3^{15}/_{16}$ " $\times 5^{13}/_{16}$ " (100 mm $\times$ 148 mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times$ 432 mm) When using Auto Document Feeder DX-1(option) : $3^{29}/_{32}$ " $\times 4^{25}/_{32}$ " (105 mm $\times$ 128 mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times$ 432 mm)
Original Paper Weight	When using the Stage Glass : 22 lb (10 kg) or less When using the Auto Document Feeder AF-VI:II (option) : 13-lb bond (50g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) When using Auto Document Feeder DX-1 (option) : 11-lb bond (40g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) (When "Scanning Side -ADF" is set to "Back Side $\rightarrow$ Simplex" or "Duplex $\rightarrow$ Simplex" : 14-lb bond (52g/m <sup>2</sup> ) - 28-lb bond (105g/m <sup>2</sup> ))
Print Paper Size (max./min.)	$3^{15}\!\prime_{16}\!$
Paper Supply Capacity	1000 sheets (17-lb bond (64g/m²))
Print Paper Weight	12-lb bond (46g/m²) - 110-lb index (210g/m²)
Image Processing mode	Line, Photo, Duo, Pencil
Master-making Time	Approx. 20 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	11 <sup>7</sup> / <sub>16</sub> " × 16 <sup>3</sup> / <sub>4</sub> " (291 mm × 425 mm)
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 200%, 154%, 129%, 121% Standard reproduction ratio (reduction) : 78%, 65%, 61%, 50% Margin+ : 90 - 99 %
Print Speed	Approx. 60 - 180 sheets per minute (six steps variable)
Print Position Adjustment	Vertical : ± <sup>19/</sup> 32" (±15 mm) Horizontal : ± <sup>3/</sup> 8" (±10 mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LCD Touch Panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-VI:II, Auto Document Feeder DX-1, Color Cylinder (Drum), Letter (A4) Cylinder (Drum) W, Auto-control Stacking Tray II, Wide Stacking Tray, Key Card Counter, Sorter TM5000/TM2500, Job Separator, Document Storage Card DM-128CF, Special Paper Feed Kit, Ink/Master Holder, RISO Controller PS7R, STAND
Power Source	RZ990U : 100V-120V/220V-240V AC, 50/60Hz <6.5/2.6A>
Dimensions	When in use : $55^{5}/_{16}"(W) \times 27^{9}/_{16}"(D) \times 41^{1}/_{3}"^{*}(H) (1405 \text{ mm}(W) \times 700 \text{ mm}(D) \times 1050 \text{ mm}^{*}(H))$ When in storage : $30^{1}/_{2}"(W) \times 27^{9}/_{16}"(D) \times 41^{1}/_{3}"^{*}(H) (775 \text{ mm}(W) \times 700 \text{ mm}(D) \times 1050 \text{ mm}^{*}(H))$ *: The optional Stand included
Weight	Approx. 253 <sup>17/</sup> 32 lb (115 kg)

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# **Specifications**

### RISO RZ977 < EUROPE Model >

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (10 kg or less), sheet
Original Size (max./min.)	When using the Platen Glass : 50 mm $\times$ 90 mm - 297 mm $\times$ 432 mm When using Auto Document Feeder AF-VI:II (option) : 100 mm $\times$ 148 mm - 297 mm $\times$ 432 mm When using Auto Document Feeder DX-1(option) : 105 mm $\times$ 128 mm - 297 mm $\times$ 432 mm
Original Paper Weight	When using the Platen Glass : 10 kg or less When using the Auto Document Feeder AF-VI:II (option) : $50g/m^2 - 128g/m^2$ When using Auto Document Feeder DX-1 (option) : $40g/m^2 - 128g/m^2$ (When "Scanning Side -ADF" is set to "Back Side $\rightarrow$ Simplex" or "Duplex $\rightarrow$ Simplex" : $52g/m^2 - 105g/m^2$ )
Print Paper Size (max./min.)	When using Standard Feed Tray : 100 mm $\times$ 148 mm - 320 mm $\times$ 432 mm When using Multi Tray Paper Feeder : 182 mm $\times$ 257 mm - 297 mm $\times$ 432 mm
Paper Supply Capacity	1000 sheets (64 g/m²)
Print Paper Weight	When using Standard Feed Tray : 46g/m² - 210g/m² When using Multi Tray Paper Feeder : 52g/m² - 105g/m²
Image Processing mode	Line, Photo, Duo, Pencil
Master-making Time	Approx. 20 seconds (for A4/landscape/100% reproduction ratio)
Printing Area (max.)	$291 \text{mm} \times 413 \text{mm}$
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 163%, 141%, 122%, 116% Standard reproduction ratio (reduction) : 87%, 82%, 71%, 61% Margin+ : 90 - 99 %
Print Speed	Approx. 60 - 180 sheets per minute (six steps variable)
Print Position Adjustment	Vertical : ±15mm Horizontal : ±10mm
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LCD Touch Panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-VI:II, Auto Document Feeder DX-1, Colour Drum, A4 Drum W, Wide Stacking Tray, Key Card Counter, Job Separator, Document Storage Card DM-128CF, Ink/Master Holder, RISO Controller PS7R, STAND
Power Source	RZ977E : 220V-240V AC, 50/60Hz <2.6A>
Dimensions	When in use : 1405 mm(W) $\times$ 700 mm(D) $\times$ 1080 mm(H) When in storage : 775 mm(W) $\times$ 700 mm(D) $\times$ 1080 mm(H)
Weight	Approx. 184 kg

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- The specifications are subject to change without prior notice.

### RISO RZ970 < EUROPE Model >

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (10 kg or less), sheet
Original Size (max./min.)	When using the Platen Glass : 50 mm $\times$ 90 mm - 297 mm $\times$ 432 mm When using the Auto Document Feeder AF-VI:II (option) : 100 mm $\times$ 148 mm - 297 mm $\times$ 432 mm When using Auto Document Feeder DX-1 (option) : 105 mm $\times$ 128 mm - 297 mm $\times$ 432 mm
Original Paper Weight	When using the Platen Glass : 10 kg or less When using the Auto Document Feeder AF-VI:II (option) : $50g/m^2 - 128g/m^2$ When using Auto Document Feeder DX-1 (option) : $40g/m^2 - 128g/m^2$ (When "Scanning Side -ADF" is set to "Back Side $\rightarrow$ Simplex" or "Duplex $\rightarrow$ Simplex" : $52g/m^2 - 105g/m^2$ )
Print Paper Size (max./min.)	100 mm $ imes$ 148 mm - 320 mm $ imes$ 432 mm
Paper Supply Capacity	1000 sheets (64g/m²)
Print Paper Weight	46g/m² - 210g/m²
Image Processing mode	Line, Photo, Duo, Pencil
Master-making Time	Approx. 20 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	$291 \text{ mm} \times 413 \text{ mm}$
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 163%, 141%, 122%, 116% Standard reproduction ratio (reduction) : 87%, 82%, 71%, 61% Margin+ : 90 - 99 %
Print Speed	Approx. 60 - 180 sheets per minute (six steps variable)
Print Position Adjustment	Vertical : ±15mm Horizontal : ±10mm
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LCD Touch Panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-VI:II, Auto Document Feeder DX-1, Colour Drum, A4 Drum W, Auto-control Stacking Tray II, Wide Stacking Tray, Key Card Counter, Job Separator, Document Storage Card DM-128CF, Special Paper Feed Kit, Ink/Master Holder, RISO Controller PS7R, STAND
Power Source	RZ970E : 220V-240V AC, 50/60Hz <2.6A>
Dimensions	When in use : 1405 mm(W) $\times$ 700 mm(D) $\times$ 1050 mm*(H) When in storage : 775 mm(W) $\times$ 700 mm(D) $\times$ 1050 mm*(H) *: The optional Stand Included
Weight	Approx. 115 kg

- Please note that due to improvements and changes to the machine, some images and explanations in this manual may not correspond to your machine.
- The specifications are subject to change without prior notice.

# **Specifications**

RISO RZ977 < ASIA Model >

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22 lb (10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : $1^{15}/_{16}$ " $\times 3^{9}/_{16}$ " (50 mm $\times$ 90 mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm) When using Auto Document Feeder AF-VI:II (option) : $3^{15}/_{16}$ " $\times 5^{13}/_{16}$ " (100 mm $\times 148$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm) When using Auto Document Feeder DX-1(option) : $3^{29}/_{32}$ " $\times 4^{25}/_{32}$ " (105 mm $\times 128$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm)
Original Paper Weight	When using the Stage Glass : 22 lb (10 kg) or less When using the Auto Document Feeder AF-VI:II (option) : 13-lb bond (50g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) When using Auto Document Feeder DX-1 (option) : 11-lb bond (40g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) (When "Scanning Side -ADF" is set to "Back Side $\rightarrow$ Simplex" or "Duplex $\rightarrow$ Simplex" : 14-lb bond (52g/m <sup>2</sup> ) - 28-lb bond (105g/m <sup>2</sup> ))
Print Paper Size (max./min.)	When using Standard Feed Tray : $3^{15}/_{16}$ " $\times 5^{13}/_{16}$ " (100 mm $\times$ 148 mm) - 12" $\times$ 17" (320 mm $\times$ 432 mm) When using Multi Tray Paper Feeder : $5^{11}/_{16}$ " $\times 8^{1}/_{32}$ " (182 mm $\times 257$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64 g/m²))
Print Paper Weight	When using Standard Feed Tray : 12-lb bond (46g/m <sup>2</sup> ) - 110-lb index (210g/m <sup>2</sup> ) When using Multi Tray Paper Feeder : 14-lb bond (52g/m <sup>2</sup> ) - 28-lb bond (105g/m <sup>2</sup> )
Image Processing mode	Line, Photo, Duo, Pencil
Master-making Time	Approx. 20 seconds (for A4/landscape/100% reproduction ratio)
Printing Area (max.)	$11^{7}/_{16}$ " $ imes$ 16 <sup>1</sup> / <sub>4</sub> " (291 mm $ imes$ 413 mm)
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 200%, 154%, 129%, 121% Standard reproduction ratio (reduction) : 78%, 65%, 61%, 50% Margin+ : 90 - 99 %
Print Speed	Approx. 60 - 180 sheets per minute (six steps variable)
Print Position Adjustment	Vertical : ± <sup>19/</sup> 32" (±15 mm) Horizontal : ± <sup>3</sup> / <sub>8</sub> " (±10 mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LCD Touch Panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-VI:II, Auto Document Feeder DX-1, Color Cylinder (Drum), Letter (A4) Cylinder (Drum) W, Wide Stacking Tray, Key Card Counter, Sorter TM5000/TM2500, Job Separator, Document Storage Card DM-128CF, Ink/Master Holder, RISO Controller PS7R, STAND
Power Source	RZ977A : 100V-120V/220V-240V AC, 50/60Hz <6.5/2.6A>

Dimensions	When in use : $55^{5}/_{16}"(W) \times 27^{9}/_{16}"(D) \times 42^{1}/_{2}"(H) (1405 \text{ mm}(W) \times 700 \text{ mm}(D) \times 1080 \text{ mm}(H))$ When in storage : $30^{1}/_{2}"(W) \times 27^{9}/_{16}"(D) \times 42^{1}/_{2}"(H) (775 \text{ mm}(W) \times 700 \text{ mm}(D) \times 1080 \text{ mm}(H))$
Weight	Approx. 405 <sup>5</sup> / <sub>8</sub> lb (184 kg)

- Please note that due to improvements and changes to the machine, some images and explanations in this manual may not correspond to your machine.
- The specifications are subject to change without prior notice.

### RISO RZ970 < ASIA Model >

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22 lb (10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : $1^{15}/_{16}$ " $\times 3^{9}/_{16}$ " (50 mm $\times$ 90 mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm) When using Auto Document Feeder AF-VI:II (option) : $3^{15}/_{16}$ " $\times 5^{13}/_{16}$ " (100 mm $\times 148$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm) When using Auto Document Feeder DX-1(option) : $3^{29}/_{32}$ " $\times 4^{25}/_{32}$ " (105 mm $\times 128$ mm) - $11^{11}/_{16}$ " $\times 17$ " (297 mm $\times 432$ mm)
Original Paper Weight	When using the Stage Glass : 22 lb (10 kg) or less When using the Auto Document Feeder AF-VI:II (option) : 13-lb bond (50g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) When using Auto Document Feeder DX-1 (option) : 11-lb bond (40g/m <sup>2</sup> ) - 34-lb bond (128g/m <sup>2</sup> ) (When "Scanning Side -ADF" is set to "Back Side $\rightarrow$ Simplex" or "Duplex $\rightarrow$ Simplex" : 14-lb bond (52g/m <sup>2</sup> ) - 28-lb bond (105g/m <sup>2</sup> ))
Print Paper Size (max./min.)	$3^{15}\!/_{16}"\times5^{13}\!/_{16}"$ (100 mm $\times$ 148 mm) - 12" $\times$ 17" (320 mm $\times$ 432 mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64g/m²))
Print Paper Weight	12-lb bond (46g/m²) - 110-lb index (210g/m²)
Image Processing mode	Line, Photo, Duo, Pencil
Master-making Time	Approx. 20 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	11 <sup>7</sup> / <sub>16</sub> " × 16 <sup>1</sup> / <sub>4</sub> " (291mm × 413mm)
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 200%, 154%, 129%, 121% Standard reproduction ratio (reduction) : 78%, 65%, 61%, 50% Margin+ : 90 - 99 %
Print Speed	Approx. 60 - 180 sheets per minute (six steps variable)
Print Position Adjustment	Vertical : $\pm^{19}/_{32}$ " (±15 mm) Horizontal : $\pm^{3}/_{8}$ " (±10 mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LCD Touch Panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-VI:II, Auto Document Feeder DX-1, Color Cylinder (Drum), Letter (A4) Cylinder (Drum) W, Auto-control Stacking Tray II, Wide Stacking Tray, Key Card Counter, Sorter TM5000/TM2500, Job Separator, Document Storage Card DM-128CF, Special Paper Feed Kit, Ink/Master Holder, RISO Controller PS7R, STAND
Power Source	RZ970A : 100V-120V/220V-240V AC, 50/60Hz <6.5/2.6A>
Dimensions	When in use : $55^{5}/_{16}"(W) \times 27^{9}/_{16}"(D) \times 41^{1}/_{3}"^{*}(H) (1405 \text{ mm}(W) \times 700 \text{ mm}(D) \times 1050 \text{ mm}^{*}(H))$ When in storage : $30^{1}/_{2}"(W) \ \times 27^{9}/_{16}"(D) \times \ 41^{1}/_{3}"^{*}(H) (775 \text{ mm}(W) \times 700 \text{ mm}(D) \times 1050 \text{ mm}^{*}(H))$ *: The optional Stand included
Weight	Approx. 253 <sup>17</sup> / <sub>32</sub> lb (115 kg)

- Please note that due to improvements and changes to the machine, some images and explanations in this manual may not correspond to your machine.
- The specifications are subject to change without prior notice.

### 选购附件 <CHINA Model>

有各种各样的选购附件可用于增强本机功能。 如需了解有关选购附件的详情,请联系您的经销商(或授权维修中心)。

- ◆ 自动进稿机 AF-VI Ⅱ 可自动供给多达 50 张原稿。
- ◆ 自动进稿机 DX-1 可自动供给多达 50 张原稿。原稿的两面可以自动扫描。
- ◆彩色滚筒 只需更换滚筒便可用多种颜色印刷。(包含外壳)
- ◆ A4 滚筒 W
  A4 尺寸横向纸张的特殊滚筒。(包含外壳)
- ◆ 自动控制堆跺盘 II(RV9690 型号) 出纸盒导板 / 出纸挡板根据纸张和复制尺寸自动调整。
- ◆ 宽型堆垛盒
  - 本单元最大可以容纳 340 mm×555 mm 尺寸的纸张。
- ◆磁卡计数器 只要按一个键,即可显示指定时间段内的印刷量与版纸消耗量。这有助于成本管理。
- ◆分页机 使用编程印刷功能,可供本机进行印刷并以胶带分页成组。
- ◆ 原稿存储卡 DM-128CF
- ◆ 特殊纸张进纸组件

通过本机组可以送入较厚的纸张,如卡片与信封。

- ◆ 盖组件:纸张进纸 (Z/V) 出纸 (Z/V) 本机在操作过程中减小噪音。
- ◆ 油墨 / 版纸支架 用于储存备件(如油墨与版纸)的支架组件。
- ◆ 理想控制器 PS7R 自选控制器,可以使本机用作网络连接的 PostScript 3 速印机。

# 技术规格

### RISO RV9698 < CHINA Model >

制版 / 印刷方法	高速数字制版 / 全自动模版印刷
原稿类型	书本 (10 kg 或以下)、稿纸
原稿尺寸(最大/最小)	使用扫描台玻璃时: 50 mm × 90 mm - 297 mm × 432 mm 使用自动进稿机 AF-VI( 选购件 )时: 100 mm × 148 mm - 297 mm × 432 mm 使用自动进稿机 DX-1( 选购件 )时: 105 mm × 128 mm - 297 mm × 432 mm
原稿纸张重量	使用扫描台玻璃时: 10 kg 或以下 使用自动进稿机 AF-VI( 选购件 )时: 50 g/m <sup>2</sup> - 128 g/m <sup>2</sup> 使用自动进稿机 DX-1( 选购件 )时: 40g/m <sup>2</sup> - 128 g/m <sup>2</sup> ("扫描侧 ADF" 设定为"背面 → 单面"或"双面 → 单面": 52g/m <sup>2</sup> -105g/m <sup>2</sup> )
印刷纸张尺寸 (最大/最小)	使用标准进纸盒时: 100 mm × 148 mm - 320 mm × 432 mm 使用进纸盒时: 182 mm × 257 mm - 297 mm × 432 mm
进纸容量	1000 张( 64 g/m <sup>2</sup> )
印刷纸张重量	使用标准进纸盒时: 46 g/m <sup>2</sup> -210 g/m <sup>2</sup> 使用进纸盒时: 52g/m <sup>2</sup> - 105g/m <sup>2</sup>
图像处理模式	文字、照片、图文、铅笔
分辨率	R600dpi
制版时间	约 20 秒 (对于 A4/ 横向 /100% 缩放比率)
印刷区域(最大)	291mm × 413mm
印刷缩放比率	任意指定: 50-200% 标准缩放比率(放大): 163%, 141%, 122%, 116% 标准缩放比率(缩小): 87%, 82%, 71%, 61% 页边放大+: 90-99%
印刷速度	每分约 60 - 130 张 (5 级速度调节)
印刷位置调整	垂直: ±15 mm, 水平: ±10 mm
油墨供给	全自动 (每筒 1000 毫升)
版纸供给 / 回收	全自动 (约每卷 220 张)
废版盒容量	100 张
用户界面	带进度箭头指示灯的 LCD 触摸面板,正面操作
选购附件	自动进稿机 AF-VIII、自动进稿机 DX-1、彩色滚筒、 A4 滚筒 W、宽型堆 垛盒、磁卡计数器、分页机、原稿存储卡 DM-128CF、特殊纸张进纸组件、盖组件:纸张进纸 (Z/V)/ 出纸 (Z/V)、油墨 / 版纸支架、 理想控制器 PS7R
电源	RV9698C : 220V AC, 50Hz <2.6A>
尺寸	使用时: 1,405 mm (W)×700 mm (D)×1,080 mm (H) 存储时: 775 mm (W)×700 mm (D)×1,080 mm (H)
重量	约 184 kg

注:

• 请注意,由于本机的改进与修改,本手册中的某些图像与说明可能与您的速印机不同。

• 以上规格如果变更恕不另行通知。

### RISO RV9690 < CHINA Model >

制版 / 印刷方法	高速数字制版 / 全自动模版印刷
原稿类型	书本 (10 kg 或以下)、稿纸
原稿尺寸(最大/最小)	使用扫描台玻璃时: 50 mm × 90 mm - 297 mm × 432 mm 使用自动进稿机 AF-VI(选购件)时: 100 mm × 148 mm - 297 mm × 432 mm 使用自动进稿机 DX-1(选购件)时: 105 mm × 128 mm - 297 mm × 432 mm
原稿纸张重量	使用扫描台玻璃时: 10 kg 或以下 使用自动进稿机 AF-VI( 选购件 )时: 50 g/m <sup>2</sup> - 128 g/m <sup>2</sup> 使用自动进稿机 DX-1( 选购件 )时: 40g/m <sup>2</sup> - 128 g/m <sup>2</sup> ("扫描侧 ADF" 设定为"背面 → 单面"或"双面 → 单面": 52g/m <sup>2</sup> -105g/m <sup>2</sup> )
印刷纸张尺寸 (最大/最小)	100 mm × 148 mm - 320 mm × 432 mm
进纸容量	1000 张( 64g/m <sup>2</sup> )
印刷纸张重量	46 g/m <sup>2</sup> -210 g/m <sup>2</sup>
图像处理模式	文字、照片、图文、铅笔
分辨率	R600dpi
制版时间	约 20 秒 (对于 A4/ 纵向 /100% 缩放比率)
印刷区域(最大)	291 mm × 413 mm
印刷缩放比率	任意指定:50-200% 标准缩放比率(放大):163%,141%,122%,116% 标准缩放比率(缩小):87%,82%,71%,61% 页边放大+:90-99%
印刷速度	每分约 60 - 130 张 (5 级速度调节)
印刷位置调整	垂直: ±15 mm,水平: ±10 mm
油墨供给	全自动 (每筒 1000 毫升)
版纸供给 / 回收	全自动 (约每卷 220 张)
废版盒容量	100 张
用户界面	带进度箭头指示灯的 LCD 触摸面板,正面操作
选购附件	自动进稿机 AF-VIII、自动进稿机 DX-1、彩色滚筒、 A4 滚筒 W、自动控制堆跺盘 II、宽型堆垛盒、磁卡计数器、分页机、原稿存储卡 DM-128CF、特殊纸张进纸组件、盖组件:纸张进纸 (Z/V)/ 出纸 (Z/V)、油墨 / 版纸支架、理想控制器 PS7R
电源	RV9690C : 220V AC, 50Hz <2.6A>
尺寸	使用时: 1,405 mm (W) × 700 mm (D) × 1,050 mm (H) 存储时: 775 mm (W) × 700 mm (D) × 1,050 mm (H)
重量	约 115 kg

注:

• 请注意,由于本机的改进与修改,本手册中的某些图像与说明可能与您的速印机不同。

• 以上规格如果变更恕不另行通知。

## CHAPTER 3: MAIN DRIVE

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### Mechanism

#### 1. Main Drive Mechanism

When the main motor is turned ON, the motor pulley rotates and the rotation is transmitted to the main pulley by the main belt. The main motor FG sensor detects the speed and the angle position of the print drum.

**SW2** on the mechanical control PCB is a main motor free rotation switch. The main motor free rotation activates even under the Low Power Mode.

SW1 on the mechanical control PCB must not be pushed by mistake. (Ref: Chapter 18)



### 2. Print Drum Angle Detection

Print drum angles are calculated from the main motor FG sensor count by using following parts.

- Main motor FG sensor.
- Position-B sensor on the main cover assembly.
- Position-B actuator plate attached on the pressure cam.

When the position-B actuator plate is detected by the position-B sensor, the print drum rotates for 4 degrees and the machine stops. This is where the center of the actuator plate is in the sensor and we call it the machine position-B. From this position the main motor FG sensor starts counting the pulse to determine the print drum position. The main FG sensor count is 2933 pulses for one full rotation from position-B to the next position-B. 326 pulse count is approximately 40 degrees turn from position-B, and this is where the print drum angle is 0 (zero) degrees and is called position-A of the print drum and this is the position in which the clamp plate is on the top and clamps the master during the master making operation.



### 3. Main Motor Safety Mechanism

Five safety switches [Rear cover safety SW (2 pcs), Master disposal box safety SW, Master making unit safety SW and Print drum safety SW] prevent the main motor, clamp motor, master removal vertical transport motor, print drum horizontal pulse motor, separation fan (paper ejection), separation pump solenoid (paper ejection) and master compression motor from turning ON when any one of these safety switches are not in contact.

In addition to the above, the machine equipped with Multi-Tray Paper Feeder unit has an additional main motor safety switch, FL-Transfer Unit Door Safety SW, to stop the main motor when the door is opened to remove jammed paper.



Print drum safety SW

### 4. Air Dumper Mechanism

The air dumper mechanism exist only on RZ9 series. It does not exist on other RZ series machines.

The air dumper unit is similar in mechanism with that of separation pump unit. The damper unit puts braking action on the main motor at certain timing during the printing job to reduce the mechanical sound.

### [Braking Action]

The piston movement is driven from the main motor via mechanical gears. The cylinder has its air vent valve closed, so the compressing action of the piston results in applying brake on the main motor rotation.

### [Noise Reduction]

During the printing, when the cam follower on the pressure lever rides over the high point of the pressure cam, the drive mechanism tends to make mechanical noise. The noise is due to the strong pressure spring used on RZ9 series. When the cam follower rides down the high portion of the pressure cam, it tends to accelerate the print drum too suddenly, creating a metalic noise. The air dumper unit applies brake on the main motor at that timing to prevent the sudden accelerated movement, erasing the mechanical noise.



### Disassembly

### PRECAUTIONS

#### < Following two points must be followed when working on the drive area for SAFETY reasons. >

- 1) When performing maintenance on the main drive section and pressure section, remove the pressure spring at the start of the disassembly, and attach it only at the end of the reassembly.
- 2) Set the vertical print position at center (home position), and insert 8mm dia. JIG shaft into the position-B phase alignment hole, located on the paper feed timing area, to prevent the drive area from moving.

The position-B holes of the the Inner and Outer vertical positioning gears only matches every 5 turns of the Outer vertical positioning gear. Make sure the holes are aligned before inserting the 8mm dia. JIGshaft through.

<Power to the machine should never be applied when the JIG shaft is inserted in the machine.>





Position-B phase alignment hole on the paper feed timing area, in which 8mm dia. JIG shaft is inserted.

Make sure that the holes on the Inner and Outer vertical positioning gears are alighned.

< Power to the machine should never be applied when the JIG shaft is inserted in the machine. >

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#### 1. Removing the Pressure Spring

- (1) Run Test mode No.908 (Pressure control maintenance positioning adjustment), unplug the print drum and switch off the machine power.
- (2) Remove the rear cover and swing open the mechanical control & power supply PCB bracket.
- (3) Push the pressure lever over to the right and unhook the pressure solenoid lever from the pressure lever. Then return the pressure lever slowly to the left.
- (4) Detach the pressure spring from the pressure lever after removing the other end from the pressure spring tension plate.

Note that the pressure spring used on RZ9 is different from that of RZ2 & 3, RZ5 and MZ machines.



### 2. Removing the Main Belt

- (1) Remove the Pressure spring.
- (2) Insert 8mm diameter shaft JIG into the position-B phase alignment hole on the paper feed timing area (refer to page 3-6.)
- (3) Unplug the position B sensor connector and remove detachable wire band (1 pc) from main cover assembly.
- (4) Loosen screws (M4x8 : 2pcs) on the tension lever, and release the tension of the main belt.
- (5) Remove the Sponge part.
- (6) Detach the main motor bearing assembly (M4x8 : 3pcs).
- (7) Dismount the main cover assembly (M4x8 : 5pcs).

### - continued on next page -



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Main motor pulley

(7) Remove the main belt from the Main shaft assembly and main motor pulley.

### < Precautions in assembly >

- When putting the Main cover assembly back on the machine, push it firmly against the machine.
- Tighten the screw on the far top right on the Main cover assembly first.

### 3. Removing the Main Motor Pulley Assembly

- (1) Remove the Main belt from the machine.
- (2) Loosen set screws (M6x8: 2pcs), and detach the main motor pulley assembly.



Main motor pulley assembly

### << Precaution in assembly >>

- Align the groove made on the back of the Main motor pulley assembly against the Parallel pin on the Main motor shaft.



Groove on the back of the Main motor pulley.



Parallel pin on the Main motor shaft.

### 4. Removing the Main Shaft Assembly

- (1) Remove the Print Drum from the machine.
- (2) Insert the 8mm dia JIG shaft in the position-B phase allignment hole.
- (3) Remove the Main belt from the machine.
- (4) Remove the Separator spring and Follower spring.
- (5) Remove the Pressure Cam (M4x8: 3pcs).

When attaching the pressure cam back on the machine, insert 4mm dia. Jig shaft through the pressure cam to fix the cam in the correct position before tightening the three mounting screws.

(6) Detach the main shaft assembly (M4x8: 3pcs).



### << Precaution in assembly >>

- In attaching the Main shaft assembly back on the machine, first insert the 8mm diameter jig shaft in the paper feed drive area to fix the gears at Position-B, and then mount the Main shaft assembly back on the machine, aligning the markings between the Main gear and the Inner vertical positioning gear.



### 5. Removing the Separation Pump Assembly, Solenoid and the Air Dumper Assembly

### [ Removing the Separation Pump Assembly ]

- (1) Switch off power, remove the cover (rear left) and the cover (rear right), and open the power supply PCB bracket and the SH PCB bracket.
- (2) Remove the Pressure Spring.
- (3) Unplug the connector and detach the Separation Pump Assembly(M4x8: 5pcs).
- (4) Move the Power band out of the way and disconnect the Air hose from the separation pump assembly.



### [Removing the Separation Pump Solenoid]

- (1) Remove the Separation Pump Assembly from the machine.
- (2) Remove the Separation Pump Solenoid (M3x6: 2pcs).

#### < Precaution in Assembly >

- (1) During the assembly, insert 4mm dia. Jig shaft through the Position-B alignment holes on the gears of the air dumper assembly and separation pump assembly when the main drive of the machine is fixed at Position-B.
- (2) Since there is a play between the separation pump unit gear and the main motor pulley gear, slide the separation pump unit slightly towards the main motor pulley gear to reduce the play between the gears.



### [Removing the Air Dumper Assembly]

- (1) Remove the Separation Pump Assembly from the machine.
- (2) Remove the Separation Spring.
- (3) Unplug the connector and detach the Pressure Solenoid Assembly(M4x8: 3pcs).
- (4) Remove the Air Dumper Assembly.

### < Precaution in Assembly >

(1) During the assembly, insert 4mm dia. Jig shaft through the Position-B alignment holes on the gears of the air dumper assembly and separation pump assembly when the main drive of the machine is fixed at Position-B.



### [ Removing the Piston assemblies of the Separation Pump and the Air Dumper ]

The piston of the separation pump can be removed in the state in which the separation pump assembly is attached on the machine.

In case of the air dumper pistion, it is necessary to remove the air dumper assembly from the machine beforehand.

Although the following explanation is related with the separation pump, the air damper pistion can be removed following the same instruction.

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Remove the E-ring holding the arm of the piston onto the air pump gear assembly, and slide off the armfrom the air pump gear assembly.
- (3) Rotate the piston assembly 90 degrees, pull the piston out to the tip edge of the air pump cylinder andswing the arm out towards you to make room for the air pump gear assembly to come out.
- (4) Remove the E-ring on the air pump gear assembly and detach the gear assembly from the machine.
- (5) Pull the piston assembly out from the air pump cylinder.



< Piston Assembly >

### < Precautions in assembly >

- (1) When installing the piston assembly back into the cylinder, make sure that the concave side of the rib onthe arm faces out.
- (2) When installing the air pump gear assembly back on the machine, make sure the machine is at itsposition-B. Align the position-B alignment hole on the air pump gear assembly aligns with the position-Bhole on the air pump base.
- (3) Since the air jet hole of the Air Dumper is closed with a screw, the piston of the air dumper is difficult to assemble back.

Pull the Air release valve and turn it a little and the piston can be assembled back easily. Don't forget to return the Air release valve to the original position after the assebbling.



#### [ Removing the O-ring ]

(1) Remove the E-ring from the piston assembly.



### < Precautions in assembly >

Apply white plastic grease on the piston and O-ring.
### [ Removing the Piston ]

(1) Remove the E-ring, detach the arm shaft, and remove the piston.



### < Precautions in assembly >

the arm.

- (1) Apply white plastic grease on the piston and O-ring.
- (2) When installing the piston assembly back into the cylinder, make sure that the concave side of the rib onthe arm faces out, and the air intake hole on the piston is on that side.



### 6. Removing the Rear Cover Safety SW

- (1) Switch off the power, and remove the Rear cover and Scanner cover;rear.
- (2) Unplug the connectors from the two switches, and detach reusable wire harness band from the machine frame (on the paper receiving side only).
- (3) Remove a screw each (M4x8: 1pc), and detach the two rear cover safety SW assemblies.
- (4) Release the hook of the torsion spring, detach the E-ring and then remove the rear cover safety SW together with its mounting bracket.





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< Rear cover safety SW assembly >

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# Adjustment

### 1. Print-Drum <Position-A> Adjustment

### Checks and adjustment

- (1) Open the front door.
- (2) Remove a screw (M4x8: 1pc) to detach the master loading cover.
- (3) Go into the test mode, and run Test Mode No.881 (Position-A stop) to rotate and stop the print drum at <Position-A>.
- (4) Run Test Mode No.884 (Clamp 3-step movement) to confirm that when the position-A compensator arm comes down on the print drum on the 2nd of the 3 steps of the test mode, the print drum rotates back a distance of 3mm maximum or stays still. The print drum should not rotate forward when the compensator arm comes down.
- (5) If Position-A of the print drum is not within the specified position, run Test Mode No.941 (Print drum position-A adjustment) to adjust the <Position-A> of the print drum.
- (6) Repeat from step (3) until the position is correctly adjusted.

This adjustment does not affect the print drum position-B stop position.



### 2. Print-Drum <Position-B> Stop Position Adjustment

### Checks and adjustment

- (1) Open the front door and press the green colored print drum release button.
- (2) Confirm that the print drum slides out of the machine smoothly when pulled out by hand.
- (3) If the print drum does not come out smoothly, run Test Mode No. 942 (Print drum Position-B Adjustment) to adjust the position-B stop position of the print drum.
- (4) Repeat from step (1) until the position is correctly adjusted.

This adjustment does not affect the print drum position-A.

# NOTE: The print drum position-B stop position is calculated from the position-B of the machine by the pulse count of the main motor FG sensor (refer to page 3-3).

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# MEMO

# CHAPTER 4: FIRST PAPER FEED SECTION

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## Mechanism

### 1. Paper Feed Tray Mechanism

The paper feed tray is equipped with a paper width potentiometer and a paper size detection sensor to determine the size of paper placed in the paper feed tray.

The paper width potentiometer detects the paper width, while the paper size detection sensor identifies the paper length (whether positioned vertically or horizontally).

Because the horizontal print position is adjusted on the print drum side, the paper feed tray does not move horizontally.



### 2. Paper Feed Tray Elevation Mechanism

The paper detection sensor detects the presence of paper in the paper feed tray.

When the paper detection sensor is detecting the paper on the paper feed tray, pressing the START key switches ON the elevator motor and lifts the paper feed tray. The paper feed tray elevates until the upper-limit sensor activates. Two upper limit sensors exist. The upper-limit sensor A is for the upper limit position for feeding thick card papers. The upper-limit sensor B is for feeding normal thickness papers. The details on the two upper-limit sensors, A and B, are explained on the next page.

During the printing operation, the elevator motor keeps switching ON and OFF, to elevate the paper feed tray to keep the upper most paper stock height on the paper feed tray at a constant height to ensure good paper feeding.

When the paper runs out from the paper feed tray and the paper detection sensor no longer sees the paper paper on the tray, the elevator motor switches ON and lowers the paper feed tray all the way down to the lower-limit position. The lower limit position of the paper feed tray is detected by the lower-limit sensor.

While the machine is in the standby condition with the paper on the paper feed tray, pressing the Feed tray button, for 0.7 seconds or less, activates the elevator motor to bring the paper feed tray down. The tray moves down until detected by the lower-limit sensor, or until the button is pressed again.

In the same condition, if the Feed tray button is pressed for more than 0.7 seconds, the paper feed tray elevates down until the button is released. The tray stops when the finger is released from the button.

When the paper feed tray is at the lower limit position with paper on the tray, pressing the Feed tray button elevates the tray up.



### << Upper-limit Position of the Paper Feed Tray >>

There are two elevator upper-limit sensors, A and B. The elevator upper-limit sensor B is paired with the upperlimit detecting plate (normal), while the elevator upper-limit sensor A is paired with the upper-limit detecting plate (card). From the various combination of these two upper-limit sensor detections, three paper feed tray upper-limit positions are possible, as shown in the diagram below.

### Selecting the upper limit position by the Test Mode:

Selecting [Auto], *the default setting*, in Test Mode No. 740 (Elevator upper-limit position selection) makes it possible to adjust the paper feed tray upper-limit position using the paper feed pressure lever. Setting the paper feed pressure lever to <Normal> sets the upper-limit position of the paper feed tray to the normal position. Setting the paper feed pressure lever to <Card> sets the upper-limit position of the paper feed tray to the card position. Selecting a setting other than [Auto] by this test mode elevates the paper feed tray to the specified upper limit position, which are Card, Normal or Custom position. Card being the highest position and Custom being the lowest position of the three.

### Selecting the upper limit position by the User Mode: (Paper Feed Adjustment in the Function tab.)

Selecting the paper feed tray upper-limit position to <0> using the [Manual] adjustment, in the Paper Feed Adjustment within the Function tab of the operation panel, stops the paper feed tray at the Normal position. Selecting this to <+1> stops the paper feed tray at the Card position. Selecting <-1> stops the paper feed tray at the Custom position.



### 3. Paper Feed Tray Safety Mechanism

The paper feed tray upper safety switch and the paper feed tray lower safety switch ensure safety while the paper feed tray is rising or stationary.

Lifting the paper feed cover opens the paper feed tray upper safety switch. Pressing down the lower-limit frame opens the paper feed lower safety switch. If either of the two safety switches opens, a paper feed tray error is detected and the elevator motor switches OFF.



Paper feed tray lower safety switch

### 4. Paper Volume Detection Mechanism

Two sensors (paper volume sensor A and paper volume sensor B) detect the volume of paper remaining in the paper feed tray when the paper feed tray is at the upper-limit position.

If the paper feed tray is not at the upper-limit position, the remaining paper volume is indicated as <Undetectable>.

	Sensor status		
Volume of remaining paper	Paper volume sensor A	Paper volume sensor B	
100% to 50%	OFF	OFF	
50% to 30%	ON	OFF	
30% to 10%	ON	ON	
Less than 10%	OFF	ON	

### Paper volume and paper volume sensor operations





### 5. Paper Feed Pressure Adjustment Mechanism

The paper feed pressure lever is located on the left-hand side of the first paper feed stay assembly.

Switching this lever either to the right or to the left adjusts the paper feed pressure (scraper pressure) between <Normal> (low) and <Card> (high).

Setting the paper feed pressure lever to the right for <Card> increases paper feed pressure (scraper pressure).

The paper feed pressure sensor checks the position of the paper feed pressure lever and switches the paper feed clutch OFF angle, switches the paper feed reverse-rotation prevention solenoid ON-OFF, and adjusts the paper wing position.



### 6. Paper Feed Reverse-Rotation Prevention Mechanism

The high resilience of thick paper stock can produce a force that reverses the rotation of the pickup roller if the paper feed clutch is switched OFF, even when the paper feed operation provides a certain amount of slack. This may eliminate slack in the paper and cause a paper feed failure. To prevent reverse rotation of the pickup roller, the paper feed reverse-rotation prevention solenoid remains ON during printing when the paper feed pressure lever is set to <Card>, and the paper feed reverse-rotation prevention hook assembly is engaged to the paper feed reverse-rotation prevention core assembly.



### 7. First Paper Feed Operation

At the start of a print job, the main motor switches ON and rotates the print drum via main drive gears A and B.

The paper feed clutch gear rotates continuously when the main motor is ON.

When the print drum rotates from position-B to a certain angle (angle set by adjusting the paper feed clutch ON angle during test mode or by the custom paper feed ON timing), the paper feed clutch switches ON, turning the scraper and pickup roller and transporting paper from the paper feed tray into the machine.

When the print drum rotates through a certain angle (angle set by adjusting the paper feed clutch OFF angle in test mode or by the amount of slack set during custom paper feed adjustment) after the paper is fed into the machine and the paper sensor senses light, the paper feed clutch switches OFF, and the first paper feed operation stops.

In this process, the leading edge of the paper contacts the guide roller and timing roller. When paper transport stops, some slack is left in the paper.

Additionally, when the print drum rotates to the paper feed jam detection angle/IN angle after the paper feed clutch switches ON, the machine polls the paper sensor for a paper failure feed error.

The scraper and pickup roller are equipped with a one-way clutch to enable free rotation and to keep the first paper feed section from halting or slowing paper feeding after the paper is fed to the second paper feed section.



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### 8. Paper Feed Adjustment (from the Function tab of the operation panel)

From the Function tab of the LCD display, chose the Paper Feed Adj. button and open the paper adjustment screen. By selecting the Manual button, the screen shown as Fig.1, below, appears. The paper feed tray upper limit position and paper buckle amount can be adjusted. The adjustment can be registered for maximum of six (6) custom papers. The Fig.1 screen is for adjusting the paper-feed-tray upper limit position and the paper buckle amount. By pressing the Specific button at the bottom-right-hand-corner of the screen (Fig.1), the screen changes (ref: Fig.2). The Fig.2 screen has the adjustment values for the Paper feed clutch ON and OFF timing adjustment. The clutch OFF timing value on Fig.2 screen corresponds with the Fig.1 screen paper-feed amount, and vice versa, except the Fig.2 screen has wider clutch OFF timing adjustable range. The clutch ON timing value on Fig.2 screen is independent from Fig.1 screen adjustment. Press OK button after making the adjustment. The screen changes to as shown by Fig.3. The adjusted values are registered, up to six, by using the <A-1> to <A-6> buttons, as shown on Fig.3.

In printing operation, by recalling one specific button from <A-1> to <A-6>, the registered upper limit position of the paper feed tray and the paper buckle amount can be selected for special paper, which does not feed well by normal setting. The selected paper feed adjustment setting is applied on the printing job until the machine power is turned OFF, Auto key is re-selected by the Fig.1 screen, or if the Admin. tab is opened.



### Adjustments made by the Fig.1 Screen

< Straight-Feed Tray Upper Limit Position > Selects the stop position of the paper feed tray.

- + 1 : Card paper position ..... High
  - 0 : Standard paper position ..... Standard
- 1 : Custom paper position ...... Low

< Paper Buckle Amount >

Selects the Paper feed clutch OFF timing in regard to the pre-programmed print drum angle.

Adjustable range: - 8 degrees to + 8 degrees. (Adjustable by unit of 2 degrees.)

### Adjustments made by the Fig.2 Screen

< Paper Feed Clutch ON Timing >

Selects the Paper feed clutch ON timing in regard to the pre-programmed print drum angle

Adjustable range: - 20 degrees to + 20 degrees. (Adjustable by unit of 1 degree.)

< Paper Feed Clutch OFF Timing >

Selects the Paper feed clutch OFF timing in regard to the pre-programmed print drum angle

Adjustable range: - 20 degrees to + 20 degrees. (Adjustable by unit of 1 degree.)

### Precaution:

Changing the values by Test mode No. 741 (Paper feed clutch ON timing adjustment) and No. 742 (Paper feed clutch OFF timing adjustment) will change the pre-programmed print drum angle and therefore affects the above adjusted clutch ON and OFF timing.

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### 9. Paper Stripping Mechanism

The scraper and pickup roller rotate to transport paper from the paper feed tray to the stripper pad. The pickup roller and the stripper pad loosen the stacked paper and transport the uppermost sheet into the machine.

The stripper pad is pressed against the pickup roller by the stripper spring, which applies resistance to the paper being transported to ensure only a single sheet of paper is fed at a time.

Use the stripper angle adjuster and stripper pressure adjuster to adjust the stripper pad angle and stripper spring pressure, if necessary.



## Disassembly

### 1. Removing the Paper Feed Tray Unit

- (1) Lower the paper feed tray to the lower-limit position, then switch off power.
- (2) Remove the ribbon cable cover. (bind, M3 x 6, 1 pc)
- (3) Disconnect the ribbon cable from the connector and remove the ribbon cable holder from the paper feed tray frame (rear).
- (4) Remove the E-rings (one each) from the front and rear sides and detach the paper feed tray retaining plates (one each). Dismount the paper feed tray unit.



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Ribbon cable cover

Paper feed tray unit

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Ribbon cable holder

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Paper feed tray frame (rear)



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# 2. Removing the Paper Detection Sensor, Paper Size Detection Sensor, and Paper Width Potentiometer

- (1) Lower the paper feed tray to the lower-limit position, switch off power, and dismount the paper feed tray unit.
- (2) Remove the E-rings and paper guide lock levers (on both the front and rear sides).
- (3) Remove the mounting screws (with double-washer, M3 x 8, 2 pcs each) and dismount the paper feed guide (front) and the paper feed guide (rear).



Paper width potentiometer

E-ring



<< Paper feed tray unit >>

### Removing the paper detection sensor

- (4) Remove the mounting screws (bind, M3 x 6, 8 pcs) and dismount paper feed tray table S.
- (5) Unplug the connector and remove the paper detection sensor.



(4) Remove the mounting screws (bind, M3 x 6, 7 pcs) and dismount paper feed tray table L.

### Removing the paper size detection sensor/paper width potentiometer

(5) Unplug the connector and remove the paper size detection sensor.

### Removing the paper width potentiometer

(5) Unplug the connector and remove the mounting screws (P tight, 3 x 8, 3 pcs). Dismount the paper width potentiometer assembly.



### << Precautions for installation >>

- Align the mark (projection line) on the paper guide rack with the mark (projection line) on the spur gear when installing the paper width potentiometer assembly.



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### 3. Removing the Scraper and Pickup Roller

#### Removing the scraper

- (1) Lower the paper feed tray to the lower-limit position, then switch off power.
- (2) Remove the retaining ring from the scraper shaft and remove the bearing metal from the front side.
- (3) Slide the scraper shaft toward the back, remove the bearing metal on the rear side from the Pickup frame unit, and dismount the scraper together with the scraper shaft from the bottom side.
- (4) Remove the scraper from the scraper shaft.
- \* The only consumable part here is the rubber paper feed roller. Remove it from the core assembly, then replace. The paper feed roller of the pickup roller is also a consumable part.



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### Removing the pickup roller

- (1) Lower the paper feed tray to the lower-limit position, then switch off power.
- (2) Remove the retaining ring from the Pickup extension shaft assembly, slide the shaft toward the front, and remove the bearing metal from the side plate.
- (3) Remove the retaining ring from the Pickup shaft.
- (4) Remove the pickup roller from the Pickup shaft.



### 4. Removing the Paper Feed Roller Assembly

- (1) Lower the paper feed tray to the lower-limit position, then switch off power.
- (2) Remove the paper feed cover. (bind, M4 x 8, 2 pcs)
- (3) Remove the Pickup extension shaft assembly.
- (4) Remove the mounting screw (double-washer cap screw, M4 x 8, 1 pc) and dismount the paper feed roller assembly.



Pickup extension shaft assembly



Paper feed roller assembly

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### 5. Removing the Paper Feed Tray Button and Paper Feed Tray Upper Safety Switch

- (1) Lower the paper feed tray to the lower-limit position, then switch off power.
- (2) Remove the following parts:
  - Paper feed cover
  - Paper feed roller assembly
- (3) Unplug the connectors (2 locations).
- (4) Remove the upper safety switch spring.
- (5) Remove the mounting screws (RS tight with round tip, M3 x 6, 3 pcs) and dismount the first paper feed stay assembly.



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Upper safety switch spring

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<< First paper feed stay assembly >>

### Removing the paper feed tray button

(6) Unplug the connector, disengage the two hooks, and dismount the paper feed tray button.

### Removing the paper feed tray upper safety switch

(6) Unplug the connector, remove the mounting screws (with double-washer, M3 x 14, 2 pcs), and dismount the paper feed tray upper safety switch.



### 6. Removing the Elevator Upper-limit Sensors and Paper Feed Pressure Sensor

- (1) Lower the paper feed tray to the lower-limit position, then switch off power.
- (2) Remove the paper feed cover.
- (3) Remove the first paper feed stay assembly.

### Removing the elevator upper-limit sensors

(4) Unplug the connectors and dismount the elevator upper-limit sensors.

### Removing the paper feed pressure sensor

- (4) Set the paper feed pressure lever to the <Normal> position.
- (5) Unplug the connector and dismount the paper feed pressure sensor.



### 7. Removing the Paper Feed Reverse-rotation Prevention Solenoid

- (1) Switch off power and remove the rear cover.
- (2) Open the SH PCB bracket.

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- (3) Unplug the connector of the paper feed reverse-rotation prevention solenoid, remove the mounting screws (M4 x 8, 2 pcs), and dismount the paper feed reverse-rotation prevention assembly.
- (4) Remove the mounting screws (with double-washer, M3 x 6, 2 pcs) and dismount the paper feed reverserotation prevention solenoid.



<< Paper feed reverse-rotation prevention assembly >>

### 8. Removing the Paper Feed Clutch

- (1) Switch off power and remove the rear cover.
- (2) Open the SH PCB bracket.
- (3) Remove the paper feed reverse-rotation prevention assembly.
- (4) Remove the bearing metal and the paper feed reverse-rotation prevention core assembly.

Be careful of the direction of the core assembly during the assembly.

- (4) Remove the mounting screws (M4 x 8, 2 pcs) and dismount the Pickup clutch bracket.
- (5) Unplug the connector and dismount the paper feed clutch.



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Pickup clutch bracket



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<< Paper feed clutch>>





Bent portion on pickup clutch bracket

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### 9. Removing Paper Volume Sensors A and B

- (1) Switch off power, remove the rear cover, and open the SH PCB bracket.
- (2) Unplug the connector and dismount paper volume sensors A and B from the paper feed relay PCB bracket.



### **10. Removing the Elevator Motor**

- (1) Remove the front cover.
- (2) Remove the left front cover. (bind, M4 x 8, 5 pcs)
- (3) Remove the elevator spring on the front side.
- (4) Remove the mounting screw (with double-washer, M3 x 8, 1 pc) and disconnect the ground wire.
- (5) Unplug the connector and remove the reusable band.
- (6) Detach the E-ring, remove the mounting screw (RS tight, M4 x 8, 1 pc), and dismount the elevator motor unit.
- \* When dismounting the elevator motor unit, grasp the paper feed tray to prevent the paper feed tray from rising abruptly. (Reason: The elevator spring is still hooked onto the tray on the rear of the machine.)
- (7) Remove the mounting screw (with double-washer, M3 x 6, 1 pc) and dismount the elevator motor cover.
- (8) Remove the mounting screws (with washer, M3 x 5, 4 pcs) and dismount the motor cover.
- (9) Remove the helical/spur gears.
- (10) Unplug the connector, remove the mounting screws (with washer, M3 x 5, 2 pcs), and dismount the elevator motor.



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### 11. Removing the Elevator Lower-limit Sensor and Paper Feed Tray Lower Safety Switch

- (1) Raise the paper feed tray to the upper-limit position, then switch off power.
- (2) Remove the rear cover and open the SH PCB bracket.

### Removing the elevator lower-limit sensor

(3) Unplug the connector and dismount the elevator lower-limit sensor.

### Removing the paper feed tray lower safety switch

- (3) Remove the lower safety switch spring.
- (4) Unplug the connector, remove the mounting screw (RS tight with round tip, M4 x 8, 1 pc), and dismount the paper feed tray lower safety switch together with the bracket.



Paper feed tray lower safety switch

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### 12. Removing the Stripper Pad Unit

- (1) Lower the paper feed tray to the lower-limit position, then switch off power.
- (2) Lower the lock knob and release the lock for the stripper pad unit.
- (3) Press the stripper pad release lever and dismount the stripper pad unit.



### 13. Removing the Stripper Pad Assembly

- (1) Lower the paper feed tray to the lower-limit position, switch off power, and remove the stripper pad unit.
- (2) Manually lift and remove the stripper pad assembly.

### << Precautions for installation >>

- Press the edge of the stripper pad (indicated by the arrows) against the section of the stripper pad base (indicated by the arrows) when attaching the stripper pad.



# Adjustment

### 1. Elevator Upper-limit Sensor Position Adjustment

### Checks and adjustment procedures

- (1) Remove paper from the paper feed tray and set the paper feed pressure lever to the <Normal> position.
- (2) Run Test Mode No. 681 (Paper feed tray maximum up positioning) to lift the paper feed tray. Bring to a full stop.
- (3) After the paper feed tray comes to a complete stop, confirm that the gap between the pickup roller and the paper feed tray ranges from 1.5 to 2.5 mm.
- (4) If the measured value falls outside this range, adjust by inserting a flat-head screwdriver through the opening in the paper feed cover and turning the upper-limit adjustment shaft to move the elevator upper-limit sensor assembly vertically.
- \* Turning the upper-limit adjustment shaft clockwise lowers the elevator upper-limit sensor assembly and increases the gap.

### Problems

Setting the elevator upper-limit sensor position too high increases paper feed pressure and may result in multiple paper feeds.

Setting the sensor position too low can reduce paper feed pressure until paper frequently fails to feed at all.


## 2. Stripper Pad Adjustment

#### Adjustment procedure

- (1) Switch the paper feed pressure lever position to suit the paper type and begin printing.
- (2) If a multiple paper feed or paper feed failure occurs, adjust the stripper pad angle or stripper pad pressure.

### 1) When multiple paper feeds occur:

- Turn the stripper pad angle adjuster clockwise to increase the stripper pad angle (toward vertical).
- Turn the stripper pad pressure adjuster clockwise to increase stripper pad pressure.

## 2) When paper feed failures occur:

- Turn the stripper pad angle adjuster counterclockwise to decrease the stripper pad angle (toward horizontal).
- Turn the stripper pad pressure adjuster counterclockwise to reduce stripper pad pressure.



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## 3. Paper Feed Clutch ON Angle Adjustment

### Checks and adjustment procedures

- (1) Print and confirm that the paper feeds reliably and smoothly.
- (2) If the timing is off for the first paper feed, launch test mode for the paper feed clutch ON angle adjustment and adjust, based on the paper type selection setting entered by the user. (For setting procedures and related information, refer to the section on test modes.)
- (3) Repeat the steps from (1).

### **Symptoms**

If first paper feed timing is off, paper jams or print position deviations may occur.

#### 4. Paper Feed Clutch OFF Angle Adjustment

#### Checks and adjustment procedures

(1) Print and confirm that printing occurs smoothly.

- (2) If the paper slack is excessive or inadequate and results in unsatisfactory printing results, launch test mode for the paper feed clutch OFF angle adjustment and make adjustments based on the paper type selection setting entered by the user. (For setting procedures and related information, refer to the section on test modes.)
- (3) Repeat the steps from (1).

## **Symptoms**

If the paper slack is excessive or inadequate, paper will not transfer to the second paper feed section, resulting in paper jams.

#### 5. Paper-Width Potentiometer Adjustment

#### Checks and adjustment

- (1) Access into protected area test mode by activating Test Mode No. 9874.
- (2) Open the paper fence to 105mm width, and run Test Mode No.1102.
- (3) Open the paper fence to 297mm width, and run Test Mode No.1103.
- (4) Open the paper fence to 105mm width, and run Test Mode No.721 to confirm whether the adjustment ended correctly or not. Confirm that the display shows a value between 1020 and 1080 (1050 plus/minus 30). If not, repeat the adjustment from the beginning.
- (5) With Test Mode still in No.721, open the fence to 297mm width, and make sure the indication shows a value between 2940 and 3000 (2970 plus/minus 30). If not, repeat the adjustment from the beginning.

When setting the fence to the given width for above adjustments, make sure to close the fence inward to the given width. Do not set to the given width by opening the fence. The fence must be moved inward.

## Symptoms

If the adjustment is incorrect, the machine judges the paper on the tray to be in a different size. This would result in either reduced master-making area, or increased master-making area, and may cause the Pressure roller to become dirty with ink.

# CHAPTER 5: MULTI-TRAY PAPER FEED SECTION

# Contents

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## Mechanism

### 1. Basic structure

The multi-tray paper feed section is comprised of the transfer unit installed in the base and the vertical transfer unit in the main unit. These are two separate units.

The base is provided with two paper feed trays. Paper from these trays is fed by the pickup roller, scraper, and stripper unit through the path shown in the diagram. The paper reaches the vertical transfer unit, and is then transported to the second paper feed section.

After the second paper feed section, paper is fed through the same path as when paper is supplied from the standard paper feed tray.

If paper jam occurs, the printer halts, and an error indication is displayed in accordance with the location of the paper jam.



## 2. Paper transport path

The rollers (pickup roller, paper feed rollers 1 through 3) in the paper transport section inside the base are driven by the FL transfer motor.

The roller (paper feed roller 4) in the vertical transfer unit is driven by the FL multi feed tray pickup motor.

The rotation timing of each roller is controlled by a clutch. (The rollers indicated by black circles are driven via a clutch.)

Paper transport status is detected by FL feed sensors 1 through 4.

The multi-tray 1 pickup sensor is provided in the paper transport path immediately after the pickup roller for feed tray 1 only.

When A3 paper is supplied from the top tray, a minor multiple feed condition may result in the overlapping of the end section of a sheet with the leading edge of the following sheet. The multi-tray 1 pickup sensor detects this condition. (Detection occurs regardless of paper size.)

The Paper sensor detects multiple paper feeds from the multi-tray feed section, the same as it does for the papers from the standard paper feed tray.



## 3. Paper feed tray

The upper tray (paper feed tray 1) and the lower tray (paper feed tray 2) can hold 1,000 sheets of paper.

The two feed trays have identical structures.

The right and left paper guides on each feed tray are moved simultaneously by a connecting belt, and also have a lock mechanism.

The paper stopper is set manually according to the paper size.

As with the standard paper feed tray, each feed tray is equipped with a paper width sensor and a paper size detection sensor for automatic detection of paper size.

Similarly with the standard paper feed tray, each feed tray uses a paper detection sensor and a tray volume sensor for detection.

#### Checking of the feed tray insertion

The feed tray insertion is checked by the electrical connection of the feed tray and by a safety switch.

When the safety switch is off, the FL multi feed tray pickup motor and FL transfer motor can not be drived.

#### **Paper-Volume Detection Mechanism**

The remaining volume of paper loaded on the table is determined by multi-feed tray volume sensor 1 and 2 (fixed on the table), and is displayed on the panel.

The actual position of the paper-feed tray is checked by a -sensor when it reaches the upper-limit position, and the remaining-paper volume is detected. [Unable to detect] is displayed on the panel if the paper-feed tray is not at the upper-limit position (the paper-feed-tray is pulled out).

Sensor	r status	Paper volume
Sensor 1	Sensor 2	detected
ON	ON	100-50%
OFF	ON	50-30%
OFF	OFF	30-10%
ON	OFF	10%

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## 4. Feed tray elevating mechanism

The paper feed tray features a double plate structure. Only the bottom plate is raised by the elevator motor.

Each feed tray is equipped with one upper limit sensor. The upper limit position cannot be adjusted as in the case of the direct paper feed system.

As soon as the feed tray with paper is set in the machine, the corresponding FL feed tray elevator motor activates, and its rotary force is transmitted to the joint and to the pulley shaft to wind a wire. As a result, the feed tray rises.

The detection of the upper limit sensor halts the rising operation, thereby maintaining a constant height during printing.

When the feed tray is pulled out, the joint disengages. The bottom plate of the feed tray drops due to its own weight.



## 5. Paper transport mechanism

The transport unit is driven by the FL transfer motor via a belt.

The transport unit has two pickup clutches that transmit drive power to the upper and lower pickup roller shafts, and three transfer clutches that transmit drive power to paper feed rollers 1 through 3.

Paper feed roller 3 are operated by two nip release solenoids on the R and L sides to prevent back tension on paper during printing.

The height of the upper limit sensor can be adjusted by turning the dial on the front side of the main unit.

The angle and pressure of the stripper pad can be adjusted from the front of the machine.

The stripper pad retracts when the feed tray is pulled out, thereby preventing crumpling of paper clamped by the stripper pad and pickup roller.



## 6. Vertical transfer unit

The knob can be used to open the paper transport path and clear jammed paper.

The paper transport path is provided with a unit comprising paper feed roller 4 and feed sensor 4 as well as two nip release solenoids.

Paper feed roller 4 transmits the rotary force of the multi-feed tray pickup motor to transfer clutch 4.

In addition to transport completion and nip release operation, the vertical transfer unit has a paper feeding operation to assist transport operations during printing.

#### < Assist transport operation >

When Tray No.1 is selected, and if the paper size detection sensor is detecting the paper (A3, B4, Ledger, Legal size papers), and if the test mode No. 3941 [Assist transport] is selected to [Enable], the assist transport operation becomes effective.

After the paper is transported to the Timing roller & Guide roller, and the buckle is made on the paper, the FL multi feed tray pickup motor is rotated at the same speed as the print drum and transfer clutch 4 is engaged at print durm angle 225.5 degrees to push the paper up. The transfer clutch 4 is disengaged when the print drum rotates to 257.5 degrees to end the assist transport operation.



## Disassembly

## 1. Removing the Covers

## **MTPF Rear Cover**

(1) Remove the screws (M4 x 10, 6 pc), and then remove the MTPF rear cover by lifting it slightly.

## **MTPF Right-Hand Cover**

- (1) Remove the MTPF rear cover.
- (2) Remove the screws (M4 x 10, 6 pc), and then remove the MTPF right-hand cover by lifting it slightly.



MTPF Right-Hand Cover

MTPF Rear Cover

### **MTPF Left-Hand Cover**

- (1) Remove the MTPF rear cover.
- (2) Open the multi-tray transfer unit, and then remove the multi-tray transfer-unit cover (M4 x 10, 2 pc).
- (3) Remove the screws (M4 x 10, 5 pc), and then remove the MTPF left-hand cover by lifting it slightly.

## **MTPF Paper Feed Tray Covers**

(1) Remove the screws (right side:M4 x 8, 2 pc left side:M4 x 8, 2 pc), and then remove the MTPF paper Feed Tray cover.



Multi-tray transfer-unit cover



0508

MTPF Paper Feed Tray cover [ 5 - 9 ] - Rev. 0.2

## 2. Removing the Paper-Feed Trays

The paper-feed trays consist of the upper (paper tray 1) and lower (paper tray 2) trays, but the removal procedure is the same for either.

(1) Remove the screws (M4 x 6,3pc) from the slide rail on the paper-feeding side, the screws (M4 x 6,2pc) from the slide rail on the paper-ejection side, and then remove the paper-feed tray upwards.

## [Precautions in Reassembly]

While holding the feed tray on the rail to keep it from falling, lift it slightly and align the projections with the indentations.

Do not over tighten the tapping screws on the cover.



Slide rail

## 3. Removing the Parts of the Paper-Feed Tray section

## < Bottom plate >

- (1) Remove the feed tray.
- (2) Remove the four wire hanging fixtures from the bottom plate of the feed tray, in the front and rear (two M4x6 binding screws each).
- (3) Disconnect the connector and remove the FL tray volume sensors 1 and 2.
- (4) Disconnect a Connector (refer to the bottom photograph).
- (5) Lift the bottom plate and remove from the tray assembly.



## < Paper Width Potentiomenter >

- (1) Remove the bottom plate.
- (2) Remove the potentiomenter cover (M4 x 8,1pc).
- (3) Disconnect the connector and remove the paper width potentiomenter.

## << Precautions in reassembly >>

When attaching the paper width potentiometer, close the paper guides all the way in, and rotate the potentiometer all the way in the clockwise direction.

After the potentiometer is attached, adjust the plate located opposite of the potentiometer to give adequate tension on the timing belt. Confirm that the paper guides slide smoothly.

Use test mode to adjust the paper width potentiometer after all the parts are asembled back on the machine.



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## < Paper-Detection Sensor and Paper-Size Detection Sensor >

(1) Unplug the connectors from the paper-detection sensor and paper-size detection sensor attached to the underside of the table , and then remove sensors with one screw (M4  $\times$  8) together with the bracket.



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## 4. Removing the Pickup Roller and Scraper

- (1) Pull out the paper-feed tray to the limit.
- (2) Insert your hand into the opening in the paper-feed tray, and remove the lock rings.
- (3) Remove the scraper and pickup roller .

## [Precautions in reassembly]

The scraper and pickup rollers contain one-way brearing. When mounted correctly, the rollers spin freely in the clockwise direction (with the roller markings at the front).



Lock rings

## 5. Removing the parts on the rear

(1) Remove the MTPF rear cover.

#### < MTPF Elevator Motor >

- (2) Unplug the connector, remove the E-ring, and then remove multi-feed-tray elevator motor assembly (M4 x 8 screw; 1pc).
- (3) Unplug the connector and rebove the elevator motor cover (M3 x 6 screw; 1pc).

## [Precautions on Reassembly]

Insert the elevator-motor-shaft assembly into the D-cut hole of the motor.



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#### < Elevation joint unit >

(1) Detach the elevation joint unit by removing two screws (M4 x 10) after disconnecting one connector and releasing one wire harness band.

Of the four screws on the elevation joint unit, removing only two of the screws will allow the unit to detach from the machine.



#### < Tray set safety switch >

- (1) Disconnect one connector and remove the switch together with the metal bracket. (M4x8 screw; 1 pc).
- (2) Remove the switch from the metal bracket (M3x20 screw; 1 pc).



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## 6. Removing the Transfer Unit

(1) Disconnect three connectors and detach the FL transfer motor assembly (M4x8 screws; 6 pcs).

During the above procedure, remove the rectangular black spong cover and unhook the timing belt.



FL transfer motor



Unhook the timing belt (after removing the black sponge cover)

(2) Pull out both Tray No.1 and No.2, and remove following parts.

- 1) Stripper pad angle adjust knob
- 2) Stripper pressure adjust knob
- 3) Stripper adjust cover (top)
- 4) Stripper adjust cover (bottom)
- 5) Stripper adjust shaft [ total 4 pcs ]



Stripper adjust shafts



Stripper adjust shafts

(3) With both Trays No.1 and No.2 pulled all the way out, detach the FL transfer unit by removing four screws (M4x8).

## Precautions in assembly:

- 1) Have Tray No.1 and No.2 pulled all the way out when mounting the FL transfer unit back on the machine.
- 2) Rail-stay left upper and sound absorbing sponge should be detached when mounting the FL transfer unit back on the machine, and then assemble them on after the FL transfer unit is mounted on the machine.



0528

FL transfer motor Sound absorbing sponge Rail-stay left upper

## 7. Removing the Parts on the Transfer Unit

## < Stripper unit >

(1) For both Trays No.1 and No.2, remove 4 screws each (M4x8) to detach the Stripper unit.



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< Stripper Unit >

## < Upper limit sensor >

- (1) For Tray No.1, remove the paper feed upper cover first (M4x8 screws; 2 pcs), disconnect the sensor connector, and detach the upper limit sensor.
- (2) For Tray No.2, just disconnect the sensor connector and detach the upper limit sensor.



Paper feed upper cover



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## < Transfer clutches >

(1) Remove E-ring and unplug connector to remove each clutch.



## < FL Transfer unit door safety switch >

- (1) Detach the safety switch from the machine with the metal bracket attached.
- (2) Disconnect the switch connector and detach the switch from the metal bracket (M3x14 screw; 1 pc).



#### < FL Feed sensor 3 >

- (1) Remove paper feed upper cover. (M4x8 screw; 2pcs)
- (2) Remove the sensor with metal bracket attached. (M3x6 screw; 2 pcs)
- (3) Disconnect the connector and detach the sensor from the bracket. (M3x6 screw; 1 pc)





Paper feed upper cover

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## < Nip Release Solenoid >

- (1) Remove paper feed upper cover. (M4x8 screw; 2pcs)
- (2) Uplug the solenoid connector and detach the solenoid (M3x8 screw; 2 pcs)
- (3) Detach the plunger by removing E-ring.



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#### 8. Vertical Transfer Unit

- (1) Detach jam release lever and remove the Front cover.
- (2) Detach the release handle together with the shaft (M4x8 screw; 1 pc).
- (3) Detach the jam release lever shaft and shaft-stay (M4x8 screw; 1 pc).





- (4) Detach the guide plate (lower) by following procedure.
  - 1) Detach pickup roller assembly.
  - 2) Detach stripper unit.
  - 3) Detach elevator support beam by removing screws (M4x8; 2 pcs).
  - 4) Detach guide plate (lower) by removing screws (M4x8; 8 pcs).
- (5) Remove rear cover and open the SH-PCB bracket.



Elevator support beam

Guide plate (lower)

(6) Remove FL multi feed tray pickup motor by uplugging 2 connectors and removing screws (M4x8; 2pcs).When mounting the motor back, the transfer clutch 4 should engage with the motor bracket.



- (7) On rear of the machine, detach two Rear support pin assemblies by removing screws (M4x8; 1 pc each).
- (8) Unplug connector from the tranfer clutch 4.



(9) On front of the machine, detach two Front support pin assemblies by removing screws (M4x8; 1 pc each).

These pins in the front differ in the length from the pins used on the back. F and R marks are engraved for identification.

(10) On front of the machine, disconnect one connector leading to the vertical transfer unit and release two wire bands from the machine frame.



Unplug connector of this line and release the wire bands.

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- (11) Detach the guide plate stay on the operator side of the machine (front) by removing screws (M4x8; 2 pcs).
- (12)The vertical tansfer unit is hooked at the top. Lift it a little bit to unhook the hook, and then remove it from the machine out through the opening above the paper feed tray.



Vertical transfer unit

Guide plate stay

## Adjustment

## 1. Upper Limit Sensor Position Adjustment

#### Checks and adjustment procedures

- (1) Open the applicable feed tray and remove the feed tray cover.
- (2) Place one sheet of paper on the feed tray. With the machine power ON, close the feed tray. (The table will rise to the upper limit position.)
- (3) Check that the gap between the pickup roller and table is 0 to 1 mm (0.5mm plus/minus 0.5mm).

But if too close to 0mm, multiple feed may occur and if too close to 1mm, paper may not feed.

(4) If the gap falls beyond the specified range, turn the upper limit sensor height adjustment dial to adjust the upper limit position.

#### < Signs of faulty adjustment >

If the upper limit sensor is positioned too high, increased paper feed pressure will tend to result in multiple feeds.

In contrast, if the sensor is positioned too low, the paper feeding process may fail to feed paper



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#### 2. Stripper Adjustment

#### Adjustment procedures

(1) Turn the adjustment lever to make the adjustment.

Rotating the stripper pad angle lever toward No.5 & No.6 direction shifts the stripper pad in steeper angle and will correct multiple paper feed problem. Making the stripper pressure stronger by rotating the stripper pressure lever will also help correct multiple paper feeds.

Rotating the stripper pad angle lever towards No.2 & No.1 direction shifts the stripper pad in less steeper angle and will correct no paper feed problem. Making the stripper pad pressure weaker by rotating the stripper pressure lever will also help correct the no paper feed problem.



Stripper pad angle adjustment mechanism

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Stripper pad pressure adjustment mechanism

#### 3. Paper-Width Potentiometer Adjustment

#### **Checks and adjustment**

#### TRAY NO. 1 (Tray on the top)

- (1) Access into protected area test mode by activating Test Mode No. 9874.
- (2) Open the paper fence to 182mm width, and run Test Mode No.1108.
- (3) Open the paper fence to 297mm width, and run Test Mode No.1109.
- (4) Open the paper fence to 182mm width, and run Test Mode No.3922 to confirm whether the adjustment ended correctly or not. Confirm that the display shows a value between 1790 and 1850 (1820 plus/minus 30). If not, repeat the adjustment from the beginning.
- (5) With Test Mode still in No.3922, open the fence to 297mm width, and make sure the indication shows a value between 2940 and 3000 (2970 plus/minus 30). If not, repeat the adjustment from the beginning.

#### TRAY NO. 2 (Tray in the bottom)

- (1) Access into protected area test mode by activating Test Mode No. 9874.
- (2) Open the paper fence to 182mm width, and run Test Mode No.1110.
- (3) Open the paper fence to 297mm width, and run Test Mode No.1111.
- (4) Open the paper fence to 182mm width, and run Test Mode No.3923 to confirm whether the adjustment ended correctly or not. Confirm that the display shows a value between 1790 and 1850 (1820 plus/minus 30). If not, repeat the adjustment from the beginning.
- (5) With Test Mode still in No.3923, open the fence to 297mm width, and make sure the indication shows a value between 2940 and 3000 (2970 plus/minus 30). If not, repeat the adjustment from the beginning.

When setting the fence to the given width for above adjustments, make sure to close the fence inward to the given width. Do not set to the given width by opening the fence. The fence must be moved inward.

#### **Symptoms**

If the adjustment is incorrect, the machine judges the paper on the tray to be in a different size. This would result in either reduced master-making area, or increased master-making area, and may cause the Pressure roller to become dirty with ink.

#### 4. Paper Buckle Amount Adjustment

#### Adjustment procedure

## TRAY NO. 1 (Tray on the top)

(1) Use test mode No. 3942 [FL Tray-1 Registration Loop Amount] to adjust the amount of the paper buckle made on the leading edge of the paper in front of the Timing roller.

## TRAY NO. 2 (Tray in the bottom)

(1) Use test mode No. 3943 [FL Tray-2 Registration Loop Amount] to adjust the amount of the paper buckle made on the leading edge of the paper in front of the Timing roller.

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#### 5. Assist Paper Feed Adjustment (For TRAY NO. 1 only)

#### Adjustment procedure

(1) Use test mode No. 3941 [FL Assist Control] and select either <enable> or <disable> to activate or deactivate the assist paper feeding.

#### 6. Lateral Image Position Adjustment

#### **Checks and adjustment**

Check and confirm that the prints made from the standard paper feed tray and prints from Tray No.1 and Tray No.2 have the printed image in the same position, horizontally, on the paper.

If the lateral image position on the prints from Tray No.1 and No.2 differs from the prints made from the standard paper feed tray, make the adjustment given below for Tray No.1 and No.2 separately.

- (1) Make image on the master using Test Mode No. 81.
- (2) Make prints from the three trays, standard paper feed tray, Tay No.1 and Tray No.2.
- (3) Measure the difference in the image position on the prints from Tray No.1 and No.2 against that from the standard paper feed tray.
- (4) Open the paper guide fence on Tray No.1 (same for Tray No.2) and loosen the two screws shown on the photograph below.
- (5) Looking at the scale from the elongated hole window, slide the paper fence assembly in the amount and direction needed.
- (6) Tighten the two screws to fix the paper fence assembly in the new position.
- (7) Make the prints again to confirm the result of the adjustment.



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#### 7. Vertical Transfer Unit Nip Pressure Adjustment

#### Check and adjustment procedure

Following adjustment is necessary if paper keeps jamming in the vertical transport unit due to lack of the nip pressure at the paper feed roller 4.

(1) Rotate the roller nip pressure adjustment lever to UP to increase the roller nip pressure.

The lever can be adjusted in 5-steps, from 1 to 5. Step 1 is the weakest nip pressure and this is where the lever is rotated to the most BOTTOM position. The standard position for the lever is the Horizontal position, which is nip pressure No.3. (The photograph below shows the lever set to No.3 position).

The nip pressure of the roller changes from 87%, 93%, 100%, 107%, 113%, starting from the weakest No.1 position to the strongest No.5 position. The center (standard) No.3 position is 100%.

The levers on the right and left must be set to the same pressure position, or the paper will skew during the paper feeding action due to the difference in the roller nip pressure on the right and left.



Roller nip pressure ajdustment lever

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# CHAPTER 6: SECOND PAPER FEED SECTION

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## Mechanism

#### 1. Second Paper Feed Mechanism

During the printing, the sector gear cam and timing cam rotate in counterclockwise direction.

The pull of the sector gear spring pushes cam follower on the sector gear assembly against the sector gear cam. Riding on the sector gear cam, the sector gear assembly makes pendulum (swinging) action when the sector gear cam rotates. The sector gear transfers the drive to the timing gear. The timing gear has a built-in clutch to drive the timing roller only when the gear rotates in the counterclockwise direction by the clockwise swing of the sector gear. Due to the one-way clutch on the timing gear, the timing roller stays stationary when the sector gear swings in the counterclockwise direction to rotate the timing gear in the clockwise direction.

To ensure that the timing roller stops instantly when the timing gear ends its counterclockwise rotation, a load spring is mounted on the operators side of the timing roller to apply a brake on the timing roller.

The guide roller receives is rotation drive directly from the timing roller. The guide roller pressure spring pulls the guide roller down against the timing roller to make the contact. When in contact, the guide roller makes its rotation only when the timing roller rotates. When the timing cam pushes the G-lever down, the guide roller rises and releases the contact with the timing roller.

During the printing, as the first paper feed area sends the paper onto the second paper feed area, the guide roller is in contact with the timing roller and stationary. As the paper arrives, both the timing roller and guide roller rotate to pinch the paper in between and transfers the paper onto the print drum area for printng.

During the printing, as the rotation of the timing roller ends, the guide roller elevates up to disengage from the timing roller to let the paper go through into the printing area freely without any drag.



## At print drum Position-A

When the print drum comes to its position-A, the G-lever is pushed down by the timing cam and the guide roller is raised up. The guide roller is disengaged from the timing roller.



First paper feed starts

When the first paper feed starts by the rotation of the rotation of the scraper roller and pickup roller, the leading edge of the paper arrives to the second paper feed area, between the At this point, the timing cam no longer pushes the G-lever and the guide roller pressure spring pulls the guide roller down against the timing roller, reventing the paper to go any further into the machine.



0603

#### Second paper feed starts

When the first paper feed operation ends, the rotation of the sector gear cam swings the sector gear assembly in the clockwise direction. The clockwise swing of the sector gear drives the timing roller. The timing roller drives the guide roller with the paper clamped in between, sending the paper onto the printing area.



0604

## 2. Vertical Print Position Control

Pressing the  $\blacktriangleleft$  or  $\triangleright$  button of the print position key on the operation panel activates the print positioning pulse motor. The rotation of the pulse motor swings the vertical print positioning assembly either to the clockwise or counterclockwise direction with the pivot on the cam shaft. The movement of the vertical print positioning assembly rotates the planetary gear. The planetary gear then rotates the outer vertical positioning gear. The rotation of the outer vertical positioning gear offsets the position of both the timing cam and sector cam against the print drum, causing the vertical print position on the paper to change.

The vertical default (home) position is checked by the vertical centering sensor.



#### Pressing the ▶ key on the panel (print image up)

When the  $\blacktriangleright$  key is pressed, the print positioning pulse motor moves the vertical print positioning assembly in the counterclockwise direction and the outer vertical positioning gear in the clockwise direction. The sector gear cam, which is screwed onto the outer vertical positioning gear, also changes it position in clockwise direction together with the outer vertical positioning gear. Noting that the outer vertical positioning gear and sector gear cam rotates in the counterclockwise direction during the printing, the sector gear cam shifted clockwise from the default position delays the timing of the timing roller to start its rotation. The timing of the paper feeding into the printing area delays and the print position on the paper goes up.



#### Pressing the ◀ key on the panel (print image down)

When the < key is pressed, the print positioning pulse motor moves the vertical print positioning assembly in the clockwise direction and the outer vertical positioning gear in the counterclockwise direction. The sector gear cam, which is screwed onto the outer vertical positioning gear, also changes it position in counterclockwise direction together with the outer vertical positioning gear. Noting that the outer vertical positioning gear and sector gear cam rotates in the counterclockwise direction during the printing, the sector gear cam shifted counterclockwise from the default position quickens the timing of the timing roller to start its rotation. The timing of the paper feeding into the printing area starts early and the print position on the paper goes down.



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## 3. Multiple Paper Feed Detection

During the printing operation, the Paper sensor checks for the multiple paper feeds. The multiple paper feed is detected by the change in the sensor sensitivity when the sensor sees the paper. The machine is stopped when the multiple paper feed is detected.

The machine checks and memorizes the paper sensor sensitivity when the sensor sees the first paper of each printing job. From the second paper coming through, the machine compares the sensor sensitivity data memorized on the first sheet against that of the second sheet and after. If the difference in the sensor sensitivity is within 80% to 120%, the machine judges only one sheet went through and keeps on running.

If the sensor sensitivity difference is beyond 80% and 120% in either way, the machine judges that multiple feeding has occurred and stops the printing. If the difference is 79% or beyond, the machine judges that the first sheet that went through was a multiple feed. If the difference is 121% or over, the sheet which just went through is judged as multiple fed.

The paper sensor checks the multiple paper feed for both the standard paper feed tray and the multi-tray paper feed unit.

The multiple paper feed detection is active also for the test-prints made by pressing the test-print button.

Whether to activate or deactivate the multiple paper feed detection is done by the ON/OFF selection by the user-mode setting.
## 4. Extended Paper Mode

The extended paper mode allows papers longer than A3/Ledger size to feed in and out through the machine.

By registering papers of lengths more than 432mm and less than 556 (papers lengths between 433mm to 555mm), and if that paper is selected for the printing, the machine goes into Extended Paper Mode.

The Extended Paper Mode ejects one sheet of paper in two print drum rotations. The image is printed on the first print drum rotation. The second print drum rotation ejects the remaining length of the paper over the standard maximum length of 432mm.

During the second print drum rotation, the machine does not activate the paper feed clutch (the next paper is not fed). The guide roller release solenoid is activated ON to prevent the guide roller from nipping against the timing roller --- the remaining portion of the paper is not pinched by these two rollers. The pressure solenoid is turned OFF so the pressure roller does not hit against the print drum --- the remaining amount of paper is not pinched between the print drum and the pressure roller. The remaining portion of the paper ejects out from the machine by the inertia.

If the extended size paper is printed with the machine not in the extended paper mode, the machine stops after feeding one sheet by paper jam. In the opposite, if the extended paper mode is applied on normal sized papers, the machine keeps on printing, but feeds only one sheet for every two print drum rotations.



## Disassembly

## 1. Removing the Guide Roller

- (1) Pull out the print drum and switch off the machine power.
- (2) From the opening on the machine for the print drum, remove the snap ring. Then remove the bearing metal from the guide roller adjusting plate to free the guide roller out of the machine.

## [ Precaution in assembly ]

Make sure that the snap ring fits in the groove in the guide roller shaft, otherwise the snap ring gets deformed and may require replacement.



## 2. Removing the Paper Sensor

## [Paper Sensor (Receive)]

- (1) Remove the print drum out from the machine and turn OFF the machine power.
- (2) Remove the guide roller.
- (3) Remove screws (M3x8: 2 pcs), and unplug the connector to detach the paper guide plate (upper).
- (4) From the detached paper guide plate (upper), remove the multiple paper feed sensor shield plate (M3x6 screw; 1 pc).
- (5) Detach the paper sensor (receive) from the paper guide plate (upper) by removing screws (M3x8; 2 pcs).



0611

Multiple paper feed sensor shield

Paper sensor (receive)



< Paper guide plate (upper) >

0612

## [Paper Sensor (Send)]

- (1) Remove the print drum out from the machine and turn OFF the machine power.
- (2) Rotate the jam release lever to open the vertical transfer unit path.

Above step (2) is not required on the machines without multi-tray paper feed unit.

(3) Remove screws (M3x6: 1 pc), and unplug the connector to detach the paper sensor (send) together with its bracket.

The rear of the sensor bracket has a slit which fits into a plate in the machine.

Remove the pressure roller on the machines with the multi-tray paper feed unit for easier mounting of the papers sensor (send) by inserting left hand through the pressure roller opening to hold onto the sensor when tightening the sensor mounting screw.

For the machines without the multi-tray paper feeder, the removal and mounting of the sensor can be made from the paper feed side of the machine by lowering the empty standard paper feed tray, removing the stripper unit, and sliding the cover behind the stripper unit aside.



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## 3. Removing the Timing Roller

- (1) Pull out the print drum and switch off the machine power.
- (2) Remove the rear cover.

## << Working on the rear of the machine >>

- (3) Open the PCB support plate of the power supply PCB and mechanical control PCB.
- (4) Remove the sector gear spring and the guide roller pressure spring.
- (5) Remove the paper feed drive cover. (M4x8: 5pcs)

There is no need to remove the Timing roller bearing assembly for RZ9 machines. If it is removed by mistake, make sure to give enough backlash between the Timing gear and Sector gear by pulling the Timing roller bearing assembly diagonally down in left-lower direction.

When mounting the cover back, tighten the two screws first (shown by blue arrow marks on the photo.)

(6) Detach the sector gear assembly by removing the E-ring.



### << Working on the rear of the machine - continued >>

- (7) Remove the E-ring, and then remove the timing gear and timing gear housing assembly.
- (8) Remove the E-ring, and then remove the collar and the timing roller bearing assembly.



## << Working on the front of the machine >>

- (9) Remove the paper sensor (send).
- (10) Remove screw (M3x8: 1pc) from the load spring collar. Then remove load spring and load spring collar.
- (11) Remove the washer, and also the bearing from the timing roller adjusting plate.
- (12) Make a little timing roller slide to rear side, and then remove the timing roller from the bottom.



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## 4. Removing the Vertical Centering Sensor

- (1) Switch off the machine power and remove the rear cover.
- (2) Unplug the sensor connector, and by removing a screw (M4x8: 1pc), detach the vertical centering sensor off the machine together with the sensor bracket.



## 5. Removing the Print-positioning Intermediate Gear

- (1) Switch off the machine power and remove the rear cover.
- (2) Remove the E-ring and detach the print-positioning intermediate gear.

## << Precaution on Reassembly >>

Mount the print-positioning intermediate gear back on the machine after inserting the 8mm diameter Jig shaft into the position-B phase alignment hole on the paper feed area so all other gears are aligned in position-B.



0623

## 6. Removing the Idler Gear

- (1) Switch off the machine power and remove the rear cover.
- (2) Remove the print-positioning intermediate gear.
- (3) Remove E-ring and remove the idler gear together with the idler spring by unhooking the spring from the base plate.

## << Precaution on Reassembly >>

Insert the shorter end of the idler spring into the idler gear. Then swing the vertical print positioning assembly in the counterclockwise direction until it stops. Mount the idler gear with the small hole on the gear positioned down and the hole aligned in straight line with the center of the cam shaft. Finally hook the longer end of the idler spring onto the hole on the base plate.



## 7. Removing the Paper Feed Drive Unit

- (1) Switch off the machine power, remove the rear cover, and then swing open the PCB bracket of the power supply and mechnical control PCB.
- (2) Insert jig (8mm dia.) into the position-B phase alignment hole on the main shaft assembly of the main drive.

Jig shaft (8 mm dia.) inserted into position-B phase alignment hole on the main shaft

assembly.



0626



Guide roller pressure spring

Sector gear spring 0627

- (4) Unplug the connector of the print positioning pulse motor.
- (5) Unplug the connector of the vertical centering sensor, and unhook the reusable band.
- (6) Remove screws (M4x8: 4pcs) of the paper feed drive unit.
- (7) Unhook the paper feed drive unit from the machine while rotating the G-lever assembly to the right by hand, making a way for the unit to come out, remove the unit from the machine.
- Precausion on assembly continues on next page -



G-lever assembly

#### << Precaution on assembly >>

Mount the paper feed drive unit on the machine so that one alignment mark on the main gear aligns in between the two alignment marks on the inner vertical positioning gear, making sure that 8mm diameter jig shafts are inserted into the position-B phase alignment holes on the main drive and paper feed drive area to align all to the machine position-B.



## 8. Removing the Print Positioning Pulse Motor

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply and mechanical control PCBs.
- (2) Remove the paper feed drive unit from the machine.
- (3) To prevent the idler spring from moving the vertical print positioning unit, insert 8mm diameter jig shaft into the position-B phase alignment hole on the paper feed drive unit. (The jig shaft holes on the outer and inner vertical poset every 5 turns of the inner vertical positioning gear.)
- (4) Remove screws (M3x6: 2pcs) and remove the vertical pulse motor.



< Paper Feed Drive Unit >

0630

## 9. Removing the Guide Roller Release Solenoid

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply and mechanical control PCBs.
- (2) Remove the sector gear spring and the guide roller pressure spring.
- (3) Unplug the connector of the guide roller release solenoid and then remove the brancket of the sorenoid (M4x8: 3pcs).
- (4) Remove the guide roller release solenoid.



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Guide roller pressure spring



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## Adjustment

## 1. G-lever Mounting Position Adjustment

## **Checks and adjustment**

- (1) Run Test mode No.889 (G-Lever mounting position) and then switch off the machine power.
- (2) Remove the rear cover.
- (3) The gap between the timing cam and the bearing on the G-lever should be less than 0.3mm or touching. If more than 0.3mm, following adjustment must be made.
- (4) Loosen the two screws on the G-lever assembly, joining the G-lever and release base in one piece.
- (5) Push the G-lever cam follower against the timing cam and retighten the two screws, making sure that the cam follower is touching the cam.

The photograph shows the Paper feed drive cover removed to show a clear view, but in actual adjustment, **do not remove the Paper feed drive cover**. The two screws to the G-lever can be accessed with the Paper feed drive cover attached on the machine. (Removing the Paper feed cover will shift the position of the shaft on which the Timing cam is attached onto.)

Timing cam





Paper feed drive cover (Do not remove for the adjsutment)

G-lever cam follower

#### 2. Paper Feed Skew Adjustment

#### **Checks and adjustment**

- (1) Load A3-size papers on the paper feed tray, run Test mode No. 81 to make cross-line image, and make 5 prints, and use the 5th print to check.
- (2) Measure the distance (A) from the left edge of the paper to the first vertical line at the top of the sheet.
- (3) Measure the distance (B) from the left edge of the paper to the first vertical line at the bottom of the sheet.
- (4) Measure the total distance (C) from the top horizontal line to the bottom line on the left side of the sheet.
- (5) Confirm that  $(A B) / C \times 100$  is less than 0.5%.
- (6) If the skew is more than 0.5%, loosen one screw on the guide roller adjusting plate and two screws on the timing roller adjusting plate, and slide the two plates in the same direction in the same amount.
  - \* Moving the plates one graduation on the scale changes the paper skew by 0.25%.
  - \* Moving the plates in the F imprint direction moves the image at the bottom of the sheet to the right, and moving in the R imprint direction moves the image at the bottom of the sheet to the left.



## 3. Print Start Position Adjustment

## **Checks and adjustment**

**Important:** Before making this adjustment, make sure that both the Master clamp range adjustment and Write start position adjustment are correctly adjusted. (Refer to the chapter on master-making.)

- (1) Load A3-size papers on the paper feed tray, run Test mode No. 80 to make checker-flag image, and make 10 prints at speed 3 and use the 10th print to check.
- (2) Measure the distance from the leading edge of the paper to the top of the image and confirm that the measurement is 4 mm plus/minus 1 mm.
- (3) If the length is out of the specified range, make adjust using Test mode No.970 (vertical print position HP adjustment).

Test Mode No. 970 [Vertical print position HP adjustment] Adjustable range: -50 to +50 (-5mm to +5mm) Adjustable in units of 1 (1 = 0.1 mm) Default setting = 0 Plus (+) number brings the image up.



## 4. Auto-adjustment of Multiple Paper Feed Detection

#### Adjustment procedure

- (1) Place white sheet of paper, which the customer uses the most, on the standard paper feed tray.
- (2) Go into test mode and activate test mode No.705 [Automatic multiple paper feed adjustment].
- (3) The adjustment ends automatically with the panel message [END]. After confirming this message, press the [C] key on the panel to keep the machine still in the test mode.
- (4) Activate test mode No.722 and confirm that the panel display shows a number between 484 and 508 (496 plus/minus 12).
- (5) If correct number is achieved, the adjustment is finished. Remove the paper out from the machine.

## CHAPTER 7: PRESS SECTION

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## Mechanism

## 1. Press Mechanism

At the start of a printing job, the pressure solenoid turns ON when the print drum rotates to a given angle, and tries to unhook the solenoid lever away from the pressure lever;cam which is still engaged until the print drum makes further rotation.

As the print drum continues to rotate, the cam follower on the pressure shaft;cam start to ride on the high portion of the pressure cam, making the pressure lever;cam to swing in the clockwise direction with its pivot on the pressure shaft. As the lever starts to ride on the highest point on the cam, it touches and starts to swing the pressure lever;spring in the clockwise direction. As the pressure lever;spring swings in the clockwise direction with the pivot at the pressure shaft, the solenoid lever disengages and allows the pressure solenoid to pull the solenoid lever further in, completely disengaging it from the pressure lever:spring.

As the print drum rotates further, the pressure lever; cam starts to ride on the lower portion of the pressure cam, causing the lever to swing back in the counterclockwise direction. The pressure lever; spring, freed from the pressure lever; cam, is pulled by the pressure spring to rotates in the counterclockwise direction, rotating the pressure shaft in the counterclockwise direction together. The counterclockwise direction rotation of the pressure shaft lifts the pressure roller up and press against the print drum.

When the clamp base plate of the print drum approaches the pressure roller, the pressure cam pushes the pressure lever; cam in the clockwise direction and lowers the pressure roller so the roller does not hit the clamp plate.

The pressure solenoid is kept ON all through the printing job. The solenoid goes OFF when the print drum comes to a given angle at the end of the printing job.



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#### 2. Pressure Control Mechanism

Pressing the ◀ or ▶ button of the print density key on the operation panel activates the pressure control pulse motor and moves the pressure spring tension plate. The movement of the pressure spring tension plate changes the tension of the pressure spring. This changes the amount of the pull applied on the pressure lever;spring, and changes the print density by changing how hard the pressure roller hits against the print drum. The print pressure control pulse motor activates only when the machine is in motion. The printing pressure varies depending on the printing speed, print density settings, ink color, how long the print drum was not used and internal temperature of print drum. The print pressure HP sensor detects the home position of the printing pressure.



## Disassembly

## 1. Removing the Pressure Roller

- (1) Pull out the print drum and switch off the machine power.
- (2) Insert a screwdriver through the hole of the front frame, and remove the shouldered screw.
- (3) Pull the pressure roller forward until the bearing disengages from the roller adjustment plate, and then lift the roller up to remove.



The hole to insert the screw driver

## 2. Removing the Pressure Lever:Spring & Pressure Lever;Cam

- (1) Remove the main belt.
- (2) Unhook the follower spring.
- (3) Loosen cap screws (M6x10: 2pcs), and remove the pressure;spring and pressure;cam from the pressure shaft.

#### << Precaution in reassembly >>

Make sure to adjust the mounting position of the pressure lever; spring. (Refer to end of this chapter)



## 3. Removing the Pressure Lever Shock Absorber

- (1) Remove the main cover assembly.
- (2) Remove the two screws and then remove the pressure lever shock absorber.



## 4. Removing the Pressure HP Sensor

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Remove the pressure HP sensor from the machine together with the sensor bracket by disconnecting the sensor connector and a screw (M3x6: 1pc).



#### 5. Removing the Pressure Control Motor

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Remove the pressure spring.
- (3) Unplug the connector from the pressure HP sensor and detach the reusable band.
- (4) Unplug the connector from the pressure control pulse motor.
- (5) Remove screws (M4x8: 3pcs), and remove the pressure control unit from the machine.
- (6) Remove the pressure control pulse motor from the pressure control unit by removing screws (M3x6: 2pcs).



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## Adjustment

## 1. Mounting Position of the Pressure Lever

#### Checks and adjustment

- (1) Make confidential master on the print drum and turn off the machine power.
- (2) Remove the main cover assembly. (Refer to chapter 3)
- (3) Hook the pressure spring onto the pressure lever; spring and let the spring hang loose.
- (4) Unhook the solenoid lever from the pressure lever; spring and allowing the pressure roller to contact the print drum by the weight of the pressure spring hooked on the pressure lever; spring.
- (5) With the cam follower of the pressure lever; cam touching the pressure cam, confirm that the engraved line on the pressure lever; spring aligns in between the two engraved lines on the pressure lever; cam.



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- (6) If step (5) is out of the specification, remove the pressure spring and loosen the two cap screws on the pressure lever;spring.
- (7) Align the hole on the pressure lever;spring with the position-B phase alignment hole, and insert the 8mm diameter JIG shaft through the two holes to fix the position of the pressure lever;spring in position.
- (8) Insert a 4mm Allen wrench through the hole on the tip of the pressure shaft and rotate the Allen wrench in the counterclockwise direction as shown on the photograph below, so the pressure roller touches the print drum very lightly. Tighten the two cap screws on the pressure lever;spring to fix the lever onto the shaft.
- (9) Recheck whether the pressure lever; spring is attached in a correct position or not by repeating steps (3) to
  (5) on the previous page and if the position is still incorrect, repeat the adjustments listed from (6) to (8) on this page.



Pressure shaft

0714

#### Symptoms

- If the engraved line on the pressure lever; spring goes out to the left of the two lines on the pressure lever; cam, the pressure will is too weak and the printing density may become too light. Also the up-and-down motion of the pressure roller is out of the correct timing, and it may result in ink leakage from the print drum.

- If the engraved line on the pressure lever; spring goes out to the right of the two lines on the pressure lever; cam, the pressure is too strong. Also, the distance in which the pressure roller escapes from the clamp plate base assembly becomes less, and the pressure roller may hit the clamp plate. In addition to the too much pressure, the up-and-down motion of the pressure roller becomes out of timing, and may result in ink leakage from the print drum.

## MEMO

# CHAPTER 8: PAPER EJECTION SECTION

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## Mechanism

## 1. Paper Ejection Mechanism

The printed paper is removed from the print drum by the separator, air blown from the separator and air blown from two separation fans. The removed papers from the print drum is transferred onto the suction unit. The suction unit contains the Suction fan and the Pre-suction fan which pull the paper onto the suction unit and the transfer belts on the suction unit ejects the paper onto paper receiving tray.

The transfer belts are driven by the paper ejection motor, and there is a paper ejection sensor on the suction unit to confirm whether the paper is correctly received from the print drum and then ejected out on the paper receiving tray.

The FG sensor disc on the shaft of the paper ejection motor is monitored by the paper ejection FG sensor to check the motor rotation speed to ensure that the transfer belts are driven at a speed faster than the circumferential speed of the print drum for smooth paper transfer from the print drum onto the paper receiving tray.



## 2. Paper Separator Mechanism

The tip of the separator is positioned close to the print drum surface when separating the paper from the print drum. As the print drum rotates and the clamp plate base approaches the separator, the cam follower on the separator lever assembly rides on the high part of the main gear. The high part of the main gear pushes the separator lever assembly down. This action rotates the separator shaft and brings the tip of the separator down, away from the print drum to clear the clamp plate base on the print drum.

During the removal and insertion of the print drum into the machine, the tip of the separator needs to move away from the print drum to prevent being hit by the print drum. A plastic release arm attached on the slide rail pushes the release lever and rotates the separator shaft to move the tip of the separator down, away from the print drum during the print drum removal and insertion.



## 3. Paper-Ejection-Wing Mechanism

The position of the Paper ejection wings are automatically selected by the size of the paper.

The wing position is changed by the M-wing cam and S-wing cam, both rotated by the Paper ejection wing pulse motor.

The M-wing cam lifts or lowers the two Wing-M at far ends by moving the Joint pate-M up or down.

The S-wing cam lifts or lowers the wo Wing-S by moving the Joint plate-S up or down.

The Paper ejection wing HP sensor detects the home position of the wings.

Four (4) wing positions exist. Of the four positions, the three positions are determined by the width of the paper on the paper feed tray, and the paper feed pressure lever position. The fourth position, which is the custom paper ejecting position, is effective only after the field serviceman inputs data using test mode No.780 (Paper ejection wing fixed position). The Paper Feed Adj. setting from the Functions tab on the operations panel has no link with the paper ejection wing position.





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## The four positions of the paper-ejection-wings.

(1) Both the wing-M and belt roller are at high position, and wing-S is lowered. This wing position is when the paper feed pressure levers is set to NORMAL and the paper width is wider than B4/Legal. (Equivalent to 1,434 pulses.)



(2) Both the wing-M and belt roller is at low position, and wing-S is raised. This wing position is when the paper feed pressure levers is set to NORMAL and the paper width is narrower than B4/Legal. (Equivalent to 717 pulses.)



(3) The wing-M, belt roller and wing-S are all at low position. This wing position is when the paper feed pressure levers is set to CARD for any paper size. (Equivalent to 0 pulse: Home Position.)



(4) Custom paper ejection wing position, to be set by a field serviceman by Test Mode No. 780 (Paper ejection wing fixed position selection). When the serviceman inputs values on Test Mode No. 780, the machine operator will be able to select this fixed wing position from the operation panel from the [Jump Wing Control] key.

## 4. Paper Receiving Tray Angle Mechanism

The standard paper receiving tray (excluding the auto-control paper receiving tray) can be adjusted in its angle.

The operator can select either 3.5 degrees or 10.5 degrees position with the tray mounting brackets attached in the default position.

If a serviceman changes the tray mounting bracket position, the operator can then choose either 0 degrees (horizontal) position or 7 degrees position.
# 5. Auto-control paper Receiving Tray Mechanism

After printing, paper is discharged into the V-shaped paper receiving tray. The paper exit section features the following mechanisms for neat stacking of discharged sheets.

#### Exit paper fence

Two paper guides and one paper stopper position discharge paper at the correct position.

These three exit paper fences feature an automatic slide function to adjust their positions to match the size of the paper in use.

The exit paper stopper cushion on the paper stopper keeps discharged paper from bouncing.

#### Paper-settling plate

The exit paper fences on both sides are provided with a total of four paper setting plates on the inside surfaces. These plates move slightly due to the weight of discharged paper, giving the paper a slight upward curl so that they stack neatly on the paper receiving tray.

The paper-settling plates can be stowed away by operating the plate knobs.

#### Paper fence HP button

Pressing the paper fence HP button moves the paper guide fences to their preset positions.

If there is no printed paper on the paper receiving tray, the paper stopper and paper guides retract to their stowage positions. If printed paper is found in the tray, the paper stopper and paper guides slide out wide to allow the papers on the tray to be removed easily. By user mode, the operator can enter settings so that only the paper stopper, only the paper guides, or both paper stopper and paper guides move.

#### Exit tray paper detection sensor

The sensor checks whether paper printed in the previous print job remains in the exit tray, then controls operation of the paper exit fences before starting a new print job.

#### Damper mechanism

Since the exit tray is heavy, the exit tray support sections on both sides are provided with dampers to open the tray slowly and minimize the impact when the tray is opened from the stowed condition.



# Paper guide base SW

The paper guide base switches are provided to detect the folded state of the three fences.

Pressing all three switches activates sliding operations.

If the fences are folded but not all paper guide base switches are pressed, sliding operations are

disabled and an error is indicated.



# 6. Fence sliding mechanism

#### Paper guide sliding mechanism

The following mechanisms are provided for paper guide sliding operations.

- 1) Paper guide pulse motor: Drive power for sliding operations.
- 2) Paper guide HP sensor: Detects the slide reference position. Widest position.
- 3) Paper guide limit sensor: Detects the narrowest position. Prevents overruns due to malfunctions.

The paper guides on the front and rear sides are operated by linked gears and belts.



#### Paper stopper sliding mechanism

The following mechanisms are provided for the paper stopper sliding operation.

- 1) Paper stopper pulse motor: Drive power for the sliding operation.
- 2) Paper stopper HP sensor: Detects the slide reference position. Widest position.
- 3) Paper stopper limit sensor: Detects the narrowest position. Prevents overruns due to malfunctions.



#### 7. Sliding operations at the beginning of the print operation

#### **Basic operations**

The auto exit tray section is electrically connected to the HC Control PCB in the main unit. The paper stopper and paper guides move to the appropriate positions according to the paper size at the beginning of a print operation.

First, all fences are moved to accommodate the widest size. When they reach the HP sensor positions, they are determined to be at their reference positions.

The paper guides then narrow the width accommodated according to the fence width on the paper feed side. The paper stopper moves based on the size of paper set in the standard paper feed tray.

#### If there is paper printed in the pervious print job in the exit tray

When the exit tray paper detection sensor detects paper printed in the previous print job in the exit tray, the sliding operations are disabled if the print paper is smaller than in the previous job.

If the printed paper is larger than the previous paper, sliding operations are activated to move

the paper guides and stopper to their proper positions according to the paper size.

#### When using nonstandard-size paper

For nonstandard paper sizes, the paper guides move with reference to the fence width on the paper feed side, and the paper stopper moves to either the fully open or half-open position, based on the reading returned by the paper size detection sensor.

#### When using postcard-size paper

For postcard size paper, the paper stopper moves first to prevent fence interference, then the paper guides start sliding.

#### Other

Fine adjustment of fence slide positions can be performed from the menu.

When thin paper, standard, thick paper, or custom paper is selected in the paper information setting, the fences stop precisely at the set positions. (The settings must be entered in Test mode.)

If the machine fails to operate due to a problem in the auto exit tray mechanism, disconnect the connection cable to enable machine operations.

# Disassembly

# 1. Removing the Paper Receiving Tray

(1) Open the paper receiving tray to an angle of about 45 degrees and lift it vertically upwards to detach from the machine.



Connector

0814

#### 2. Removing the Suction Unit

- (1) Pull out the print drum from the machine.
- (2) Switch off the machine power and remove the paper receiving tray.
- (3) In the case of the machine which has equipped the auto paper receiving tray , remove the paper receiving tray brackets.
- (4) Remove the paper ejection cover by removing screws (M4x8: 4pcs)
- (5) Remove the sponge parts.



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Paper receiving tray bracket (Front side)

Paper ejection cover

Paper receiving tray bracket (Rear side)



0816

(6) Disconnect two connectors, remove screws (M4x8: 2pcs) and pull the suction unit out while lifting it up a little.



0817

Conectors



[ 8 - 14 ] - Rev. 0.2

#### 3. Removing the Paper Ejection Motor and Paper Ejection FG sensor

- (1) Switch off the machine power and remove following components .
  - Paper receiving tray
  - Paper ejection cover
  - Suction unit
- (2) Remove the paper ejection motor unit (M4 x 8 ,2pc).

In mounting the paper ejection motor unit, make sure that the timing belt tension is correctly adjusted.

- (3) Remove the E-ring and the gear.
- (4) Disconnect the connector and remove the paper ejection motor (M4 x 5,2pc).
- (5) Disconnect the connector and remove the paper ejection FG sensor.



# 4. Removing the Paper Ejection Wing HP Sensor

- (1) Switch off the machine power and remove following components .
  - Paper receiving tray
  - Paper ejection cover
  - Suction unit
- (2) Detach the reusable cable band, disconnect the connector, and detach the Paper ejection wing HP sensor.



# 5. Removing the Paper Ejection Wing Pulse Motor

- (1) Switch off the machine power and remove following components .
  - Paper receiving tray
  - Paper ejection cover
  - Suction unit
- (2) Remove both the Joint plate-M and Joint plate-S by removing screws (M3x10: 2 pcs each).



- (3) Remove the E-ring, and then remove the W-cam shaft.
- (4) Disconnect the connector of the motor and remove the screw ,and then remove the paper ejection wing pulse motor (M3 x 8 ,2pc).



[ 8 - 17 ] - Rev. 0.2

#### 6. Removing the Paper Ejection Sensor and the Transfer Belts

- (1) Switch off the machine power and remove the following components.
  - Paper receiving tray
  - Paper ejection cover
  - Suction unit
- (2) Remove the paper ejection suction plate (M4 x 8; 2pc).

In mounting the paper ejection suction plate back on the suction unit, make adjustment referring to the last page of this chapter.



(3) Lift the driven shaft assembly by hand and unhook it from the unit.

In mounting it back, make sure that it is hooked correctly in position.

(4) Detach suction center plate by removing screws (M4 x 6; 4pc).

In mounting the suction center plate back on the suction unit, make sure that it does not pinch the transfer belts.



0823

Driven shaft assembly

Suction upper assembly

- (5) Detach the shaft, shown on the photograph below, by by removing the timing belt, E-ring and bearing, and sliding the shaft towards the pulley
- (6) Remove the transfer belts.



Paper ejection sensor

#### 7. Removing the Separation Fan Unit

- (1) Switch off the machine power and remove the paper receiving tray.
- (2) Remove screws (M4x8: 2pcs), unplug the connector, and remove the separation fan.

# - Precaution in assembly continues on next page -





< Separation Fan Unit >

#### < Precautions in reassembly >

- (1) Insert the U-shaped hooks on the separation fan unit into the shafts on the right and left of the machine frame.
- (2) Fit the flat pins on the machine frame into the small rectangular slits on the far right and far left of the separation fan unit to position the separation fan unit correctly on the machine.





Flat pins on the machine frame inserted through the rectangular slits on the separation fan unit.



# [8-21]-Rev. 0.2

#### 8. Removing the Separator

- (1) Switch off the machine power and remove the following components.
  - Paper receiving tray
  - Separation fan unit
- (2) Pinch the power-band, slide it away from the separator, and pull the air-hose off the separator.
- (3) Remove the cap screws (M3x10: 2pcs) and detach the separator from the shaft.

#### < Precaution in reassembly >

The pinch knobs on the power-band should face towards you, as shown on the photograph when mounting it on the air-hose.



0832

# 9. Removing the Separation Lever

- (1) Remove the main shaft assembly. (Refer to chapter 3)
- (2) Remove the cap screw (M3x10: 1pc) and detach the separator lever assembly.



Separator lever assembly

Pressure lever;spring

#### 10. Removing the Auto-control Paper Receiving Tray

- (1) Disconnect the connector for the bundled wires from the machine.
- (2) Remove the front and rear side flanges (M4 x 6 ,1pc each).
- (3) Remove the auto exit tray unit.





0834

#### 11. Removing the Right/Left Fence Belts from Auto-control Paper Receiving Tray

- (1) Remove the auto-control paper receiving tray.
- (2) Remove the rear cover (M4 x 8 ,7pc).
- (3) Detach the idler spring and loosen the tensioner.
- (4) Remove the clamp ;belt (M3 x 8 ,1pc).
- (5) Detach the retaining ring and flange from the pulley and remove the belt.

#### << Precautions in reassembly >>

Because the right and left fences are linked while in sliding motion, it is important to set the right and left fences in their correct positions when reinstalling the clamp and belt.

With the sliders of both fences moved all the way toward the center, place a mark on the belt to indicate the installation position of the clamp and belt.



#### 12. Removing the Paper Guide Pulse Motor from Auto-control Paper Receiving Tray

- (1) Remove the auto-control paper receiving tray.
- (2) Remove the rear cover (M4 x 8 ,7pc).
- (3) Remove the reuse wire band and disconnect the connector of the motor.
- (4) Detach the retaining ring and flange from the pulley, and then remove the belt from the pulley.(Be careful to avoid dropping the pin located inside the pulley.)
- (5) Dismount the motor (three M4x8 ,3pc).

Paper guide pulse motor



0837

Detach this flange from the pulley



#### 13. Removing the Paper Stopper Fence Belt from Auto-control Paper Receiving Tray

- (1) Remove the auto-control paper receiving tray.
- (2) Remove the rear cover (M4 x 8 ,7pc).
- (3) Detach the retaining ring and flange from the pulley and dismount the belt from the tensioner.
- (4) Remove the clamp ;belt (M3 x 8 ,1pc).
- (5) Detach the belt.



Detach this flange from the pulley

#### 14. Removing the paper stopper drive motor

- (1) Remove the auto-control paper receiving tray.
- (2) Remove the rear cover (M4 x 8 ,7pc).
- (3) Dismount the paper detection sensor and paper stopper limit sensor together with the plate (M4 x 8 ,2pc).
- (4) Dismount the reuse wire band and disconnect the connector, and then remove the paper stopper drive motor (M4 x 8,3pc).





Reuse wire band

# Adjustment

#### 1. Separator Mounting Position

#### **Checks and adjustment**

- (1) Using Test Chart No.15, create a master and make prints. Confirm that neither paper jamming on the drum nor black thin line (caused by the separator touching and scratching the master on the print drum) appears on the prints. Note that 5mm white margin is given on top of the prints to check the paper jamming (sticking) on the drum.
- (2) If paper jams on the drum or a thin black line appears on the prints, remove the print drum from the machine and remove the print drum front cover. Return the print drum back in the machine and switch off the machine power. The adjustment is to be done with the machine stopped at position-B..
- (3) Loosen the two screws on the separator adjusting plate (one located at the right of the print drum and the other on the machine frame inside the machine at the paper receiving side).
- (4) Move the separator adjusting plate up or down to adjust the position of the separator against the print drum, looking at the gap between the print drum and the tip of the separator through the hole on the front frame of the print drum (refer to the photographs on next page). Aim with a flash light from the paper receiving side of the machine if necessary.





[8-29]-Rev. 0.2

The gap between the tip of the separator and the surface of the print drum should be adjusted to 1mm plus or minus 0.5mm. Note that one graduation scale changes the gap by 1mm. Tighten the two screws after the adjustment.



# Symptoms

(1) If the tip of the separator touches the print drum surface, it will scratch the surface of the master, causing a black line in the center of the prints.

Separator

1.5-AM

(2) If the gap is too wide, the separator does not lift the paper off the print drum and causes paper jam on the print drum.

#### 2. Adjusting the Paper Ejection Suction Plate

#### Checks and adjustment

#### << When the pressure roller adjusting plate on the front side is adjusted >>

- (1) Loosen the mounting screws (bind, M4 x 8, 2 pcs) on the paper ejection suction plate.
- (2) In accordance with the adjustment value of the pressure roller adjusting plate, align the front side of the paper ejection suction plate with the line engraved on the front side of the transport plate toward the paper feed side. Also confirm that the rear side aligns with the longest engraved line.
- (3) Tighten the mounting screws.
- \* Make sure that the pressure roller is parallel to the paper ejection suction plate during adjustment.
- \* When the roller adjusting plate is moved one increment mark (1 mm) on the scale, also move the paper ejection suction plate one increment mark (1 mm).

#### << When the pressure roller adjusting plate on the rear side is adjusted >>

- (1) Loosen the mounting screws (bind, M4 x 8, 2 pcs) on the paper ejection suction plate.
- (2) In accordance with the adjustment value of the roller adjusting plate, align the rear side of the paper ejection suction plate with the line engraved on the rear side of the transport plate toward the paper feed side. Also confirm that the front side aligns with the longest engraved line.
- (3) Tighten the mounting screws.
- \* Make sure that the pressure roller is parallel to the paper ejection suction plate during adjustment.
- \* When the roller adjusting plate is moved one increment mark (1 mm) on the scale, also move paper ejection suction plate one increment mark (1 mm).



0822

# MEMO

# CHAPTER 9: PRINT DRUM SECTION

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# Mechanism

#### 1. Master on the Drum Check Mechanism (Before Printing)

The machine checks for the presence of the master on the print drum at the start of a print job..

With a push of the Start key to begin the printing operation, the print drum starts to rotate and at drum angle 40 degrees from the position-A, the master sensor checks if a master is wrapped on the print drum or not.

If a master is found on the print drum, the printing operation takes place, but if a master is not detected, the machine stops. Once the master is detected on the print drum, the information is memorized on the machine. The master sensor no longer checks for the master on the print drum from the next printing job until a new master is made, print drum is pulled out of the machine, or the power to the machine is turned OFF.



0901

#### 2. Print Drum Set Mechanism

The removal and insertion of the print drum is done at print drum position-B stop position. Whether the print drum is set in the machine or not is checked by the drawer connector of the print drum, print drum safety SW and print drum lock sensor.

When the print drum safety SW is OFF following motors will not go ON.

The main motor, clamp motor, master removal vertical transport motor, master compression motor, print drum horizontal pulse motor, separation fan, and separation pump solenoid.



#### 3. Print Drum Lock Mechanism

When the print drum is set in the main unit, the print drum lock plate presses the lock lever and hooks it on the movable plate of the horizontal sliding unit. Since the force of the return spring returns the lock lever to the lock position, the print drum lock plate will not descend, even if the print drum lever is pulled (print drum in locked condition).

Opening the front cover and pressing the print drum pull-out button will move the machine to position B and unlock the drive mechanism (of either the first or second print drum). The print drum solenoid will then switch ON, and the lock lever will move to the lock release position. Pulling the print drum lever lowers the print drum lock plate to permit removal of the print drum (print drum in unlocked condition).



#### 4. Print Drum Horizontal Sliding Mechanism

he horizontal pulse motor moves the print drum to adjust the horizontal printing position. When the print drum is set in the main unit, it is fastened to the horizontal sliding assembly by the print drum lock mechanism. When the horizontal pulse motor of the horizontal sliding base assembly rotates, the horizontal sliding assembly moves, causing the print drum to move as well.

The horizontal home position sensor checks the horizontal reference position.



#### 5. Print Drum Rotation Mechanism

When the main motor rotates, the drive is transferred in following sequence.

The main motor drive is transferred to the main shaft assembly via main belt, and via the drive joint the drum joint receives the drive and rotates the flange-R of the print drum.

The flange gear on flange-R drives the squeegee idle gear and the drive is transferred to the squeegee drive gear to rotate the squeegee roller.

As the squeegee roller rotates, the squeegee roller attached on the squeegee roller shaft rotates and transfers the drive to the driven shaft gear and rotates the driven shaft.

The squeegee drive gear contains a one-way clutch to prevent the squeegee roller from rotating in the reverse direction if by accidentally the print drum is rotated in the opposite direction by hand.

The doctor roller is fixed in position and does not rotate.



#### 6. Inking Mechanism

The ink is pumped into the print drum from the ink bottle when the ink sensor in the print drum no longer detects the ink in the drum while the drum is rotating with the main motor ON.

The pumped ink is distributed on to the squeegee roller from the holes on the ink distributor.

The ink distributed on the squeegee roller makes a long ink bead around the driven roller located between the squeegee roller and doctor roller. Once the bead of ink touches the ink sensor the ink motor deactivates to stop the inking action.

There is a small gap made between the doctor roller and squeegee roller. From this gap the ink from the bead of ink transfers onto the inner surface of the print drum via the squeegee roller.

The overflow sensor is located in the print drum to stop the machine to prevent ink overflow in the case the bead of ink for some reasons becomes too large.



# Disassembly

#### 1. Removing the Print Drum Horizontal Sliding Unit

- (1) Pull out the print drum, switch off power, and dismount the cover (front lower).
- (2) Remove the motor cover plate. (RS tight, M4 x 8, 2 pcs)
- (3) Remove the mounting screws (RS tight, M4 x 8, 4 pcs), unplug the connectors (5 locations), pull out the coaxial cable (red color cable), and dismount the print drum horizontal sliding unit. (Turn the unit slightly clockwise when pulling out.)



0909

Print drum horizontal sliding unit



coaxial cable(red color cable)

# [9-8]-Rev. 0.2

#### 2. Removing the Screen Assembly

- (1) Make a confidential master on the print drum and pull the print drum out of the machine.
- (2) Remove screws from the tail hanger (M3x6: 2pcs).
- (3) Remove screws from the top hanger (M3x6: 4pcs) and remove the screen assembly from the print drum.

# Caution: Do not fold or bend the screen assembly during the removal or installation. Refer to the next page for the precautions in reassembly.



0912

#### < Precautions in Reassembly >

- (1) Mount and screw the top hanger on the print drum and wrap the screen around the drum. Then tentatively attach the screws on the tail hanger, very lightly.
- 2) Hook the screen jigs through the holes on the left and right of the tail hanger, pull the screen jig and hook the loop end of the jigs on the short pillars on the left and right drum flanges, located close to where the top hanger is. This is to tension the screen assembly tightly and evenly around the print drum.
- (3) With the screen assembly tightly wrapped around the drum by the screen jig, tighten the screws on the tail hanger.
- (4) Remove the screen jigs from the print drums once the screws on the tail hanger are tightened.



<< Front side >>

# [9-10] - Rev. 0.2
# 3. Removing the Master Clamp Base Assembly

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove screws (M3x6: 4pcs) and detach the master clamp base assembly from the print drum.



0918

0919



## 4. Removing the Drum Body

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
- (3) Loosen screws (M3x6: 2pcs) on the potbelly-shaped hole towards the tail end of the drum body (indicated by the arrow marks on the photograph), and remove all other remaining screws (M3x6: 10pcs).
- (4) Holding the drum body, so it does not pop open, peel off the tape which holds the top edge of the drum body onto the tail end of the drum body. (The tape will be reused in assembly.)
- (5) Slide the drum body and unhook the potbelly-shaped holes from the two loosened screws, and then remove the drum body.

#### - Precautions in assembly continues on next page -



< Enlarged View >

[9-12]-Rev. 0.2

# < Precautions in Reassembly >

- (1) On the outskirts of the tail end of the drum body, close to the drum flanges are marked with arrow marks and F & R imprints. The F imprint should face the flange-F, and R imprint should face the flange-R. With the drum body in this direction, hook the potbelly shaped holes of the drum body onto the two loosened existing screws on the drum flanges F and R.
- (2) Tentatively place one screw each on the screw holes which the arrow marks point to.





## 0923

- (3) Hook the screen jigs into the holes on the drum body located at the inner edge of the top of the drum body, and hook the loop ends of the jig on the pillars on the drum flanges F and R.
- (4) Push the flange-F and flange-R tightly against the drum body, and tighten the two screws at the arrow mark which was previously tentatively mounted.
- (5) Likewise, push the flange-F and flange-R tightly against the drum body and tighten the two loose screws at the potbelly holes of the drum body, and then mount and tighten all the remaining screws around the drum body while pushing the flanges tightly against the drum body.



(6) On the second screw holes from the top at the top end of the drum body, use screws (M3x6: 2pcs from another part of the drum) to tightly hod the drum body onto the drum flanges.





0927

(7) Remove the screen jigs off the print drum, and place the adhesive tape back on the joint section of the drum body while pushing down the joint section for a tight hold by the tape. Caution:

If the joint section of the drum is lifted during the taping, it may result in master-wrinkling during master loading or causes mechanical noise during printing.



0929

# 5. Removing the Ink Scraper Plate Assembly F & R

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
  - Drum body
- (3) Remove screws (M3x8: 1pc each), and remove the scraper plate assembly F & R.



Ink scraper assembly R





< Ink scraper assembly R >



< Ink scraper assembly F >



Ink scraper assembly F

# **Precaution in reassembly:**

0930

Markings are make for where the cross-beams to be mounted. For A3 print drum, attach the cross-beam where an A3 marking is engraved. B4 marking is engraved for B4 size print drum, etc.

# 6. Removing the Ink Pump Assembly

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
  - Drum body
- (3) Disconnect the inking motor FG sensor connector and the inking motor connector. Then remove screws (M4x8: 2pcs) and detach the ink pump assembly.



# 7. Removing the Ink Bottle Guide Assembly

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
  - Drum body
  - Ink pump assembly
- (3) Remove the inspection cap from the inside of the ink bottle guide.
- (4) Gently pull out the connector pin from the Antenna PCB. Then disconnect the ink bottle set switch connector and detach the two reusable bands from the print drum frame.
- (5) Remove screws(M3x8: 4pcs), and lift out the ink bottle guide assembly from the print drum after sliding it towards the center of the drum.







0937

Bottle set SW connector

# 8. Removing the Ink Bottle Lock Assembly & Antenna PCB

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
  - Drum body
  - Ink pump assembly
  - Ink bottle guide assembly

## **Removing the Ink Bottle Lock Assembly**

(3) Remove screws (M3x8: 2pcs) and detach the ink bottle lock assembly from the ink bottle guide assembly.



# **Removing the Antenna PCB**

- (3) Separate the ink bottle guide (top) from the ink bottle guide (bottom) by unhooking the claws.
- (4) Remove the antenna PCB from the PCB holder.



[9-18]-Rev. 0.2

# 9. Removing the Ink Sensor PCB

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
  - Drum body
  - Ink pump assembly
  - Ink bottle guide assembly

(3) Disconnect the ink sensor PCB connector, remove screws (M3x8: 2pcs) and detach the ink sensor PCB.



0942



< Ink Sensor PCB >

0943

# **10. Removing the Print Drum PCB**

- (1) Remove the print drum from the machine, and detach the drum cover from the drum by removing screws (M3x6: 4pcs).
- (2) Disconnect wire harness connectors (6 locations), remove screws (M3x8: 2pcs) and detach the print drum PCB.

# < Precaution in assembly >

Refer to Chapter-18 for special instructions on the replacement of the Print Drum PCB.



# 11. Removing the Drum Joint

- (1) Remove the print drum from the machine.
- (2) Detach both the left and right drum side frames by removing screws (M4x8: 2pcs each).
- (3) Gently pull out the drum rear frame assembly off the drum joint.
- (4) Remove screws (M4x8: 3pcs) and remove the drum joint.





[9-21] - Rev. 0.2

# 12. Removing the Flange-R

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
  - Drum body
  - Drum side frames (2pcs)
  - Drum rear frame assembly
  - Drum joint
- (3) Remove the C-ring and detach the flange-R.



# 13. Removing the Flange-F

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
  - Drum body
  - Drum side frames (2pcs)
- (3) Disconnect two connectors from the print drum PCB, detach one reusable band from the drum front frame assembly and detach the drum front frame assembly by removing screws (M4x8: 5pcs).
- (4) Remove the lock-clip on the flange support roller found at the bottom of the drum, and detach the roller.
- (5) Detach the flange-F.
- \* Remaining two flange support rollers can be removed after removing the flange-F.



# < Precaution in reassembly >

Push down on the Position-B lock-lever when attaching Flange-F, so that the lock-lever slides into the correct slit, instead of locking into one of the spaces around Flange-F.

#### 14. Removing the Squeegee Roller

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
  - Screen assembly
  - Master clamp base assembly
- Drum joint Flange-R

- Drum body
- Drum front frame assembly
- Drum cover
- Drum side frames (2pcs)
- Flange-F Doctor spring
- Drum rear frame assembly
- (3) Detach the driven shaft support plate by removing a screw (M4x8: 1pc).
- (4) Remove the driven shaft gear.
- (5) Remove the squeegee gear by detaching an E-ring.



- (6) Remove the squeegee idle gear on the rear of the print drum by detaching an E-ring.
- (7) Also from the rear of the print drum, remove the squeegee drive gear by detaching an E-ring.
- continues on next page -



(8) Remove screws (M4x8: 3pcs) and also the shoulder screw from the front of the print drum.



< FRONT >

0956

(9) Remove screws (M4x8: 2pcs) and also the shoulder screw from the rear of the print drum.

- continues on next page -

< REAR >



0957

- (10) Detach the squeegee unit from the print drum by unhooking the hook portion on the squeegee unit from the plastic squeegee-gap cam in the front and rear of the print drum.
- continues on next page -



0958



0959

< SQUEEGEE UNIT >



[9-26] - Rev. 0.2

- (11) Pull out the driven shaft from the squeegee unit.
  - \* Be careful not to lose the bearing metal and O-ring as these will come off together with the shaft.
- (12) Pull the squeegee side frames F & R off from the ends of the squeegee unit to free the squeegee roller.
  - \* The doctor roller, pressed tightly fit into the ink block F & R, will also come loose.



[9-27] - Rev. 0.2

# Adjustment

# 1. Squeegee Gap Adjustment

# Checks and adjustment

- (1) Remove the print drum from the machine and detach following components off the print drum.
  - Screen assembly
  - Drum body
  - Drum cover
- (2) Detach the drum handle and drum handle lever. (Refer to the photograph below for the location).
- (3) Clean out the ink inside the squeegee unit.
- (4) Use a feeler gauge to check the gap between the squeegee roller and doctor roller.
  - \* The gap should be 0.08mm plus/minus 0.02mm .
- (5) If the gap is out of the specified range, loosen the securing screw on the squeegee-gap adjustment plate.
- (6) Insert a flat-head screw driver in the groove on the squeegee-gap adjustment plate and move the plate to adjust the squeegee gap.
- (7) Tighten the securing screw on the squeegee-gap adjustment plate to end the adjustment.

# - Refer to the next page for the photograph of the rear side.



#### < FRONT >



#### Symptoms:

- (1) If the squeegee gap is too wide, too much ink is transferred onto the inner surface of the print drum and may result in ink leakage from the print drum. Other problems, such as the master slipping out from the clamp plate and horizontal line images may start to rip on the master.
- (2) If the squeegee gap is too narrow, not enough ink is transferred onto the inner surface of the print drum and may cause the images on the prints to be too light or images missing from the prints due to lack of ink on the drum surface, and more than necessary quantity of prints may have to be printed before the image transfers completely on the paper.

# 2. Squeegee Pressure Balance Adjustment

#### **Checks and adjustment**

- (1) Create a master using Test chart No.14 and make prints. Check the left and right of the prints to compare the print density and confirm that the density is even between the two sides.
- (2) Also check the squeegee pressure by pushing the drum body by fingers against the pressure roller. The gap between the drum body and the squeegee roller by the feel of the fingers should be equal throughout the length of the print drum. The gap should be within the following range, and if not, make an adjustment.
  - \* 0.2mm plus/minus 0.05mm (0.15 to 0.25mm) for A3/Ledger drums.
  - \* 0.3mm plus/minus 0.05mm (0.25 to 0.35mm) for B4/Legal/A4/Letter drums.

## < Adjustment in the FRONT >

- (3) Remove the print drum from the machine, pull out the ink bottle and remove following components.
  - Drum cover
  - Drum handle
  - Drum handle lever
- (4) Loosen the three securing screws (indicated by the arrow marks on the photograph) on the squeegee side frame-F found through the holes on the drum front frame assembly.
- (5) Also from the hole on the drum front frame assembly, using a flat-head screwdriver, rotate the squeegeegap cam until correct gap is obtained between the squeegee roller and drum body.
- (6) Tighten the three securing screws on the on the squeegee side frame-F to finish the adjustment on the front side of the print drum.
- the adjusting procedure for the rear side of the print drum continues on the next page -



#### < Adjustment in the REAR >

- (3) Remove the print drum from the machine.
- (4) Looking at the rear of the print drum, find two securing screws of the squeegee side frame-R (indicated by the arrow marks on the photograph) and loosen the two screws.
- (5) Insert a flat-head screwdriver through the opening on the drum rear frame assembly, rotate the squeegeegap cam until correct gap is obtained between the squeegee roller and drum body.
- (6) Tighten the two securing screws on the on the squeegee side frame-R to finish the adjustment on the rear side of the print drum.



#### Symptoms

- (1) Difference in the squeegee pressure between the front and rear of the print drum will result in uneven density between the right and left of the prints.
- (2) If the squeegee pressure is too strong (the gap too small), too much ink is transferred onto the inner surface of the print drum and may result in ink leakage from the print drum. Other problems, such as the master slipping out from the clamp plate and horizontal line images may start to rip on the master.
- (3) If the squeegee pressure is too weak (the gap too large), not enough ink is transferred onto the inner surface of the print drum and may cause the images on the prints to be too light or images missing from the prints due to lack of ink on the drum surface, and more than necessary quantity of prints may have to be printed before the image transfers completely on the paper.

#### 3. Master Skew Adjustment

Before making adjustments, clean the pressure roller.

#### **Checks and adjustment**

If the master on the print drum starts to skew to one side during the printing operation, follow the instruction below to make the correction.

- << To move the master toward the front side >>
- (1) Pull out the print drum and remove the print drum horizontal sliding unit.
- (2) To move the master toward the front side, loosen the retaining screw on the roller adjusting plate on the front side.
- (3) Adjust by aligning the increment mark on the left side of the roller adjusting plate to the left-side edge of the pressure roller bracket.
- \* Moving the roller adjusting plate one increment mark to the left to move the master 1 mm toward the front side. The roller adjusting plate can be moved up to two increment marks, which is equal to 2 mm.
- << To move the master toward the rear side >>
- (1) Pull out the print drum.
- (2) To move the master toward the rear side, loosen the retaining screw on the roller adjusting plate on the rear side.
- (3) Adjust by aligning the increment mark on the left side of the roller adjusting plate to the left-side edge of the pressure roller bracket.
- \* Moving the roller adjusting plate one increment mark to the left moves the master 1 mm toward the rear side. The roller adjusting plate can be moved up to two increment marks, which is equal to 2 mm.
- \* After the above adjustment, adjust the suction plate (paper ejection). (See the section on adjustment of the paper ejection section in Chapter 8.)



# CHAPTER 10: CLAMP UNIT

# Contents

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# Mechanism

# 1. Clamp Unit Home Positioning Mechanism

The clamp unit is checked if the unit is at home position or not each time the machine power is turned ON or the all-reset key is pressed.

The unit is judged to be at home position when the clamp sensor-A is detecting the clamp opening cam (the clamp opening cam is at the maximum up position) and the clamp sensor-B is not detecting the actuator disc.

If the unit is not at the home position when the power is turned ON or all-reset key is pressed, the clamp motor is activated to rotate the clamp cam is rotated to bring the position-A compensation plate and clamp opening cam to the home position.







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# 2. Clamp Plate Opening Mechanism

When the START key is pressed for the master-making or confidential-master making, the print drum starts to rotate from its position-B. After the presence of the master on the print drum is checked and as the print drum returns to position-B, the print drum stops once and starts the clamp plate opening action. The clamp motor activates and rotates the clamp cam until the light path of the clamp sensor-B is blocked by the disc. This action brings the clamp opening cam down.

The print drum then rotates to start the master removal action. The clamp opening cam, at its lowered position, opens the clamp plate first, and then lifts the master ejection plate to eject the leading edge of the master out from under the clamp plate.



# 3. Drum Position-A Compensation

The print drum rotates to remove the master and as it comes back to position-A, the clamp opening cam at its lowered position opens the clamp plage and lifts up the ejection plate.

As the print drum stops at position-A, the clamp motor turns ON to rotate the clamp cam until the light path of the clamp sensor-B becomes unblocked by the disc. This action brings the position-A compensation plate down to catch the plastic compensator pin on the print drum to hold the print drum at position-A.



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# 4. Clamp Plate Master Clamp Mechanism

Once the load pulse motor on the master-making area feeds a set length of the master material onto the print drum, the clamp motor activates to rotate the clamp cam until the light path of the clamp sensor-A is blocked by the disc and the light path of the clamp sensor-B becomes unblocked. This action brings the clamp opening cam up and closes both the master ejection plate and the clamp plate to clamp the master material under the clamp plate. At this stage both the clamp opening cam and position-A compensation plate are brought up back to their home position.



# Disassembly

# 1. Removing the Clamp Unit

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Disconnect the clamp motor connector and relay connector. Remove screws (M4x8: 3pcs) and remove the clamp unit from the machine.



Clamp unit

1011



< Clamp Unit >

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# 2. Removing the Clamp Motor

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Detach the clamp unit.
- (3) Detach the helical/spur gear and spur gear by removing an E-ring on the helical/spur gear.
- (4) Detach the clamp motor by unplugging the connector and removing the screws (M3x5: 2pcs).



# 3. Removing the Clamp Sensors A & B

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Detach the clamp unit.
- (3) Unplug the reusable band (1pc) from the clamp unit.
- (4) Remove a screw (M3x6: 1pc) and detach the clamp sensor plate with the two sensors attached.
- (5) Unplug the connectors and unhook and remove each sensor from the clamp sensor plate.



# CHAPTER 11: MASTER REMOVAL SECTION

# Contents

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# Mechanism

# 1. Master Removal Mechanism

Master on the print drum is removed from the print drum and disposed in following sequence.

- (1) At the start of master removal, the master sensor checks for the presence of master on the print drum as the print drum makes one rotation.
- (2) After the print drum returns to Position-B, the clamp unit operates to bring the clamp opening cam down. The print drum rotates to position-A and both the clamp plate and the master release bar opens up to release the master out from the clamp plate of the print drum. The print drum does not stop at position-A, but continues its rotation.
- (3) The master removal roller rotates and catches the leading edge of the master and pulls the master away from the print drum as the print drum continues to rotate.
- (4) As the whole length of the removed master enters into the master disposal box, the master compressing plate pushes the removed master deep into the master disposal box.
- \* Above step-(1) is made only when the machine does not have the memory of the master on the drum.
- \* Even with no master is found on the drum, the master removal action takes place, except that the master removal sensor detection is not functional.
- \* Both the master compressing action and master loading action takes place at the same time, with the master-guiding-plate in its lowered position. The master-guiding -plate in this lowered position prevents the tail edge of the master being loaded on the print drum from touching the master removal rollers and getting the ink transferred.



### 2. Master on the Drum Check Mechanism (Before Master Removal)

When creating a confidential or normal master, the print drum makes one rotation from its position-B. During this rotation, the Master sensor checks for the presence of the master on the drum at 40 degrees turn from position-A. If a master is found on the drum, the machine makes the master removal action with the master removal sensor active. If no master is found, the master removal action is made with the master removal sensor deactivated.

The default position of 40 degrees from position-A to check the presence of master on the drum can be changed by test mode No. 940.

If the machine already knows that there is a master on the drum before going into master making operation, the master on the drum check action is skipped, and the print drum starting the rotation from the position-B goes immediately into master removal action.



#### 3. Removed Master Vertical Transport Mechanism

At the start of the clamp plate opening action to remove the master from the drum, the master removal motor activates to rotate the master removal rollers to catch the leading edge of the removed master from the drum. With the continued rotation of the print drum, the removed master is transferred into the master disposal box by the master removal rollers.

Once the master removal action has started and the print drum rotates to position-A, the main motor stops, and also the master removal motor deactivates 0.5 seconds later.

Whether the master has arrived into the master disposal area or not is checked by the master removal sensor at drum angles 120 degrees and 180 degrees during the master removal action.

The master removal roller speed is checked by the master removal motor FG sensor, and the speed can be adjusted by test mode No. 578.

After the master removal action ends, the master-guiding-plates A and B are raised by the master compression plate to clear the path for the oncoming master on the next master removal action.



# 4. Disposed Master Compression Mechanism

# 1) Initializing movement

The initialization action of the master compression plate is made in two occasions.

- (1) If the master compression plate HP sensor is found opened when the machine power is turned ON or when the all-reset key is pressed, the master compression motor rotates in the return direction until the light path of the master compression plate HP sensor becomes blocked. If the light path of the master compression plate HP sensor is blocked from the start, the initializing operation of the master compression plate is not performed.
- (2) If the light path of the master compression plate HP sensor is opened at the start of the master compressing operation, the master compression motor rotates in the return direction until the light path is blocked. If the light path of the sensor is blocked from the start, the initializing operation of the master compression plate is not performed.

# 2) Master compressing movement

With only a small amount of removed master in the master disposal box, the master compression plate makes full compressing action. The plate stops at the maximum down position for 3 seconds and then returns to the fully raised home position. The maximum down position is 130 pulse count by the FG sensor (adjustable by test mode No.573). The FG sensor, located in between the series of gears between the master compression motor and compression plate, starts counting the pulses when the compression plate clears from the master compression plate HP sensor.

As the removed master in the master disposal box increases, the resistance to the compression plate increases, causing the plate to slow down during the compression movement. The compression plate ends the compressing action before it reaches the 130 pulse count position. If the time intervals between each pulse exceeds 53 ms (adjustable by test mode No.575), the compression plate ends the compression action and stops for 3 seconds. The plate then returns to the home position.

As the amount of the removed master increases, the resistance against the compression plate increases during the compressing movement. If the time interval exceeds more than 53 ms (adjustable by test mode No.575) between each FG count within the compression plate arrives at 106 pulse count from the home position (adjustable by test mode No.576), the master disposal box is detected to be full. The LED lamp on the operation panel lights to give the FULL message.



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## 5. Master Disposal Box Safety SW

The master disposal box safety switch checks whether the master disposal box is correctly set on the machine.

When the master disposal box is not set on the machine, the master disposal safety switch prevents the main motor, clamp motor, master removal vertical transport motor and master compression motor from turning ON.

In the case the master disposal box FULL indication LED lights up on the operation panel, the master disposal box needs to be removed from the machine to switch OFF the master disposal box safety switch for 5 seconds to reset and clear the LED indication.



Master disposal box safety SW
#### 6. Protect function

The protect function is to prevent prints to be made from previously made master which may contain classified information, especially when the operator leaves the machine.

#### ON / OFF selection of the protect function

The activation and deactivation of the protect function is done by the user-mode Admin. display.

#### Automatic confidential master making

When the Protect Function is selected to ON, after an elapse of certain period of time from the finish of one printing job, the machine display asks whether to do Confidential master making. When selected [YES], the machine goes into confidential master making. If [NO] is selected, the machine does not operate any further.

#### Master disposal box lock mechanism

When the protect function is selected to ON, after each master disposal movement finishes, the master compression plate in the master disposal unit comes down a little from the horizontal home position. The master compression plate, when down from the home position, locks the master disposal box in place. The master disposal box cannot be pulled out, so that the removed master from the drum cannot be taken out and looked at.

With the protect function selected to ON, the only time the master disposal box can be removed out from the machine is when an error, in which the master disposal box must be removed out of the machine to make the correction, appears. These error conditions are Master Disposal Box Full, Master Disposal Jam Error, etc. In these error conditions, the master compression plate goes back to the horizontal home position and allows the master disposal box to be removed.

#### Locking the master disposal box with a Padlock

Even with the protect function OFF, the master disposal box can be locked in position by using a padlock.



The master disposal box can be locked in the machine using a padlock through this device.

### Disassembly

#### 1. Removing the Master Disposal Box

When the master disposal box is locked in the machine, either by a padlock or by the user mode protect function, the master disposal box cannot be removed unless the following steps are taken if the machine is in an error condition and the box cannot be released in the normal way.

In either case, a permission from the customer is needed in order to remove the master disposal box when the box is purposely locked in position.

#### When a padlock is used

If a padlock is used, a key for that padlock is needed to unlock the key to remove the master disposal box out of the machine. If the key is lost, the only way to get the master disposal box is to break the box at the handle where the padlock is hooked on.

#### When the master compression plate is locking the box. [Protect Function]

If the test mode can be activated, use test mode No. 0490 to raise the master compression plate up to the home position, and then remove the master disposal box out.

If the machine is non-operational and the test mode cannot be used, then take the following steps to get the master disposal box out.

- (1) Turn OFF the machine power and remove the front cover.
- (2) Detach the compression gear cover by removing screw (M3x8; 1 pc)
- (3) Detach the spur gear.
- (4) Rotate the compression gear all the way in the counterclockwise direction to raise the master compression plate, and remove the master disposal box out of the machine.



#### 2. Removing the Master Compression FG Sensor

- (1) Switch off the machine power and remove the front cover.
- (2) Disconnect the connector to the sensor and unplug the reusable band from the sensor bracket.
- (3) Remove a screw (M3x6: 1pc) and detach the master compression FG sensor together with the bracket.



#### 3. Removing the Master Compression Motor

- (1) Switch off the machine power and remove the front cover.
- (2) Remove a screw (M3x6: 1pc) and detach the compression gear cover.
- (3) As the master compression plate swings down by its weight, remove the spur gear while holding the compression gear by hand and let the plate swing down slowly.
- (4) Detach the helical/spur gear by removing an E-ring.
- (5) Remove screws (M3x6: 3pcs) and detach the master compression motor, together with the motor bracket.
- (6) Detach the motor from the bracket by removing screws (M3x5: 2pcs).
- \* Be careful not to lose the white thin plastic spacer on the tip of the worm-gear on the motor shaft.



#### 4. Removing the Master Removal Unit

- (1) Switch off the machine power, remove the master disposal box and detach the front cover.
- (2) Remove the master removal covers F & R by removing screw (M3x8: 1pc each).
- (3) Remove the screws (M4x8: 1pc each) found after removing the master removal covers F & R.
- (4) On the operators side of the machine (front), disconnect the two connectors and remove one screw (M4x8: 1pc) located on the top right, and slide the master removal unit out toward the operators side of the machine.



#### 5. Removing the Master Removal Sensor & Master Sensor

(1) Switch off the machine power and detach the master removal unit from the machine.

#### Removing the master sensor

(2) Disconnect the sensor connector, remove a screw (M3x6: 1pc), and detach the master sensor together with the sensor bracket.

#### Removing the master sensor

(2) Disconnect the sensor connector, remove a screw (M3x6: 1pc) by inserting a screwdriver through a hole on the master disposal housing, and detach the master sensor.



< Master Removal Unit >

#### 6. Removing the Master Removal Motor & Master Removal Motor FG sensor

#### Removing the master removal motor

- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove an E-ring and detach the spur gear.
- (3) Remove the timing belt.
- (4) Disconnect the motor connector, remove screws (M3x5: 2pcs), and detach the master removal motor.

#### Removing the master removal motor FG sensor

(5) Disconnect the sensor connector and detach the master removal motor FG sensor.



#### 7. Removing the Master Compression Plate HP Sensor

- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove the compression gear cover and spur gear, and then lower the master compression plate.
- (3) Unplug the sensor connector and detach the master compression plate HP sensor.

#### < Precaution in Reassembly >

Mount the master compression plate at its home position during the assembly.





Spur gear

< Master Compression Plate at HP position >



Master compression plate HP sensor



< Master Compression Plate at its lowered position >

#### 8. Removing the Master Disposal Box Safety SW

- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove a screw (M3x6: 1pc) and detach the master disposal roller lock lever.
- (3) Remove screws (M3x8: 3pcs) and detach the master disposal box guiding plate.
- (4) Remove the switch spring.
- (5) Disconnect the switch connector, remove a shoulder screw and detach the master disposal spring safety SW together with switch bracket.



Master disposal box guiding plate

Master removal roller lock lever



Master disposal box safety SW



< View from A >

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### 9. Removing the Master Removal Roller (Bottom)

- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove the master disposal roller lock lever and master disposal box guiding plate.
- (3) Detach the compression gear cover and spur gear to lower the master compression plate.
- (4) Press the master removal roller release lever to drop the master removal roller (bottom).
- continues to next page -



< Master Removal Roller (bottom) in raised position >

Master removal roller (bottom)





< Master Removal Roller (bottom) in dropped position >

Master removal roller (bottom)

(5) Remove E-rings and metal bushings from both ends of the roller hook shaft, and detach the master removal roller (bottom) assembly by lifting it upwards.



- (6) From the rear tip of the master removal roller (bottom) assembly, remove an E-ring and detach both the spur gear and metal bushing.
- (7) From the front tip of the master removal roller (bottom) assembly, remove an E-ring and detach the joint arm, spur gear, and metal bushing. Detach the master removal roller (bottom) from the assembly.



#### **10. Removing the Master Compression Plate**

- (1) Switch off the machine power and detach the master removal unit.
- (2) Detach the compression gear cover and spur gear to lower the master compression plate.
- (3) Remove an E-ring and metal bushing from the rear of the unit.
- (4) Remove a screw (M4x8: 1pc) from the front of the unit and detach the compression gear.
- (5) Remove an E-ring and metal bushing from the front of the unit and detach the master compression plate.



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< Master Compression Plate >

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#### 11. Removing the Pulley Shaft

- (1) Switch off the machine power and detach the master removal unit.
- (2) Press the master removal roller release lever to release the master removal roller (bottom).
- (3) Detach the flanged-gear and pulley shaft gear on the operator's side of the master removal unit by removing a snap ring in front of the flanged gear.
- (4) Also on the operator's side of unit, remove a snap ring and unhook the metal bushing from the frame and slide inward. Remove the pulley shaft from the unit by pulling it out though the round belts.



#### 12. Removing the Master Removal Roller (Upper)

- (1) Switch off the machine power and detach the master removal unit.
- (2) Press the master removal roller release lever to release the master removal roller (bottom).
- (3) Detach the flanged-gear on the operator's side of the master removal unit by removing a snap ring in front of the flanged gear.
- (4) Remove the AF-spring and AR-spring from the master removal unit.
- (5) Unhook the round belts from the pulleys on the master removal roller (upper).
- (6) Remove a snap ring from the front (operator's side) of the master removal roller (upper). Slide the shaft of the roller to the front to free the rear side of the roller off the frame of the master removal unit. Remove the flat-washer from the shaft. Free the front side of the roller shaft from the frame of the unit and remove the flat-washer from the shaft on the front side also. Pull the master removal roller (upper) out through the round belts.
- \* Do not lose the two flat-washers, and do not forget to put them during the assembly.



#### 13. Removing the Round Belts

- (1) Switch off the machine power and detach the master removal unit.
- (2) Press the master removal roller release lever to release the master removal roller (bottom).
- (3) Removing the following two components enable the round belts to be removed.
  - Pulley-shaft
  - Master removal roller (upper)

#### 14. Removing the Master Removal Housing Assembly

- (1) Switch off the machine power and detach the master removal unit.
- (2) Detach the compression gear cover and spur gear to lower the master compression plate.
- (3) Press the master removal roller release lever to release the master removal roller (bottom).
- (4) Detach the roller hook spring-R from the rear.
- (5) Detach the release lever spring from the front, watching out for injuries as the spring is strong.
- (6) Disconnect the connector from the side plate-F, and by remove screws (M3x6: 2pcs each) from the front and rear, remove the master removal housing assembly by sliding it out towards the paper ejection side.

#### < Precaution on reassembly >

- Fit the boss on the release lever into the groove on the roller hook-F.









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## MEMO

# CHAPTER 12: FB ORIGINAL SCANNING SECTION

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### Mechanism

#### 1. Original Scanning Mechanism

The FB read pulse motor drives the front and rear wire drum by timing belts with the speed reduced by two speed reduction pulleys.

The wire drive system for the front and rear are symmetrically made.

One end of the wire is secured to the front side of the scanner unit frame and from there it goes around pulley No.2 mounted on the mirror carriage. It then goes around the pulley fixed on the front side of the scanner unit frame and then wound on wire spool pulley located at the back of the scanner unit. From the wire spool pulley, the wire is attached onto the lamp carriage. It then continues to go around the pulley No.1 on the mirror carriage and finally the other end is fixed on the frame of the scanner unit.

The lamp carriage is mounted with one original illumination lamp, a reflector, a lamp inverter, and mirror No.1. The mirror carriage is provided with mirrors No. 2 and No.3.

The mechanism uses a "full/half-rate mirror scanning" system, in which the mirror carriage moves 1/2 L mm as the lamp carriage moves L mm in the same direction. This means that when the FB read pulse motor is activated, the original can be scanned while maintaining a constant distance between the original and the lens on the CCD assembly mounted on the scanner unit.

The original on the scanner table illuminated by the lamp is reflected via mirrors No.1, 2, and 3, and the scanned image is then focused onto the CCD by the lens on the CCD assembly.



#### Drive system diagram



#### **Optical system diagram**



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#### 2. Flatbed Initialization Movement

Initialization is performed in the following situations to bring the flatbed unit to the home position.

- When the machine power is switched on.
- When recovering from the sleeping mode (wake-up).
- When All-Reset button is pressed.

#### Initialization operation

- (1) When any of the above three action is taken, if the FB/AF HP sensor is detecting the lamp carriage, the FB read pulse motor rotates in the scanning direction in 25mm to move the lamp carriage out of the sensor detection. Then the FB read pulse motor rotates in the return direction until the sensor detects the lamp carriage again, and then keeps on moving until the lamp carriage moves 7mm further from the detected position and stops. This is the home position of the lamp carriage, and at the home position the sensor is still detecting the carriage.
- (2) If the lamp carriage was not detected when any of the above three action is taken, the FB read pulse motor rotates in the reverse direction to move the carriage back 10mm and stops. If the HP sensor detects the carriage during this movement, the initialization movement explained in the above paragraph (1) takes place. If the carriage was not detected during the 10mm reverse movement, the pulse motor rotates in the forward direction to move the carriage 10mm in the scanning direction. Then the pulse motor rotates in the reverse direction to bring the carriage back until the HP sensor detects the carriage and stops after the carriage moves 7mm from the detected position (home position).



#### 3. Stage-Glass Original Detection Mechanism

The FB original detection sensor checks whether an original has been placed on the stage glass. As soon as the stage cover is closed halfway, blocking the light path to the stage-cover sensor, the FB original detection sensor checks whether there is an original on the stage glass. If the flatbed original detection sensor is receiving light (original present), the indication on the operation panel changes to "Master Making" and the shading-compensation and auto-base-control adjustment are performed. The lamp carriage is then moved to the scanning standby position with the scanner lamp turned on. If the Start key is pressed within 60 seconds, the scanning operation starts.

If the Start key is not pressed within 60 seconds, the scanner lamp turns off and the lamp carriage returns back to the home position.



Stage-cover sensor

#### 4. FB Auto-Base-Control

When an original is set and the stage cover is closed, or when the original scanning density is set to "AUTO" and if the operation starts from the lamp carriage at home position, the auto-base-control, which is explained below, is conducted after the shading-compensation is performed.

With an original set on the scanner table and when the stage-cover sensor detects the stage cover closed, or when the Start key is pressed, the scanner lamp illuminates and the FB read pulse motor rotates in the scanning direction. At a distance of 47mm after the lamp carriage escapes from the FB/AF HP sensor, the lamp carriage stops for a very short period and moves another 3.5mm in which the shading-compensation is made. After the shading-compensation is performed, the lamp moves 16.5mm in the scanning direction (10mm from the leading edge of the original) and the CCD reads the color density of the original background. The original background is read two more times after moving the lamp 2.5mm in distance the each time. Therefore, the auto-base-control scanning is made 3 times in total.

The FB read pulse motor then rotates in the reverse direction to bring the lamp carriage back to the standby position and starts the original scanning.



#### 5. FB Scanning Mechanism

When the Start key is pressed, the FB read pulse motor activates to move the lamp carriage in the scanning direction. After the top 4 mm of the original is skipped, the read signal turns ON and the original scanning operation starts.

Once the scanning is made for a specific given distance, the scanner lamp turns off to end the scanning operation.

The lamp carriage returns back to the home position after the scanning operation is finished.

#### 6. Original Size-Detection Mechanism

If the flatbed original det. sensor detects its reflected light (original present), the size of the original is detected based on the detection statuses of flatbed original size sensors 1 to 7 (reflection-type sensors). The size of the original is determined as shown in the table below.

Detected original cize	Flatbed original size sensor No.						
Delected onginal size	1	2	3	4	5	6	7
A 5	1	1	0	0	0	0	0
B 5	1	1	0	0	1	0	0
A 5 - R	1	0	0	0	0	0	0
B 5 - R	1	0	1	0	0	0	0
A 4 - R	1	1	1	1	0	0	0
Foolscap	1	1	0	0	1	1	1
B 4	1	1	1	0	1	1	1
A 4 - R	1	1	0	0	1	1	0
A 3	1	1	1	1	1	1	1

- \* [1] indicates sensor light reflected back (original present), and
- [0] indicates sensor light not reflected back (no original).
- \* The original size will not be identified for combinations other than those listed.

Flatbed original det. sensor



Flatbed original size sensor

### Disassembly

#### 1. Removing the Scanner Unit

- (1) Switch off the machine power and remove the following covers.
  - Stage cover
    - Scanner cover;paper feed
    - Scanner cover;rear
    - Scanner cover;paper ejection
    - Operation panel
    - Side cover;paper ejection
- (2) Detach electrical noize blocking plate from the SH PCB bracket (M4x6 screws; 5 pcs).
- (3) Detach the cover-open-sensor (M4x8 screw; 1 pc).
- (4) Disconnect connector from Relay PCB.
- (5) Disconnect the FB-read pulse motor connector.
- (6) Disconnect the connector of the scanner (flat cable) from the SH PCB.
- (7) Remove two hinge mounting brackets (M4x8 screws; 4 pcs each).
- (8) Remove five mounting screws (M4x8) of the scanner unit and lift the scanner unit off the machine. (This is a heavy precision component. Handle with care.)

#### < Precautions in Assembly >

- (1) When replacing with a new scanner unit, make sure to remove the large screw, which fixes the mirror carriage on the scanner unit for the transportation purpose.
- (2) Prior to reassembly, memo down the information label located on the top right of the scanner unit, listing the necessary Test Mode adjustments for the scanner unit.

#### 2. Removing the Stage Glass

- (1) Switch off the machine power and remove the following covers.
  - Scanner cover;paper feed
  - Scanner cover;paper ejection
- (2) Remove two shoulder screws and detach the original stopper.
- (3) Detach the plate springs F & R by removing screws (M3x6: 2pcs each).
- (4) Lift and remove the stage glass.



#### < Stage-glass installation procedure >

- (1) Put the stage glass on the scanner unit.
- (2) Install the original stopper.
- (3) Push and slide the stage glass against the original stopper.
- (4) Install the plate springs F & R, pushing tightly against the stage glass, and secure with screws.
- (5) Reinstall the covers.

#### 3. Removing the FB Original Detection Sensor

- (1) Switch off the machine power and remove the stage glass.
- (2) Remove screws (M3x6: 3pcs), lift the sensor cover with the FB original detection sensor attached. Disconnect the sensor connector and detach the FB original detection sensor together with the sensor cover.
- (3) Disengage the claws (3 locations) on the FB original detection sensor from the sensor cover to detach the sensor.





< FB Original Detection Sensor >

#### 4. Removing the Original Size Detection Sensors

- (1) Turn OFF the machine power and remove the stage glass..
- (2) Remove the CCD cover by removing three screws (M3x6).
- (3) Disconnect the original size detection sensor connector from the CCD PCB.
- (4) Remove the original size detection sensor mounting plate with the sensors attached, by removing 3 screws (M3x6).
- (5) Detach the required sensor from the sensor mounting plate by unhooking the three claws from the bracket and disconnecting the connector from the sensor.



#### 5. Removing the Scanner Lamp

- (1) Run Test Mode No.287 (scanner lamp replace positioning) and switch off the machine power.
- (2) Remove the stage glass.
- (3) Remove screws(M3x6: 2pcs) and detach the inverter cover.
- (4) Unhook the wire harness to the scanner lamp from the cord clamps (2 locations), and disconnect the connector from the inverter.
- (5) By lifting the clear plastic sheet on the cutout section of the scanner unit, remove screws (M3x6: 1pc each) from the both sides, and detach the scanner lamp.



#### 6. Removing the CCD Unit

- (1) Switch off the machine power and remove the stage glass.
- (2) Remove screws (M3x6: 3pcs) and detach the CCD cover.
- (3) Remove original size detection sensor plate.
- (4) Disconnect the CCD cable from the CCD PCB while supporting the PCB firmly by hand.
- (5) Remove screws (M3x6: 3pcs) and detach the CCD unit.

#### < CCD Unit Installation Procedure >

- (1) The replacement CCD unit is pre-adjusted at the factory with the positioning brackets attached on the left and right of the unit for a correct positioning. Therefore, fit the holes on the positioning brackets into the positioning pins on the scanner unit, and secure the CCD unit in place using three screws.
- (2) After the CCD unit is firmly screwed onto the scanner unit, unscrew and detach the positioning brackets off the left and right of the CCD unit.
- (3) Connect the CCD cable onto the CCD PCB while supporting the PCB firmly by hand.

#### < Precautions in Assembly >

To prevent damages to the CCD PCB, firmly support the PCB by hand while connecting or disconnecting the CCD cable to the PCB.



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#### 7. Removing the FB/AF HP Sensor

- (1) Switch off the machine power and remove the scanner cover; paper feed.
- (2) Detach the FB/AF HP sensor, together with the sensor bracket, from the scanner unit by removing screw (M3x6: 1pc), and disconnect the connector to the sensor.
- (3) Disengage the claws on the FB/AF HP sensor from the sensor bracket to remove the sensor.

For the machines with the duplex AF unit, the metal cover shown on the photograph at the bottom of the page needs to be removed first.





Metal cover

For the machines with the duplex AF unit, this metal cover needs to be removed first.

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#### 8. Removing the FB Read Pulse Motor

- (1) Switch off the machine power, remove the stage glass and scanner cover; rear.
- (2) Remove the mounting screws (M3x6: 4pcs) of the FB read pulse motor mounting bracket, unhook the timing belt located inside the scanner unit and detach the motor with the mounting bracket attached.
- (3) Detach the FB read pulse motor from the bracket by removing screws (M3x6: 2pcs).

#### < Precaution in Assembly >

Pull the bent edge of the motor bracket in the direction indicated by an arrow on the photograph below to apply adequate tension to the timing belt when tightening the mounting screws of the FB read pulse motor bracket onto the scanner unit.





## Adjustment

#### 1. FB Read Pulse Motor Speed Adjustment (Image Elongation & Shrinkage in Scanning)

#### Checks and adjustment

- (1) Set A3-size papers on the paper feed tray and place Test Chart No.11 on the stage glass. Make a master and print.
- (2) Lay the printed paper on top of the test chart original to check that the image elongation and shrinkage, if exits, is within plus/minus 1.4% compared from the top to the 350mm line of the test chart original.
- (3) If the elongation or shrinkage is over the specified range, make an adjustment using Test Mode No. 382 (FB Scanning Speed Adjustment).

Make sure that master-making elongation/shrinkage adjustment is already made prior to this scanning adjustment.

#### 2. FB Scan Start Position Adjustment

#### Checks and adjustment

- (1) Set A3-size papers on the paper feed tray and place Test Chart No.11 on the stage glass. Make a master and print.
- (2) Check the prints and confirm that 4mm plus/minus 2mm of the scaled line on top of the test chart is erased on the prints (the scanning is omitted for this distance).
- (3) If the scanning start position is out of the specified range, make an adjustment using Test Mode No. 381 (FB Scan Start Position Adjustment).

#### 3. FB Horizontal Scan Position Adjustment

#### Checks and adjustment

- (1) Set A3-size papers on the paper feed tray and place Test Chart No.14 on the stage glass. Make a master and print.
- (2) Look at the master made on the print drum. Confirm that all the [e] images are made on the right and left of the master on the print drum.
- (3) If any of the [e] images are omitted, make an adjustment using Test Mode No. 380 (FB Horizontal Scan Position Adjustment).

## MEMO

# CHAPTER 13: SIMPLEX AF UNIT

## Contents

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#### Mechanism

#### 1. AF Original Set Mechanism

When an original is set along the original guide fence and pushed up against the original stopper gate, the AF original detection sensor turns ON (receives light) and the Master/Print indication on the panel changes to [Ready to make master].

After a set length of time, the AF read pulse motor operates in the reverse direction, lowering the pickup roller in the direction indicated by the arrow and withdrawing the original stopper gate upward. (In this step, the one-way clutch incorporated between the registration-roller gear and registration-roller shaft prevents the registration roller from rotating.)

When the pickup roller descends and presses against the original, the pickup roller and original stripper roller rotate in the original transport direction, and a single original is fed forward by the action of the original stripper roller and the original stripper pad. This activates the AF original registration sensor (light blocked), and the edge of the original is stopped by the stationary registration roller.

When the AF original registration sensor turns ON, after a preset length of time the AF read pulse motor starts rotating in the forward direction. This raises the pickup roller and turns the registration roller, the two read rollers, the white roller, and the original ejection roller, all of which are linked by the timing belt, in the feed direction.

The original stops temporarily when it moves 90 mm from the original set position.

Meanwhile, when the AF original detection sensor turns ON, the lamp carriage in the scanner unit conducts a series of operations from lamp illumination to shading compensation, then moves to the AF read position and stops in the standby mode.

If the Start key is not pressed within 60 seconds, the lamp turns off and the lamp carriage returns to the home position. Only when the Start key is pressed, the shading compensation operation is conducted (as well as the auto-base-control operation if the original scanning density is set to AUTO), and the scanning operation begins.

When the Start key is pressed within 60 seconds, the scanning operation starts immediately if the original scanning density is not set to AUTO. If it is set to AUTO, the lamp carriage returns to the home position, and the shading-compensation and auto-base-control operations are performed before the scanning operation starts.




## 2. AF Original Size-Detection Mechanism

The width of the original is detected by the AF guide potentiometer linked to original guide fences, which are aligned with the original. The length of the original is detected by AF original size sensor 1 and AF original size sensor 2.



## 3. AF Set Detection Mechanism

Whether the AF is closed over the stage glass or not is checked by the AF cover set sensor. The AF cover set sensor is attached on the AF unit.



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## 4. AF Original Scanning Mechanism (with Automatic Base Control)

## (This operation only occurs when the original scanning density is set to [Auto].)

Once the AF original set operation is complete, pressing the Start key moves the lamp carriage to the shading position. After performing the shading-compensation operation, the lamp carriage moves to the AF-ABC position. Meanwhile, the AF read pulse motor rotates in the forward direction, rotating the registration roller, the two read rollers, the white roller, and the original ejection roller in the feed direction. After the AF original IN sensor turns ON (light blocked), the paper is fed for a distance of 22.5 mm and stops. At this position (AF-ABC position), the image sensor scans the surface density of the original. Then, the flatbed read pulse motor moves the lamp carriage back by 3 mm in the return direction (to the AF read position).

The AF read pulse motor immediately rotates in the forward direction and, at the same time, the print signal turns ON and the original scanning operation starts.

When a preset length of time elapses after the AF original IN sensor turns OFF (receives light) due to the passing of the original, the print signal turns OFF. As soon as the scanning operation is complete, the AF read pulse motor starts operating at high speed.

When the AF original ejection sensor turns OFF, the original is sent a preset distance and then the AF read pulse motor stops. The lamp carriage returns to the home position, and the AF read operation ends.

The auto-base control function is inactive in the Photo, mixed Text/Photo, and Dot-screening modes.

## 5. AF Original Scanning Mechanism

When the Start key is pressed after the AF original set operation is complete, the AF read pulse motor rotates in the forward direction, turning the registration roller, the two read rollers, the white roller, and the paper ejection roller in the feed direction. When the AF original IN sensor turns ON (light blocked), the original is sent a distance of 25.5 mm, and then the print signal turns ON and the original scanning operation starts. (The pickup roller returns to the standby position.)

When a preset length of time has elapsed after the AF Original IN sensor turns OFF (receives light) due to the passing of the original, the print signal turns OFF and, at the same time, the AF read pulse motor starts operating at high speed.

After the AF original ejection sensor turns OFF, the original is sent a preset distance, and then the AF read pulse motor stops. The lamp carriage returns to the home position, and the AF read operation ends.





## **Removal and Assembly**

## 1. Removing the Original Pickup Asembly

- (1) Remove the top cover by loosening the screws (M4 x 6: 3 pcs) on the front of the top cover and removing the screws (4 x 10: 2 pcs) from the rear.
- (2) Disconnect the two connectors and the reusable band, remove the screws (M3 x 4: 2 pcs), and detach the sensor-bracket assembly.







(3) Remove the resin clips from both sides, pull the bearing metals toward the inside, and remove the original pickup assembly by passing the drive gear on the rear of the assembly through the hole on the side panel.





Original pickup assembly

1311

## 2. Removing the Original Pickup Roller

- (1) Remove the original pickup assembly (refer to the removal instructions in this Chapter).
- (2) Remove the resin clip, open the end of the K holder, and remove the pickup roller. (Note that the K holder C and parallel pin may fall during disassembly.)



#### 3. Removing the Original Stripper Roller

- (1) Remove the original pickup assembly (refer to the removal instructions in this Chapter).
- (2) Remove the K holder C, parallel pin, and pickup roller (refer to the removal instructions in this Chapter).
- (3) Remove the resin clip from the rear of the original stripper roller, and move the original stripper roller in the direction indicated by the arrow.
- (4) Remove the E-ring, move the K holder F assembly slightly in the direction indicated by the arrow, pull out the parallel pin holding the K holder F assembly in place from the shaft, and remove the K holder F assembly.
- (5) Remove the original stripper roller.

#### [Precautions in Reassembly]

When installing the parallel pin to hold the K holder F assembly in place, be sure to insert it into the shallower groove on the K holder F assembly.

The original stripper roller must be installed with the correct orientation. Be sure to position the gear side on the front of the machine.



View of the K holder F assembly and parallel pin

## 4. Removing the Original Stripper Pad Assembly

- (1) Remove the original pickup assembly (refer to the removal instructions in this Chapter).
- (2) Detach original stopper bracket by removing one screw (M3 x 4), and remove the original stopper.
- (3) Using the original release lever, elevate down the original stripper section.
- (3) Being careful not to drop the spring under the original stripper pad assembly, slide back the assembly to disengage it out from the hooks and then take it out from the AF unit through the opening.

## [Precautions in Reassembly]

In putting the original stripper pad assembly back into the AF unit, place an adhesive tape on the assembly (ref: photograph), and elevate down the original stripper section by using the original release lever. Push the assembly down into the opening under the stripper sheet and attach the spring firmly onto the assembly.

Use the attached adhesive tape to pull the original stripper pad assembly to hook it onto the AF unit.

Remove the adhesive tape once the original stripper pad assembly is fixed in its position.



## 5. Removing the AF Original IN Sensor

- (1) Remove the top cover by loosening the screws (M4 x 6: 3 pcs) on the front of the top cover and removing the screws (M4 x 10: 2 pcs) from the rear.
- (2) Remove the screw (M3 x 8: 1 pc), disconnect the connector, and remove the AF original IN sensor.

## [Precautions in Reassembly]

Following reassembly, adjust the AF original IN sensor by using Test Mode No. 3044 (Original-IN-Sensor Sensitivity Adjustment).



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## 6. Removing the AF Read Pulse Motor

- (1) Remove the top cover by loosening the screws (M4 x 6: 3 pcs) on the front of the top cover and removing the screws (M4 x 10: 2 pcs) from the rear.
- (2) Remove the screw (M4 x 6: 1 pc), and move the harness-bracket assembly to the side.
- (3) Remove the open lever together with the open-lever spring.
- (4) Detach the tension spring, remove the mounting screws (M3 x 6: 2 pcs), and then remove the AF read pulse motor together with the motor tension bracket.



## 7. Removing Other Rollers

- (1) Detach the AF unit from the machine.
- (2) Remove the top cover by loosening the screws (M4 x 6: 3 pcs) on the front of the top cover and removing the screws (M4 x 10: 2 pcs) from the rear.
- (3) Disconnect the connector, and remove the Control PCB (M3 x 6: 2 pcs).
- (4) Cut the band indicated by the arrow in the photograph, remove the mounting screws (PM4 x 10: 7 pcs; M4 x 10 + Washer: 2 pcs on the front), and detach the AF mechanism unit.



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AF mechanism unit

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- (5) Disconnect the AF cover set switch connector and AF read pulse motor connector, and detach the ground wire by removing screw (M3 x 6: 1 pc).
- (6) Remove the reusable band, detach the harness from the three harness clamps, and move the harness to the side.
- (7) Detach the ground wire from the harness-bracket assembly by removing screw (M4 x 6: 1 pc).
- (8) Detach the harness-bracket assembly by removing screw (M4 x 6: 1 pc).
- (9) Remove the sensor actuator disc together with the actuator disc spring.
- (10) Detach the motor-bracket assembly by removing screws (M4 x 6: 4 pcs).
- (11) Loosen the idler assembly securing screws, and remove the idler spring.
- (12) Remove the resin clip, spur gear, E-ring, gear assembly, and timing belt No.1, in that order.

#### [Precautions in Reassembly]

The gear assembly has a built-in one-way clutch. Be sure to install the gear assembly with the stamped face toward the front.







## Removing the registration roller

- (13)Remove the timing pulley from the rear side of the roller. Also remove the parallel pin at the same time.
- (14) Remove the E-ring, and detach the bearing metal.
- (15)Remove the resin clip from the front side of the roller, and detach the bearing metal.
- (16)Remove the registration roller.





#### Removing the read roller No. 1

- \* Before removing the read roller No. 1, detach the registration roller.
- (13)Remove the resin clip from the rear side of the roller, and detach the timing pulley. Also remove the parallel pin at the same time.
- (14) Remove the E-ring, and detach the bearing metal.
- (15)Remove the E-ring from the front side of the roller, and detach the dial. Also remove the parallel pin at the same time.
- (16)Remove the timing-pulley assembly, remove the E-ring, and detach the bearing metal.
- (17)Remove the read roller No. 1.

## [Precautions in Reassembly]

The timing-pulley assembly has a built-in one-way clutch. Be sure to install the gear assembly with the stamped face toward the front.



Read roller No.1



## Removing the read roller No. 2

- (13)Remove the resin clip from the rear side of the roller, and detach the timing pulley. Also remove the parallel pin at the same time.
- (14) Remove the E-ring, and detach the bearing metal.
- (15)Remove the resin clip from the front side of the roller, and detach the bearing metal.
- (16) Remove the read roller No. 2.



## Removing the original ejection roller

- (13)Remove the resin clip from the rear side of the roller, and detach the timing pulley. Also remove the parallel pin at the same time.
- (14) Remove the E-ring, and detach the bearing metal.
- (15)Remove the resin clip from the front side of the roller, and detach the bearing metal.
- (16) Remove the original ejection roller.





## 8. Removing the AF Original Guide Fence Potentiometer Assembly

- (1) Open the AF unit.
- (2) Detach the stage-cover assembly by removing screws (M3 x 10+Plastic washer: 2 pcs).
- (3) Detach the bottom cover by removing screw (M4 x 6: 1 pc).
- (4) Unplug connector, and remove the AF originial guide fence potentiometer assembly by removing screws (M3 x 10: 2 pcs).

## [Precautions in Reassembly]

Before putting back the potentiometer assembly, slide the original guide fences to the innermost (closed) position, and rotate the gear of the potentiometer assembly in the counterclockwise direction all the way. Then rotate it back one tooth and mount the potentiomenter assembly back on the AF unit.

After the assembly is back on the AF unit, activate test mode No.3045 [AF-guide min.-width VR value] with the original guide fence closed all the way. Then activate test mode No.3046 [AF-guide max.-width VR value] with the original guide fence opened wide all the way.







Original guide fence

N Potentiometer assembly

Gear

- 1. Close the original guides all the way in.
- 2. Rotate the potentiometer in the counterclockwise direction all the way.
- 3. Then return it in the clockwise direction for one tooth and join the gears, and screw it back on the AF unit.





Bottom cover

## Adjustment

## 1. AF Scan Start-Position Adjustment

## **Checks and procedure**

- (1) Place A3 size printing paper on the paper feed tray. Make 1 to 1 size master using **test chart No.11 on** the AF unit, and make prints.
- (2) Examine the prints to confirm that the scanning start position is at 5 mm ± 2 mm on the top vertical scale on the test chart No.11 printed image.
- (3) If the scanning start position does not fall within above specification, make an adjustment using test mode No.3073 (AF Scan Start Position Adjustment).

## 2. AF Horizontal-Scan Position Adjustment

## Checks and procedure

- Place A3 size printing paper on the paper feed tray. Make 1 to 1 size master using test chart No.14 on the AF unit.
- (2) Examine the master created on the print drum, and confirm that the [e] images on the left and right of the original is not missing on the created master.
- (3) If not all the [e] images are made on the master, make adjustment using test mode No.3072 (AF Horizontal Scan Position Adjustment).

## 3. AF Read Pulse-Motor Speed Adjustment (Elongation & Shrinkage)

## Checks and procedure

- Place A3 size printing paper on the paper feed tray. Make 1 to 1 size master using test chart No.11 on the AF unit, and make prints.
- (2) Lay the print on top of the original to confirm that the image elongation or shrinkage is within ±1.0% at the 350-mm line of the test chart image.
- (3) If the elongation and shrinkage does not fall within this specification, make an adjustment using test mode No.3074 (AF Scanning Speed Adjustment).

Prior to adjustment, adjust the image elongation and shrinkage by first adjusting the write pulse-motor speed (see chapter 15).









## 4. AF Original Guide Fence Potentiometer Adjustment

## Adjustment

- (1) Slide the original guide fence to the innermost (closed) position, and run **test mode No.3045** [AF-guide min.-width VR value].
- (2) Then slide the original guide fence to the outermost (opened) position, and run **test mode No.3046** [AFguide max.-width VR value].

## 5. AF Original IN Sensor Sensitivity Adjustment

## Adjustment

- (1) Without an original, execute **Test Mode No. 3044** *[AF Original IN Sensor Sensitivity Adjustment]*. This will automatically adjust the sensitivity of the sensor.
  - \* This adjustment must be made when the sensor is replaced with a new one.

# CHAPTER 14: DUPLEX AF UNIT

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## Mechanism

## 1. Basic Mechanism

Two or more sheets of original can be set on the Original Table. The Original Table has a original size detection mechanism.

The original on the original table is feeded to the scanning area through the Pick-up roller, Paper feed belt, and the 1st transport roller.

In one side scanning, the original which scanning of one side finished is transported to the Exit table through the 2nd transport roller and Exit roller.

In double-sided scanning, the original is further transported to the reverse table through the reverse roller.

In double-sided scanning, the original once transported to the reverse table side is again leaded into the scanning area through the reverse roller, exit roller, and 1st transport roller.

The original which scanning of the reverse side finished performs reverse operation once again, and is transported to the exit table through the 2nd transported roller and exit roller.



## 2. Original Size Detection Mechanism

The original size detection mechanism consists of the original width sensor board and two original length sensor 1 and 2.

Based on the combined output of the length sensors and the width sensor board, the machine can detect the size of the original.

Note that the width sensor's terminal plate is attached to the original guide, so the widths of the originals must all be the same.



## 3. Electrical Component Description

## **Feed Cover Sensor**

Detects whether the feed-in cover is opend or not. Original Set Sensor

Detects if an original is on the feed table. Original Width Sensor Board and Original Length Sensor 1/2

Detect the original size.

## **DF Position Sensor**

Detects whether the DF is lifted or not.

## **Registration Sensor**

Detects the leading edge of the original tu turn off the DF feed and transport motors, detects the original exposure timing, and checks for original misfeeds.

## **Original Exit Sensor**

Detects the leading edge of the original to turn on the junction gate solenoid and checks for original misfeeds.

Detects the trailing edge of the original tu turn off the transport and feed motor and junction gate solenoid.

In single-sided mode, used to detect original misfeeds.

## **Original Reverse Sensor**

Detects when the original is fed from the reverse area during duplex scannings.

## **Original Trailing Sensor**

Detects the trailing edge of the last original to stop copy paper feed and to turn off the transport motor, nad checks for original misfeeds.

## Feed motor

Drives the feed belt, separation, pick-up, and reverse table roller.

## Feed Clutch

Transfers transport motor drive to the pick-up roller and feed belt.

## **Transport Motor**

Drives the transport and exit rollers.

## **Pick-up Solenoid**

Controls the up-down movement of the original table.

## Junction Gate Solenoid

Opens and closes the junction gate.



## 4. Original Feeding and Transporting Mechanism

## **Original Setting**

1) The original is set with the image facing up. The original pushes actuator and the original set sensor is activated.



## **Original Feeding and Transporting**

- 2) After pressing the start button, the pick-up solenoid is activated and the lift plate lifts the original up until it comes in contact with the pick-up roller.
- 3) The feed motor feeds the separated original to the 1st transport roller at maximum spped.
- 4) When the registration sensor detects the leading edge of the original, the motor stops for a while.
- 5) Then the feed and transport motors turn on again , and feed the original through scanning area ata a lower spped.
- 6) After scanning, the original is fed out by the 2nd transport roller and exit roller.



#### Original transporting to the reverse table

- 7) When the original exit sensor detects the leading edge of the original, the junction gate solenoid is activated and the junction gate opens. The original is then transported towards the reverse table.
- 8) Soon after the trailing edge of the original passes the exit sensor, the junction gate is closed.



#### Original transporting to the scanning area for scanning reverse side

- 9) When the original has been fed onto the reverse table , the feed motor switches on in reverse.
- 10) The original is then fed by the reverse roller and then by the exit roller and 1st transport roller to the scanning area.



## Original transporting to the exit table

11) The original is then sent to the reverse table a second time to be turned over. this is done so that the copies will be properly stacked front side down in the exit tray in the correct order.



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## Disassembly

- 1. Removing the Pick-up roller , Feed Belt and the Separation Roller
  - (1) Open the left cover.
  - (2) Detach the paper feed unit by sliding it toward the front of the machine and then lifting the far side.
  - (3) Remove a snap ring and detach the pick-up roller.



- (8) Lift the original feed guide.
- (9) Remove the separation roller cover.
- (10) Remove the separation roller.



## 2. Removing the Original Set Sensor and the Original Reverse Sensor

- (1) Open the left cover.
- (2) While pushing the left and right pawls, open the original feed guide plate.
- (3) Disconnect the connector and remove the original set sensor.
- (4) Disconnect the connector and remove the original reverse sensor.



# 3. Removing the Original Width Sensor Board , the Original Length Sensor , and Trailing Edge Sensor

(1) Open the original table.

(2) Remove the upper part of the table (3 screws).

(3) Disconnect the connectors and remove the original width sensor board , original length sensor 1/2 , and trailing edge sensor.

## Note:

To ensure proper detection of paper size , after wiping off the sensor board and terminal plate with a dry cloth (or cloth with alcohol) , apply silicone grease(KS-660) to the terminal plate.



## 4. Removing the Covers

- (1) Open the original table.
- (2) Open the reverse table.
- (3) Remove the front cover (3 screws).
- (4) Remove the rear cover (3 screws).
- (5) Remove the original exit table (3 screws).



## 5. Removing the Feed Clutch , Pick-Up Solenoid , Transport Motor , and the Feed Motor

- (1) Remove the rear cover (3 screws).
- (2) Remove the feed clutch (1 E-ring, 1 connector).
- (3) Remove the pick-up sorenoid (3 screws, 1 snap ring, 1 connector).
- (4) Remove the bracket of the motor unit (1 spring, 1 connector, 2 screws)
- (5) Remove the feed motor (1 connector, 2 screws)



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## 6. Removing the Left Cover

- (1) Remove the front and rear covers.
- (2) Remove the left cover (2 screws).
- (3) Remove the lower left stay unit (2 screws).



## 7. Removing the Registration Sensor

- (1) Remove the front and rear covers.
- (2) Remove the left cover.
- (3) Remove the transport guide plate.
- (4) Remove the registration sensor (1 connector).



## 8. Removing the Original Exit Sensor

- (1) Remove the rear cover.
- (2) Remove the exit tray.
- (3) Open the exit guide plate.Next, detach the unit by inserting a screwdriver or other tool into the small openings on either of the guide plate holder and pushing firmly.
- (4) Remove the original exit sensor (1 connector).





## MEMO
# CHAPTER 15: MASTER MAKING SECTION

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## Mechanism

#### 1. Master Making Unit Components



#### 2. Set Detection Mechanism

#### Master making unit set detection mechanism

As flatbed section cannot be opened or closed, the unit has a mechanism in which the master making unit can be pulled out.

The pulling out and insertion of the master making unit are conducted at print drum position-B stop position. The master making U safety switch and the master making U lock sensor confirm that the master making unit is set.

When the master making U safety switch turns OFF, the main motor, clamp motor, master removal compression motor and master removal transport motor are electrically designed not to activate.



#### The master making unit upper cover detection mechanism

The master making unit upper cover set sensor confirms that the master making unit upper cover is set, and the master setting operation is performed once the cover is set.

#### Master end detection

The end of the master roller is confirmed by the master end sensor detecting the black end mark attached on the tail end of the master material on the master roll. The master end sensor checks every 10 ms while the master is being transported, and the master roll replace message is indicated when the end mark is detected twice in succession.

#### 3. Master Cutting Mechanism

The master is cut by the rotary cutter of the cutter unit, which is rotated by the cutter motor. The cutter motor rotates in one direction.

The cutter HP SW confirms the home position of the rotary cutter. The cutter is at the home position when the switch is not pressed.

As the cutter motor activates, the gears turn to rotate the rotary blade. The cam on the metal gear pushes against the actuator of the cutter HP SW and after one rotation of the cam the switch actuator arrives back to the flat-cut on the cam. The switch actuator is no longer pressed by the cam and the cutter motor stops.



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#### 4. TPH (Thermal Print Head) Elevation Mechanism

When the machine is at standby or when loading the master onto the print drum after master making, the TPH is elevated away from the write roller. The TPH is lowered against the write roller only during the master making and master transfer operation.

The up and down movement of the TPH is made by the rotation of the eccentric pressure cam rotated by the thermal pressure motor.

The stop position of the TPH, whether going up or down, is detected by the thermal pressure sensor and sensor disc.

When the machine power is switched ON or when the all-reset button is pressed, the initialization movement of the machine elevates the TPH away from the write roller.



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#### 5. Master Set Mechanism

When the master making unit upper cover is closed and the set sensor detects the closed cover, the master set operation, described below, takes place.

First, the TPH is elevated down against the write roller. Then the write pulse motor rotates the write roller and master stocker roller to feed the master material forward until the leading edge of the master material is detected by the master positioning sensor. The write pulse motor stops and the TPH is elevated up. The write pulse motor rotates again to advance the master material forward 20mm by the rotation of the master stocker roller and the pulse motor stops.

The TPH is elevated down against the write roller again and the write pulse motor rotates in the reverse direction to bring the master material back. From the point when the leading edge of the master material clears away from the detection of the master positioning sensor, the master material continues to come back 5mm distance and the motor stops, and the TPH elevates up. This measurement can be adjusted by test mode No.540 [Master front-end position adjustment]. The master set operation ends and the master making unit waits for the master making operation to start.

#### The master set operation is also performed after each master cut operation, as described below.

After the cutter operates to cut the master material, the TPH elevates down against the write roller. The write pulse motor activates to send the master material forward until the leading edge of the master material is detected by the master positioning sensor. The pulse motor stops once, and then rotates in the reverse direction for 5mm from the point the leading edge of the master material escapes from the master positioning sensor (adjustable by test mode No.540). The write pulse motor stops and elevates the TPH up. The master set operation ends and the master making unit waits for the master making operation to start.



#### 6. Master Making Movement

The start of master making to the start of master loading on the print drum is explained in sequence below.



- (1) At the start of the master making, the TPH comes down to pinch the master material between the TPH and the write roller. The write pulse motor activates to rotate the write roller and master stocker roller in the forward direction to feed the master material towards the master positioning sensor.
- (2) The write pulse motor is rotates in the reverse direction to bring the master material back away from the master positioning sensor for a given distance and waits for the scanning to proceed.
- (3) With the master making start signal, the master stocker guide plate rises to cover the stocker room. Both the load pulse motor and write pulse motor rotates in the forward direction to transfer the leading edge of the master material through the load roller. The master making starts.
- (4) The master stocker guide plate drops down to let the oncoming master material to enter into the stocker room. The separation fans operate to assist the master material to enter into the stocker room smoothly, and when the clamping guide roller grips the master material, the load pulse motor stops. The master making continues.
- (5) The print drum stops at position-A and the clamp plate opens. The load pulse motor activates to send the leading edge of the master material to the clamp plate. The clamp plate closes and clamps the master material. The master making still continues.
- (6) As the master making ends, the TPH elevates up and the print drum starts to rotate, wrapping the master material around the print drum.

## Disassembly

#### 1. Removing the Master Making U Lock Sensor

- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the safety SW cover by removing a screw (M4x8: 1pc).
- (3) Unplug the connector, remove a screw (M3x6: 1pc) and detach the master making U lock sensor.





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#### 2. Removing the Print Drum, Master Making U Release Button, Lock Solenoid, and Safety Switch

- (1) Detach the front cover.
- (2) Pull out the master making unit and switch off the machine power.
- (3) Detach the safety SW cover by removing a screw (M4x8: 1pc).
- (4) Unplug connectors (3 locations), remove screws (M4x8: 3pcs) and detach the master making U lock unit.



#### Removing the print drum release button and master making U release button

(5) Undo two hooks on each button from the master making U lock unit and remove the buttons.

#### Removing the master making U lock solenoid

(5) Remove screws (M3x6: 2pcs) and detach the master making U lock solenoid.



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#### Removing the master making U safety SW

- (5) Unplug the connectors (2 locations), remove a screw (M4x8: 1pc) and detach the master making U safety SW assembly.
- (6) Unhook the torsion spring, remove an E-ring and detach the master making U safety SW together with the bracket. Remove the switch from the bracket.





#### 3. Removing the Print Thermal Head Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Disconnect the ground wire by removing a screw (M3x6: 1pc).
- (3) Open the master making unit upper cover.
- (4) Detach the master making unit bottom cover by removing screws (M3x6: 2pcs).
- (5) Detach the connector cover by removing one screw (M3x6: 1pc).

#### - Continues on next page -





Master making unit bottom cover

Ground wire

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- (6) Unplug the connectors (2 locations), detach the snap ring, spring and metal bushing.
- (7) Slide off the metal bushing from the TPH bracket and remove the print thermal head assembly.







< Print Thermal Head Assembly >

#### 4. Removing the Thermal Pressure Motor Assembly and the Capacitor PCB

- (1) Pull out the master making unit and switch off the machine power.
- (2) Remove the thermal print head assembly.
- (3) Detach the thermal pressure gear cover by removing screws (M3x6: 4pcs).
- (4) Remove the two thermal pressure springs.

There are three kinds of thermal pressure springs and they are distinguishable by a color.

Black : B4 machine Gold : RZ9 A3 machine Silver : RZ5 A3 machine

(5) Remove E-rings and metal bushings from both ends of the TPH support shaft, and remove the shaft.

#### - Continues on next page -



Thermal pressure gear cover



TPH support shaft

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- (6) Detach the thermal pressure motor assembly by disconnecting the connectors to the motor and sensor and removing screws (M3x6: 2pcs).
- (7) Disconnect two connectors of capacitor PCB and remove the gland wire, and then remove the capacitor PCB (M3 x 6,2pc).



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< Thermal Pressure Motor Assembly >

#### 5. Removing the Master End Sensor (receive) Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover.
- (3) Remove a screw (M3x6: 1pc), unplug the sensor connector and detach the master end sensor (receive) assembly.



Master End sensor (receive) assembly



< Master End Sensor (receive) Assembly >

#### 6. Removing the Master Detection Sensor and Master End Sensor (send) Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove the master roll.
- (3) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (4) Detach the master making PCB by removing screws (M3x6: 2pcs)
- (5) Detach the master making PCB bracket (M4x8: 1 pc)
- (6) Remove the stopper plates front and rear by removing screw (M3x6: 1pc each).
  - \* Since the set guide plate-B is forced up by two springs, set guide plate-B springs front and rear, press down the set guide plate-B when removing the stopper plates.
- (7) Detach and hang loose the master-flange assembly (rear) by removing screws (M3x6: 2 pcs).
- (8) Detach the set guide plate-B, together with the set guide plate shaft by removing the mounting screws of the shaft (M3x6: 1 pc each).

#### - Continues on next page -



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Master flange assembly (rear): Remove 2 screws and hang loose.



(6) Detach the master detection sensor and master end sensor (send) assembly by disconnecting a connector and removing a screw (M3x6: 1pc).



Master detection sensor and Master end sensor (send) assembly

#### < Precautions in Reassembly >

- Set guide plate-B spring (rear) is black in color.
- Hook the set guide plate-B springs (front and rear) correctly.
- The stopper plates (front and rear) are assembled back on the machine after the set guide plate-B springs. Therefore, the set guide plate-B must be pushed down when attaching the stopper plates on the machine.

#### 7. Removing the Antenna PCB

- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (3) Detach the master making PCB by removing screws (M3x6: 2pcs).
- (4) Gently pull out the antenna connector, and detach the antenna PCB from the master holder (front) by unhooking from the three plastic claws of the master holder.





#### 8. Removing the Write Pulse Motor Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (3) Unhook wire harness from the wire saddle on the bracket of the write pulse motor.
- (4) Detach the reusable band from the bracket of the write pulse motor and unplug the connector from the write pulse motor.
- (5) Remove screws (M3x6: 2pcs) and detach the write pulse motor assembly together with the timing belt.





#### < Precaution in Reassembly >

When installing the write pulse motor assembly back on the machine, screw on the motor assembly on the machine loosely. Then rotate the whole motor assembly in clockwise direction to apply tension on the timing belt. With adequate tension applied on the timing belt, securely tighten the mounting screws.

#### 9. Removing the Write Roller

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
  - Master roll
  - master making cover front
  - Write pulse motor assembly
  - Master guide gate (excluding A3/Ledger machines)
- (3) Detach the write roller pulley by removing a screw (M3x8: 1pc).
- (4) Detach the bearing support bracket (front) by removing screws (M3x6: 2pcs).
- (5) Pull out the write roller through the hole on the side frame.



Pulley

Bearing support bracket (front)



< Write roller >

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#### 10. Removing the Load Pulse Motor Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
  - Master roll
  - master making cover front
  - Write pulse motor assembly
- (3) Detach the reusable bands (3 locations) from the bracket of the load pulse motor and unplug the load pulse motor connector.
- (4) Remove screws (M3x6: 2pcs) and detach the load pulse motor assembly.



Reusable band

#### 11. Removing the Cutter Cover Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
  - Master roll
  - master making cover front
  - Write pulse motor assembly
  - Load pulse motor assembly
- (3) Unplug the sensor connector, remove screws (M3x6: 2pcs), and detach the cutter cover assembly while pulling out the wire harness from the hole on the machine side frame.





( Under view )

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#### 12. Removing the Clamping Guide Roller

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove the master making cover front.
- (3) Detach the master loading guide by removing screws (M3x6: 2pcs).
- (4) Detach the spur gear by removing screws (M3x8: 1pc).
- (5) Detach the snap ring from the rear side, unhook the metal bushing from the rear side frame and slide it inward. Slide the clamping guide roller towards the rear and unhook the metal bushing from the front side frame. Remove the clamping guide roller from the machine.



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#### 13. Removing the Cutter Guide Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
  - Master roll
  - master making cover front
  - Write pulse motor assembly
  - Load pulse motor assembly
  - Cutter cover assembly
  - Master loading guide
  - Clamping guide roller
- (3) Detach the cutter guide assembly by removing screws (M3x6: 2pcs).



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Cutter guide assembly



< Cutter guide assembly >

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#### 14. Removing the Cutter Unit

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the pressure plate, remove the following components.
  - Master roll Master making cover front
  - Write pulse motor assembly
- Load pulse motor assemblyMaster loading guide
- Cutter cover assemblyLoad roller
- Cutter guide assembly
- Write roller pulley Master stocker roller pulley
- (3) Detach the cutter unit by unplugging the connectors (2 locations) and removing two shoulder screws.



Write roller pulley



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< Cutter unit >

1560

#### 15. Removing the Load Roller (bottom)

- (1) Pull out the master making unit, switch off the power.
- (2) Open the compression plate, remove the following components.
  - Master roller -
  - Master making cover front -
  - Write pulse motor assembly
  - Load pulse motor assembly
  - Cutter cover assembly
  - Master loading guide
  - Clamping guide roller
  - Cutter guide assembly -
- (3) Detach the spur gear by removing a screw (M3x8: 1pc).
- (4) Remove the E-rings from both sides, detach the load roller (bottom) by sliding it out to the front first, and then out through the side opening.
- \* The assembly is easier if the metal busings on the ends of the shaft are not removed when detaching the load roller (bottom)..



Bearing metal

#### 16. Removing the Master Making Unit

- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (3) Unplug the master flat cable from the master making PCB.
- (4) Remove a screw (M3x8: 1pc) and detach the flat cable bracket. Then unhook the flat cable support plate from the master making unit side frame (front) and let it hang down.

- continues on next page -



- (5) Pull out the flat cable guiding box in the direction indicated by an arrow mark on the photograph below, just enough to unhook from the master making unit, and disengage it from the master making unit.
- (6) Push both the flat cable guiding box and flat cable support plate back into the machine.
- (7) From the top of the master making unit, remove the four shoulder screws and detach the unit from the machine by lifting it.

#### - Precaution in assembly continues on next page -

Flat cable guiding box

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#### < Precautions in Disassembly >

- Insert the flanged portion of the flat cable guiding box through the support hooks on the bottom of the master making unit and engage the damper gear into the rack gear on the top surface of the flat cable guiding box.
- Place the cap portion of the flat cable bracket over the hooks on the front tip of the flat cable support plate and hook the catch on the flat cable bracket on the rectangular hole on the master making unit front frame.



Support hooks on the bottom of the master making unit

Rectangular hole to hook the flat cable bracket

Rack gear molded on the flat cable guiding box



Flanged portion on the flat cable guiding box



Hooks at the tip of the flat cable support plate

Cap portion on the flat cable bracket



#### 17. Removing the Master Stocker Roller (bottom)

- (1) Pull out the master making unit and switch off the machine power.
- (2) Remove the following components.
  - Write pulse motor assembly
  - Load pulse motor assembly
  - Cutter cover assembly
  - Master loading guide
  - Clamping guide roller
  - Cutter guide assembly
  - master stocker roller pulley
- (3) Remove the master making unit from the machine.
- (4) Detach the master stocker spring from the master stocker lever.
- (5) Detach the master stocker solenoid assembly by disconnecting the solenoid connector and removing screws (M3x6: 2pcs).

#### - continues on next page -



(6) Detach the master stocker roller (bottom) from the master making unit by removing E-rings and metal bushings from both ends of the roller.

Master stocker roller (bottom)



< Rear >

< Front >

#### < Precaution in Assembly >

The movement of the master stocker guide plate may stick if the master stocker spring is hooked twisted between the master stocker lever and master stocker guide plate. After hooking the spring, check and confirm that the master stocker guide plate opens and closes smoothly by pushing the plunger of the master stocker solenoid.



Master stocker solenoid

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## Adjustment

#### 1. Thermal Power of Thermal Print Head

The thermal power must always be adjusted each time a TPH (thermal print head) is replaced.

- (1) Activate test mode No.9874 to access into the protected area test mode.
- (2) Run test mode No.1234 (TPH resistance input) and enter the resistance value imprinted on a sticker attached on each TPH. Press START key to enter the value.
- (3) Press <RESET> key to return to return back to the normal operation mode.

#### 2. Master Clamp Range Adjustment

#### **Checks and adjustment**

- (1) Make a master and mark a short straight line at the center of the master along the edge of the clamp plate so the measurement of the mater under the clamp plate can be measured.
- (2) Open the clamp plate and measure from the leading edge of the master to the marking made. The measured length should be 18mm (plus or minus 1mm).
- (3) If the measurement is out of the specified range, make an adjustment using test mode No. 543 (master clamp range adjustment) clamp range adjustment.
  - \* Increasing the setting by the test mode increases the master clamp amount.

#### 3. Write Start Position Adjustment

#### **Checks and adjustment**

- (1) Run Test mode No.80 (Test print A) to make a master.
- (2) Remove the leading edge of the master by opening the clamp plate of the print drum and measure the distance from the leading edge of the master to the write start position (top of the image) to confirm that the distance is 63mm (plus or minus 1mm) measured at about the center of the master material.
- (3) If the measurement is out of the specified range, run test mode No.541 (Write start position adjustment) and make an adjustment.
  - \* Increasing the settings by the test mode decreases the distance, moving the image up on the master material.
  - \* Master Clamp Range Adjustment must be made before the Write Start Position Adjustment.

#### 4. Horizontal Write Position Adjustment

#### Checks and adjustment procedure

- (1) Run Test Mode No. 386 (Activates or deactivates center black dot setting).
- (2) Without turning off power, exit Test Mode and make a master without an original on the scanner stage glass.
- (3) Pull out the print drum, confirming that the black line on the master is within 186 mm  $\pm$  1 mm of the inside of the flange on the rear side.
- (4) If the measurement deviates from the range of standard values, start the protected area Test Mode No. 1233 (TPH master-making horizontal position adjustment) and make adjustments.
- \* Increasing the set value will move the horizontal write position on the master toward the rear, potentially resulting in the image having missing portions when printed if the value is raised too much.

#### 5. Master cut length adjustment

#### **Checks and adjustment**

- (1) Make a master and measure the length of the master margin at the tail end of the master on the drum (distance from where the ink ends on the master material to the tail edge of the master). The distance should be 10.5mm (plus or minus 1.5mm).
- (2) If the measured distance is out of the specified range, make an adjustment using test mode No.544 (master cut length adjustment).
  - \* Increasing the setting by the test mode increases length of the margin at the tail of the master, making the total length of each master longer.

#### 6. Master making image Elongation and Shrinkage adjustment

#### **Checks and adjustment**

- (1) Run Test mode No.81 (Test print B) to make a master, and then make prints.
- (2) Check by folding the printed paper and look through the top and bottom folded print. If the horizontal line loverlaps exactly with the vertical line or within plus/minus 1%, the adjustment is correct.
- (3) If the length of the horizontal and vertical lines differ for more than 1%, make an adjustment using test mode No.547 (master-making speed adjustment).
  - \* Increasing the setting by the test mode vertically elongates the image.

#### 7. Master making length adjustment

#### Checks and adjustment

- (1) Run the Test mode No. 80 (Test print A) to make a master.
- (2) Peel off the master from the print drum and measure the distance from the leading edge of the top image to the tailing edge of the bottom image created on the master. The distance should be 413mm.
- (3) If the measured length is not 413mm, make an adjustment using test mode No.542 (master making length adjustment).
  - \* Increasing the setting by the test mode increases the master making length.



Fold 45 degrees diagonally.

#### 8. Master Positioning Sensor sensitivity adjustment

Make following adjustments after replacing Master positioning sensor.

#### **Checks and adjustment**

- (1) Pull out the Master making unit. If master material is set in the unit, rewind the master material back on the master roll, so no master is under the Master positioning sensor.
- (2) Detach the Master-making unit front cover.
- (3) With the machine power ON, using a multimeter, measure the voltage between pin No.1 (+) and pin No.3 (-) of connector (CN6) of the Master making PCB.
- (4) Confirm that the measured voltage is between 0.8 volt and 1.2 volts.
- (5) If the voltage is not within the above given range, slowly and gently rotate both volume dials VR1 and VR2 all the way in the clockwise direction until the dials stop.
- (6) Slowly rotate the dial VR1 (rough adjustment dial) in the counterclockwise direction until the voltage becomes about 2 volts.
- (7) Then slowly rotate the dial VR2 (fine adjustment dial) in the counterclockwise direction until the voltage comes down to the correct voltage setting within 0.8 volt to 1.2 volts. (If possible, aim for 1.0 volt.)



## MEMO
# CHAPTER 16: PANEL MESSAGE

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	D01 , D02 , D03 . D04 , D05	. 16-30
	D07, D08, D09, D11, D13	. 16-31
	D18 , D19 , D22 , D32	. 16-32
	E01 , E02	. 16-33
	F01 , F02 , F03 , F05 , F08 , F10	16-34
	F12 , F15 , F17 , F18 , F21 , F22	16-35
	F24 , F30 , F31 , F32 , F37	. 16-36
	F40 , F41 , F42 , F43 , F44 , F45	16-37
	F47 , F48 , F49 , F52 , F58 , F60	16-38
	F61 , F62 , F63 , F64 , F65 , F66	16-39
	F67 , F73 , F74 , F78 , F79 , F85	16-40
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	H1 , H2 , H3 , H4 , H5 , H6	. 16-43
	J**	. 16-44
4.	Errors Requiring Special Attention	. 16-45

## 1. Explanation of Panel Messages

### Overview of the messages

#### 1) Error-code displays

If an error occurs, an error message is displayed on the LCD panel of the machine, in Error-code display and in graphics, to indicate the machine problem to the operator.

Error-code displays consist of an "error type" indicating the type of error and an "error-point number" indicating the error situation.

Example: T01-520	T01:	Error type
	520:	Error point

#### 1. Error type

The order of error priority is as specified below.

Error Type	Description	3	5	9
Т	Serviceman-call error	0	0	0
А	Jam error	0	0	0
В	Option error	0	0	0
С	Consumable error	0	0	0
D	Set check error	0	0	0
E	Warning (Serviceman call)	0	0	0
F	Warning (Other)	0	0	0
J	Paper/Original jam error	0	0	0
Н	Parameter value input	0	0	0

#### 2. Error point

The error-point classification are as specified below.

Error Point	Description	3	5	9
0XX	System (hardware, software, communication), Operation panel	0	0	0
1XX	Scanning section (scanner, AF), image processing	0	0	0
2XX	Master making section	0	0	0
3XX	Master-disposal section	0	0	0
4XX	Paper-feed/ejection section	0	0	0
5XX	Print-drum area	0	0	0
6XX	Printing adjustment section (vertical, horizontal, density)	0	0	0
7XX	Optional accessories	0	0	0

# 2. List of Error Types

Error Type	Description	3	5	9
T01	Main motor lock	0	0	0
T02	Elevator motor lock	0	0	0
T03	Clamp motor lock	0	0	0
T04	Overflow	0	0	0
T05	Print-positioning pulse-motor lock	0	0	0
T06	Horizontal pulse-motor lock	х	х	0
T08	Communication error with CI	0	Х	х
T09	Sorter error	х	Х	0
T10	Multi-tray paper feeder error	х	Х	0
T11	Print pressure pulse motor lock	0	0	0
T12	Master disposal area motor lock	0	0	0
T13	Cutter motor lock	0	0	0
T14	Flatbed error	0	0	0
T15	AF error	0	0	0
T17	Solenoid counter not connected	0	0	0
T18	Drum-lock solenoid lock	0	0	0
T19	Thermal-pressure motor lock	0	0	0
T20	Paper-ejection-section motor lock	0	0	0
T24	Inking motor lock	0	0	0
T25	No battery error	0	0	0
T89	Master compression plate error	0	0	0
T91	Operation panel EEPROM error	х	0	0
T92	Drum EEPROM write error	0	0	0
T93	NET-C hardware error	0	0	х
T93	NET-D hardware error	х	х	0
T94	Call service error: TPH	0	0	0
T95	FRAMerror	0	0	0
T96	Data not input	0	0	0
T97	PC card access error	0	0	0
T98	Hardware error	0	0	0
T98	Softdware error	0	0	0

Error Type	Description	3	5	9
A01	Master feed error	0	0	0
A02	Master loading error	0	0	0
A04	Master-removal error	0	х	х
A04	Master present on the print drum	Х	0	0
A05	Master present in the master-disposal	0		0
A03	area	0	0	0
A06	Check paper-feed tray	0	0	0
A07	Paper-feed error	0	0	0
A08	Paper jam on print drum	0	0	0
A09	Paper-ejection error	0	0	0
A10	AF original feed error	0	0	0
A16	Awaiting for the master to be removed	0	0	0
AIO	from the drum	0	0	0
A17	Cutter error	0	0	0
A34	Requesting for master to be reset	0	0	0

Error type	Description	3	5	9
B01	Keycard counter: No card	0	0	0
B02	Sorter: Call service error	X	х	0
B03	Sorter: Jam error	X	х	0
B04	Sorter: Door open error	X	х	0
B05	Sorter: Error (other)	X	х	0
B07	MTPF: Paper jam error (upper)	X	х	0
B08	MTPF: Feed joint passage cover open error	X	х	0
B09	MTPF: Paper jam error (lower)	X	х	0
B11	MTPF: Tray-1 paper jam error	X	х	0
B13	MTPF: Tray-1 tray open error	X	х	0
B15	MTPF: Transfer unit open error	X	х	0
B17	MTPF: Tray-2 paper jam error	х	Х	0
B19	MTPF: Tray-2 tray open error	х	Х	0
B21	Hold memory: Read/Write error	х	Х	0
B22	Job separator: Power OFF	0	0	0
B23	Job separator: No tape	0	0	0
B24	Job separator: Tape jam	0	0	0
B25	Sorter: Tray full error	X	Х	0
B26	Sorter: Paper remaining on tray error	х	Х	0
B27	Sorter: Stapler error	х	Х	0
B28	Sorter: Size error	х	Х	0
B31	Linked printer: Data communication error	0	0	0
B32	Network cable not connected	0	0	0
B33	IP address setup error	0	0	0
B34	Linked printer: error	0	Х	х
B34	Linked printer: No toner	х	0	0
B35	Linked printer: Call service error	X	0	0

Error Type	Description	3	5	9
C01	Replace ink cartridge	0	0	0
C02	Replace master roll	0	0	0
C03	Master disposal box full	0	0	0
C04	No paper on the paper feed tray	0	0	0
C06	MTPF: Tray-1 no paper	Х	Х	0
C07	MTPF: Tray-2 no paper	Х	Х	0
C08	No interposal paper: Standard paper feed tray	х	х	0
C09	No interposal paper: Tray-1	Х	х	0
C10	No interposal paper: Tray-2	Х	х	0

Error type	Description	3	5	9
D01	Print drum not set	0	0	0
D02	Incorrect print drum	0	0	0
D03	Ink cartridge not set	0	0	0
D04	Incorrect ink cartridge	0	0	0
D05	Master not set	0	0	0
D07	Master-disposal box not set	0	0	0
D08	Master making unit not set	0	0	0
D09	Master making unit cover not closed	0	0	0
D11	Front cover not closed	0	0	0
D13	Rear cover not closed	0	0	0
D17	Incorrect master roll	0	0	0
D18	Print drum is ready for removal	0	0	0
D19	Master making unit is ready for removal	0	0	0
D22	Print drum removal command	0	0	0
D23	AF cover not closed	х	х	0

Error type	Description	3	5	9
E01	Replace battery	0	0	0
E02	Maintenance call	0	0	0

Error type	Description	3	5	9
F01	No master on print drum	0	0	0
F02	Master image larger than paper size: 1	х	0	0
F03	Multi-up printing - Incorrect paper size	0	0	0
F05	Print quantity less than the minimum print quantity setting	0	0	0
F08	Auto tray selection: Wrong paper size	х	х	0
F10	Master image larger than paper size: 2	х	0	0
F12	Auto tray selection: Irregular size original	х	х	0
F15	Auto control paper receiving tray. Large paper remaining on the tray	х	Х	0
F17	Incorrect print drum size	х	0	0
F18	Reproduction ratio error	х	х	0
F21	Multi-Up: No original on AF	0	х	х
F22	Multi-Up: No original on FB	0	х	х
F24	Auto reproduction: Error between original size and paper size	х	х	0
F30	Multiple paper feed error	х	х	0
F31	Auto control paper receiving tray. Paper guide fence error	х	х	0
F32	Storage data: Storage area full	х	х	0
F37	Book mode: AF cannot be used	0	0	0
F40	Auto trav selection: No paper on standard paper feed trav	X	Х	0
F41	Auto tray selection: No paper in Tray-1	х	х	0
F42	Auto trav selection: No paper in Trav-2	х	х	0
F43	AF cannot be used in book mode	х	0	0
F44	Auto reproduction size: Error between original size and paper size	х	х	0
F45	Linked printer error	х	0	0
F47	Linked printer error - No paper	х	0	0
F48	Multi-Up: Wrong original size	х	Х	0
F49	Multi-Up: No original	х	х	0
F52	Linked printer error - Job interrupted	х	0	0
F58	Book editing not available with AF	0	0	х
F58	Book editing not available with AF	х	х	0
F60	Master-making confirmation when linked printer is selected (when print quantity = 0)	х	0	0
F61	Linked printer: Wrong paper size	х	х	0
F62	Linked printer auto selection: Linked printer error	х	0	0
F63	Linked printer: Auto tray selection not available for irregular size original	х	х	0
F64	Selected function not available while processing print data from PC	х	х	0
F65	Scan mode: Auto page size selection not available for irregular size original	х	х	0
F66	Linked printer: Saddle-stitch error	х	0	0
F67	Linked printer: Rotation sort error	х	0	0
F73	Linked printer: Auto tray selection not available with selected reproduction ratio	х	х	0
F74	High speed printing: Printer temperature is too low for 180ppm high speed printing	х	х	0
F78	Editor: Stage cover is opened	х	х	0
F79	Editor: No original during re-scanning	x	x	0
F85	External CI: Scanning not possible with external CI not connected	х	х	0
F86	Auto trav selection: Trav cannot be selected with selected reproduction ratio	х	х	0
F87	Auto trav selection: Multi-Up not possible	x	х	0
F88	Auto tray selection: 2-Up selection error	x	x	0
F89	Interposer mode: Wrong paper size	x	x	0
F90	Stock management (ink)	x	0	0
F91	Stock management (master)	x	0	0
F92	Original size: Larger than the master-making size	x	х	0
F93	Reproduction size: Larger than the master-making size	x	x	0
F94	Protect mode: Discard current master	x	0	0
F95	Protect mode: Confirmation	х	0	0
	1			

Error type	Description	3	5	9
H01	Ink color setting	0	0	0
H02	Print density fine adjustment	0	0	0
H03	Proof-print density adjustment (ink)	0	0	0
H04	Master-making density	0	0	0
H05	Print density fine adjustment	0	0	0
H06	Proof-print density adjustment (master)	0	0	0

# 3. Detailed List of Panel Messages

# Service call errors

Error Type	T01 [Main motor lock]			
Description	T01-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service			
lo reset display	Press Reset Key			
Error Point	Error Conditions	3	5	9
520	Main encoder sensor does not go ON/OFF within 10 milliseconds after the main motor activates.	0	0	х
520	Main motor lock detection due to main motor FG sensor count reduced to 50% of the set speed. (The detection is not made for the first 2 seconds from the main motor movement.)	x	x	0
521	B-positioning sensor status does not change even after 3,033 pulses after the main motor activates.	0	0	0
524	Clamp unit is not at the home position while the print drum is in operation (except during master disposal).	0	0	0
537	Print drum failed to stop at position B.	0	0	0
538	Print drum is not locked during operation. (Drum lock sensor: OFF)	0	0	0

Error Type	T02 [Elevator motor lock]			
	T02-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset display	Press Reset Key or turn OFF and ON the power.			
Error Point	Error Conditions	3	5	9
400	Both the upper and lower limit sensors are ON at the same time.	0	0	0
401	Overload current was detected in the elevator motor.	0	0	0
404	The lower-limit sensor does not go OFF within 2 seconds after the elevator motor	0	0	0
404	operates in the raising direction from the lower-limit position.	0	0	0
405	The upper-limit sensor does not go ON within 12 seconds after the elevator motor	0	0	0
405	operates in the raising direction.	0	0	0
406	The upper-limit sensor does not go OFF within 2 seconds after the elevator motor		0	0
400	operates in the lower direction from the upper-limit position.	0	0	0
407	The lower-limit sensor does not go ON within 12 seconds after the elevator motor		0	0
407	operates in the lowering direction.	0	0	0
408	The upper-limit sensor is OFF continuously for over 2 seconds during operation of the	0	0	0
408	elevator servo action to raise the feed tray.	0	0	0

Error Type	T03 [Clamp motor lock]			
	T03-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset display	Press Reset Key			
Error Point	Error Conditions	3	5	9
500	Clamp sensor A is OFF after the completion of the clamp unit initialization or home	0	0	0
500	positioning movement.	0	Ŭ	U
501	Clamp sensor B does not change within 1 second from the time the clamp motor	0	0	0
501	operates in the forward direction.	0	Ŭ	Ŭ
502	Clamp sensor B does not change within 1 second from the time the clamp motor	0		0
502	operates in the reverse direction.	0	Ŭ	Ŭ
503	Clamp sensor A does not go ON within 3 seconds when the clamp unit makes	0	0	0
505	initialization movement.	0	U	U
504	At the start of Clamp plate open/close action, the detection sequence of clamp-sensors A	0		
504	& B are abnormal.	0	U	U
505	At the start of print drum Position-A compensation movement, the detection sequence of	0		0
505	clamp-sensors A & B are abnormal.	0	U	U
506	At the start of Clamp unit Home-positioning movement, the detection sequence of clamp-	0		
500	sensors A & B are abnormal.	0		U
507	Clamp sensor A is ON after the clamp release action is completed.	0	0	0
508	Clamp sensor A is ON after the A-position compensating movement is completed.	0	0	0
545	Clamp unit is not in the home position while the print drum is in movement (cause due to	0		0
545	the clamp motor).	0		0

Error Type	T04 [Ink overflow]			
	T04-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Press Reset Key after correcting the ink overflow condition. (No ink on the ink overflow			
display	sensor.)			
Error Point	Error Conditions	3	5	9
513	The overflow sensor is ON for a set number of times in succession during the 10-	0	0	
515	millisecond-interval overflow-sensor check.	0	0	U

Error Type	T05 [Vertical print positioning pulse motor lock]			
	T05-xxx			
Description	!!System Error!!			
Becomption	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset display	Press Reset Key or turn the power OFF and ON.			
Error Point	Error Conditions	3	5	9
	The vertical-centering sensor does not switch ON even when the vertical-positioning			
603	pulse motor activated in the image-down direction for 5.0 seconds during vertical home	0	х	х
	positioning movement.			
	The vertical-centering sensor does not switch ON even when the vertical-positioning			
603	pulse motor activated in the image-down direction for 5.5 seconds during vertical home	х	0	х
	positioning movement.			
	The vertical-centering sensor does not switch ON even when the vertical-positioning			
603	pulse motor activated in the image-down direction for regulation time during vertical home	х	х	0
	positioning movement.			
	The vertical-centering sensor does not switch OFF even when the vertical-positioning			
604	pulse motor activated in the image-up direction for 5.0 seconds during vertical home	0	х	х
	positioning movement.			
	The vertical-centering sensor does not switch OFF even when the vertical-positioning			
604	pulse motor activated in the image-up direction for 5.5 seconds during vertical home	х	0	х
	positioning movement.			
	The vertical-centering sensor does not switch OFF even when the vertical-positioning			
604	pulse motor activated in the image-up direction for regulation time during vertical home	х	х	0
	positioning movement.			
	Even though the vertical positioning motor stopped according to the vertical centering			
605	sensor detection, the stopping position does not correspond with the programmed	0	0	0
	position. (GA control error).			
612	The print positioning key is pressed with vertical-print-position information undefined.	0	0	0
610	The vertical positioning motor does not end its operation within the set period during the	v	×	0
019	recovery movement to rotate -98 pulses.	^	^	0
632	The vertical positioning motor does not end its operation within the set period in the pulse	v	v	0
632	count stop mode, or in the sensor stop mode after the actuator is detected by the sensor.	*	×	0

Error Type	T06 [Print drum horizontal pulse motor lock]			
Description	T06-xxx !!System Error!!			
	Press Reset Key If Recovery has Failed, Call Service			
To reset display	Press Reset Key or turn the power OFF and ON.			
Error Point	Error Conditions	3	5	9
607	The actuator plate does not escape from the horizontal HP sensor when the print drum slides to the right during the horizontal HP movement.	x	x	0
608	The actuator plate does not escape from the horizontal HP sensor when the print drum slides to the left during the horizontal HP movement.	x	x	0
609	Even though the horizontal positioning pulse motor stopped after the sensor stop mode, the sensor detection status did not match with the programmed status.	x	x	0
611	Timeout error during print drum horizontal movement.	х	Х	0
617	Horizontal movement system information error.	х	х	0
618	The clamp unit is not in its HP position when the print drum starts its horizontal movement.	x	x	0
633	The horizontal positioning pulse motor does not end its operation within the set period in the pulse count stop mode, or in the sensor stop mode after the actuator is detected by the sensor.	x	x	0

Error Type	T08 [Communication error with CI]			
	T08-xxx	ľ		
Deceriation	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset		1		
display	I I I I I I I I I I I I I I I I I I I			
Error Point	Error Conditions	3	5	9
951	The file is not a correct RINC data.	0	х	Х

Error Type	T09 [Sorter error]			
Description	T09-xxx			
	!!System Error!!			
	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset				
display	I un the power OFF and ON.			
Error Point	Error Conditions	3	5	9
003	Sorter communication error.	Х	х	0
700	Sorter communication error: The /CTS does not change to LOW even after 3 seconds	v	v	0
700	from power ON.	^	^	0
701	Sorter communication error: The machine status information is not received from the	v	v	0
701	sorter even after 0.2 seconds from the initialization command.	^	^	0
712	Sorter communication error: The retry command was not received.	Х	х	0
720	Sorter communication error: The retry command was not received twice consecutively.	Х	х	0

Error Type	T10 [Multi-tray paper feeder error]			
	T10-xxx	Ī		
Description	!!System Error!!			
	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset		Ī		
display	I un the power OFF and ON.			
Error Point	Error Conditions	3	5	9
801	The machine model status did not come back from MTPF when powered ON.	Х	х	0
802	Ready command did not come back from MTPF at the start of print operation.	Х	х	0
803	The status information did not come back from MTPF.	х	х	0
904	Call service error command is received from MTPF. (No encoder sensor data even after		v	
004	0.1 second from the time the FL Transfer Motor activated.)	X	x	0
840	Unknown command was received from MTPF.	Х	Х	0
844	Communication error was received from MTPF.	Х	х	0
845	Overload current detected on MTPF Tray-1 elevator motor.	Х	Х	0
846	Overload current detected on MTPF Tray-2 elevator motor.	Х	Х	0
847	Elevator motor lock on MTFP Tray-1.	х	х	0
848	Elevator motor lock on MTFP Tray-2.	х	х	0

Error Type	T11 [Print pressure pulse motor lock]			
	T11-xxx	1		
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Press Reset Key or turn the power OFF and ON.			
Frror Point	Error Conditions	3	5	9
	Print pressure HP sensor does not switch ON within 5 seconds after the print pressure		-	•
600	pulse motor activated towards higher pressure during home positioning operation.	0	0	х
	Print pressure HP sensor does not switch ON within 3.9 seconds after the print pressure			0
600	pulse motor activated towards higher pressure during home positioning operation.	X	х	0
004	Print pressure HP sensor does not switch OFF within 5 seconds after the print pressure			
601	pulse motor activated towards lower pressure during home positioning operation.	0	0	х
601	Print pressure HP sensor does not switch OFF within 4.6 seconds after the print pressure	x		0
001	pulse motor activated towards lower pressure during home positioning operation.	×	X	0
	Even though the print pressure control pulse motor stopped according to the print			
602	pressure HP sensor detection, the stopping position does not correspond with the	0	0	0
	programmed position. (GA control error).			
614	Print pressure pulse motor does not complete its movement even after 7 seconds from			v
014	the print pressure HP movement to move -1000 pulses.	0	0	X
614	Print pressure pulse motor does not complete its movement even after 1.2 time the set	v	v	0
014	period passed from the print pressure HP movement to move -1000 pulses.	^	^	0
	The print pressure pulse motor does not end its operation within the set period in the			
631	pulse count stop mode, or in the sensor stop mode after the actuator after the actuator is	0	0	0
	detected by the sensor.			

Error Type	T12 [Master disposal area motor lock]			
Description	T12-xxx !!System Error!! Press Reset Key If Recovery has Failed. Call Service			
To reset display	Press Reset Key.			
Error Point	Error Conditions	3	5	9
300	Overload current was detected in the master disposal motor.	0	0	0
301	Master compression motor lock when moving compression plate up.	0	0	0
305	Master compression sensor does not go ON within 6.5 seconds after the master compression motor operates in the return direction.	0	0	х
305	Master compression sensor does not go ON within 7.5 seconds after the master compression motor operates in the return direction.	x	x	0
306	Master compression sensor does not go OFF within 2 seconds after the master compression motor operates in the compress direction.	0	0	0
307	Master compression plate maximum position is not detected within 6.5 seconds after the master compression motor operates in the compress direction.	0	0	x
307	Master compression plate maximum position is not detected within 7.5 seconds after the master compression motor operates in the compress direction.	x	x	0
309	The FG sensor status on the master compression motor does not change even after 2 seconds from the motor activation.	0	x	x
309	Master-compression-motor encoder sensor count did not change as the master compression motor activated in the compress direction and moved out from the home position.	x	0	x
309	The FG sensor status on the master compression motor did not change for 50 consecutive times during 10 millisecond polling.	x	x	0
316	Master-compression-motor encoder sensor count did not change within 10 milliseconds after the master compression motor activated.	0	0	x
316	The master-disposal-motor FG sensor count dropped to 50% of the set speed. (The speed check starts 2 seconds after the activation of the motor.)	x	x	0

Error Type	T13 [Cutter motor lock]			
	T13-xxx	Ī		
Description	IISystem ErrorII			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Pross Reset Key	Ī		
display	Fless Reservey.			
Error Point	Error Conditions	3	5	9
202	Cutter HP switch does not go OFF within 100 milliseconds after the cutter motor is	0	0	0
203	activated.	0	0	0
204	Cutter HP switch does not go ON within 300 milliseconds after the cutter motor is		0	0
204	activated.	U	0	0
205	Master-positioning sensor is ON when the print drum rotates through the preset angle		0	0
205	following master cutting.	U	0	U
222	Cutter HP switch does not go ON within 450 milliseconds after the cutter home		0	0
	positioning operation started.	0	0	0

Error Type	T14 [Flatbed error]			
	T14-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Press Depativou	1		
display	Press Resei key.			
Error Point	Error Conditions	3	5	9
112	The scanner HP sensor does not go OFF within given time.	х	Х	0
113	The scanner HP sensor does not go ON within given time.	х	Х	0
114	Incorrect main-unit data.	х	Х	0
115	The scanner operation is not completed within the set time.	0	0	0
116	Timeout error for black shading compensation.	0	0	0
117	Timeout error for white shading compensation.	0	0	0
118	Software error	0	0	Х
123	Offset adjustment not completed within set time.	0	0	0
124	Gain adjustment not completed within set time.	0	0	0
125	Offset adjustment not completed.	0	0	0
126	Gain adjustment not completed.	0	0	0
135	Malfunction detected during offset adjustment.	0	0	0
136	Malfunction detected during gain adjustment.	0	0	0
137	Malfunction detected during black shading compensation.	0	0	0
138	Malfunction detected during white shading compensation.	0	0	0
160	The scanner model information is missing.	0	0	Х
170	Even though the read pulse motor stopped according to the sensor detection, the	0	0	
170	stopping position does not correspond with the programmed position. (GA control error).		0	0

Error Type	T15 [AF error]			
	T15-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset display	Turn OFF and ON the power.			
Error Point	Error Conditions	3	5	9
100	AF original IN sensor adjustment error.	х	Х	0
101	AF-EEPROM error.	х	Х	0
110	ABC (auto-base-control) timeout. The original does not move from the ABC scanning position on the AF unit.	0	0	0
111	Operation command was made to the AF unit without 24 volts supplied to the AF unit.	0	0	0
130	Timeout error in receiving reply from the AF unit after command signal was sent from the Riso printer to the AF unit.	0	0	0
131	Riso printer received an undefined command from the AF unit.	0	0	0
132	Riso printer detected communication sequence error from the AF unit.	0	0	0
133	Communication error with AF unit (ACK, NAK, or receiving channel error).	0	0	0
134	Riso printer could not send command to the AF unit within the set time.	0	0	0
161	AF unit not connected.	0	0	0

Error Type	T17 [Solenoid counter not connected]			
	T17-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Connect the colonaid counter			
display				
Error Point	Error Conditions	3	5	9
020	Solenoid counter is not connected.	0	0	0

Error Type	T18 [Drum-lock-solenoid lock]			
	T18-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Pross Reset Koy			
display	riess reservey			
Error Point	Error Conditions	3	5	9
531	Print drum lock sensor is still ON even after 100 milliseconds after the print drum lock	0	0	0
531	solenoid is activated.	0	0	0

Error Type	T19 [Thermal-pressure motor lock]			
	T19-xxx	Ī		
Description	IISystem ErrorII			
	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Press Reset key	Ī		
display	T TESS TRESET REY			
Error Point	Error Conditions	3	5	9
207	TPH pressure sensor does not go OFF within 2 seconds after the thermal-pressure	0	0	0
207	motor activates in the decompressing direction, or during home positioning operation.	U	0	U
208	TPH pressure sensor does not go ON within 2 seconds after the thermal-pressure motor	0	0	0
200	activates in the decompressing direction.	U	0	U
216	TPH pressure sensor does not go OFF within 2 seconds after the thermal-pressure	0	0	0
210	motor activates in the compressing direction.	U	0	U
217	TPH pressure sensor does not go ON within 2 seconds after the thermal-pressure motor	0	0	0
217	activates in the compressing direction.	0	0	0

Error Type	T20 [Paper-ejection-section motor lock]			
	T20-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Press Reset key			
display				
Error Point	Error Conditions	3	5	9
414	Paper ejection wing HP sensor status does not change within set time after the paper	>	0	0
	ejection wing motor activated for the wing home position movement.	^	U	U
415	Paper-ejection-wing home sensor does not go OFF within 7 seconds after the paper	v	0	v
415	ejection wing motor activates in the clockwise direction from the home position.	^	0	^
415	The paper ejection wing HP sensor does not change from OFF to ON even though the	v	v	0
	paper ejection wing pulse motor is activated for a given time.	^	^	0
416	Overload current was detected in the paper-ejection motor.	0	0	0
137	Paper-ejection encoder sensor status does not change within 10 milliseconds after the	0	0	v
437	paper-ejection motor is activated.	0	0	^
427	The paper ejection motor FG sensor pulse count dropped to 50% of the set speed.	v	v	0
437	(The detection starts 2 seconds after the paper ejection motor is activated.)	X	X	0
	Even though the paper ejection pulse motor stopped after the sensor stop mode, the			
442	sensor detection status did not match with the programmed status, or the motor does not	х	0	х
	stop within the set time in the pulse count stop mode.			
440	Though the paper ejection wing motor stopped correctly at the wing sensor position, the	v		0
442	stopping position does not correspond with the programmed position (GA control error).	X	X	0
	The paper ejection pulse motor does not end its operation within the set period in the			
456	pulse count stop mode, or in the sensor stop mode after the actuator is detected by the	х	х	0
	sensor.			

Error Type	T24 [Inking motor lock]			
	T24-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Proce Resat key or turn the newer OEE and ON			
display	riess Reservey of turn the power of r and on.			
Error Point	Error Conditions	3	5	9
530	Inking-motor FG sensor status does not change within 20 milliseconds after the inking-		0	0
539	motor is activated.	0	0	0

Error Type	T25 [Replace Battery]			
	T25-xxx			
Description	!!Low Battery!!			
	Call Service			
To reset	Poplace the battery			
display	Replace the battery.			
Error Point	Error Conditions	3	5	9
0.26	Battery voltage is too low when the power is turned ON.		0	0
026	(Readjust the machine clock after replacing the battery.)		0	0

Error Type	T89 [Master compression plate: incorrect position]			
	T89-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Turn the power OFF and ON.			
display				
Error Point	Error Conditions	3	5	9
	The clamp unit is in the lowered position and the master compression plate is not in the			
350	HP position when the print drum starts its movement. (This is to protect the machine	0	0	0
	parts.)			

Error Type	T91 [Panel EEPROM error]			
	T91-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Press Reset Key			
display	T less Reservey			
Error Point	Error Conditions	3	5	9
968	Panel EEPROM read error.	х	0	0
969	Panel EEPROM write error.	х	0	0
976	Panel EEPROM check-sum error.	х	0	0
977	Panel EEPROM verify error.	х	0	0

Error Type	T92 [Drum EEPROM write error]			
	T92-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Pross Reset Koy			
display	riess Reservey			
Error Point	Error Conditions	3	5	9
570	EEPROM on the print drum PCB is being accessed while the print drum is in releasing	0	0	
570	action from the machine.	0	0	0

Error Type	T93 [NET-C / NET-D hardware error]			
	T93-xxx	Ī		
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset		Ī		
display	Turr the power of F and ON.			
Error Point	Error Conditions	3	5	9
032	No reply from the NET-C or NET-D network interface card while accessing to the network		0	0
952	interface card.	0	0	0
933	No response from NET-C for 90 seconds during NET-C initialization.	0	0	Х
933	No response from NET-D for 90 seconds during NET-D initialization.	Х	Х	0

Error Type	T94 [Call service error: TPH]			
	T94-xxx	Ī		
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset		Ĩ		
display				
Error Point	Error Conditions	3	5	9
	TPH code does not match with the machine code when the power is turned ON with the			
225	master-making unit in operating position or when the master-making unit is inserted in	0	0	0
	operating position while the power is ON.			

Error Type	T95 [FRAM error]			
	T95-xxx			
Description	<pre>!!System Error!!</pre>			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset				
display	Tum the power OFF and ON.			
Error Point	Error Conditions	3	5	9
050	Machine serial-number information sent from SH-PCB does not match with the machine	0	0	0
039	serial number information in the MCTL PCB.	0	0	0

Error Type	T96 [Data not input]			
	T96-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Input the parameters using test mode			
display	input the parameters using test mode.			
Error Point	Error Conditions	3	5	9
171	TPH resistance value not input.	0	0	0
172	Scanner adjustment not completed.	0	0	0
433	Paper size width potentiometer test-mode setting is not completed.	0	0	0
452	Too small difference between the 105mm and 297mm A/D data of the paper feed tray pape	0	Х	Х
569	Either the print drum color information or ink category information is still not input.	0	0	0
613	Print pressure data missing.	0	0	0
872	MTPF Tray-1 paper width potentiometer value is not input.	Х	Х	0
873	MTPF Tray-2 paper width potentiometer value is not input.	Х	Х	0
972	REv data storage area is not initialized.	0	0	0

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Error Type	T97 [PC card access error]			
	T97-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset	Prop Popet Key			
display				
Error Point	Error Conditions	3	5	9
939	PC card access error: PC card not set.	0	0	0
940	PC card access error: PCMCIA card information error.	0	0	0
941	PC card access error: CF card device error.	0	0	0
942	PC card access error: Same file already exists.	0	0	0
943	PC card access error: Not formatted.	0	0	0
944	PC card access error: Media ID error.	0	0	0
945	PC card access error: Media error (cannot access the PC card).	0	0	0
946	PC card access error: Media error (not enough blank space available on CF card).	0	0	0
990	PC card access error: Specified file not found on the selected drive.	0	0	0
991	PC card access error: Accessed to the file not opened.	0	0	0
992	PC card access error: File information folder is already in use.	0	0	0
002	PC card access error: Incorrect setting on the readout address when sending data to the		0	0
993	machine.	0	0	0
994	PC card access error: Unsuccessful file deleting.	0	0	0

Error Type	T98 [Hardware error]			
	T98-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset display	Turn power OFF and ON.			
Error Point	Error Conditions	3	5	9
	No reply from SH PCB. If SH PCB signal is detected at machine power ON, but if the PCB			
002	communication terminates and T98-069 error is detected, the error point is rewrote to this	0	0	0
	T98-002 error message.			
005	Hardware error	0	0	0
006	FRAM check-sum error	0	0	0
025	Defective RF PCB (Unsuccessful initial communication with RF PCB).	0	0	0
034	Unable to write on EEPROM on the machine. (Cannot access EEPROM).	0	0	0
035	CRC error on EEPROM on the machine (Defective EEPROM data).	0	0	0
038	Information between the PCB and EEPROM does not match.	0	0	0
039	Incorrect EEPROM.	0	0	0
051	Communication error with the touch-panel controller.	х	0	0
053	Unsuccessful data readout from the Memory setting (program, mode, user paper).	0	0	0
054	Unsuccessful data writing of the Memory setting (program, mode, user paper).	0	0	0
055	Machine code number sent from SH PCB does not match with that from the Mechanical control PCB.	0	0	0
063	Test mode setting is beyond the adjustable range.	0	0	0
064	Communication error between SH PCB and MCTL PCB.	0	0	0
065	Communication error between SH PCB and MCTL PCB (01) - on MCTL PCB side.	0	0	0
067	Communication error between SH PCB and MCTL PCB (03) - on MCTL PCB side.	0	0	0
068	Communication error between SH PCB and MCTL PCB (04) - on MCTL PCB side.	0	0	0
069	Communication error between SH PCB and MCTL PCB (05) - on MCTL PCB side.	0	0	0
070	Communication error between SH PCB and MCTL PCB (06) - on MCTL PCB side.	0	0	0
071	Communication error between SH PCB and MCTL PCB (07) - on MCTL PCB side.	0	0	0
072	Communication error between SH PCB and MCTL PCB (08) - on MCTL PCB side.	0	0	0
073	Communication error between SH PCB and MCTL PCB (09) - on MCTL PCB side.	0	0	0
074	Communication error between SH PCB and MCTL PCB (10) - on SH PCB side.	0	0	0

Error Type	T98 [Hardware error]			
	T98-xxx			
Decerintian	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset				
display				
Error Point	Error Conditions	3	5	9
075	Communication error between SH PCB and MCTL PCB (11) - on SH PCB side.	0	0	0
076	Communication error between SH PCB and MCTL PCB (12) - on SH PCB side.	0	0	0
077	Communication error between SH PCB and MCTL PCB (13) - on SH PCB side.	0	0	0
078	Communication error between SH PCB and MCTL PCB (14) - on SH PCB side.	0	0	0
079	Communication error between SH PCB and MCTL PCB (15) - on SH PCB side.	0	0	0
080	Communication error between SH PCB and MCTL PCB (16) - on SH PCB side.	0	0	0
081	Communication error between SH PCB and MCTL PCB (17) - on SH PCB side.	0	0	0
082	Communication error between SH PCB and MCTL PCB (18) - on SH PCB side.	0	0	0
083	Communication error between SH PCB and MCTL PCB (19) - on SH PCB side.	0	0	0
084	Communication error between SH PCB and MCTL PCB (20) - on SH PCB side.	О	0	0
098	Machine serial number information on EEPROM does not match with that of FRAM.	0	0	0
119	Defective image PCB (memory check error on the image processing IC).	0	0	0
120	Timeout on the scanner serial communication.	0	0	0
129	Defective scanner gate array PCB (memory check error on the gate array).	0	0	0
245	Timeout error on master transfer during master-making (related to Write pulse motor).	0	0	0
246	Timeout error on master transfer during master-making (related to Load pulse motor).	0	0	0
	The light emittance from the Paper sensor (send) exceeded the maximum allowance			
422	during the Automatic Multiple Paper Feed Adjustment [paper sensor sensitivity	х	х	0
	adjustment] by Test Mode No.705.			
	The light emittance from the Paper sensor (send) exceeded the minimum allowance			
423	during the Automatic Multiple Paper Feed Adjustment [paper sensor sensitivity	х	х	0
	adjustment] by Test Mode No.705.			
921	The USB controler chip is not responding when PC and printer is connected by USB cable.	х	х	0
934	Communication error between MCTL PCB and RF PCB. (on FR PCB side)	0	0	0
935	Communication error between MCTL PCB and RF PCB. (on MCTL PCB side)	0	0	0
937	Undefined serial number.	0	0	0
938	FRAM version down.	0	0	0
947	24V-A does not go ON. (Possible broken Fuse for 24V-A area).	0	0	0
948	24V-A does not go ON. (Possible broken Fuse for 24V-B area).	0	0	0
949	24V-A does not go OFF.	0	0	0
950	24V-B does not go OFF.	0	0	0
952	SH3M2 PCB flash memory check-sum error.	0	0	0
953	Unsuccessful writing on the SH3M2 PCB flash memory	0	0	0
960	Unsuccessful readout from the SH3M2 PCB flash memory	x	0	0
961	SH3M2 PCB flash memory unused.	x	0	0
978	Incorrect power ON command from MCTL PCB when machine power turned ON	x	0	0
979	Abnormal flash memory setting on the SH3M2 PCB	×	0	0
983	24V-C does not an ON (Possible broken Fuse for 24V-C area)	~	v	0
984	24V-C does not an OFF	^ 	^ V	0
504		^	^	

Error Type	T99 [Software error]			
	T99-xxx			
Description	!!System Error!!			
Description	Press Reset Key			
	If Recovery has Failed, Call Service			
To reset				
display	Tum power of F and ON.			
Error Point	Error Conditions	3	5	9
181	Timeout on Image processing time.	Х	Х	0
982	Wrong loader.	х	0	Х

### Jam errors

Error Type	A01 [Master feed error]			
	A01-xxx			
Description	Master Mis-Feed			
	Pull Out Master Making Unit and Rewind Master Roll, then Reset Master in Place.			
To reset	Open the master-making unit and rewind the master material on the master roll, and then			
display	reset the master, or turn OFF the power and power back ON.			
Error Point	Error Conditions	3	5	9
201	Master-positioning sensor does not go ON even after the write pulse motor is activated	0	0	0
201	during the master-positioning, master-cut, or master-loading operation.		0	U
202	Master-positioning sensor does not go OFF even when the write pulse motor is reversed		0	0
202	during the master-positioning or at start of master-making operation.		0	0
211	Master-positioning sensor is ON during standby.	0	0	0
214	Master-positioning sensor is ON at the start of master making.	0	0	0
215	Faulty gate-array control for the write pulse motor (motor does not stop within set time).	0	0	0

Error Type	A02 [Master loading error]			
	A02-xxx			
Description	Master Loading Error			
	Pull Out Print Cylinder and Discard Master.			
To reset	Pull out the print cylinder and set it back			
display	T di out the print cymoer and setteback.			
Error Point	Error Conditions	3	5	9
500	Master-loading sensor was OFF when the master was checked at a specified drum angle		0	0
509	during the master-loading operation.	0	0	0

Error Type	A04 [Master disposal error]			
	A04-xxx			
Description	Master Disposal Error			
	Pull Out Print Cylinder and Discard Master.			
To reset	Pull out the print drum and push it back in			
display	Fuil out the philit druht and push it back in.			
Error Point	Error Conditions	3	5	9
303	Check Print Drum - Master disposal error / Master disposal jam.	0	0	0

Error Type	A05 [Master present in the master disposal area]			
	A05-xxx			
Description	Master Jammed in Disposal Unit			
	Pull Out Master Disposal Box and Remove Jammed Master			
To reset	Pull out master disposal box and place it back after removing the jammed master in the	1		
display	master disposal area, or turn OFF the power and power back ON.			
Error Point	Error Conditions	3	5	9
304	Master disposal jam sensor was ON at the completion of the master disposal.	0	0	0
312	Master disposal jam sensor was ON at the start of the master making.	0	0	0
315	Master disposal jam sensor was ON after the completion of the recovery movement.	0	0	0

Error Type	A06 [Check paper feed tray]			
	A06-xxx			
Description	Safety SW on Standard Feed Tray is Activated			
	Reset paper on Standard Feed Tray			
To reset	Change the condition of the paper-feed-tray upper/lower safety switches to ON condition,			
display	or turn OFF the power and power back ON.			
Error Point	Error Conditions	3	5	9
402	Either the upper or lower safety switch of the paper-feed-tray is OFF.		0	0
403	Note: This detection is not made when the machine is in low-power-mode (24V OFF).	0	0	0

Error Type	A16 [Waiting for the master to be removed from the drum]			
	A16-xxx	Ī		
Description	Master Remains on Print Cylinder (Drum)			
	Pull Out Print Cylinder and Remove Master			
To reset	Pull out the print cylinder (drum) remove the master around it and insert it back			
display	r un out the print cymucer (drunn), remove the master around it and insert it back.			
Error Point	Error Conditions	3	5	9
525	Waiting for the master to be removed from the print cylinder (drum).	0	0	0

Error Type	A17 [Cutter error]			
	A17-xxx	Ī		
Description	System Error in Master Making Unit			
	Take Out Master and then Close Master Making Unit Cover			
To reset	Open the Master making unit remove the master and close the master making unit			
display	open the master making thit, remove the master and close the master making thit.			
Error Point	Error Conditions	3	5	9
200	Cutter HP switch is OFF when master-making starts, when the master material is set in	0	0	0
209	the master making unit, or when the machine goes into idle condition.	0	0	0

Error Type	A34 [Requesting for the master to be reset]			
	A34-xxx	Ī		
Description	Master Not Set in Place			
	Insert Lead Edge of Master into Master Entrance and Close Master Making Unit			
To reset	Open the Master making unit, re-insert the master material into the master making unit	Ī		
display				
Error Point	Error Conditions	3	5	9
218	Reqesting for the master material to be reset into the master making unit.	0	0	0

Error Type	A07 [Paper feed error]			
Error Point	Error Conditions	3	5	9
409	Paper-ejection sensor was OFF when the paper should have arrived, and the paper sensor was ON when the machine stopped (Paper misfeed).	0	0	0
412	Paper sensor was OFF three times in succession when a paper misfeed was detected (paper misfeed).	0	0	0
413	Paper sensor was still ON (detecting paper) when the paper should have went out from the sensor.	x	x	0
418	The paper sensor was ON at the start of machine operation when the START button was pressed.	0	0	0
429	Paper feed error (recovery error).	0	0	0
432	Paper sensor was ON when the machine went into paper feed retry movement after a paper misfeed.	0	0	0

# Jam error message which comes up after pressing the asterisk key in $\mathsf{J}^{\star\star}$ message

Error Type	A08 [Paper jam on print drum]			
Error Point	Error Conditions	3	5	9
410	Paper-ejection sensor was OFF when paper should have arrived, and the paper sensor was OFF when the machine stopped (paper jam on the print drum).	0	0	0
430	Paper jam on print drum (recovery error).	0	0	0

Error Type	A09 [Paper ejection error]			
Error Point	Error Conditions	3	5	9
411	Paper-ejection sensor was ON when the paper should have left the paper-ejection sensor.	0	0	0
417	Paper-ejection sensor was ON at the start of machine operation when the START button was pressed.	0	0	0
431	Paper-ejection error (recovery error).	0	0	0

Error Type	A10 [AF original feed error]			
Error Point	Error Conditions	3	5	9
102	The original is pulled out from the AF unit before the scanning is completed.	0	0	0
103	Original jammed under AF registration sensor.	0	0	Х
	Original jam at AF registration sensor.			
103	Simplex AF: Registration-sensor does not go OFF after Original-IN-sensor goes ON.	х	х	0
	Duplex AF: Registration-sensor does not go OFF after the original feeds.			
105	Original jammed at AF Read sensor.	0	0	0
106	Original jammed at original ejection sensor.	0	0	х
	Original jam at AF original out sensor.			
106	Simplex AF: Original-OUT-sensor does not go OFF after Original-IN-sensor goes OFF.	х	х	0
	Duplex AF: Original-OUT-sensor does not go OFF after Registration-sensor goes OFF.			
107	Original does not arrive to the AF Registration sensor.	0	0	0
108	Original does not arrive to the AF Read sensor.	0	0	0
109	Original does not arrive to the original ejection sensor.	0	0	Х
	Original Jam before AF original out sensor.			
109	Simplex AF: Original-OUT-sensor does not go ON after Original-IN-sensor goes ON.	х	х	0
	Duplex AF: Original-OUT-sensor does not go ON after the original feeds.			
169	AF feed cover is opened due to original jam, while originals are present on the tray.	0	0	0
170	Original Jam before Original reverse sensor.			
170	Duplex AF: Original reverse sensor does not go ON after the original feeds.	X	X	0
170	Original Jam at Original reverse sensor.			
179	Duplex AF: Original reverse sensor does not go OFF after the original feeds.	X	X	0
180	Duplex AF: Original multiple feed	х	Х	0

## **Option errors**

Error Type	B01 [Keycard counter: No card]			
Description	B01-xxx	[		
Description	Insert Card in Key/Card Counter			
To reset	Insort card	Ī		
display	linsen caru.			
Error Point	Error Conditions	3	5	9
730	Keycard counter: No card	0	0	0

Error Type	B02 [Sorter error - Serviceman Call]			
Description	B02-xxx			
Description	Check sorter panel display.			
To reset	Chack the sector	Ī		
display				
Error Point	Error Conditions	3	5	9
702	Serviceman call error command was received from the sorter.	Х	Х	0

Error Type	B03 [Sorter error - Jam]			
	B03-xxx			
Description	Paper Jam			
	Remove paper in Indicated Areas and Press [OK] Button.			
To reset	Pomovo the jammed paper			
display	Remove the jammed paper.			
Error Point	Error Conditions	3	5	9
703	Received paper jam error command was received from the sorter.	Х	Х	0

Error Type	B04 [Sorter error - Door open]			
Description	B04-xxx			
Description	Close sorter cover.			
To reset	Close the corter cover			
display				
Error Point	Error Conditions	3	5	9
707	Cover open error cmmand was received from the sorter.	Х	Х	0

Error Type	B05 [Soter Error - Other errors]			
Description	B05-xxx			
Description	Check Soter panel Display			
To reset	Charly the porter			
display				
Error Point	Error Conditions	3	5	9
709	Other error command was received from the sorter.	Х	Х	0

Error Type	B07 [MTPF - Paper Jam (upper)]			
	B07-xxx			
Description	Paper Jam			
	Remove Paper in Indicated Areas and Press [OK] Button			
To reset	Remove the jammed paper			
display				
Error Point	Error Conditions	3	5	9
	Received paper jam error from the MTPF unit.			
	The FL feed sensor 4 does not go ON after the Transfer motor activated for set pulses			
825	from the moment the FL feed sensor 3 turned ON.(FL feed sensors 1 & 2 = OFF, sensor	х	х	0
	3=ON).			
	Or the FL feed sensor 3 is ON when the machine power is turned ON.			
	Received paper jam error from the MTPF unit.			
	After the paper is fed, the FL feed sensor 4 goes ON, but the Paper sensor does not go			
826	ON even after the FL transfer motor activated for the set pulses.(FL feed sensors 1 &2 =	х	х	0
	OFF, sensors 3 & 4 =ON).			
	Or the FL feed sensors 3 & 4 are ON when the machine power is turned ON.			
	Received paper jam error from the MTPF unit.			
827	While the machine is in idle state (waiting for a print job), the FL feed sensors 3 & 4 and	х	х	0
	Paper sensor are ON.			
	After the paper is fed, the FL feed sensor 4 goes ON, but the Paper sensor does not go			
000	ON even after the FL transfer motor activated for the set pulses.(FL feed sensors 1, 2 & 3	v	v	
020	= OFF, sensor 4 =ON).	х	X	0
	Or the FL feed sensor 4 is ON when the machine power is turned ON.			
	Received paper jam error from the MTPF unit.			
829	While the machine is in idle state (waiting for a print job), the FL feed sensor 4 and Paper	х	х	0
	sensor are ON.			
849	MTPF other jam errors.	Х	Х	0
850	MTPF Tray No.1 multiple feed error.	Х	Х	0
851	MTPF Tray No.2 multiple feed error.	Х	Х	0
852	MTPF Tray No.1 multi-drag feed error 1 (wrong A/D data)	х	х	0
853	MTPF Tray No.2 multi-drag feed error 1 (wrong A/D data)	х	Х	0
856	MTPF Tray No.1 multi-drag feed error 1 (FL feed sensor 4 does not go OFF)	х	Х	0
857	MTPF Tray No.2 multi-drag feed error 1 (FL feed sensor 4 does not go OFF)	х	Х	0

Error Type	B08 [MTPF - Feed Joint Passage Cover Open Error]			
Description	B08-xxx			
Description	Close Feed Joint Passage Cover			
To reset	Clean the feed joint nanage cover			
display	Close the leed joint passage cover.			
Error Point	Error Conditions	3	5	9
805	Feed joint passage cover open error singal is received from MTPF unit.	х	х	0

Error Type	B09 [MTPF - Paper Jam (lower)]			
	B09-xxx			
Description	Paper Jam			
	Remove Paper in Indicated Areas and Press [OK] Button			
To reset display	Remove the jammed paper.			
Error Point	Error Conditions	З	5	9
	Received paper jam error from the MTPF unit.			
816	After the paper is fed, the FL feed sensor 1 goes ON, but the FL feed sensor 2 does not go ON even	v	v	0
010	after the FL transfer motor activated for the set pulses. (FL feed sensors 1 = ON).	^	^	Ŭ
	Or the FL feed sensor 1 is ON when the machine power is turned ON.			
	Received paper jam error from the MTPF unit.			
917	After the paper is fed, the FL feed sensor 2 goes ON, but the FL feed sensor 3 does not go ON even	v	v	0
017	after the FL transfer motor activated for the set pulses. (FL feed sensors 1 & 2 = ON).	^	^	U
	Or the FL feed sensors 1 & 2 are ON when the machine pow er is turned ON.			
	Received paper jam error from the MTPF unit.			
818	After the paper is fed, the FL feed sensor 3 goes ON, but the FL feed sensor 4 does not go ON even	v	v	~
	after the FL transfer motor activated for the set pulses. (FL feed sensors 1, 2 & 3 = ON).	X	X	0
	Or the FL feed sensors 1, 2 & 3 are ON when the machine power is turned ON.			
	Received paper jam error from the MTPF unit.			
010	After the paper is fed, the FL feed sensor 4 goes ON, but the Paper sensor does not go ON even			
819	after the FL transfer motor activated for the set pulses. (FL feed sensors 1, 2, 3 & 4 = ON).	х	х	0
	Or the FL feed sensors 1, 2, 3 & 4 are ON when the machine pow er is turned ON.			
	Received paper jam error from the MTPF unit.			
820	While the machine is in idle state (waiting for a print job), the FL feed sensors 1, 2, 3 & 4 and Paper	х	х	0
	sensor are ON.			-
	Received paper jam error from the MTPF unit.			
<b>a</b> a (	After the paper is fed, the FL feed sensor 2 goes ON, but the FL feed sensor 3 does not go ON even			~
821	after the FL transfer motor activated for the set pulses. (FL feed sensor $1 = OFF$ , sensor $2 = ON$ ).	х	х	0
	Or the FL feed sensor 2 is ON when the machine power is turned ON.			
	Received paper iam error from the MTPF unit.			
	After the paper is fed, the FL feed sensor 3 goes ON, but the FL feed sensor 4 does not go ON even			
822	after the FL transfer motor activated for the set pulses. (FL feed sensor 1 = OFF, sensors 2 & 3 =	x	х	0
		~	~	Ũ
	Or the FL feed sensors 2 & 3 are ON when the machine now er is turned ON			
	Received paper iam error from the MTPE unit			
	After the paper is fed, the FL feed sensor 4 goes ON but the Paper sensor does not go ON even			
823	after the FL transfer motor activated for the set pulses. (FL feed sensor 1 = OFF sensors 2.3.8.4 =	x	x	0
020		~	~	Ŭ
	Or the FL feed sensors 2, 3 & 4 are ON when the machine power is turned ON			
	Received paper iam error from the MTPE unit			
824	While the machine is in idle condition (waiting for a print job), the FL feed sensors 2,3&4 and Paper	x	x	0
021	sensor are ON	^	~	Ŭ
	Received paper iamerror from the MTPE unit			
	After the paper is fed, the FL feed sensor 3 does ON but the FL sensor 4 does not do ON even after			
825	the El transfer motor activated for the set nulses (El feed sensors $1.8.2 = OFF$ sensor $3 = ON$ )	х	х	0
	Or the FL feed sensor 3 is $ONw$ ben the machine now er is turned $ON$			
849	MTPE other iam errors	v	¥	0
854	MPTE Tray No 1 Multi-drag feed error 2 (FL feed sensor 3 does not go OFF)	Ŷ	Ŷ	0
855	MPTE Tray No 2 Multi-drag feed error 2 (FL feed sensor 3 does not go OFF)	Ŷ	x	0

Error Type	B11 [MTPF - Tray No.1 Paper Jam]			
	B11-xxx	Ĩ		
Description	Paper Jam			
	Remove Paper in Indicated Areas and Press [OK] Button			
To reset display	Remove the jammed paper and reset Tray No.1 in MTPF Unit.	ľ		
Error Point	Error Conditions	3	5	9
807	Received paper jam error from MTPF unit.	v	v	0
007	Paper misfeed from Tray No.1 (FL feed sensor 3 = OFF)	^	^	Ŭ
842	The Paper sensor is still OFF when the paper from Tray No.1 should have arrived at the sensor.	Х	Х	0
	The mult-tray 1 pickup sensor is ON at the start of a printing job from Tray No.1.			
858	* If any of the FL feed sensor is ON at the same time, the error message on those sensors	х	х	0
	will be displayed.			

Error Type	B13 [MTPF - Tray No.1 Open Error]			
Description	B13-xxx			
Description	Set Feed Tray 1 in Place			
To reset	Sat the Tray No.1 back in place			
display	Set the Tray No. 1 back in place.			
Error Point	Error Conditions	3	5	9
809	MTPF Tray No.1 is opened.	Х	Х	0

Error Type	B15 [MTPF - FL Transfer Unit Door Open Error]			
Description	B15-xxx			
Description	Close Multi-Tray Transfer Unit			
To reset	Close the MTPE Transfer unit			
display				
Error Point	Error Conditions	3	5	9
800	The MTPF Transfer unit is opened.	х	Х	0

Error Type	B17 [MTPF - Tray No.2 Paper Jam]			
	B17-xxx			
Description	Paper Jam			
	Remove Paper in Indicated Areas and Press [OK] Button			
To reset	Remove the immed paper and react Trav No 2 in MTRE Unit			
display	Remove the jammed paper and reset may No.2 in MTPP Onit.			
Error Point	Error Conditions	3	5	9
010	Received paper jam error command from MTPF unit.	v	v	0
012	Paper misfeed from Tray No.2 (FL feed sensor 1 = OFF)	^	^	0
843	The Paper sensor is still OFF when the paper from Tray No.2 should have arrived at the	v	v	
	sensor.	<b> </b> ^	×	0

Error Type	B19 [MTPF - Tray No.2 Open Error]			
Description	B19-xxx			
Description	Set Feed Tray 2 in Place			
To reset	Sat the Tray No 2 back in place			
display	Set the Tray No.2 back in place.			
Error Point	Error Conditions	3	5	9
814	MTPF Tray No.2 is opened.	Х	Х	0

Error Type	B21 [Hold Memory - Unable to Read or Write]			
	B21-xxx			
Description	!! System Error !!			
Description	Turn Main Power SW OFF Then ON			
	If Recovery has Failed, Call Service			
To reset	Switch OEE the newer and then switch ON the newer back			
display	Switch OFF the power and then switch ON the power back.			
Error Point	Error Conditions	3	5	9
714	File name error on the Hold Memory.	х	Х	0
715	Access error on the Hold Memory.	х	Х	0
716	Other error on the Hold Memory.	х	Х	0

Error Type	B22 [Job separator: Power off]			
	B22-xxx			
Description	!! Job Separator is OFF !!			
	Turn On Power Switch of it			
To reset	Proce Report Koy and check and switch ON the newer of Job Separator			
display	I ress reset regard check and switch on the power of 500 Separator.			
Error Point	Error Conditions	3	5	9
701	With the [Tape separation] function set ON, no power is supplied to the job separator	0	0	0
121	when start key is pressed.	0	0	0
727	After cluster-A signal turned ON, BUSY-signal stayed [L] more than 7 seconds (power to	0	0	0
	job separator was turned OFF while the tape is being ejected.	0	0	0

Error Type	B23 [Job separator: No tape]			
	B23-xxx			
Description	No Paper Tape in Job Separator			
	Replace Tape Roll			
To reset	Pross Resat Koy and set paper tang in Job Separator			
display	riess Reservey and set paper lape in 300 Separator.			
Error Point	Error Conditions	3	5	9
700	With the [Tape separation] function set ON, no tape detected in the job separator when	0	0	0
122	the start key is pressed.	0	0	0
723	No tape remains in job separator upon completion of the tape-ejection operation.	0	0	0

Error Type	B24 [Job separator: Tape jam]			
	B24-xxx			
Description	Paper Tape Jam in Job Separator			
	Remove Paper Tape			
To reset display	Press Reset Key and remove the jammed tape.			
Error Point	Error Conditions	3	5	9
724	Tape jam detected when the start key is pressed with the [Tape separation] function set to ON.	0	0	0
725	The tape-jam detection signal is [H] for more than 1.2 seconds after cluster-A signal turns ON (tape misfeed).	0	0	0
726	Job separator tape-jam detection signal is [L] when the BUSY signal changes from [L] to [H] (or after 7 sec. at [L]) after the cluster-A signal goes ON (tape misfeed).	0	0	0

Error Type	B25 [ Sorter - Tray Full Error]			
Description	B25-xxx			
Description	Check Sorter Panel Display			
To reset	Pomovo papers from the sector trav			
display	Remove papers nom the soliter tray.			
Error Point	Error Conditions	3	5	9
704	Sorter tray full.	Х	Х	0

B26 [Sorter - Paper Remaining on the Tray]			
B26-xxx			
Check Sorter Panel Display			
Pomovo paper from the sector trav			
Internove paper nom the solier tray.			
Error Conditions	3	5	9
Paper remaining on the sorter tray.	х	х	0
	B26 [Sorter - Paper Remaining on the Tray]   B26-xxx   Check Sorter Panel Display   Remove paper from the sorter tray.   Error Conditions   Paper remaining on the sorter tray.	B26 [Sorter - Paper Remaining on the Tray]   B26-xxx   Check Sorter Panel Display   Remove paper from the sorter tray.   Error Conditions 3   Paper remaining on the sorter tray. x	B26 [Sorter - Paper Remaining on the Tray]   B26-xxx   Check Sorter Panel Display   Remove paper from the sorter tray.   Image: Description of the sorter tray.   Second time sorter tray.

Error Type	B27 [Sorter - Stapler Error]			
Description	B27-xxx			
Description	Check Sorter Panel Display			
To reset	Check the stapler and correct the stapler problem			
display				
Error Point	Error Conditions	3	5	9
706	Stapler error command is received from the sorter.	Х	Х	0

Error Type	B28 [Sorter - paper Size Error]			
Description	B28-xxx			
Description	Check Sorter panel Display			
To reset	Pemove paper from the sector trav			
display	Remove paper nom the soliter tray.			
Error Point	Error Conditions	3	5	9
708	Paper size error command was received from the Sorter.	Х	Х	0

Error Type	B31 [Network cable not connected]			
	B31-xxx			
Description	!! No Linked Printer Detected !!			
	Check Cable Connection and Power Supply for Linked Printer			
To reset	Proce Resat Key and connect the network cable			
display	Fless Reset Reyand connect the network cable.			
Error Point	Error Conditions	3	5	9
916	Network cable is not connected when the machine is powered ON.	0	0	0

Error Type	B32 [NIC - Communication error]			
	B32-xxx			
Description	!! No Linked Printer Detected !!			
	Check Cable Connection and Power Supply for Linked Printer			
To reset	Pross Resat Key and check the network cable and linked printer			
display	riess Reservey, and check the network cable and linked printer.			
Error Point	Error Conditions	3	5	9
914	MIB (Management Informtion Base) request error	х	0	0
915	MIB no reply	х	0	0
917	Communication error on the network.	0	0	0
020	Error detected by Network Interface Card (NIC) - NAK (negative acknowledgement was	0	0	0
320	received).	0	0	0

Error Type	B33 [IP address set up error]			
	B33-xxx			
Description	No IP Address Assigned to This Printer			
	Contact Your Network Administrator			
To reset	Pross Resat Key and enter the IR address			
display	riess Reser Rey, and enter the ir address			
Error Point	Error Conditions	3	5	9
931	DHCP is ON, but DHCP server is not found.	0	0	0

Error Type	B34 [Linked Printer Error] (RZ3) [Linked Printer - No Toner Error] (RZ5 & RZ9)			
Description	B34-xxx			
Description	No Toner in Linked Printer			
To reset	Press [Reset] Key and correct the error on the linked printer (RZ3).			
display	Press [Reset] Key and replace the toner on the linked printer (RZ5 & RZ9).			
Error Point	Error Conditions	3	5	9
919	Error on the linked printer.	0	Х	Х
919	No toner in the linked printer.	х	0	0

Error Type	B35 [Linked Printer: Call Service Error]			
Description	B35-xxx			
Description	Linked Printer in Error			
To reset	Proce Report Key and correct the error on the linked printer			
display				
Error Point	Error Conditions	3	5	9
970	Error in the linked printer.	Х	0	0

## Errors involving consumables

Error Type	C01 [Replace ink cartridge]			
	C01-xxx			
Description	No Ink			
	Replace Ink Cartridge			
To reset	Remove the empty ink cartridge and replace with a new one			
display	Remove the empty link callinge and replace with a new one.			
Error Point	Error Conditions	3	5	9
512	The ink sensor did not go ON even when inking was performed for a preset duration.	0	0	0
563	Ink remaining amount is zero from the information on the RF-Tag.	0	0	0
574	Inkless error was detected 5 times consecutively on one same ink cartridge.	0	0	0

Error Type	C02 [Replace master roll]			
	C02-xxx			
Description	No Master			
	Replace Master Roll			
To reset	Remove the emptymacter rell and replace with a new one			
display	incentove the empty master foil and replace with a new one.			
Error Point	Error Conditions	3	5	9
200	The master end was detected twice in succession at 10-milliseconds intervals during		0	$\circ$
200	master transport.		0	0
240	Master remaining amount is zero from the RF-Tag information.	0	0	0
253	Masterless error was detected twice consecutively on one same master-roll.	0	0	0

Error Type	C03 [Master disposal box full]			
	C03-xxx			
Description	Master Disposal Boxis Full			
	Empty Master Disposal Box			
To roadt	Remove master disposal box from the machine, throw away the disposed master from			
diaplay	the disposal box and return the disposal box in the machine after an interval of over 5			
uispiay	seconds.			
Error Point	Error Conditions	3	5	9
	Compression detection position was reached before the master-compression-motor			
308	encoder-sensor count reached the specified level, after the master compression motor	0	0	0
	turned ON in the compressing direction.			

C04 [No paper on the Standard paper Feed Tray]			
C04-xxx	Ī		
Add Paper			
Add namer on the standard namer food trav	Ī		
had paper on the standard paper leed tray.			
Error Conditions	3	5	9
Paper detection sensor is OFF (not detecting paper).	0	0	0
	C04 [No paper on the Standard paper Feed Tray]   C04-xxx   Add Paper   Add paper on the standard paper feed tray.   Error Conditions   Paper detection sensor is OFF (not detecting paper).	C04 [No paper on the Standard paper Feed Tray]   C04-xxx   Add Paper   Add paper on the standard paper feed tray.   Error Conditions 3   Paper detection sensor is OFF (not detecting paper). 0	C04 [No paper on the Standard paper Feed Tray]   C04-xxx   Add Paper   Add paper on the standard paper feed tray.   Error Conditions   3   Paper detection sensor is OFF (not detecting paper).

Error Type	C06 [MTPF - No Paper in Tray No.1]			
Description	C06-xxx			
Description	Load Paper in Feed Tray 1			
To reset	Fill Tray No.1 with paper			
display	rii Itay No. I will paper.			
Error Point	Error Conditions	3	5	9
859	No paper in Tray No.1	Х	Х	0

Error Type	C07 [MTPF - No Paper in Tray No.2]			
Description	C07-xxx			
Description	Load Paper in Feed Tray 2			
To reset	Fill Tray No 2 with paper			
display				
Error Point	Error Conditions	3	5	9
860	No paper in Tray No.2	Х	Х	0

Error Type	C08 [No Interposal Paper on Standard Paper Feed Tray]			
Description	C08-xxx			
Description	Load Interposal Paper in Interposer Tray			
To reset display	Press [Reset] key, and load interposal paper on the standard paper feed tray.			
Error Point	Error Conditions	3	5	9
861	No paper is set on the standard paper feed tray while the tray is specified as interposer tray by the Admin. Tab on the operation panel.	x	x	0

Error Type	C09 [No Interposal Paper in MTPF Tray No.1]			
Description	C09-xxx			
Description	Load Interposal Paper in Interposer Tray			
To reset	Press [Peset] Key and load internosal paper in Tray No.1			
display	These lives and load interposal paper in Tray No. 1			
Error Point	Error Conditions	3	5	9
862	No paper is set in Tray No.1 while the tray is specified as interposer tray by the Admin.	v	v	0
002	Tab on the operation panel.	<b>^</b>	^	0

Error Type	C10 [No Interposal Paper in MTPF Tray No.2]			
Description	C10-xxx			
Description	Load Interposal Paper in Interposer Tray			
To reset	Press [Peset] Key and load internosal paper in Tray No 2			
display	These lives eight bad interposal paper in Tray No.2			
Error Point	Error Conditions	3	5	9
863	No paper is set in Tray No.2 while the tray is specified as interposer tray by the Admin.	v	v	
005	Tab on the operation panel.	^	^	0

#### Set check errors

Error Type	D01 [Print drum not set]			
Description	D01-xxx			
Description	Set Print Cylinder (Drum) in Place			
To reset	Set the print drum in the machine			
display				
Error Point	Error Conditions	3	5	9
526	Print drum is not set in the machine (drum connection signal, drum safety switch, and	0	0	0
520	drum-lock sensor is OFF.	0	0	0
527	Print drum connection signal is OFF when the print drum was inserted in the machine.	0	0	0
528	Print drum safety switch is OFF when the print drum was inserted in the machine.	0	0	0
520	Print drum lock sensor is OFF when the print drum was inserted in the machine (time-out:	0	0	0
529	5 seconds).	0	0	0
530	Print drum connection signal does not go OFF within 5 seconds after the print drum safety		0	0
550	switch went OFF when the print drum was pulled out.	0	0	0

Error Type	D02 [Incorrect print drum]			
	D02-xxx	Ī		
Description	Wrong-Type Print Cylinder Installed			
	Replace with Correct Type			
To reset	Sat correct print drum in the machine	Ī		
display				
Error Point	Error Conditions	3	5	9
532	Incorrect print drum is used.	0	0	0
580	Incorrect print drum is used.	Х	Х	0

Error Type	D03 [Ink cartridge not set]			
Description	D03-xxx	[		
Description	Install Ink Cartridge			
To reset	Install ink cartridge in the print drum	Ī		
display				
Error Point	Error Conditions	3	5	9
533	Bottle set switch is OFF.	0	0	0

Error Type	D04 [Incorrect ink cartridge]			
	D04-xxx	Ī		
Description	Wrong-type Ink Cartridge Installed or Cannot Read Ink Info			
	Replace Ink Cartridge or Contact dealer/Riso office			
To reset	Poplace with correct ink cartridge	Ī		
display				
Error Point	Error Conditions	3	5	9
534	Incorrect ink cartridge is used.	0	0	0
560	Ink RF-Tag is not detected on ink bottle.	0	0	0
561	Ink RF-Tag communication error (communication with the ink cartridge was interfered by		0	
501	noise).	0	0	0
562	Wrong ink cartridge information on the Ink RF-Tag.	0	0	0
564	Detected a mismatch in the Ink RF-Tag.	0	0	0
575	RF-Tag software error.	0	0	0

Error Type	D05 [Master not set]			
Description	D05-xxx	Ī		
Description	Set Master in Place			
To reset	Insert leading edge of the master material into the master entrance and close the master	1		
display	making unit.			
Error Point	Error Conditions	3	5	9
210	Master detection sensor is OFF (not detecting master material).	0	0	0

Error Type	D07 [Master disposal box not set]			
Description	D07-xxx			
Description	Set Master Disposal Box in Place			
To reset	Sat master disposal box in the machine			
display				
Error Point	Error Conditions	3	5	9
310	Master disposal box safety switch is OFF.		0	
510	(Does not detect the error during low-power mode in which 24V power is down)	0	0	0

Error Type	D08 [Master making unit not set]			
Description	D08-xxx Set Master Making Unit in Place			
To reset display	Insert the master making unit in the machine.			
Error Point	Error Conditions	3	5	9
224	Master making unit is not set (both the safety switch and lock sensor are OFF).	0	0	0
226	Master making unit safety switch is still OFF when the master making unit is set in position.	0	0	0
227	Master making unit lock sensor is still OFF when the master making unit is set in position (timeout: 5 seconds).	0	0	0
228	Master making unit lock sensor is still ON even after the master making unit safety switch went OFF, when the master making unit was pulled out of the machine.	0	0	0

Error Type	D09 [Master making unit cover is not closed]			
Description	D09-xxx			
Description	Close Master Making Unit Cover			
To reset	Close the master making unit cover			
display				
Error Point	Error Conditions	3	5	9
212	Master making unit cover set sensor is OFF.	0	0	0

Error Type	D11 [Front cover not closed]			
Description	D11-xxx			
Description	Close Front Cover			
To reset	Clean the front cover of the machine			
display				
Error Point	Error Conditions	3	5	9
535	Front cover set sensor is OFF.	0	0	0

Error Type	D13 [Rear cover not closed]			
	D13-xxx			
Description	Rear Cover of Main Body is Off			
	Call Service			
To reset	Close the rear cover of the machine to activate the rear cover (serviceman safety)			
display	switch. [Field serviceman has to close and screw-on the rear cover]			
Error Point	Error Conditions	3	5	9
009	The rear cover is opened (serviceman safety switch is OFF).	0	0	0

Error Type	D17 [Incorrect master roll]			
	D17-xxx			
Description	Wrong-type Master Installed or Cannot Read Master Info			
	Replace Master Roll or Contact dealer/Riso office			
To reset	Sat correct master roll in the machine			
display				
Error Point	Error Conditions	3	5	9
236	Incorrect master roll.	0	0	0
237	Master roll RF-Tag not detected.	0	0	0
238	Master roll RF-Tag communication error. (Communication interrupted by noise)	0	0	0
239	Incorrect information on the Master roll RF-Tag.	0	0	0
241	Mismatch in the Master roll RF-Tag information.	0	0	0
256	Master roll RF-Tag software error.	0	0	0

Error Type	D18 [Print cylinder (drum) is ready for removal]			
Description	D18-xxx	I		
Description	Print Cylinder (Drum) has been Unlocked			
To reset	Pull out the print Ovlinder (Drum)	Ĩ		
display				
Error Point	Error Conditions	3	5	9
522	Print Cylinder (Drum) is unlocked for its removal. (Drum lock Solenoid is ON).	0	0	0

Error Type	D19 [Master making unit is ready for removal]			
Description	D19-xxx	ľ		
Description	Master Making Unit has been Unlocked			
To reset	Pull out the master making unit	Ī		
display				
Error Point	Error Conditions	3	5	9
223	Master making unit is unlocked for its removal. (Lock Solenoid is ON).	0	0	0

Error Type	D22 [Print cylinder (drum) removal command]			
	D22-xxx			
Description	Print Cylinder (Drum) Not Set in Place.			
Description	Press Cylinder (Drum) Release Button and Pull Out Print Cylinder (Drum)			
	after the Button Lights.			
To reset	Pull out print cylindor (drum) from the machine			
display	r di out print cyinder (dram) nom die machine.			
Error Point	Error Conditions	3	5	9
540	Cannot access to the EEPROM on the print drum PCB.	0	0	0
542	Print drum PCB EEPROM data error.	0	0	0

Error Type	D32 [AF Cover Not Closed]			
Description	D23-xxx			
Description	Close the AF Cover			
To reset	Close the AE cover			
display				
Error Point	Error Conditions	3	5	9
177	The AF cover is opened.	Х	Х	0

# Warnings (requiring service calls)

Error Type	E01 [Replace battery]			
	E01-xxx			
Description	!!Low Battery!!			
	Call Service			
To reset	Press Reset Key and replace the battery			
display				
Error Point	Error Conditions	3	5	9
010	Battery voltage was less than 2.1 V when the power was switched ON (weak battery: time	0	0	0
010	to replace battery).	0	0	0

Error Type	E02 [Maintenance call]			
	E02-xxx			
Description	!!Maintenance!!			
	Call Service			
To reset	Pross Resat Key and also resat the maintenance call value setting by test mode			
display	riess Reset Rey, and also reset the maintenance call value setting by test mode.			
Error Point	Error Conditions	3	5	9
	Master counter reached the value set for the maintenance call (value set by test mode).			
011	[The message appears when either the power is turned ON, the unit is reset, or when the	0	0	0
	machine operation ended.]			
	Copy counter reached the value set for the maintenance call (value by set test mode).			
012	[The message appears when either the power is turned ON, the unit is reset, or when the	0	0	0
	machine operation ended.]			
	Maintenance counter inside the print drum reached the value set for the maintenance call			
022	(value set by test mode). [The message appears when either the power is turned ON, the	0	0	0
	unit is reset, or when the machine operation ended.]			

# Warnings (Miscellaneous)

Error Type	F01 [No master on print cylinder (drum)]			
	F01-xxx	Ī		
Description	No Master on Print Cylinder (Drum)			
	Make a New Master			
To reset	Make a new master with an original	Ī		
display				
Error Point	Error Conditions	3	5	9
015	There is no master on the print drum at the start of printing.	0	0	0

Error Type	F02 [Master image larger than paper size: 1]			
	F02-xxx			
Description	Page Format is Larger than Paper Size			
	!! Possible Ink Smudges on Prints !!			
To reset	Pross [OK] or [Cancel] button. Also shock the paper size			
display	riess [ON] of [Cancer] button. Also check the paper size.			
Error Point	Error Conditions	3	5	9
018	Paper size does not match with the image size on the print drum at the start of printing.	v		0
010	The paper size is smaller than the image size on the master.	^	0	0

Error Type	F03 [Multi-up printing - Incorrect paper size]			
	F03-xxx	Ī		
Description	!! Multi-Up is Not Available with This Paper Size !!			
	Replace with Proper Paper of Standard Size			
To reset	Pross reset key and place correct size papers on the paper feed trav	Ī		
display	riess leser key and place correct size papers on the paper leed tray.			
Error Point	Error Conditions	3	5	9
016	Tried to make multi-up printing with incorrect paper size.	0	0	0

Error Type	F05 [Print quantiy under Minimum Print Quantity]			
Description	F05-xxx	[		
Description	Enter Print Quantity Over The Programmed Minimum Value			
To reset	Enter print quantity value over the programmed minimum value			
display	Enter print quantity value over the programmed minimum value.			
Error Point	Error Conditions	3	5	9
019	In master making, the print quantity selected is less than the minimum print quantity.	0	0	0

Error Type	F08 [Auto Tray - Paper Size and Original Size does not Match]			
	F08-xxx			
Description	!! Improper Paper Size !!			
Description	Set Proper Paper, or Select Paper Size Manually			
	and then Press START Key			
To reset	Pross CANCEL button, and check the paper and original size			
display	Fless CANCEL bullon, and check the paper and original size.			
Error Point	Error Conditions	3	5	9
017	When the Auto-Tray is selected, the original size (scanning ratio) and the printing paper	v	×	0
017	set on the tray(s) did not match.	^	^	0

Error Type	F10 [Master image larger than paper size: 2]			
	F10-xxx	ľ		
Description	Page Format is Larger than Paper Size			
Description	!! Possible Ink Smudges on Prints !!			
	(Continue->PROOF Key)			
To reset	Press Cancel keyto cancel, or press Proof keyto continue			
display				
Error Point	Error Conditions	3	5	9
021	Paper size does not match with the size of image on the print drum when test print is	~	0	0
021	selected and activated.	^	0	0

Error Type	F12 [Auto-Tray: Irregular Size Original]			
	F12-xxx			
Description	Auto Paper Size Selection is Not Available for Irregular-Size Original			
	Select Paper Size Manually and then Press START Key			
To reset				
display				
Error Point	Error Conditions	3	5	9
024	Irregular size original was used when Auto-Tray was selected.	Х	Х	0

Error Type	F15 [Paper size does not match with the paper on the paper receiving tray]			
	F15-xxx			
Description	Receiving Tray Paper Guides Cannot Move			
	Remove Paper from Receiving Tray			
To reset				
display				
Error Point	Error Conditions	3	5	9
042	With the auto-control-paper-receving-tray connected, the paper on the receiving tray is	v	v	
042	larger than the printing paper.	x	x	0

Error Type	F17 [Print cylinder (drum) size does not match]			
Description	F10-xxx [The message to appear when print cylinder (drum) is inserted.] !!The Print Cylinder Type has been Changed!! Select the Current Print Cylinder Type [The message to appear when print cylinder (drum) type is selected.] Invalid Print Cylinder has been Selected Change Cylinder, or Reselect Cylinder Size			
To reset display	Select the same drum as specified, or install the same drum installed previously.			
Error Point	Error Conditions	3	5	9
027	Different size print cylinder (drum) from the previous is set.	Х	Х	0

Error Type	F18 [Paper Size and Original Size Do Not Match]			
	F18-xxx			
Description	!! Image may not fit in Frame of Paper with this Reproduction Size !!			
	Check Current Selection			
To reset	Pross of the START or STOR Key			
display	riess either the START of STOP key.			
Error Point	Error Conditions	3	5	9
	The paper size and the original size (reproduction ratio) does not match in master-			
875	making.	х	х	0
	(The error message is for machines with MTPF unit and when Auto-Tray is selected.			

Error Type	F21 [Next Original not set on AF for Multi-Up]			
Description	F21-xxx			
To reset	Set original on the AF.			
display	Or press STOP key (time-out exists for pressing the STOP key).			
Error Point	Error Conditions	3	5	9
032	Next original is not set on AF whe multi-up is selected.	0	Х	Х

Error Type	F22 [Next Original not placed on FB for Multi-Up]			
Description	F22-xxx			
To reset	Set origial on the FB and press START key.			
display	Or press STOP key (Time-out exists for pressing the STOP key)			
Error Point	Error Conditions	3	5	9
033	Next Original not placed on FB for Multi-Up scanning.	0	х	х

Error Type	F24 [Auto Reproduction Size Selection Not Possible]			
	F24-xxx	Ī		
Description	!! No Auto Reproduction Size Selection with this Combination			
	of Original and Paper !! Select Size manually			
To reset	Pross [STOP] kov			
display	Fless [STOF] key			
Error Point	Error Conditions	3	5	9
037	The reproduction ratio does not match.	Х	Х	0

Error Type	F30 [Possible Multiple Paper Feed]			
	F30-xxx	Ī		
Description	!! Possible Multiple Paper Feed !!			
	Check Printed Copies			
To reset	Press [STOP] key	Ī		
display				
Error Point	Error Conditions	3	5	9
425	Multiple paper feed is detected on the first paper fed through.	Х	Х	0
426	Multiple paper feed is detected on the paper just fed through. (Other than the 1st paper.)	Х	Х	0

Error Type	F31 [Auto Control Paper Receiving Tray - Paper Guide Fence Error]			
Description	F31-xxx Check Paper Receiving Tray			
To reset display	Press either the {START] or [STOP] key.	Ī		
Error Point	Error Conditions	3	5	9
836	HP sensor did not go ON when the side fences made initial home position movement.	Х	Х	0
837	HP sensor did not go OFF when the side fences should have left home position.	Х	Х	0
838	HP sensor did not go ON when the end fence made initial home position movement.	х	Х	0
839	HP sensor did not go OFF when the end fence should have left home position.	х	Х	0
868	Even though the End fence pulse motor ended its movement by the sensor detection, the sensor status does not match with the programmed status.	x	х	0
869	Even though the Side fence pulse motor ended its movement by the sensor detection, the sensor status does not match with the programmed status.	x	х	0
870	The End fence pulse motor does not stop either by its pulse count stop nor by sensor detected stop.	x	x	0
871	The Side fence pulse motor does not stop either by its pulse count stop nor by sensor detected stop.	x	x	0

Error Type	F32 [Storage Data - Storage Area Full]			
	F32-xxx			
Description	!! The Data Storage Area has Become Full !!			
	Clear Old Storage Data			
To reset	Pross [STOP] kov			
display	Fless [STOF] key			
Error Point	Error Conditions	3	5	9
713	The DM-128 card became full while saving data.	Х	Х	0

Error Type	F37 [Book mode: AF cannot be used]			
	F37-xxx	I		
Description	!! Book Shadow Editor is Not Available with AF !!			
	Place Original on Stage Glass			
To reset	Diago original on the stage slapp	Ī		
display	riace original on the stage glass.			
Error Point	Error Conditions	3	5	9
050	Original was set on the AF with book mode selected in master making.	0	0	0
Error Type	F40 [Auto Tray Selection - No Paper on Standard Paper Feed Tray]			
-------------	--	---	---	---
Description	F40-xxx			
To reset	Load Paper on Standard Paper Feed Tray			
display	Load paper on the standard paper feed tray.			
Error Point	Error Conditions	3	5	9
	The paper ran out from the standard paper feed tray, when printing from the standard			
060	paper feed tray using the Auto tray selection with Feed-tray-relay activated. (Other trays	X	х	0
	also paper empty.)			
907	paper feed tray using the Auto tray selection with Feed-tray-relay OFF.	x	х	0
	F44 Marte Trey Coloction No Denor in Trey 41			
Error Type	F41 [Auto Tray Selection - No Paper In Tray-1]			
Description	Load Paper in Feed Tray 1			
To reset		1		
display				
Error Point	Error Conditions	3	5	9
061	Ine paper ran out from MIPF Tray No.1, when printing from the Tray No.1 using the Auto	x	х	0
	The paper ran out from MTPF Tray No.1, when printing from Tray No.1 using the Auto tray			_
908	selection with Feed-tray-relay OFF.	X	х	0
Error Type	F42 [Auto Tray Selection - No Paper in Tray-2]			
	F42-xxx			
Description	Load Paper in Feed Tray 2			
To reset	Load paper in MTPF Tray No.2.			
display	Error Conditions	2	E	0
	The paper ran out from MTPE Tray No 2 when printing from the Tray No 2 using the Auto	3	Э	9
062	tray selection with Feed-tray-relay activated. (Other trays also paper empty.)	X	х	0
909	The paper ran out from MTPF Tray No.2, when printing from Tray No.2 using the Auto tray	v	v	0
505	selection with Feed-tray-relay OFF.	^	^	Ŭ
Error Type	F43 [Data printing / Paper size mismatch]			
	F43-xxx			
Description	II Unmatched Size Current Page and Printing Paper II			
To reset				
display	Check paper size, press Cancel or Continue key.			
Error Point	Error Conditions	3	5	9
902	Original size is larger than the paper size.	х	0	0
Error Type	F44 [Auto Reproduction Size - Error Between Original Size and Paper Size]			
Description	F44-xxx			
Description	!! No Auto Reproduction with This Original and Printing Paper !!			
To reset	Press [CANCEL] button.			
Error Point	Error Conditions	3	5	9
901	Original size could not be detected (original size out of the specification).	x	x	0
		!		
Error Type	F45 [Original Undetected]			
Description	Original Undetected			
	Reset Original			
To reset	Reset the original in place	1		
display			_	-
Error Point	Error Conditions	3	5	9
954	print to linked printer is started with original undetected	x	0	0
959	Master making or print to a linked printer is started with original undetected.	x	0	0
				0

Error Type	F47 [AF - card size reproduction not available]			
Description	F47-xxx [A4->Card] Reproduction is Not Available in combination with AF Place Original on Stage Glass			
To reset display	Remove original from AF and set it on the stage glass.			
Error Point	Error Conditions	3	5	9
904	Reproduction size from A4 size reduced to card size is selected and the original is placed on the AF unit.	x	0	0

Error Type	F48 [Multi-Up - Wrong Original Size]			
Description	F48-xxx Original Size Exceeds Limitation of Multi-Up Specify Original Size			
To reset display	Press [STOP] key.			
Error Point	Error Conditions	3	5	9
955	During the multi-up operation, the original size was detected as customs size or out of specification.	x	x	0

Error Type	F49 [Multi-Up - No Original]			
	F49-xxx			
Description	Original Undetected			
	Reset Original			
To reset	Proce ISTOPI kov			
display	1 1633 [5101 ] Key			
Error Point	Error Conditions	3	5	9
080	The original was undetected when Multi-Up operation was selected for either one original	v	v	
909	or multi-original.	^	~	0

Error Type	F52 [Printing from Linked Printer disabled - Printer data not received]			
	F52-xxx			
Description	Acquiring Linked Printer Configuration Data			
	Please Wait a Moment			
To reset	Pross the ICL OSEI button			
display				
Error Point	Error Conditions	3	5	9
912	Printing from linked printer disabled (Linked printer data not received).	Х	0	0

Error Type	F58 [Printing from Linked Printer Disabled - Initializing NET-C]			
	F58-xxx	I		
Description	Starting Up RISORINC-NET			
	Please Wait a Moment			
To reset	Pross the ICL OSEI button	Ì		
display				
Error Point	Error Conditions	3	5	9
927	Printing from Linked Printer disabled (NET-C/D being initialized).	0	0	0

Error Type	F60 [Printer-Auto-Selection disabled: Print quantity selected is 0]			
	F60-xxx	ĺ		
Description	!! Number of Copies is set to [0] !!			
	Printing Operation will Start on this Printer			
To reset	Press either [OK] or [Cancel] button			
display				
Error Point	Error Conditions	3	5	9
929	Auto-printer-selection is disabled with print quantity selected as Zero.	Х	0	0

Error Type	F61 [Linked Printer - Wrong Paper Size]			
	F61-xxx			
Description	Proper Size Paper is Not Set on Linked Printer			
	Set Proper Paper			
To reset				
display				
Error Point	Error Conditions	3	5	9
930	Original size does not match with the paper size set on the linked printer.	Х	Х	0

Error Type	F62 [Printer-Auto-Selection disabled - Linked printer error]			
	F62-xxx			
Description	!! Auto-Link Operation is Not Available !!			
	Specified Linked Printer may be in Error or Turned OFF			
To reset	Brass [Cancel] button			
display				
Error Point	Error Conditions	3	5	9
956	Auto-printer-selection is disabled due to linked printer error.	х	0	0

Error Type	F63 [Linked Printer - Auto Tray Selection not avaialble for Irregular Size Original]			
Decembration	F63-xxx			
Description	II NO Auto Paper Size Selection with irregular Size Original II Select Paper Size and then Restart			
To reset display	Press [CANCEL] button			
Error Point	Error Conditions	3	5	9
971	Auto-Tray-Selection was used in printing from the linked printer using irregular sized original.	x	x	0

Error Type	F64 [Selected Function Not Available While Processing Print Data from PC]			
	F64-xxx			
Description	Processing Print Data from PC			
	This Function is Not Available while Processing Current Data			
To reset	Press {CLOSE] button.			
display				
Error Point	Error Conditions	3	5	9
964	Scanning, Overlay, Digitizer or Hold function was selected while the printer is receving data from PC.	x	x	0

Error Type	F65 [Scan Mode - Auto Page Size Selection Not Available for Irregular Size Original]			
	F65-xxx			
Description	Auto Page Size Selection is Not Available for Irregular-Size Original			
	Select Format Size to Store and then Restart			
To reset				
display				
Error Point	Error Conditions	3	5	9
065	The auto-size (save data) selection at start of scanning is detected as original irregular in	v	v	
905	size.	^	^	0

Error Type	F66 [Linked printer saddle stitching is disabled]			
Description	F66-xxx			
Description	Saddle Stitching is Not Available with This Paper Size			
To reset	Press [Close] hutton			
display				
Error Point	Error Conditions	3	5	9
062	Specified tray does not have any A3 (Ledger), B4 (Legal), A4 (Letter) or	×	0	0
962	A4L (Letter-L) when printing from linked printer with saddle stitching selected.	^	0	U

Error Type	F67 [Linked printer saddle stitching is disabled]			
	F67-xxx	Ī		
Description	!! Improper Paper for Rotation Sorting !!			
	Set Same Sized Paper in 2 Trays, One in Horizontal and Other in Vertical Direction			
To reset displav	Press [Close] button.			
Error Point	Error Conditions	3	5	9
963	Specified size papers are not set in horizontal and vertical directions in the linked printer tray, when printing from linked printer with rotation sorting selected.	x	0	0

Error Type	F73 [Linked Printer - Auto Tray Selection Not Available with Selected Reproduction			
	Ratio]			
	F73-xxx			
Description	Paper Size cannot be Defined by Specified Reproduction Size			
	Select Paper Tray and Press Start Key			
To reset	Proce [STOP] kov			
display	Fiess [STOF] key.			
Error Point	Error Conditions	3	5	9
075	In Linked Printer printing, the detected original size does not match with the selected	v	v	0
915	reproduction size.	^	^	0

Error Type	F74 [High Speed Printing - Printer Temperature is Too Low for 180 ppm High Speed Printing]			
Description	F74-xxx Printer Temperature is Low 189 ppm is Not Available			
To reset display	Press [STOP] or [START] key.			
Error Point	Error Conditions	3	5	9
980	High speed printing was selected with the machine temperature below 15 degrees Celcius.	x	х	0

Error Type	F78 [Editor - Stage Cover is Opened]			
	F78-xxx			
Description	Close Stage Cover			
	If original moves you may not get desired result			
To reset	Close the stage cover and pross [CLOSE] butten			
display				
Error Point	Error Conditions	3	5	9
731	The stage cover is opened during the digitizer operation.	х	х	0

Error Type	F79 [Editor - No Original During Re-Scanning]			
	F79-xxx	Ī		
Description	Set Original and Press Start key			
	Re-scanning will be Started to Add Image Processing			
To reset	Pross [STOP] kov			
display	Fless [STOF] key			
Error Point	Error Conditions	3	5	9
732	The original was not detected during re-scanning.	Х	Х	0

Error Type	F85 [External CI - Scanning Not Possible with External CI not Connected]			
	F85-xxx			
Description	!! Scanning is Not Possible !!			
Description	External CI is not Connected or Processing Connection			
	Check Cable Connection			
To reset	Pross ICL OSEI button or pross ISTARTI kov			
display	riess [olool] button of press [or Artif Rey.			
Error Point	Error Conditions	3	5	9
995	Either the PS7R is not connected or improperly connect.	Х	Х	0

Error Type	F86 [Auto Tray Selection - Tray Cannot Be Selected with Selected Reproduction Ratio]			
Description	F86-xxx Paper Size cannot be Defined by Specified Reproduction Size Select Paper Tray and Press Start Key			
To reset display	Press [STOP] Key			
Error Point	Error Conditions	3	5	9
864	With the Auto Tray selected, the master-making was activated with original size which does not match with the reproduction ratio against the printing paper.	x	x	0

Error Type	F87 [Auto Tray Selection - Mult-Up Not Possible]			
Description	F87-xxx			
Description	Select Paper Tray			
To reset	Proce [ENTER] button or [CANCEL] button			
display				
Error Point	Error Conditions	3	5	9
865	Multi-Up was chosen with Auto Tray selected.	х	Х	0

Error Type	F88 [Auto Tray Selection - 2 UP Selection Error]			
Description	F88-xxx			
Description	Select Paper Tray and Press Start Key			
To reset	Pross [STOP] kov			
display				
Error Point	Error Conditions	3	5	9
866	With Auto Tray selected, the 2-UP was selected with printing papers other than A4R or		v	
866	B5R.	^	^	0

Error Type	F89 [Interposer Mode - Wrong Paper Size]				
	F89-xxx				
Description	!! Unmatched Paper Size !!				
Description	Interposal Paper is Smaller than Printing Paper				
	Check Interposal Paper Size				
To reset	Proce (STOP) kov				
display	riess [STOF] key.				
Error Point	Error Conditions	3	5	Ş	)
867	Interposer mode was selected with interposal paper smaller than the printing paper.	Х	Х	(	)

Error Type	F90 [Ink Supply Stock Inventory]			
Description	F90-xxx			
Description	Check Stock of Required Ink and Please Order If Needed			
To reset	Pross [CLOSE] button			
display				
Error Point	Error Conditions	3	5	9
957	Set quantity of the specified color ink stock quantity is equal to or less than the calculated stock quantity.	x	0	0

Error Type	F91 [Master Roll Supply Stock Inventory]			
Description	F91-xxx			
	Check Stock of Required Master and Please Order If Needed			
To reset	Proce ICL OSEI button			
display				
Error Point	Error Conditions	3	5	9
958	Set quantity of the specified master roll stock quantity is equal to or less than the calculated stock quantity.	x	0	0

Error Type	F92 [Original Size - Larger than the Master Making Size]			
Description	F92-xxx	Ī		
	Check the Original Size			
	The Original Size is Larger than Max. Printing Area			
To reset	Proce (START) kov or (STOR) kov	Ī		
display	riess [START] key, of [STOP] key.			
Error Point	Error Conditions	3	5	9
	Master making was selected with an original larger in size than the paper size when Auto			
874	Tray selection is made and reproduction ratio at 100%.	v	v	$\circ$
	(The error message appears only on the machines with MTPF unit and Auto Tray	^	^	0
	selected.)			

Error Type	F93 [Reproduction Size - Larger than the Master Making Size]			
Description	F93-xxx			
	Check the Settings			
	The Selected Reproduction Ratio will not fit the Max. Printing Area			
To reset	Proce (STAPT) key or proce (STAP) key			
display	riess [START] key, of press [STOF] key.			
Error Point	Error Conditions	3	5	9
	Either of the following two causes the reproduction ratio to exceed the printing area.			
936	1) Auto Tray is selected with reproduction ratio neither at 100% nor at AUTO.	х	х	0
	2) Paper tray is manually selected and the reproduction ratio is at AUTO.			

Error Type	F94 [Protect Mode - Discard Current Master]			
Description	F94-xxx	I		
	PROTECT			
	Discard Current Master			
To reset		Ī		
display				
Error Point	Error Conditions	3	5	9
007	The protect function is active when machine power is turn ON, machine woke up from	~		0
	sleep, or print drum is inserted into the machine.	X	0	0

Error Type	F95 [Protect Mode - Confirmation]			
	F95-xxx	Ĩ		
Description	PROTECT			
-	Discard Current Master			
To reset	Prope (START) key or prope (STAR) key	Ĩ		
display	riess [START] key, of press [STOP] key.			
Error Point	Error Conditions	3	5	9
008	The job completes when the protect mode is selected active by the Admin. display.	Х	0	0

#### Parameter value input

Message	H1 [Ink color setting]
Description	H1
	Select the same color as the Print Cylinder (Drum) currently in use.
To reset	Enter the required parameter value
display	

Message	H2 [Print density fine adjustment]
Description	H2
	Select a Print Density level to match the ink to fine-tune print result.
To reset	Enter the required parameter value
display	

Message	H3 [First print density adjustment]
Description	H3
	Select a Print Density level of the first print (proof-read copy) to match the ink.
To reset	Enter the required parameter value
display	

Message	H4 [Master Density]
Description	H4
	Select the standard density to be applied during master-making.
To reset	Enter the required parameter value
display	

Message	H5 [Print density fine adjustment]
Description	H5
	Select a Print Density level to match the master to fine-tune print result.
To reset	Enter the required parameter value
display	

Message	H6 [First print density adjustment]
Description	H6
	Select a Print Density level of the first print (proof-read copy) to match the master.
To reset	Enter the required parameter value
display	

#### Paper/Original errors (J-codes)

Error Type	J** [Paper/Original jam error]
	J**
Description	Paper Jam
	Remove Paper in Indicated Areas and Press [OK] Button
To reset	Remove immed paper or original and proce Report Koy
display	temove jammed paper of original and press Reset key.

When **A-code** errors, listed bellow, occur, they are substituted by  $J^{**}$  error codes. The two-digit error-type number which follows after the **J** is the sum of the Corresponding Values for each of those **A-code** errors and **B-code** errors.

Pressing the asterisk key on the operation panel will display the details of the J\*\* errors.

Error Type	Error Description	Bit	Corresponding Value	3	5	9
A10	AF original feed error	0	1	0	0	0
A09	Paper ejection error	1	2	0	0	0
A08	Paper jam on print drum	2	4	0	0	0
A07	Paper feed error	3	8	0	0	0
B07	MTPF: Paper jam error (upper)	6	16	Х	Х	0
B09	MTPF: Paper jam error (lower)	7	32	Х	Х	0
B11	MTPF: Tray-1 paper jam error	8	64	Х	Х	0
B17	MTPF: Tray-2 paper jam error	9	128	Х	Х	0
B03	Sorter: Jam error	10	256	Х	Х	0

**Example:** If A10 and A08 jam errors occur at the same time, the panel message will show error **J05**.

## 4. Errors Requiring Special Attention

The errors listed below are not cleared even when the machine power is switched OFF and ON.

The problem must be corrected in order to clear the error message.

Error Type	Error Description
C01	Replace ink cartridge
C02	Replace master roll
C03	Master disposal box full

Error Type	Error Description
T13	Cutter motor lock
A02	Master loading error
A04	Master removal error
A08	Paper jam on print drum
A16	Waiting for the master to be removed from the drum
A17	Cutter error

# MEMO

# CHAPTER 17: TEST MODE

# Contents

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## 1. Test Mode Procedures

#### 1) Start-up Procedure

Switch ON the machine power while simultaneously pressing the two print positioning keys on the operation panel. This initiates the test mode in standby mode.



#### 2) Operating Procedure

Test mode numbers can be entered (selected) via [Key entry] or [Menu selection].

#### a) Key entry procedure

- (1) In standby mode, enter the number of the test mode to be run using the numeric keys. If you make a mistake during entry, you can perform entry once again by pressing the [C] key.
- (2) Press the [Start] key to initiate Test mode operations.
- (3) Press the [Stop] or [Start] key to end Test mode and return to standby or operation standby modes.
- \* After setting data, press the [Start] key to confirm the modified data and return to standby mode. Press the [Stop] key to cancel settings before returning to standby mode.

#### b) Menu selection method

- (1) While in standby mode, select the unit containing the test item to be run from the Test mode menu.
- · Press the unit name on the LCD screen. (Unit name is highlighted.)
- The Test mode sub-menu appears.
- (2) Select the test item to be run from the Test mode sub-menu.
- Press the test item on the LCD screen. (Test item is highlighted.)
- (3) Press the [Start] key to initiate Test mode operations.
- (4) Press the [Stop] or [Start] key to end the Test mode operation and return to standby mode or operation standby mode.
- \* After setting data, press the [Start] key to confirm the modified data and return to standby mode. Press the [Stop] key to cancel the settings before returning to standby mode.

#### 3) Ending Procedure

To exit the Test mode, press the [Reset] key for at least 1 second during test mode standby mode or test mode operation standby mode.

### 2. Individual Test Procedures

#### 1) Checking sensors and switches

Indicates the sensor and switch status with audible beeps.

- Detected: Buzzer sounds at 0.1 second intervals (short beeps).
- Not detected: Buzzer sounds at 0.5 second intervals (long beeps).

#### 2) Checking motors and solenoids

Switch on by pressing the [Start] key, then press the [Start] or [Stop] key to switch off.

\* Error checking is not performed during the operation. Note that moving parts may lock if at their limit positions.

#### 3) Checking unit operations

- (1) Switch on by pressing the [Start] key, then initiate unit operation. Error checking is performed in basically the same way as for normal operation. Some operations will halt when the sequence is complete, while other operations will continue until you press a key ([Stop] or [Start]).
- (2) A continuous audible tone is emitted to indicate an error. To cancel errors, press the "Reset" key.

#### 4) Data clear

Press the [Start] key to clear the data. [In Action] message appears while clearing the data. The activating ends automatically and [End] message appears when completed.

#### 5) Data check

Press the [Start] key to display data.

\* Data check only displays the various settings. These settings cannot be changed here.

#### 6) Data setting

- (1) Press the [Start] key to display and change the data currently set.
- (2) Change data using the numeric keys. Use the [\*] key to change the [±] display.
- (3) Once settings have been changed, press the "Start" key to confirm the data and return to standby mode. Press the "Stop" key to cancel the settings and return to standby mode.
- \* The settings will be set to their default values if values beyond the specified setting ranges are entered. The settings are also set to their default values if values are entered in units other than the units specified.

## 3. System & Control Panel Test Mode

No.	Sensors, switches	Detection status	3	5	9
0001	Wakeup Key	KeyPressed	0	0	0
0002	Solenoid counter connection signal	Solenoid counter connected	0	0	0
0003	24V A output signal	24V-A ON (24V output)	0	0	0
0004	24V B output signal	24V-B ON (24V output)	0	0	0
0005	Serviceman safety SW (Rear cover	Switch ON (main unit rear cover is installed)			
0005	safety SW)	Other safety switches must be ON for this check.	0	0	0
No.	Motor solenoid system		3	5	9
0062	Wakeup LED	LED Illuminates	0	0	0
No.		Unit check	3	5	9
0080	Test Print A (checkered)		0	0	0
0080	Creates Test pattern 1 (Check	er Flag)	0	0	0
0081	Test Print B (cross stripes)		0	0	0
0001	Creates Test pattern 2 (Cross	Lines)	Ŭ	U	U
0082	Test Print C (Dot1)		0	0	0
0002	Creates Test pattern 4 (Dot 1)		Ŭ	U	0
0083	Test Print D (Dot2)		0	0	0
0000	Creates Test pattern 5 (Dot 2)		Ŭ	•	•
0084	Test Print E (Dot1 + Cross Lines)		0	0	0
0001	Creates Test pattern 6 (Dot 1 ·	+ Cross Lines)	Ŭ	•	•
0085	Test Print F (Dot2 + cross stripes)			0	0
	Creates Test pattern 7 (Dot 2 + Cross Lines)			Ŭ	•
0086	86 Test Print G (Dot3)		x	x	0
	Creates Test pattern 8 (Dot 3)		Â	Â	•
	Paper-Feed Test (continuous feeding	g)			
	Prints continuously.				
0087	* The Speed key is enabled.		0	0	0
	* If the rear cover safety switch	is OFF, the operation begins when the rear cover safety			
	switch is turned ON within 10 seconds after the START key is turned ON.				
0088	0088 Low-Speed Printing Operation		0	ο	0
	Prints continuously at 15 rpm.				
	Stepped Printing Operation				
0000	Press "Start" key to switch on t	he suction fan. Prints at 15 rpm only while "lest print" key is			
0089	pressed.	W1	0	0	х
	Printing stops when "lest Prin	t" key is released, and resumes if the key is pressed again.			
	Press "Stop" to switch suction	tan off.			
	Unit initialization	ing units to their home positions			
		mg units to their nome positions.			
	RZ3.TPH pressure, master co	impression plate, drum lock, clamp unit, vertical plint position,			
0004		marcassion plate, drum look, alama unit vortical print position		0	0
0034	nzo. IF II pressure, master co	inpression plate, drum lock, claimp unit, vertical plint position,	Ŭ	Ű	U
	Paper Fiection Wing				
	R70:scanner, thermal print he	ad compression plate clamp units vertical print position			
		ad, compression plate, clamp units, vertical print position,			
	System Configuration Data Output				
0095	Creates a master for the CLsv	stem data	0	0	0
	Data-Setting & Error-History Output				
0097	Creates a master for the list of	data-setting changes and the error history	х	0	0
	Frror Record				
0099	Stores the error loas accumula	ated on FLASH memory into CF card.	0	0	0
	Rev Manual Event Code Set				
0100	Stores the settings set in Test	mode "No. 196 to 198" manual event codes into REv Flash	0	ο	0
	address in CF card.				
	Machine Clock Activation				
	Activates time set by Test Mod	es No.0171 to 0173. The new clock time set by test mode			
0101	No. 0171 through No.0173 wil	I not be activated unless this test mode No. 0101 is activated.	0	0	0
	Pressing the Start key begins the operation and automatically stops it after 0.5 seconds.				

	Machine Test-Mode Data Recording				
0103	Stores the machine Test Mode	e settings into CF card.	0	0	0
	Print Drum Test-Mode Data Recordir	na			
0104	Stores the print-drum Test Mo	de settings now in the EEPROM of the Print Drum PCB into	0	0	0
	Machine Test-Mode Data Re-store	<b>J</b>			
0105	Writes the test mode settings	retrieved in CF card by test-mode No.0103 into the	0	0	0
	SH4F(SH3M2) PCB.	·····			
	Print Drum Test-Mode Data Re-store				
0106	Writes the test mode settings	retrieved in CF card by test-mode No.0104 into the Print Drum	ο	0	0
	PCB EEPROM.				
	Test Mode Data Back-up				
0107	Stores all the test mode numb	pers and settings, which are changed from the program	0	0	0
	default, are stored in CF card	for record keeping purpose.			
	DSP Download (Multi-feed tray)				
0108	Pressing the Start key begins	download of the DSP program for controlling the Multi-feed	х	х	0
	tray.				
No.	Data clear	Details	3	5	9
	Clearing Jam Status Data				
0110 <sub>F</sub>		This test mode can also be used to clear error data for items	Ĩ		
		for which	0	0	0
	Forcibly clears the jam.	jam can otherwise be cleared only by the jam release	Ŭ	ľ	Ŭ
		procedure.			
		Consumables errors cannot be cleared.			
	Clearing User Memory		<b>↓  </b>		
0111		Initializes data in user area memory to the programming	0	0	0
	User area memory clear	defaults			
		Record all the settings before the test mode activation.			
	Clearing Normal Area Test-Mode Data Memory [MACHINE]				
	Normal area test mode memory	Initializes all normal area test mode settings on the machine			
0112	clear for test modes on the	to their programming default values.	0	0	0
	machine.	The protected area test modes stay unchanged. Record all the settings before, the test mode activation			
		Record all the settings before the test mode activation.			
0110	Maintenance Count Clear (master m	aking)			
0113	Maintenance Call master count	Clears the master-making maintenance-call message.	0	0	0
	Clear				
0114	Maintenance Count Clear (printing)	Clears the printing maintenance call measure	0	0	0
	Maintenance Call copy could clear				
0115	Maintenance Could clear (print drum		0		0
0110	count clear	Clears the print-drum maintenance-call message.	Ŭ	ľ	Ŭ
	Set-up Wizard Initialize				
0116	Set-up Wizard clear	Initializes the set-up wizard to the out-of-the-factory condition	х	0	0
	Clearing Normal Area Test-Mode Da	ta Memory IPRINT DRUM			
		Initializes all normal area test mode settings within the	ł		
0447	Normal area test mode memory	EEPROM of the print drum to their programming default			
0117	clear for test modes on the print	values.	0	0	0
	drum.	The protected area test modes stay unchanged.			
		Record all the settings before activation.			
No.	Data check	Details	3	5	9
		Displays the test mode numbers and settings for all the test			
0120	System Parameter Adust Record	modes changed from the program default settings. (Does	х	0	0
		not list those in the protected test mode.)			
0121	SW Action Record	Displays error codes (D**-***) for set-switch errors which	v		
		caused the machine to stop. (Most recent 8 items)		0	0
0122	Error Record	Lists error code history of the error types T, A and B which	v		0
5122	occurred on the machine. (Most recent 64 items)		Â	Ŭ	Ŭ
0123	Maintenance Count	Displays all the maintenance counter values (master-	x	0	0
		making, printing, and print-drum).		Ľ	Ľ
0124	Machine Serial Number 1	Displays the left 4 digits of the machine serial number.	0	х	х

0405	Machine Cariel Number 2	Diamles m th	a left 1 digite of the machine equiples			
0125	Machine Senai Number 2	Displays in	Displays the left 4 digits of the machine serial number.			х
0126	Optional Configuration Check	Displays of	splays optional peripherals/devices currently connected F Unit, Job Separator, NIC).			о
		Diaplays whather there is any AE connection				
		0 · not con	nected			
0127	AF connection status		ted (displays program version if POM is set	0	х	х
		1. connec	Every program version in ROW is set.			
		Dianlara	Example. Displays 0101 for ver. 1.01)			
0128	Job Separator connection status	Displays w	nether there is any Job Separator connection.	0	х	x
		U: not cor				
0129	NIC connection status	Displays w	hether there is any NIC connection.	0	х	x
		0: not conr	nected 1: connected			
0130	MCTL PCB program version display	Displays M	echanical control PCB program version.	0	х	x
		Example: D	Displays "0101" for Ver.1.01	_		
0131	ROSA PCB program version display	Displays R	OSA program version. Example: Displays "0101"	0	х	x
	······································	for Ver.1.01				
	Paper Size ID display					
		Displays paper ID decided according to paper size VR and				
	Description	paper size	detection sensor.			
		Paper size	ID is as follows:			
		Paper ID	Paper description			
		00	No paper			
		01	A3			
		02	B4			
		03	A4			
		04	A4 landscape			
		05	B5			
		06	B5 lands cape			
		07	A5			
	Setting	08	A5 landscape			
		09	B6			
		10	B6 lands cape			
0135		11	Post card	0	0	0
	Paper size on feed tray is displayed	12	Post card lands cape			
	by ID numbers.	13	l edger			
		14				
	Note that the Paper ID is limited for	15	Letter			
	each machine models, such as	16	Letter lands cane			
	millimeter machine, inch machine,	17	Statement			
	Chinese machine, etc.	10	Statement landa cana			
		10	Foolooon			
		19	Chinaga Dapar Na K16			
		21	Chinese Paper No. K10 Chinese Baper No. K16 Jandasano			
		22	Chinese Paper No. KTO lanuscape			
		52	Chinese Paper No. Ko			
		50	Paper size undefined 1			
			(paper size detection sensor : ON)			
		51	Paper size undefined 2			
			(paper size detection sensor : OFF)			
NO.	Coop Master Maline Indexed at 114	Data	setting			
	Scan/waster-waking independent Mo					
04.40		Selection to	о make the scan/master-making action together			
0140	Description	with the ma	aster-removal-action or to make the two actions	0	0	X
		separately.				
L	Setting	0 : Together (default) 1 : Independent				
	Counter Display Control					
0141	Description	Selection to	o display or not display the counter.	0	0	0
I	Setting	0 : Not disp	played (default) 1: Displayed			

Test Mode Language					
0142	Description	Selects the language for the Test Mode display.	х	0	0
	Setting	0 : Japanese 1: Japanese 2: English 3: Chinese			
	Maintenance - Master Count Entry				
	Description	Selects the maintenance call count for master-making.			
0143		Range: 0 to 9999 (0 to 999,900 master-making)	0	0	0
	Setting	Unit: 1 (100 master-making)			
		Default: 0 (No Entry)			
	Maintenance - Copy Count Entry				
0444	Description	Selects the maintenance call count for printing.			_
0144	0	Range: 0 to 9999 (0 to 9,999,000 copies)	0	0	0
	Setting	Unit: 1 (1,000 copies)			
	Maintanana - Duran Matan Fistor	Default: 0 (No Entry)			
	Maintenance - Drum Meter Entry				
0145	Description	Selects the maintenance call count for each printing drum.	_	~	~
0145	Catting	Range: 0 to 9999 (0 to 9,999,000 copies)	0	0	0
	Seung	Defaulte 0 (No Entre)			
	Delault: 0 (No Entry)				
	Scan First	Colocto whether econoring is done before meeter removal or			
0146	Description	Selects whether scanning is done before master-removal, of	v	v	~
0140		0 : Inactive (default) [both done at some time]	^	^	0
	Setting	1: Active (deladit) - [both done at same time.]			
	Print Quantity Peneat Setting	1. Active - [scanning is done before master-making.]			
	Thin Quantity Repeat Setting	Selects whether to display 0 or to re-display the input print			
0150	Description	quantity after each ALITO printing is finished	x	0	0
0100		0 : Dinalys 0 (default)	~		Ŭ
	Setting	1. Re-displays the input print quantity			
	Print after Short Interval				
		Selects whether to start with slow printing speed or not after			
0151	Description	the machine is kept idle for some short interval.	о	0	0
		0 : Inactive (default)			
	Setting	1: Active			
	Min. Print Quantity Control				
	Description	Selects to allow changes made on the minimum print			
0154	Description	quantity input value by Admin. Tab in user mode.	0	0	0
	Catting	0 : Prohibit			
	Seung	1: Allows (default)			
	Counter Action Control				
		Stops both the mechanical & soft counter. Once the power is			
0155	Description	turn OFF and turned back ON, the setting automatically	0	0	0
0100		changes back to Counter Active.	Ŭ	Ŭ	Ŭ
	Setting	0: Stops the counter			
	Seang	1: Activates the counter (default)			
	WARNING Diplay Control				
	Description	Selects whether to display the Wrong Size Warnings [F02,			
0159		F10 and F43] in master-making and printing operation	Х	0	0
	Setting	0: Does not display the Warnings			
		1: Displays the Warnings (default)			
	Auto Multi-Up Recovery				
0400	Description	Selects whether to keep the Multi-Up selection active or to			
0160	•	change to inactive after a Multi-Up operation is finished.	X	0	0
	Setting	U: Changes to Inactive (detault)			
	5	1: Stays active			

	Program Print Auto-Repeat Setting				
0161	Description	Selection to keep the program printing active or to change to inactive after one master-making with Auto-Print OFF.	x	0	0
		0 : Change to inactive			
	Setting	1: Stays active (default)			
	RLP Default Tray Selection				
		Selects the default tray on linked printer. (This selection is			
	Description	effective against 1st linked printer. Tray No.1 is			
0164		automatically selected for 2nd linked printer and up.)	х	0	х
		0: MP-tray, 1: Tray-1 (default), 2: Tray-2, 3: Tray-3, 4: Tray-4,			
	Setting	5: Tray-5,			
		6: Tray-6, 7: Tray-7, 8: Tray-8.			
	RLP Mode display change timing se	lection			
	Description	Timing adjustment for the display to change when using			
0165	Description	RLP auto-selection mode.	х	0	0
	Setting	-5 to +5 (0 second to 2.5 seconds) $1 = 0.25$ seconds			
	Setting	0: 1.25 seconds (default)			
	Maximum Print Quantity Control				
	Description	Enable or disable the maximum maximum print quantity			
0166	Description	setting, and also sets the maximum print quantity.	х	0	0
	Setting	0 : Disabled (default) 1 to 9999: Enabled			
	County	1 = 1 print			
	Paper ID Auto-Repeat Control				
	Description	Selects if the paper data stays active or become inactive after			
0167		power is turned OFF or RESET button is pressed.	х	0	0
	Setting	0 : Stays active (default)			
		1: Changes to inactive			
	Fine Adjustment Button Display Con	trol			
0168	Description	Used to display or nide the fine adjustment button.	х	х	0
	Setting	0. No display (delault)			
	Admin Display Control	1. Displays			
	Admin. Display Control	Slects if the Admin. Tab is displayed or not			
0169	Description	0 : Does not display	х	0	0
	Setting	1: Displays (default)			
	Consumable Storage Indication				
		Selects if the consumable storage indication is displayed on			
0170	Description	the Admin window	х	0	0
		0 : Does not display (default)		-	
	Setting	1: Displays			
	Machine Clock Setting (YEAR)				
	Description	Sets YEAR in clock.			
		2000 to 2199 (Year 2000 to 2199)			
0171		1 = 1 year	•	•	•
0171	Sotting	Default: 2000 (Year 200)	0	0	0
	Seurig	Test Mode No. 0101 must be activated after inputting			
		test modes No. 0171 through No. 0173 to activate the			
		new setting.			
	Machine Clock Setting (MONTH & DA	ATE)			
	Description	Sets MONTH/DATE in clock.			
		Left 2 digits = MONTH: 1 to 12 (January to December)			
		Right 2 digits = DAY: 1 to 31 (Days 1 to 31)			
0172		1 = 1 month, 1 = 1 day	0	0	0
	Setting	Default: 0101 (January <u>1</u> )			
		Test Mode No. 0101 must be activated after inputting			
		test modes No. 0171 through No. 0173 to activate the			
		new setting.			

	Machine Clock Setting (HOUR & MINUTE)				
	Description	Sets HOUR/MINUTE in clock.			
		Left 2 digits = HOUR: 0 to 23 (0 to 23 hours)			
		Right 2 digits = MINUTE: 0 to 59 (0 to 59 minutes)			
0173		1 = 1 hour, 1 = 1 minute	0	0	о
	Setting	Default: 0000 (0 hours, 0 minute)			
	5 5 5 5	Test Mode No. 0101 must be activated after inputting			
		test modes No. 0171 through No. 0173 to activate the			
		new setting			
	Chinese Paper No 16 (Width data se	atting)			
	Description	Sets paper width data			
0174	Description	Banga : $101 \text{ to } 100 \text{ (101mm to } 100 \text{ mm})$	0		0
0174	Satting		0		0
	Seung	$D_{\text{res}} = 10000000000000000000000000000000000$			
	Chinese Dener No. 9. (Midth data as				
	Chinese Paper No.8 (Width data se				
0475	Description	Sets paper width data.			
0175		Range : 266 to 276 (266mm to 276mm)	0	0	0
	Setting	Unit:  1 = 1mm			
		Default: 271 (271mm)			
	Chinese Paper No.8 (Length data s	etting)			
	Description	Sets paper length data.			
0176		Range : 385 to 395 (385mm to 395mm)	0	0	0
	Setting	Unit: 1 = 1mm			
		Default: 390 (390mm)			
	Paper Size Detection Selection (Normal or Chinese)				
0177	Description	Normal paper size detection or Chinese paper size	_		
	Description	detection.	0	0	х
		0 : Normal paper size detection (default)			
	Setting	1: Chinese paper size detection.			
	DCC Selection				
		Selection between normal counter and digital copy counter			
	Description	display			
0178		0 : Counter display (default)	0	0	0
	Setting	1 : DCC (Digital Conv Counter) display			
	Setting	2: No display			
	Counter / Stock Info Mail Control	2. No display			
		Sanda consumable stock data by a mail			
0182	Description		х	х	0
	Setting	0. Disabled			
	DEv Manual Event Cade Innut (1): En				
	REV Manual Event Code Input (1): Tro				
0.4.0.0	Description	Rev manual event input of the 1st set of 4-digit numbers.			
0196		0 to 9999	0	0	0
	Setting	1 = 1			
		U (default)			
	REv Manual Event Code Input (2): Tro	ouble Area Code			
	Description	REv manual event input of the 2nd set of 4-digit numbers.			
0197		0 to 9999	0	0	0
	Setting	1 = 1			
		0 (default)			
	REv Manual Event Code Input (3): Jo	b Code			
	Description	REv manual event input of the 3rd set of 4-digit numbers.			
0198		0 to 9999	0	0	0
	Setting	1 = 1			
	Ĭ	0 (default)			
	Software Option Enable Control				
		The software option is enabled when the key code (8 digits)			
	Description	is entered and the Start key is pressed			
0199		Range : $00000000$	- x	х	0
-	0.54%	I linit · 1			
	Seurig				

# 4. Image Processing / Scanning Test Mode

No.	Sensor s	switch check Detection status			5	9
0200	FB/AF HP senso	r	Carriage at Home position	0	0	0
0201	Flatbed Original	Det. Sensor	Detecting (original present)	0	0	0
0202	Flat Bed Original Sensor 1	I Size Detection	Detecting (original present)	x	х	0
0203	Flat Bed Original Sensor 2	I Size Detection	Detecting (original present)	x	х	0
0204	Flat Bed Original Sensor 3	I Size Detection	Detecting (original present)	x	x	0
0205	Flat Bed Original Sensor 4	I Size Detection	Detecting (original present)	x	x	0
0206	Flat Bed Original Sensor 5	I Size Detection	Detecting (original present)	x	x	0
0207	Flat Bed Original Sensor 6	I Size Detection	Detecting (original present)	x	x	0
0208	Flat Bed Original Sensor 7	I Size Detection	Detecting (original present)	x	x	0
0209	Stage Cover Ser	nsor	Stage cover closed	0	0	0
No.	Motor	, solenoid	Remarks	3	5	9
0260	Scanner lamp		Switches ON/OFF scanner lamp	0	0	0
No.			Unit check	3	5	9
0281	Carriage Home Brings the Mirror carr	the carriage to the Home Position. (RZ2 series = Scanner carriage, RZ3 series = Carriage)				o
0284	Scanner Cycle Continuous Action Scanner A3 size original scanning cycle movement with auto-base-control (ABC) action. Repeats the one cycle action until the STOP key is pressed. Pressing the STOP key ends the movement and returns to Home position				ο	0
0287	Scanner Lamp F Moves the	Replace Positioning	np replacing position.	0	0	0
0289	Scanner SHIPPI	NG Positioning		0	0	0
No	ivioves trie	e lamp camage to the	Data softing	2	E	0
NO.	Line Conv Slice	Level Adjustment	Data Setting	3	5	3
	Description	Sets the slice level	for line mode. Larger values for lighter print			
0340	Setting	Range : -16 to Unit : 1 Default : 0	16	0	0	0
	Auto Base Contr	ol (ABC) Slice Level	Adjustment			
	Description	Sets the slice level	for ABC. Larger values for lighter print.			
0341		Range: -16 to	16	0	0	0
	Setting	Unit: 1				
		Default: 0				
	Photo/Duo Defa	ult Setting				
0345	Description	Image processing s Applies to both the r	selection when Photo or Duo is selected in master-making. master-making and printing to linked printer (RLP).			
	Setting (RZ3/5) Range: 0: Error-difusion (default) 1: Dot-Screen-1 2: Dot-screen-2		usion (default) 1: Dot-Screen-1 2: Dot-screen-2	0	0	Х
	Setting (RZ9)	Range: 0: Error-dif 3: Dot-Scr	usion (default)1: Dot-Screen-12: Dot-screen-2een-34: Dot-Screen-4	x	х	0
	Halftone Curve S	Selection (Photo)				
	Description	Selects the matrix for	orming the halftone-curve base for photo mode.			
0350		Range: 0 to	8	0	0	0
	Setting	Unit: 1 Default: 4				

	Halftone Curve Selection (Dot Photo)				
	Description Selects the matrix forming the halftone-curve base for dot mode.				
0351		Range: 0 to 8	0	о	0
	Setting	Unit: 1			
	Ū	Default : 4			
	Halftone Curve S	Selection (Duo)			
	Description	Selects the matrix forming the halftone-curve base for DotDuo mode.			
0352		Range: 0 to 8	0	0	0
	Setting	Unit: 1			
		Default: 4			
	Halftone Curve S	Selection (Dot Duo)			
	Description	Selects the matrix forming the halftone-curve base for DotDuo mode.	1		
0353		Range: 0 to 8	0	0	0
	Setting	Unit : 1			
		Default : 4			
	Trimming Slice Level Adjustment				
	Description	Sets the slice level for the trimming.			
0359		Range : -16 to +16 * (<+> for reduced density)	X	х	0
	Setting	Uni t: 1			
		Default : -2			
	FB Horizontal Scan Position Adjust				
	Description	Adjusts the original horizontal scan position on the flatbed (For FB scanning).			
0380	Setting	Range: -30 to +30 (-3.0mm to +3.0mm)	0	0	0
		(+ is to the left )	ľ	Ũ	Ũ
		Unit : 5 (0.5mm)			
		Default : 0 (0mm)			
	FB Scan Start Position Adjust				
	Description	Adjusts the original scanning start position on the flatbed (amount of top image			
		omitted)			
0381		Range: -40 to +40 (-4.0mm to +4.0mm)	0	о	0
	o #	(+ omits more top image of the original and moves the printed image			
	Setting	up)			
		Unit: $1(0.1\text{mm})$			
	FB Scanning Sp	eed Adjustment			
	Description	Adjusts the original scanning speed on the flatbed (Adjust the speed of Read			
0382		Pulse Wold() Pange: $50 \text{ to } \pm 50 \text{ (} 5.0\% \text{ to } \pm 5.0\% \text{)}$		_	
0302		Range . $-50 \ 10 \ +50 \ (-5.0\% \ 10 \ +5.0\%)$		0	0
	Setting	(+ e) (1) (10) (10) (10) (10) (10) (10) (10)			
		Default: $0.0\%$			
	Center dotted lin				
		Adds center dotted line on the prints during master-making or printout from linke			
0386	Description	nrinter	0	0	0
		0: No center dotted line (default)	ľ	Ŭ	Ŭ
	Setting	1. Adds center dotted line			
	Edge Emphasis	Threshold Offset			
	Description	Sets the offset for the following Test Mode setting value.			
0399	2000.10001	Range: -128 to 127	x	х	0
	Settina	Unit: 1	~		
		Defaul t: 0			
			-		

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## 5. Master-Making / Master-Disposal Test Mode

No.	Sensor switch check	Detection status	3	5	9
0400	Master-positioning sensor	Sensor light reflected (Master present) / No reflection ( No master)	0	ο	ο
0401	Master detection sensor	Sensor light reflected (Master present) / No reflection ( No master)	0	o	0
0402	Master end sensor	Sensor light blocked (Master end seal detected)	0	0	0
0403	Cutter HP SW [Shuttle blade cutter]	SW pressed (Cutter at HP)	0		0
0400	Cutter HP SW [Rotary cutter] SW not pressed (Cutter at HP)		Ŭ	ľ	Ŭ
0404	Cutter Stop Position SW [Shuttle blade cutter] SW pressed (Cutter at end position)		0	0	x
0406	TPH pressure sensor     Sensor light blocked (TPH down position)		0	0	0
0407	Master-making-unit set sensor	Sensor light blocked (Master-making unit cover closed)	0	0	0
0408	Master-making-unit lock sensor	Sensor light blocked (Master-making unit locked in position)	0	0	0
0409	Master-making-unit safety SW	SW pressed (Master-making unit upper cover is closed). Other safety switches must be ON for this check.	0	o	0
0410	Master-making-unit releasing button	SW ON (Button is pressed )	0	0	0
0420	Master-disposal Jam Sensor	Sensor light is not blocked (Master is detected - jammed)	0	0	0
0421	Master-compression HP Sensor	Sensor light blocked (Master compression plate at HP)	0	0	0
0423	Master-disposal BOX safety SW	SW ON (Master-Disposal Box is set in place). Other safety switches must be ON for this check.	0	0	0
0425	Master-compression motor FG sensor	Sensor light blocked (Encoder disc is detected)	ο	o	0
0426	Master-removal motor FG sensor	Sensor light blocked (Encoder disc is detected)	0	0	0
No.	Motor, solenoid	Remarks	3	5	9
0460	Thermal-pressure motor (CW)	Rotates in clock-wise (CW) direction	0	0	0
0461	Thermal-pressure motor (CCW)	Rotates in counter-clock-wise (CCW) direction	0	0	0
0462	Write pulse motor in feed direction	Rotates in master feeding direction	0	0	0
0463	Write pulse motor in return direction	Rotates in master returning direction	0	0	0
0464	Load pulse motor in feed direction	Rotates in master feeding direction	0	0	0
0466	Write pulse motor + Load pulse motor in feed direction	Rotates both the Write & Load pulse motors in master feed direction	0	0	0
0467	Master-making-unit release button LED	LED illuminates.	0	ο	0
0470	Master removal motor in feed direction	Rotates in the direction to feed the removed master towards the master disposal box.	0	ο	0
No.		Unit check	3	5	9
0480	Cutter motor 1 cycle motion Performs one cutting motion.		0	ο	ο
0481	Thermal pressure motor action (TPH Pushes the TPH down.	l down)	0	ο	ο
0482	Thermal pressure motor action (TPH Pushes the TPH up	lup)	0	ο	ο
0488	Master-making-unit Lock Solenoid O Press "Start" key to switch ON	N/OFF action	0	ο	0
0489	Storage fan solenoid ON/OFF action Press START key to switch ON	, the Solenoid. Solenoid automatically switches OFF 10 sec.	0	o	0
0490	Master compression-plate home pos	sitioning	0	0	0
0404	Moves master compression p MCompress. Protect Position	late to the home position.	~	~	
0491	Moves master compression p	late to the Protection Mode position.	×	×	0
0493	Repeats disposal compression	is movement on action with interval of 3 seconds between the each.	0	0	0
0494	Cutter motor ON action (cut direction [This test mode is for checking the m cutter unit before activation.] Rotates the cutter motor in the	) otor as one independent part. Disconnect the motor from the	0	0	0
0490 0491 0493 0494	Master compression-plate home pos Moves master compression p MCompress. Protect Position Moves master compression p Master compression-plate continuou Repeats disposal compressio Cutter motor ON action (cut direction [This test mode is for checking the m cutter unit before activation.] Rotates the cutter motor in the	sitioning late to the home position. late to the Protection Mode position. is movement on action with interval of 3 seconds between the each otor as one independent part. Disconnect the motor cut direction (maximum 10 seconds)	n. • from the	o       x       o       r       o	0     0       x     x       x     0       x     0       x     0       x     0

No.	[	Data check	Details	3	5	9
0521	TPH thermist	or temperature data	Displays the temperature of the TPH thermistor in "degrees Celsius"	0	0	0
0524	TPH power w	oltage	Displays the voltage applied to the TPH when the power to the TPH is switched ON.	ο	ο	ο
0527	Master usage	e start date	Displays master use start date stored in Master TAG. For example, 2005/8/28 will be displayed as 2005 and 0828 alternately.	0	0	0
No.			Data setting	3	5	9
	Master Leadi	ng-Edge Position Adjus	t			
0540	Description	Adjusts return moveme to perform inching ope so the master-position	ent a little bit after the master-positioning sensor goes ON ration during master setting or following master cutting action, ing sensor is OFF when the master-set action is completed.	0	0	0
	Setting	Range : 0 to 100 (+ value re Unit : 1 (0.1mm) Default : 50 (5.0mm	(0mm_to_+10.0mm) turns the master material further back) )			
	Write start-pc	sition adjustment		Ļ		
0541	Description	Adjusts the master-ma amount of rotation in C write-signal goes on.	king start position on the master material by changing the W or CCw direction the write-pulse-motor makes before the			
	Setting	Range : -50 to +50 (+ values re goes on. The the master comes up.) Unit : 1 (0.1mm) Default : -15 (J.5mm	(-5.0mm to +5.0mm) turn the master material back more before the write signal ne master-making starts from closesr to the leading edge of material. As a result, the printed image position on the paper	0	o	0
	Master-makir	a length adjustment	1)			
	Description	Adjusts the master-ma	king area length.	1		
0542	Setting	Range : -100 to +1 (+ values i Unit : 1 (0.1mm) Default : 0 (0mm)	00 (-10.0mm to +10.0mm) ncrease master-making area length)	0	0	0
	Master-clamp	o-amount adjustment				
	Description	Adjusts the master-cla the drum.This adjust	mp amount under the clamp plate during master loading onto ment affects the write-start position.			
0543	Setting	Range : -100 to +1 (+ values Unit : 1 (0.1mm) Default : 0 (0mm)	00 (-10.0mm to +10.0mm) increase clamping amount)	0	0	0
	Master cut le	ngth adjustment				
0544	Description	Adjusts the total length drum angle).	of one master (changes the master cut timing against the			
0544	Setting	Range : -100 to + (+ values i Unit : 5 (0.5 deg Default : 0 (0 degre	100 (-10.0 degrees to +10.0 degrees) ncrease the master length). rees) ees)	0	0	0
	Master-makir	ng speed adjustment				
0547	Description	Image elongation and pulse motor.)	shrinkage in making master. (Adjusts the speed of the write $100 (10.0\% \text{ to } \pm 10.0\%)$	0	0	0
0547	Setting	Unit : 1 (0.1%) Default : 0 (0%)	elongate the image in master making.).	0	0	0

	MRmv. Rolle	er Stop Timing			
0570	Description	Sets the timing for the vertical transport rollers to stop in relation to Drum angle.			
0570	Setting	Range: -50 to +50 (-50 to +50 degrees) Unit: 1 degree Default: 3 degrees	х	х	0
	MRmv. Rolle	er Stop Timing (A4W)			
0574	Description	Sets the timing for the vertical transport rollers to stop in relation to A4W Drum angle.			
0571	Setting	Range: -50 to +50 (-50 to +50 degrees) Unit: 1 degree Default: 18 degrees	х	х	0
	Master comp	ression-linhit position (maximum end position).			
	Description	Sets the pulse count for the compression-limit position (maximum end position).			
0573		Range : 106 to 163 (106 pulses to 163 pulses)			
0575	Setting	(Master compression plate 65° to 100° from HP position).	0	0	0
	Setting	Unit : 1 (1 pulse)			
		Default : 130 pulses (compression plate angle 90° from HP)			
	Mater compre	ession duration adjustment			
		Sets the stop time duration for one master compression. (The compression finishes			
	Description	when one it takes one certain time for the encoder disc on master compression			
		motor to make one rotation).			
		Range: 5 to 70 (5msec to 70msec)			
0575	Setting	Unit: 1 (1msec)	-		
0575	(RZ3/5)	Delault : 53 (53msec) for D4 % Leage	0	0	х
		45 (40  msec)  for  44  g Legal			
		$\frac{40}{40115eC} = 101 \text{ A4 a Letter}$			
	Setting	Linit: 25 (0.25msec)			
	(PZQ)	Default : 5300 (53msec) for A3 & Ledger	х	х	0
	(1123)	4500 (45msec) for B4 & Legal			
	Master dispo	sal box full detection position adjustment			
	Description	Sets the pulse count for master disposal box full detection position.			
		Range: 57 to 131 (57 pulse to 131 pulse)pulse			
		(Master compression plate angle 35° to 80° from HP).			
	Setting	Unit: 1 (1 pulse)	_	_	
	(RZ3/5)	Default: 106 pulses for A3 , B4 , Ledger , Legal & Foolscap.	0	0	х
0576		(Compress plate angle 65° from HP)			
		115 pulses for A4 & Letter.			
		Range : 57 to 131 (57 pulse to 131 pulse)pulse			
	Setting	(Master compression plate angle 35° to 80° from HP).			
	(RZ9)	Unit: 1 (1 pulse)	х	х	0
	()	Default : 129 pulses for B4.			
		122 pulses for A3.			
	MCompress	S. Protect Pos. Adjustment			
0577	Description	Selects the position of the master compression plate in Protection Mode.	х	х	0
	Setting	Range: -30 to +30 (-30 to +30 pulses) Unit: 5 pulses Default: 0 pulse			
	Master dispo	sal motor speed selection			
0570	Description	Selects the master-disposal-motor speed in relation to the print drum rotation speed.	~	~	
0578	Sotting	<ol> <li>Same speed as the print drum speed.</li> <li>10% faster than the print drum around (default)</li> </ol>	0	0	0
	Seung	1. 10% laster than the print drum speed. (default)			
	Compacting	2. 2070 laster than the print drunt speed.			
	compacing	Enables/disables automatic adjustment to correct the default value of the compacting			
0579	Description	completion position	х	х	0
	Setting	Range : 0 (Disable) / 1 (Enable : Default))			

# 6. Paper-Feeding / Paper-Ejection Test Mode

No.	Sensors, switches	Detection status	3	5	9
0600	Paper detection sensor	Sensor light reflected (paper detected)	0	0	0
0601	Paper-size detection sensor	Sensor light reflected (paper detected)	0	0	0
0602	Elevator upper-limit sensor A [Only	Sensor light blocked (Sensor A detecting paper feed tray at			
0602	for RZ3 series]	maximum up position)	0	0	0
0602	Elouator uppor limit concor P	Sensor light blocked (Sensor B detecting paper feed tray at	_		
0603	Elevator upper-innit sensor B	maximum up position)	0	0	0
0604	Eleveter lewer limit e ene er	Sensor light blocked (Sensor detecting paper feed tray at			
0004		maximum down position)	0	0	0
0605	Paper sensor(RZ3/5)	Sensor light reflected (paper detected)	0	0	х
0005	Paper sensor(RZ9)	Sensor light blocked (paper detected)	х	х	0
0606	Paper-ejection sensor	Sensor light reflected (paper detected)	0	0	0
		The switch is pressed			
0607	Paper-feed-tray upper safety SW	The paper feed tray upper safety SW must beON during this	о	0	0
		procedure.			
		The switch is pressed			
0608	Paper-feed-tray lower safety SW	The paper feed tray lower safety SW must beON during this	о	0	0
		procedure.			
0609	Paper-feed tray elevation button	Switch ON (button is pressed)	0	0	0
0610	Remaining Paper Volume Sensor A	Sensor light blocked (blocked by shield plate)	х	х	0
0611	Remaining Paper Volume Sensor B	Sensor light blocked (blocked by shield plate)	х	x	0
0612	Paper-ejection FG sensor	Sensor light blocked (detecting encoder disc)	0	0	0
0614	Paper-feed pressure sensor	Sensor light blocked (detecting paper feed pressure lever)	0	0	0
		Sensor light blocked (detecting actuator plate of the election	-	-	-
0618	Paper ejection wing HP sensor	wing)	х	0	0
No.	Motor solenoid system	Remarks	3	5	9
0660	Paper ejection motor	Rotates the motor.	0	0	0
0661	Suction fan	Activates the fan.	0	0	0
0662	Separation fan	Activates the fan.	0	0	0
0666	Paper ejection wing pulse motor (CW)	Rotates the pulse motor in clockwise direction.	x	ο	ο
0667	Paper ejection wing pulse motor	Rotates the pulse motor in counter-clockwise direction.	x	0	0
0668	East Trav Button LED	Food Tray Button LED	v	v	0
0660	Pro Suction for				0
No			^	~	0
NO.	Paper ciection fans action	Unit check	ა 	Э	9
0680	Turne ON the Separation Fan	Sustian Ean and Dra Sustian Ean hypropaing STADT key	х	х	0
	Paper food trov maximum up position	Suction Fail, and Fie-Suction Fail by pressing START Rey.			
0681	Paper leed tray maximum up position	ha maximum up position by proceing START kay	0	0	0
	Raises the paper leed tray to I	ne maximum up position by pressing START key.			
0682	Paper leed tray elevation up & down		о	0	0
	Raises and lowers the paper-	ieed tray repeatedly			
0602	Paper feed tray maximum down post	luoning			
0003	Lowers the paper feed tray to	the maximum down position by pressing by pressing STAR I	0	0	0
	key.				
0004	Separation Pump Solenoid ON/OFF	Action			
0684	Turns the solenoid ON when t	the Start key is pressed. The solenoid automatically switches	X	X	0
	OFF after 10 seconds.				
	Paper Feed Reverse-rotation Solence	id ON/OFF Action			
0687	Turns the solenoid ON when t	he Start key is pressed. The solenoid automatically switches	х	X	0
	OFF after 10 seconds.				
	Paper-feed clutch ON/OFF action				
0688	Presses START key to turn ON	N the clutch. The clutch automatically switches off after 10	0	0	0
1	seconds.				

0689	Scraper Clutch ON/OFF Action (Optic Turns the clutch ON when the	nal) Start key is pressed. The clutch automatically switches OFF	x	х	0
	after 10 seconds.				
	Guide Roller Release Solenoid ON/0	OFF Action			
0690	Turns the solenoid ON when t	he Start key is pressed. The solenoid automatically switches	х	х	0
	OFF after 10 seconds.				
0703	Paper ejection wing HP positioning			о	0
	Positions the paper ejection wing to its HP position.			_	
0704	Paper ejection wing fixed position		х	о	0
	Fixes the paper wing position	to the position selected by test mode No. 0780.			
0705	Automatic Multiple Paper Feed Adjustment One sheet of thin RISO paper must be set at the multiple paper feed sensor position during		v	v	
0705	One sheet of thin RISO paper must be set at the multiple paper feed sensor position during this procedure.		x	x	0
	Elevator motor ON action				
0708	Rotates the elevator motor for	10 seconds	0	0	0
0/00	Remove the elevator motor fr	rom the machine before activation 1	Ŭ	Ŭ	Ŭ
No.	Data check	Details	3	5	9
0704		Displays the potentiometer adjustment result in millimeter	-		-
0721	Paper width measurement (mm)	value to the first decimal.	0	0	0
0700	Multiple Deper Food Concer	Displays the A/D value of the multiple paper feed sensor (also			
0722	Multiple Paper Feed Sensor	serves as paper sensor).	х	х	0
No.		Data setting	3	5	9
	Elevator upper-limit position selectio	n.			
		Selects the paper-feed-tray upper-limit position. If 0 (Auto) is			
	Description	selected, the upper limit position is linked to the paper feed			
	Decemption	pressure lever position. If 1, 2 or 3 is selected, the upper			
0740		limit stop position is fixed.	0	0	0
		0: Auto - Linked to the Pressure adjust lever (default)			
	Setting	1: Standard paper position			
	Ŭ	2: Card paper position			
	Depart food alutab ON angle	3: Custom paper position			
	Paper-leed-clutch ON angle	Adjusts the drum angle timing for activating the paper food			
	Description				
0741		Range: $-100 \text{ to } \pm 100 \text{ (-10.0° to } \pm 10.0°)$	0	0	0
••••		(+ values delay clutch ON timing )	Ũ	Ũ	Ŭ
	Setting	Unit: $5(0.5^\circ)$			
		Default : 0 (0°)			
	Paper-feed-clutch OFF angle				
	Description	Adjusts the drum angle timing for deactivating the paper-feed			
	Description	clutch.			
0742		Range : -100 to +100 (-10.0° to +10.0°)	0	0	0
	Setting	(+ values delay clutch OFF timing )			
	County	Unit : 5 (0.5°)			
		Default: 0 (0°)			
	Paper feed retries after one paper fe	ed action on 1st paper feed area.			
	Description	Sets the number of times the 1st paper feeding is tried when			
		no paper feed occurs.			
		The mechine displays paper feed icm on the first paper			
		food try			
0743		2: One more paper feed action	0	0	0
	Setting	Paper iam display if no paper feeds after second paper			
	Coung	feed try.			
		3: Two more tries.			
		Paper jam display if no paper feed after third paper feed			
		trv.			

	Paper Feed Clutch OFF Angle (card)				
	Description	Sets the deactivation angle for the paper feed clutch when the paper type is <card>.</card>			
0744		Range: -100 to +100 (-10.0° to +10.0°)	х	х	о
	Sotting	* (<+> for slower OFF timing)			
	Seung	Unit: 5 (0.5°)			
		Default: 0 (0°)			
	Paper Feed Clutch ON Angle (card)				
	Description	Sets the activation angle for the paper feed clutch when the paper type is <card>.</card>			
0745		Range: -100 to +100 (-10.0° to +10.0°)	х	х	о
	0.5 #17 5	* (<+> for slower ON timing)			
	Setting	Unit: 5 (0.5°)			
		Default: 0 (0°)			
	Scraper Clutch OFF Angle				
	Description	Sets the deactivation angle for the scraper clutch.			
0748		Range: –100 to +100 (–10.0° to +10.0°)	Y	x	0
0740	Setting	* (<+> for slower OFF timing)	^	^	Ŭ
	Setting	Unit: 5 (0.5°)			
		Default: 0 (0°)			
	Paper feed jam detection angle. (Pa	per IN)			
	Description	Adjusts the drum angle timing for detecting the paper feed			
	Beschption	jam bypaper sensor. (Paper IN)			
0751		Range : -200 to +200 (-20.0° to +20.0°)	0	0	0
	Setting	(+ values delay detection timing )			
	Cetting	Unit : 5 (0.5°)			
		Default: 0 (0°)			
	Paper feed jam detection angle. (Pa	per OUT)			
	Description	Sets the detection angle for paper feed jam (paper feed OUT).			
0752		Range : -200 to +200 (-20.0° to +20.0°)	х	х	о
	Setting	(+ values delay detection timing )			
	5	Unit : 5 (0.5°)			
		Default: 0 (0°)			
	Paper receiving jam detection angle	. (Paper IN)			
	Description	Adjusts the drum angle timing for detecting paper receiving			
0752		Jam by paper-ejection sensor. (Paper IN)	~	~	
0755		Range: $-500$ to $+500$ ( $-50.0^{\circ}$ to $+50.0^{\circ}$ )	0	0	0
	Setting	(+ values delay detection timing )			
		Default: $0(0^\circ)$			
	Paper receiving iam detection angle				
	Faper receiving jain detection angle	Adjusts the drum angle timing for detecting paper receiving			
	Description	iam hypaner-election sensor (Paner OUT)			
0754		Range $-500$ to $+500$ (-50.0° to $+50.0°$ )	0	0	0
		(+ values delay detection timing )	Ũ	Ũ	Ŭ
	Setting	$1 \text{ lnit} : 5 (0.5^{\circ})$			
		Default $(0.0)$			
	Paper-ejection motor speed adjustm	nent (Proof-Print)			
		Adjusts the speed of the suction belt in relation to the print			
	Description	drum speed.			
		0: 3.0 times the drum speed.			
0755		1: 3.4 times the drum speed. (default)	0	0	0
	Settina	2: 3.7 times the drum speed.			
	9	3: 4.0 times the drum speed.			
		4: 4.5 times the drum speed.			

	Paper-ejection motor speed adjustm	nent (Print speed No.1)			
	Deceminitien	Adjusts the speed of the suction belt in relation to the print	1		
	Description	drum speed.			
0756		0 : 1.5 times the drum speed.		~	
0756		1 : 1.7 times the drum speed. (RZ3, RZ5)	0	0	0
	Setting	2 : 1.8 times the drum speed. (RZ9)			
	6	3: 1.9 times the drum speed.			
		4: 2.0 times the drum speed.			
	Paper-ejection motor speed adjustm	nent (Print speed No.2)			
		Adjusts the speed of the suction belt in relation to the print	1		
	Description	drum speed.			
		0: 1.3 times the drum speed.	1		
0757		1: 1.5 times the drum speed. (RZ3, RZ5)	0	0	0
	Setting	2: 1.6 times the drum speed. (RZ9)			
		3 : 1.7 times the drum speed.			
		4: 1.8 times the drum speed.			
	Paper-ejection motor speed adjustm	nent (Print speed No.3)			
		Adjusts the speed of the suction belt in relation to the print			
	Description	drum speed			
		0 · 11 times the drum speed			
0758		1: 13 times the drum speed (R73 R75)	0	0	0
	Setting	$2 \cdot 14$ times the drum speed (R79)			
	Octaing	3 : 15 times the drum speed			
		4: 1.6 times the drum speed			
	Paper-ejection motor speed adjustm	ent (Print speed No 4)			
		Adjusts the speed of the suction bolt in relation to the print			
	Description				
		0 to 10 times the drum and			
0759		1. 1.1 times the drum aread (DZ2 DZ5)	0	0	0
	Setting	1. 1.1 times the drum speed. $(RZ3, RZ3)$			
	Setting	2 1.2 times the drum speed. (R29)			
		3: 1.3 times the drum speed.			
	Paper election motor speed adjustm	4. 1.4 times the drum speed.			
	Faper-ejection motor speed adjustin	Adjuste the speed NO.3)			
	Description	Adjusts the speed of the suction beit in relation to the print			
		arum speed.			
0760		0: 1.0 times the drum speed.	0	0	0
	0	1: 1.1 times the drum speed.			
	Setting	2: 1.2 times the drum speed. (default)			
		3 : 1.3 times the drum speed.			
		4: 1.4 times the drum speed.			
	Paper-feed-clutch ON angle (Adjustr				
		Sets the speed of the paper ejection motor for high-speed			
	Description	printing.			
0761		This value is added to the adjustment value of No.741.	0	х	x
		Range : -200 to +200 (-20.0° to +20.0°)			
	Setting	(+ values delay ON timing )			
	coung	Unit: 5(0.5)			
		Default: 0 (0)			
	Paper-ejection motor speed adjustm	nent (180 copies per minute high speed printing)			
	Description	Sets the speed of the paper ejection motor for high-speed			
	Decomption	printing.			
		Range:			
0761		0 (1.1 times the circumferential speed), 1 (1.3 times the	Y	x	0
		circumferential speed)	l^	L ^	Ŭ
	Setting	2 (1.4 times the circumferential speed), 3 (1.5 times the			
		circumferential speed)			
		4 (1.6 times the circumferential speed)			
		Default: 1 (1.3 times the circumferential speed)			

Paper-feed-clutch OFF angle (Adjustment 1)					
		Adjusts the drum angle timing for the paper-feed-clutch OFF			
	Description	(For user-mode paper finish type 1) This value is added to			
0762		the adjustment value of Test Mode No.742.	0	x	x
0.02		Range : -200 to +200 (-20.0° to +20.0°)	Ŭ	Â	Â
	Setting	(+ values delay ON timing )			
	g	Unit : 5 (0.5°)			
		Default: 0 (0°)			
	Elevator upper-limit position selectio	In (for user-mode paper linish type 1)			
	Description	Selects the paper-leed-tray upper-limit position (For user-			
0763		0 : High (naper feed pressure is higher)	0	х	х
	Setting	1 : Middle (naner feed pressure is middle) <default></default>			
	County	2 · Low (paper feed pressure is lower)			
	Paper-feed-clutch ON angle (Adjustr	nent 2)			<u> </u>
		Adjusts the drum angle timing for the paper-feed-clutch ON			
	Description	(For user-mode paper finish type 2) This value is added to			
0764		the adjustment value of Test Mode No.741.	•		
0764		Range: -200 to +200 (-20.0° to +20.0°)	0	х	×
	Sotting	(+ values delay ON timing)			
	Seung	Unit : 5 (0.5°)			
		Default: 0 (0°)			
	Paper-feed-clutch OFF angle (Adjust	ment 2)			
		Adjusts the drum angle timing for the paper-feed-clutch OFF			
	Description	(For user-mode paper finish type 2) This value is added to			
0765		the adjustment valueTest Mode No.742.	0	х	x
		Range: $-200$ to $+200$ ( $-20.0^{\circ}$ to $+20.0^{\circ}$ )			
	Setting	(+ values delay ON timing )			
		Default: $0(0^\circ)$			
	Elevator upper-limit position selection	n (for user-mode paper finish type 2)			
		Selects the paper-feed-tray upper-limit position (For user-			
0700	Description	mode paper finish type 2)			
0766		0 : High (paper feed pressure is higher)	0	х	х
	Setting	1 : Middle (paper feed pressure is middle) <default></default>			
		2 : Low (paper feed pressure is lower)			
	Paper-feed-clutch ON angle (Adjustr	nent 3)			
		Adjusts the drum angle timing for the paper-feed-clutch ON			
	Description	(For user-mode paper finish type 3) This value is added to			
0767		the adjustment value of Test Mode No.741.	0	х	x
		Range: $-200$ to $+200$ ( $-20.0^{\circ}$ to $+20.0^{\circ}$ )			
	Setting	(+ values delay ON timing )			
		Default: $0(0^\circ)$			
	Paper-feed-clutch OFF angle (Adjust	ment 3)			
		Adjusts the drum angle timing for the paper-feed-clutch OFF			
	Description	(For user-mode paper finish type 3) This value is added to			
0700		the adjustment value of Test Mode No. 742.			
0768		Range : -200 to +200 (-20.0° to +20.0°)	0	х	х
	Cotting	(+ values delay ON timing )			
	Seung	Unit : 5 (0.5°)			
		Default : 0 (0°)			
	Elevator upper-limit position selection	n (for user-mode paper finish type 3)			
	Description	Selects the paper-feed-tray upper-limit position (For user-			
0769		mode paper finish type 3)	0	х	x
	0111	U : High (paper feed pressure is higher)			
	Setting	1 : Ivildale (paper feed pressure is middle) <default></default>			
		z . Low (paper leed pressure is lower)		1	1

· · · · ·	Paper-feed-clutch ON angle (Adjustr	nent4)			
		Adjusts the drum angle timing for the paper-feed-clutch ON			
0770	Description	(For user-mode paper finish type 4) This value is added to			
	Decemption	the adjustment value of Test Mode No. 741			
		Range : $-200$ to $+200$ ( $-20.0^{\circ}$ to $+20.0^{\circ}$ )	0	X	х
		(+ values delay ON timing )			
	Setting	(+  values delay ON (infing ))			
		Default: $0(0.5)$			
	Paper food oluteb OEE angle (Adjust	Delault . 0 (0 )			
	Paper-leed-clutch OFF angle (Aujust	Adjuste the drive engle timing for the groups for distribute OFF			
	Description	Adjusts the drum angle timing for the paper-feed-clutch OFF			
0774		(For user-mode paper finish type 4)	_		
0771		Range : $-200$ to $+200$ ( $-20.0^{\circ}$ to $+20.0^{\circ}$ )	0	X	х
	Setting	(+ values delay ON timing )			
		Unit: 5 (0.5°)			
		Default: 0 (0°)			
	Elevator upper-limit position selection	n (for user-mode paper finish type 4)			
	Description	Selects the paper-feed-tray upper-limit position (For user-			
0772	Description	mode paper finish type 4)	0	l v	v
0112		0 : High (paper feed pressure is higher)	Ŭ	l^	Â
	Setting	1 : Middle (paper feed pressure is middle) <default></default>			
		2 : Low (paper feed pressure is lower)			
	Paper-feed-clutch ON angle (Adjustr	nent 5)			
		Adjusts the drum angle timing for the paper-feed-clutch ON			
	Description	(For user-mode paper finish type 5)			
0773		Range : -200 to +200 (-20.0° to +20.0°)	0	x	х
		(+ values delay ON timing )			
	Setting	Unit $5(0.5^{\circ})$			
		Default: $0 (0^{\circ})$			
	Paper-feed-clutch OFF angle (Adjust	ment 5)		-	
		Adjusts the drum angle timing for the paper-feed-clutch OEE			
	Description	(For user-mode paper finish type 5)			
0774		(1  of user-mode paper limits type 5)	0		v
0114		$(\pm v \mu \mu \rho \rho$	Ŭ	^	Â
	Setting	(+  values delay ON (infing ))			
		Default: $O(0.3)$			
	Eleveter upper limit position coloction	Delault. 0 (0 )			
		Colorte the paper find trevument limit position. (For your			
	Description	Selects the paper-leed-tray upper-limit position (For user-			
0775	- -	mode paper finish type 5)	0	x	х
		0 : High (paper feed pressure is higher)			
	Setting	1 : Middle (paper feed pressure is middle) <default></default>			
		2 : Low (paper feed pressure is lower)			
	Paper-ejection wing position compe				
	Description	Compensates the amount of the paper-ejection wing			
		movement.			
		Range : -20 to +20 (-20 pulses to +20 pulses)			
0779	Setting(RZ5)	Unit: 1 (1 pulse)	х	0	х
		Default: 0 (0 pulse)			
		Range : -20 to +20 (-20 pulses to +20 pulses)			
	Setting(RZ9)	Unit: 1 (1 pulse)	х	x	0
		Default : 9 (9 pulse)			
			_	1	
	Paper-ejection wing fixed-position se	election			
	Paper-ejection wing fixed-position se	election Fixes the paper-ejection wing position when custom position			
	Paper-ejection wing fixed-position se Description	election Fixes the paper-ejection wing position when custom position is selected by the operator. The adjusted position also			
0780	Paper-ejection wing fixed-position se Description	election Fixes the paper-ejection wing position when custom position is selected by the operator. The adjusted position also applies to test mode No.0704.	x	0	0
0780	Paper-ejection wing fixed-position se Description	Election Fixes the paper-ejection wing position when custom position is selected by the operator. The adjusted position also applies to test mode No.0704. Range: 0 to 2150 (0 pulse to 2150 pulses)	х	0	0
0780	Paper-ejection wing fixed-position se Description Setting	election         Fixes the paper-ejection wing position when custom position is selected by the operator. The adjusted position also applies to test mode No.0704.         Range :       0 to 2150 (0 pulse to 2150 pulses)         Unit :       1 (1 pulse)	x	0	0

# 7. Print-Drum / Printing Test Mode

No.	Sensors, switches	Detection status	3	5	9
	Position B sensor(P73/5)	Blocked (detection plate detected) Machine main drive is at		~	v
0001		position-B.	0	0	^
0801	Desition Beenser(BZ)	Not blocked (detection plate not detected) Machine main			_
	POSILIOII-B SEIISOI(RZ)	drive is at position-B.	х	х	0
0802	Main-motor limit sensor	Blocked (encoder disc detected)	0	0	0
0803	Clamp sensor A	Blocked (disc detected)	0	0	0
0804	Clamp sensor B	Blocked (disc detected)	0	0	0
0806	Master loading sensor	Light reflected (master on the drum)	0	0	0
0807	Print-drum lock-position sensor	Blocked (drum lock lever in lock position)	0	0	0
0809	Ink sensor	In contact with ink (ink present )	0	0	0
0810	Overflow sensor	In contact with ink (ink present )	0	0	0
0811	Ink-cartridge set SW	Pressed	0	0	0
0812	Ink pump FG sensor	Blocked (encoder disc detected)	0	0	0
0816	Drum free rotation SW	Diocked (cheodel disc deletica)	0	0	0
0010	Front cover set sons or	Placked (front cover clased)	0	0	0
0017	Print drum release button	Droop od	0	0	0
0010	Print-drum release bullon	Presseu	0	0	0
0819	Print-drum connection signal		0	0	0
0820	Print-drum safety switch	Switch ON (drum set).	0	0	0
		Other safety switches must be ON for this check.			
0830	Print-Pressure HP Sensor	Blocked (detection plate present)	0	0	0
0831	Vertical-Centering Sensor	Blocked (detection plate present)	0	0	0
0832	Horizontal Home Position Sensor	Blocked (detection plate present)	Х	Х	0
No.	Motor solenoid system	Remarks	3	5	9
0861	Main-motor action (30 rpm)	Print drum rotation at speed of 30rpm.	0	0	0
0863	Clamp-motor action (Normal	Clamp motor rotates in the normal correct direction	0	0	
0005	direction)		0	0	0
0964	Clamp-motor action (Opposite	Clamp mater retates in the appealite direction		~	
0004	direction)	clamp motor rotates in the opposite direction.	0	0	0
0866	Print-drum release SW (button)	Illuminates	0	0	0
No		Unit chock	2	5	a
110.		Onit Check	3	5	5
0880	Variable print-drum rotation	Unit Check	3	2	
0880	Variable print-drum rotation Print speed key changes the c	rum rotation speed.	<b>)</b> 0	0	0
0880	Variable print-drum rotation Print speed key changes the c Position-A action of the print drum	rum rotation speed.	<b>)</b> 0	0	0
0880 0881	Variable print-drum rotation Print speed key changes the c Position-A action of the print drum Stops the print drum at positio	rum rotation speed.	<b>9</b> 0	0 0	0 0
0880 0881	Variable print-drum rotation Print speed key changes the c Position-A action of the print drum Stops the print drum at positio Inking motor ON action	n-A.	<b>o</b> 0	0	0
0880 0881 0882	Variable print-drum rotation Print speed key changes the c Position-A action of the print drum Stops the print drum at positio Inking motor ON action Activates the inking motor for 1	n-A.	<b>o</b> 0	0 0 0	0 0 0
0880 0881 0882	Variable print-drum rotation Print speed key changes the c Position-A action of the print drum Stops the print drum at positio Inking motor ON action Activates the inking motor for 1 Clamp home positioning action	n-A second.	<b>o</b> 0	0 0 0	0 0 0
0880 0881 0882 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 7 Clamp home positioning action Resets the clamp unit to the h	n-A. second.	<b>o</b> o o	0 0 0	0 0 0
0880 0881 0882 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 7 Clamp home positioning action Resets the clamp unit to the h	rum rotation speed. n-A. second. ome position.	<b>o</b> o o	0 0 0	0 0 0
0880 0881 0882 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle)	Irum rotation speed. n-A. second. ome position.	<b>o</b> o o	0 0 0	0 0 0
0880 0881 0882 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage	<b>o</b> 0 0	0 0 0	0 0 0
0880 0881 0882 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below		0 0 0	0 0 0
0880 0881 0882 0883 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for for Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate d	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. perform the operations specified below.	0 0 0 0	0 0 0 0	0 0 0 0
0880 0881 0882 0883 0884	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for for Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. posed position to clamp open. osition to Position A compensation action	0 0 0 0	0 0 0 0	0 0 0 0
0880 0881 0882 0883 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla Step 2: From Clamp open p	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. osed position to clamp open. osition to Position-A compensation action.	<b>o o o o</b>	0 0 0 0	0 0 0 0
0880 0881 0882 0883 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla Step 2: From Clamp open p Step 3: From Position-A com	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position.	<b>o o o o</b>	0 0 0	0 0 0 0
0880 0881 0882 0883 0883	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla Step 2: From Clamp open p Step 3: From Position-A con	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. operform the operations specified below. osed position to clamp open. osition to Position-A compensation action. hpensation action to clamp closed position.			
0880 0881 0882 0883 0883 0884	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla Step 2: From Clamp open p Step 3: From Position-A con Drum lock solenoid ON/OFF action. Press START key to switch ON	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. operform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. I the drum lock solenoid. The solenoid switches OFF		0 0 0 0	0 0 0 0
0880 0881 0882 0883 0883 0884	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for f Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate clu Step 2: From Clamp open p Step 3: From Position-A com Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. I the drum lock solenoid. The solenoid switches OFF r.		0 0 0 0	
0880 0881 0882 0883 0883 0884	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for f Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate clu Step 2: From Clamp open p Step 3: From Position-A com Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. If the drum lock solenoid. The solenoid switches OFF r.			
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0880         0881         0882         0883         0884         0885         0886	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for a Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate clu Step 2: From Clamp open p Step 3: From Position-A con Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Press START key to switch ON automatically 10 seconds late	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. I the drum lock solenoid. The solenoid switches OFF r. I the pressure solenoid. The solenoid switches OFF r.			
0880 0881 0882 0883 0884 0884 0885 0886	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for a Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla Step 2: From Clamp open p Step 3: From Position-A con Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Print drum inking action	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. I the drum lock solenoid. The solenoid switches OFF r. I the pressure solenoid. The solenoid switches OFF r.			
0880 0881 0882 0883 0883 0884 0885 0886	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla Step 2: From Clamp open p Step 3: From Position-A com Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Print drum inking action Performs the inking operation	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. operform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. I the drum lock solenoid. The solenoid switches OFF r. I the pressure solenoid. The solenoid switches OFF r.			
0880 0881 0882 0883 0883 0884 0885 0886	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate cla Step 2: From Clamp open p Step 3: From Position-A con Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Print drum inking action Performs the inking operation 1. Pumps in the ink into print	Irum rotation speed. n-A second. ome position. um to Position-A by test mode No. 0881 before activating this damage. operform the operations specified below. osed position to clamp open. osition to Position-A compensation action. osition to Position-A compensation action. opensation action to clamp closed position. If the drum lock solenoid. The solenoid switches OFF r. If the pressure solenoid. The solenoid switches OFF r. If the pressure solenoid. The solenoid switches OFF r.			
0880 0881 0882 0883 0883 0884 0885 0885 0886	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate clu Step 2: From Clamp open p Step 3: From Position-A com Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Print drum inking action Performs the inking operation 1. Pumps in the ink into prin without pressure roller to	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. perform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. If the drum lock solenoid. The solenoid switches OFF r. If the pressure solenoid. The solenoid switches OFF r. is in following sequence by one press of the START key: t drum while rotating the drum until the lnk Sensor detects lnk, uching the print drum.			
1000         0880         0881         0881         0882         0883         0884         0885         0886         0887	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 1 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate clu Step 2: From Clamp open p Step 3: From Position-A com Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Press UN/OFF action. Press START key to switch ON automatically 10 seconds late Print drum inking action 1. Pumps in the ink into prin without pressure roller tou 2. Makes a confidential mass	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. operform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. I the drum lock solenoid. The solenoid switches OFF r. I the pressure solenoid. The solenoid switches OFF r.			
1000         0880         0881         0881         0882         0883         0884         0885         0886         0887	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for 7 Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate clu Step 2: From Clamp open p Step 3: From Position-A com Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Press START key to switch ON automatically 10 seconds late Print drum inking action Performs the inking operation 1. Pumps in the ink into print without pressure roller to 2. Makes a confidential mas 3. From the time the ink sen	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. operform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. I the drum lock solenoid. The solenoid switches OFF r. I the pressure solenoid. The solenoid switches OFF r. s in following sequence by one press of the START key: t drum while rotating the drum until the lnk Sensor detects lnk, uching the print drum. ter on the print drum. sor detects the ink again, the print drum makes 10 rotations			
1000         0880         0881         0881         0882         0883         0884         0885         0886         0887	Variable print-drum rotation Print speed key changes the of Position-A action of the print drum Stops the print drum at position Inking motor ON action Activates the inking motor for a Clamp home positioning action Resets the clamp unit to the h Clamp unit cycle action (3 step cycle) Make sure to bring the print dr test mode to prevent machine Press START key each time to Step 1: From clamp plate clo Step 2: From Clamp open p Step 3: From Position-A con Drum lock solenoid ON/OFF action. Press START key to switch ON automatically 10 seconds late Press UNION ON ON START key to switch ON automatically 10 seconds late Print drum inking action Performs the inking operation 1. Pumps in the ink into prin without pressure roller to 2. Makes a confidential mas 3. From the time the ink sen with the Pressure Roller	Irum rotation speed. n-A. second. ome position. um to Position-A by test mode No. 0881 before activating this damage. operform the operations specified below. osed position to clamp open. osition to Position-A compensation action. npensation action to clamp closed position. If the drum lock solenoid. The solenoid switches OFF r. If the pressure solenoid. The solenoid switches OFF r. If the press of the START key. If the print drum. ter on the print drum. sor detects the ink again, the print drum makes 10 rotations pressing against the print drum.			

	Print drum ink-drainage action.				
	Performs the ink drainage from the print drum in following sequence by one press of the				
	START key:				
0888	1. Makes TPH test mode ima	ge on the master and wraps around the print drum.	о	о	0
	2. Printing is started with no i	nking motion and with the ink sensor deactivated.			
	3. The printing is continued u	3. The printing is continued until the STOP key is pressed.			
	4. The print drum stops at Po	sition-B.			
	G-Lever mounting position.				
0889	Stops the machine at G-Lever r	nounting position (print drum at 104.1 degrees from	0	0	0
	Position-A).				
	Print drum ink-code copy				
0890	Copies the ink information (ink	color, ink category, etc.) onto the Print Drum PCB from the Ink	0	0	0
	TAG.				
0000	Machine Position-B stop. (The position	on in which the print drum can be removed from the machine.)	_	~	
0092	Stops the print drum at machine	e Position-B. (The test mode can be activated with or without	0	0	0
	Vortical contoring action				
0900	Moves the vertical print position	to the home (center) position	0	0	0
	Vertical print position one cycle action				_
0901	Makes one cycle vertical print p	ositionina movement.	0	0	0
0000	Horizontal Home Action	5			
0902	Returns the print drum horizont	al position to the center (home position).	х	х	0
0003	Horizontal Cycle Action		v	v	
0903	Performs a single horizontal m	ovement cycle.	^	^	0
0904	Print-pressure home positioning.		0	0	0
0001	Resets the print pressure to the center (home) position.		Ŭ	Š	Ŭ
0905	Print-pressure one cycle action.		о	о	0
	Makes one cycle print-pressure movement.				
0008	Print-pressure maintenance positioning.		~		
0908	Bings the print pressure control	for unit to the point where the Pressure Spring can be	0	0	0
No	Data check		3	5	9
		Displays the present print-drum angle. (example: 3600 =	-	-	Ŭ
0921	Print-drum angle display	360°)	0	0	0
0022	Print drum ink tomporaturo display	Displays the temperature of the ink in the print drum in	_	_	
0923	Fint-druin link temperature display	degrees Celsius [°C].	0	0	0
0925	Ink remaining volume display	Displays the amount of ink left in the ink tube in percentage	0	0	0
0020	g	(%) [Ink TAG information]	Ŭ	Ŭ	Ŭ
	Inking motor FG count	Displays the inking motor FG count value read from the ink	о	х	x
0026	(RZ3:About that of 10,000)	cartridge tag. (1 count = 0.1 ml) (About that of 10,000 )			
0920	Inking motor EG count(P75/0)	Displays the amount of the used from the tube from the inking	v	~	
		1 count = 0.1ml	x	0	0
	Inking motor FG count	Displays the inking motor FG count value read from the ink			
0927	(RZ3:About that of 1.000)	cartridge tag. (1 count = $0.1 \text{ m}$ ) (About that of $1.000$ )	0	х	х
		Displays the lnk usage starting date.			
0928	Displays the link cartridge using start	Example: For year 2004 February 28th, the display indicates	о	о	0
	uale.	2004 and 0228 alternately.]			
No.		Data setting	3	5	9
	Master loading sensor detection timin	g adjustment			
	Description Adjusts the angle to	detect master on the print drum by master loading sensor.			
0940	Range : -200 to	$+100$ (-20.0° to $+10^{\circ}$ )	0	0	0
	Setting	s the detection timing))			
1					

	Print-drum Posit	ion-A adjustment			
	Description	Adjusts the print-drum Position-A stop position.			
0041		Range : -40 to +40 (-4.0° to +4.0°)		~	
0941	0.11	(+ moves drum forward in over-run direction)	0	0	0
	Setting	Unit : 5 (0.5°)			
		Default : 0 (0°)			
	Print-drum posit	ion-B adjustment			
	Description	Adjusts the print-drum Position-B stop position.			
		Range: -40 to +40 (-4.0° to +4.0°)			
0942		(+ moves drum forward in over-run direction)	0	0	0
	Setting	Unit $5(0.5^{\circ})$			
		Default $-15(-15^{\circ})$			
	Inking time adju	stment (when over X% of ink is consumed from the ink tube )			
		Timer setting before the Replace Ink Cartridge message comes up (when the ink			
	Description	consumption amount from the tube is over X% which is set by test mode			
0943	Description	No 0048)	0	0	0
0010		$ \begin{array}{c} Range: & 5 \text{ to } 60  (5 \text{ seconds } to  60 \text{ seconds}) \end{array} $	Ŭ	Ŭ	Ŭ
	Sotting	Linit: 1 (1 second)			
	Seung	Default: $10(10 \text{ seconds})$			
	laking time ediw	Delault. 10 (10 Seconds)			
	inking time adju	Strinent (right after the Deplaced)			
	Description	Inner setting before the Replace ink Cartiloge message comes up (right alter			
0944		empty ink tube is replaced with a new one.)	0	0	0
	o #1	Range: 5 to 60 (5 seconds to 60 seconds)			
	Setting	Unit: 1 (1 second)			
		Default: 30 (30 seconds)			
	Ink overflow dete	ection frequency adjustment			
	Description	Sets the number of detection times for the overflow sensor to determine that an			
		ink overflow has occurred in the print drum.	0	ο	x
		Range : 1 to 100 (1 time to 100 times)			
0945	Setting	Unit : 1 (1 time)			
		Default : 50 (50 times)			
		Range : 1 to 200 (1 time to 200 times)			
	Setting	Unit : 1 (1 time)	х	х	0
		Default : 50 (51 times)			
	Inking time adju	stment (when under X% of ink is consumed from the ink tube.)			
		Timer setting before the Replace Ink Cartridge message comes up (when the ink			
	Description	consumption amount from the tube is under X%, which is set by test mode			
0946		No.0948).	0	0	0
		Range: 1 to 60 (1 second to 60 seconds)			
	Setting	Unit: 1 (1 second)			
		Default: 15 (15 seconds)			
	Inking drum rota	tion quantity (while inking) after ink tube is pulled out and put back.			
	Description	Decides the drum rotation quantity while inking after the ink tube is pulled out and			
0047	Description	put back.		_	
0947		Range : 0 to 10 (0 rotation to 10 rotations)	0	0	0
	Setting	Unit: 1 (1 rotation)			
		Default: 1 (1 rotation)			
	Selection of X%	for test modes No. 0943 and 0946.			
	Description	The X% selection relates to that of test modes No. 0943 and 0946.			
0948		Range: 1 to 100 (1% to 100%)	0	0	0
	Setting	Unit: 1 (1%)			
	Ŭ	Default: 80 (80%)			
	Print pressure s	etting for Proof-read printing (Black Ink)			
	_	Selects print pressure for printing the proof-read print after each master-making			
0949	Description	(Black Ink)	0	0	0
		0:extra light 1: light 2: normal (default)			
	Setting	3 dark 4 extra dark			
	1				

	Print pressure setting for Proof-read printing (color ink)					
0950	Selects print pressure for printing the proof-read print after each master-making.					
	Description	(Color Ink)			0	0
		0 : extra light 1: light 2: normal (default)				
	Setting	3: dark 4: extra dark				
	Ink color code					
	Description	Ink color code setting on inkless print drum.				
		0 : No Selection (default)				
	Setting	64: Black 1 65: Blue 1 66: Blue 2		v		
		67: Blue 3 68: Blue 4 69: Red 1				
		70: Red 2 71: Red 3 72: Red 4				
0054		73: Green 1 74: Green 2 75: Green 3			_	0
0951		76: Yellow 1 77: Yellow 2 78: Brown 1		X	0	
		79: Brown 2 80: Purple 1 81: Purple 2				
		82: Gray 1 83: Gray 2 84: Lightgray 1				
		85: Lightgray 2 86: Orange 1 87: Orange 2				
		88: Gold 1 89: Gold 2 90: Silver 1				
		91: Silver 2 92: Pink 1 93: Pink 2				
		94: Custom				
	Automatic Print Position Reset Condition Setting					
		Selects the condition for automatic print position reset after master-making or	r			
	Description	renewal.				
		Range:				
0956		0 (No automatic reset) * Remains at center after master-making/renewal		х	х	0
	Setting	1 (Automatic reset only after master renewal)				
		2 (Automatic reset after master-making and renewal)				
		Default: 1 (Automatic reset only after master renewal)				
	Vertical print pos	artical print position HP adjustment				-
	Description	Sets the HP (center) position of the vertical print position				
	Decemption	$\begin{array}{c} \text{Bange: -50 to +50 (-50 mm to +50 mm)} \end{array}$				
0970			0	0	0	
	Setting	Linit · 1 (0.1 mm)				
		Default: $0.0 \text{ mm}$				
	Description	Offects the HP (center) position of the printing pressure				
	Description	$P_{2}$				
0972	Setting	$(\pm values move print process to \pm 5000 pulses)$		0	0	0
		(* values move print pressure table up moreases print pressure,	′			
		Default: 0 (0 pulses)				
	Harizontal HD M	divetment (Print Drum)				<u> </u>
	HUHZUHIAI HE AL	Ujustinent (Finit Diuni)	+			
	Description	drum PCP)	۲ ا	1		
0973	-	$\begin{array}{c} \text{utuill FCD}, \\ \text{Dange: } 20 \text{ to } \pm 20 \text{ ( } 20 \text{ to } \pm 20 \text{ mm}) \\ & \pm \text{ (ct> for adjustment left)} \end{array}$		х	х	0
	Sotting	(< + > 101 adjustment leit)				
	Setting	Default 0 (0, mm)				
	Detault: 0 (0 mm)					
	Department PAJUS (ITTENL (WACHINE)					
0074	Description	Bange: 20 to 120 (2.0 to 12.0 mm) * (c1> for adjustment left)		v	v	
0374	Sotting	(< + > 101 aujustinent leit)		^	^	0
	Setting	Default 0 (0, mm)				
	Drinting Droces	Detault: U (U mm)				
0975		IC or nostion Aujustinent (Waltille)	$ \longrightarrow $			
	Description	Dense: E00 to 1500 ( 5000 to 15000 pulses) * (415 for instruction to 1500 to 1500 to 15000 pulses)		~	v	
	Setting	range>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>		۸	X	0
		pressure)				
		junit i (10 puises)				

0977	Print Position Shift Selection				
	Description	Selects whether the motion increment is set to 0.1 mm or 0.5 mm if the fine			
		adjustment button is not displayed.		x	0
	Setting	Range: 0 (0.5 mm)			0
		Unit: 1 (0.1 mm)			
		Default: 0 (0.5 mm)			
0978	Number of Idling Selection				
	Description	Selection of the print drum rotation quantity table between Japan and Overseas.	x	x	о
	Setting	Range: 0: Japan 1: Overseas (default)			

## 8. Protected Area Test Mode

No.	Unit check					
1102	Paper size VR adjustment					
1102	Sets a VR value at paper guide fence width of 105 mm (A6 paper width).					Ŭ
1103	Paper size VR adjustment				0	0
	Sets a VR	value at paper guide	fence width of 297 mm (A3 paper width).	Ŭ	Ľ	Ľ
1104	LCD Base Point Compensation					
	Perform the following adjustment in the order given.				0	0
	1) I ouch two diagonally opposite markings.					
	2) On the confirmation display, touch the three marking to confirm the adjustment.					
1108	Multi-feed 1 size VR adj. (Short size)				х	0
	Sets the VR value for multi-reed tray 1 to 182 mm (B5 paper size width).				⊢	
1109	IVIUIT-reed 1 Size VK adj. (Long Size)				х	0
		VR value IOI IIIulii-leet	i tray i to 297 mm (AS paper size width).	-		
1110	Nulli-leeu 2 Size	/R auj. (Short Size)	trow2 to 192 mm (PE papar size width)	х	х	0
	Multi food 2 sizo	VR value IOI IIIulii-leeu	1 tray 2 to 162 11111 (B5 paper size widtir).	<u> </u>		
1111	Private-leeu 2 Size VR auj. (LUTIY Size)					0
No		a clear		3	5	9
1193	REv Data Initializ	7e	Initializes the REv data memory area	0	0	0
			Initializes the memory on the Mechanical Control PCB.	0	Ť	Ŭ
1198	Memory Initializa	ition	(This test mode is not included in the test mode list on the		0	0
	display)			Ŭ		ľ
No.			Data setting	3	5	9
	REv Event Selection					
	Description	Description Selects the REvevents to be downloaded.				
1000		0 : All events & All errors.				
1200	0.44%	1 : All the errors only.				
	Seung	2: All errors, and Ma	ster-making and printing start points. (default)			
		3 : Manual events only.				
	Paper Size Selection					
1201	Description	Selects the paper size detection unit in either INCH, MILLIMETER or CHINESE.				0
	Setting	Range: 0: Millimet	er 1: Chinese Sizes 3: Inch	Í		
	Drum Codo Entr					
	Doc cription	y Sote the print drum i	nformation on the EEDDOM of the Drum PCB	$\frac{1}{2}$		
	Description	Bange : 0 to 25				
1210		1 Xaliye . Ο το 20 33· Δ3	34 · B4 35 · A4/I etter 36 · A4-R/I etter-R	0	0	0
	Setting	37: Leda	er			
		Default · 0				
	Drum Serial Code Entry 1					0
	Description Inputs the first 4 -digits of the print drum serial number					
1211	Range : 0 to 9999					
	Settina	Unit: 1				
		Default: 0				
	Drum Serial Code Entry 2					
1212	Description Inputs the last 4 -digits of the print drum serial number					
	· · ·	Range: 0 to 9999	)	0	0	0
	Setting	Unit: 1				
		Default: 0				
	Drum Color Cod	e Entry				
------	-----------------	---	--	---	---	---
	Description	Sets the print drum color information on the	e EEPROM of the Drum PCB.	1		
		0: Not Specified (default) 13	3: Yellow			
		1: Black 14	l: Light Gray			
		2: Blue 15	5: Gray			
		3: Medium Blue 16	S: Flourescence Pink			
		4: Red 17	7: Flourescence Orange			
1214		5: Bright Red 18	3: Orange	0	о	0
	Setting	6: Riso Federal Blue 19	): Flat Gold			
		7: Purple 20	): Hunter Green			
		8. Riso Marine Red 21	1. Crimson			
		9: Burgundy 30	): Custom			
		10: Green 31	1: Order (with specified paper)			
		11: Teal 32	2: Order (with specified paper)			
		12: Prown 63	2. Order (without specified paper)			
	Scannor Adjusta	12. DIOWIT 05				
		Input the number imprinted on the eticker of	on the Seenner Unit			
1220	Description				~	
1220	Cotting			0	0	0
	Setting					
	Scanner Adjustn	nent (2) Main-Scanning				
1001	Description	Input the number imprinted on the sticker of	on the Scanner Unit.	_		_
1221		Range : 92 to 164		0	0	0
	Setting	Unit: 1				
		Default: 128				
	Scanner Adjustn	nent (3) Sub-Scanning Ratio				
	Description	Input the number imprinted on the sticker of	on the Scanner Unit.			
1222		Range : 0 to 100		0	0	0
	Setting	Unit: 1				
		Default : 50				
	Scanner Adjustn	nent (4) Offset				
	Description	escription Input the number imprinted on the sticker on the Scanner Unit.				
		Range : 0 to 255				
		Unit: 1				
1223		Default: 128			0	
1220	Sotting			Ŭ	Ŭ	Ŭ
	Setting	Note:				
		The input number changes to another num	nber after the test mode is activated.			
		Use the newly displayed value from the new	ext Offset adjustment for that one			
		particular scanner unit.	-			
	Scanner Adjustn	nent (5) Gain				
	Description	Input the number imprinted on the sticker of	on the Scanner Unit.			
		Range: 0 to 255				
		Unit: 1				
1001		Default: 128				
1224				0	0	0
	Setting	Note:				
		The input number changes to another num	nber after the test mode is activated			
		Use the newly displayed value from the ney	ext Gain adjustment for that one			
		particular scanner unit				
	RI P Mode Enab	le Control				
	Description	Activates or deactivates the RLP feature				
1229	2000101011	0 · Disabled (default)		0	0	0
	Setting	1 <sup>°</sup> Enabled				
L						

	Panel Contrast Adjustment					
	Description	Adjusts the	contrast of the operation panel display.	1		
1231		Range :	-120 to +120	х	0	0
	Setting	Unit :	1			
		Default :	0			
	Panel Back-light	Adjustment				
	Description	Adjusts the	back-light of the operation panel display.			
1232		Range :	50 to 115	х	0	0
	Setting	Unit :	1			
		Default :	85			
	TPH master-ma	king horizon	al position adjustment			
	Description	Sets the TP	the TPH master-making position to the center			
1233	Sotting	Range :	-30 to +30 (-30mm to +30mm)		0	0
1200			(+ values bring the master-making image to the left)	Ŭ	Ŭ	Ŭ
	Seung	Unit :	1 (0.1mm)			
		Default :	0 (0mm)			
	TPH resistance	input				
	Description	Sets TPH re	esistance.			
		Range :	1200 to 2300 (1200 ohm to 2300 ohm) : 600dpi		0	v
	Setting		1200 to 1900 (1200 ohm to 1900 ohm) : 300dpi	ľ	Ŭ	Â
1234	Setting	Unit :	1 (1 ohm)			
		Default :	1200 (1200 ohm)			
		Range :	1200 to 5920 (1200 ohm to 5920 ohm)			
	Setting	Unit :	1 (1 ohm)	х	х	0
		Default :	1200 (1200 ohm)			

### 9. Options (AF) Test Mode

No.	Sensors, switches	Detection status	3	5	9
3000	AF-unit connection signal check	AF connected	0	0	0
3001	AF Original registration sensor	Blocked (original detected)	0	0	0
3002	AF Original IN sensor	Blocked (original detected)	0	0	0
3003	AF Original OUT sensor Blocked (original detected)				0
3004	AF original detection sensor	Sensor light reflected back (original detected)	0	0	0
3005	AF Cover Set SW	Switch ON (AF closed)	х	х	0
3006	AF Original Size Sensor 1	Light received (original detected)	х	х	0
3007	AF Original Size Sensor 2	Light received (original detected)	Х	Х	0
3008	AF Original Feed Cover Sensor	Closed	Х	Х	0
3009	AF Original Width Det. Sensor 1	(Duplex AF only) Detected width is under 235mm.	Х	Х	0
2010	AE Original Width Dat Sonsor 2	(Duplex AF only) Detected width is over 270mm or under			•
3010	AF Oliginal Width Det. Sensol 2	190mm.	×	X	0
3011	AF Original End Det. Sensor	(Duplex AF only) Original detected.	х	Х	0
3012	AF Flipper Sensor	(Duplex AF only) Original detected.	х	Х	0
No.	Motor solenoid system	Remarks	3	5	9
3030	AF read pulse-motor CW	Activates the AF read pulse-motor in original feeding direction.	0	0	0
3031	AF read pulse-motor CCW	Activates the AF read pulse-motor in reverse direction.	0	0	х
0000	AE Deed/Cwitch heek Dules Mater	(Duplex AF only)			
3032	AF Read/Switch-back Pulse Motor	ON/OFF action. ON by START key. OFF by STOP key.	х	х	0
		(Duplex AF only)			
3033	AF Transfer Pulse Motor	ON/OFF action. ON by START key. OFF by STOP key.	х	х	0
		(Duplex AF only)			
3034	AF Original Feed Clutch Check	ON/OFF action Clutch ON by START key Automatically	x	x	0
		OFF in 10 seconds	Â	Â	Ŭ
		(Duplex AF only)	┝─┤		
3035	AF Original Feed Base Solenoid	ON/OFE action Solenoid ON by START key Automatically	v	v	0
3033	Check	OFF in 10 seconds	^	^	0
			$\vdash$		
3036	AF Flipper Solenoid Check	ON/OFF action Solonoid ON by START key, Automatically		v	_
3030		OFF in 10 seconds	^	^	0
No			2	5	٩
NO.	AF one cycle action with no Auto Bas	e Control	3	5	3
	Performs one AF scanning cv				
	1 Picks up original				
	2 Scanner unit moves to be	me position			
3041	2. Scallier unit moves to ho	ine position.	0	0	0
	3. Shading compensation.				
		opping position			
	E Foods and sights the orig	anning position.			
	5. Feeds and ejects the orig	anning position. jinal.			
	5. Feeds and ejects the orig 6. Scanner unit moves back	anning position. inal. to the home position.			
	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action	anning position. inal. to the home position.			
3042	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope	anning position. inal. to the home position. ration	0	0	0
3042	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original.	anning position. inal. to the home position. ration	0	0	0
3042	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig	anning position. inal. to the home position. ration jinal.	0	0	0
3042 3044	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj.	anning position. inal. to the home position. ration inal.	o	o	0
3042 3044	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the C	anning position. inal. to the home position. ration jinal. Driginal IN Sensor.	o x	o x	0
3042 3044 3045	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the C AF Original Guide Minimum Width	anning position. inal. to the home position. ration jinal. Driginal IN Sensor.	o x x	0 × ×	0 0 0
3042 3044 3045	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa	anning position. inal. to the home position. ration jinal. Driginal IN Sensor. aper guides are brought to the minimum-width position.	0 X X	o x x	0 0
3042 3044 3045 3046	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width	anning position. inal. to the home position. ration jinal. Driginal IN Sensor. aper guides are brought to the minimum-width position.	0 X X X	0 X X X	0 0 0
3042 3044 3045 3046	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width Sets the VR value when the pa	anning position. inal. to the home position. ration jinal. Driginal IN Sensor. aper guides are brought to the minimum-width position.	o x x x x	o x x x	0 0 0
3042 3044 3045 3046 <b>No.</b>	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width Sets the VR value when the pa Data check	anning position. inal. to the home position. ration jinal. Driginal IN Sensor. aper guides are brought to the minimum-width position. aper guides are brought to the maximum-width position. Details	0 X X X X 3	0 X X 5	0 0 0 9
3042 3044 3045 3046 <b>No.</b> 3060	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width Sets the VR value when the pa Data check AF Guide width A/D data	anning position. inal. to the home position. ration inal. Driginal IN Sensor. aper guides are brought to the minimum-width position. aper guides are brought to the maximum-width position. Detection status	0 X X X X 3 X	0 x x x <b>5</b> x	0 0 0 <b>9</b> 0
3042 3044 3045 3046 <b>No.</b> 3060	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width Sets the VR value when the pa Data check AF Guide width A/D data	anning position. inal. to the home position. ration inal. Driginal IN Sensor. aper guides are brought to the minimum-width position. aper guides are brought to the maximum-width position. Details Detection status 00: No detection 01: A3 02: B4 03: A4 04:A4R 05: B5	0 X X X X 3 X	0 x x x <b>5</b> x	0 0 0 <b>9</b> 0
3042 3044 3045 3046 <b>No.</b> 3060	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width Sets the VR value when the pa Data check AF Guide width A/D data AF Original Size Code	anning position. inal. to the home position. ration jinal. Driginal IN Sensor. aper guides are brought to the minimum-width position. aper guides are brought to the maximum-width position. Detection status Detection status 00: No detection 01: A3 02: B4 03: A4 04:A4R 05: B5 06: B5R 07:A5 08: A5R	0 X X X 3 X	0 x x x <b>5</b> x	0 0 0 <b>9</b> 0
3042 3044 3045 3046 <b>No.</b> 3060	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width Sets the VR value when the pa Data check AF Guide width A/D data AF Original Size Code	anning position. inal. to the home position. ration inal. Driginal IN Sensor. aper guides are brought to the minimum-width position. aper guides are brought to the maximum-width position. Details Detection status 00: No detection 01: A3 02: B4 03: A4 04:A4R 05: B5 06: B5R 07:A5 08: A5R (09:B6* 10: Postcard* 53: Custom*) - * Not detected by	0 x x x x 3 x x x	0 x x x 5 x x	0 0 0 9 0
3042 3044 3045 3046 <b>No.</b> 3060 3061	5. Feeds and ejects the orig 6. Scanner unit moves back AF original feed action Performs AF original feed ope 1. Picks up original. 2. Feeds and ejects the orig Orig. IN Sensor Sensitivity Adj. Sensitivity adjustment on the O AF Original Guide Minimum Width Sets the VR value when the pa AF Original Guide Maximum Width Sets the VR value when the pa Data check AF Guide width A/D data AF Original Size Code	anning position. inal. to the home position. ration inal. Driginal IN Sensor. aper guides are brought to the minimum-width position. aper guides are brought to the maximum-width position. Details Detection status 00: No detection 01: A3 02: B4 03: A4 04:A4R 05: B5 06: B5R 07:A5 08: A5R (09:B6* 10: Postcard* 53: Custom*) - * Not detected by Duplex AF Unit.	0 X X X X 3 X X	0 x x x 5 x x	0 0 0 <b>9</b> 0

No.	Data setting 3			5	9
	Mirror carriage s	canning position adjustment (AF scanning)			
	Description	Adjusts the position of the mirror carriage for AF scanning.			
3070		Range : -20 to +20 (-2.0mm to +2.0mm)			
3070	Sotting	(+ values move the Mirror carriage back moves the image up)	0		
	Seung	Unit: 1 (0.1 mm)			
		Default : 0 (0 mm )			
	Mirror carriage p	osition adjustment for Auto-Base-Control (AF scanning)			
	Description	Adjusts the position of the mirror carriage for AF scanning during ABC control.			
3071		Range: 0 to +30 (0mm to +3.0mm)			
3071	Cotting	(+ values move the Mirror carriage back moves the image up)		0	
	Seung	Unit: 1 (0.1 mm)			
		Default : 0 (0 mm )			
	Scanning horizo	ntal centering position adjustment. (AF scanning)			
	Description	Adjusts the horizontal scanning position when the original is scanned using the			
2072		Range: -30 to +30 (-3.0mm to +3.0mm)			
3072	0	(+ values move the image to the left)	0	0	
	Setting	Unit: 5 (0.5 mm)			
		Default: 0 (0 mm )			
	Scanning start-position adjustment. (AF scanning)				
		Adjusts the scanning start position against the original when the original is			
	Description	scanned using the AF.			
		(Adjusts how much area to skip from the top of the original when the scanning			
3073		starts.)	0	0	0
		Range: -60 to +60 (-6.0mm to +6.0mm)			
	0.11	(+ values move the image up)			
	Setting	Unit: 1 (0.1 mm)			
		Default: 0 (0 mm )			
	Scanning-speed	adjustment to control Elongation & Shrinkage in scanning. (AF scanning)			
		Adjusts the speed of the AF-Read pulse motor to control the speed of the Original			
	Description	through the AF.			
3074		Range: -50 to +50 (-5.0% to +5.0%)	0	0	0
		(+ values elongate the image)			
	Setting	Unit: 1 (0.1%)			
		Default : 0 (0 % )			
	AF Scan. End Si	gnal Output Time			
	Description	Adjusts original scanning end position.	1		
3076		Range: -63 to +63 (-6.3 mm to +6.3 mm) * (<+> for adjustment down)	x	х	0
	Setting	Unit: 1 (0.1 mm)			
	Ŭ	Default: 0 (0 mm)			
	AF Original Feed	Sequence Change (1 cycle)			
0.0		(Duplex AF only)			
3077	Description	Selects the original feed action when 1 cycle action is selected by Test Mode	X	х	0
		Selects the original feed action when i cycle action is selected by lest Mode.			

### 10. Options (Job-Separator) Test Mode

No.	Sensor	s, switches	Detection status	3	5	9
3100	Job separator tape jam sensor		Jammed tape is detected	0	0	0
3101	Job separator ta	pe detection	Tape is detected	0	0	0
3102	Job separator po	ower switch	Power is supplied to the Job separator	0	0	0
3103	Job separator co	onnection signal	Job separator is connected	0	0	0
No.			Unit check	3	5	9
3140	Tape output			0	0	0
0140	Outputs one tape.		0	Ŭ	Ŭ	
No.			Data setting		5	9
	Stamping quantity					
	Description	Description Sets number of times the stamper stamps per one tape cut.				
3170		0: No stamping (	default)	0	0	0
	Setting	1: One stamping				
		2: Two stamping				
	Activate or deact	ivate the tape jamme	ed message			
3171	Description	Activates or deactivation	ates the Tape Jam message while using the Job Separator.	0	0	0
	Sotting	0: Does not show	the jammed message.	U		Ŭ
	Seung	1: Shows the jam	med message. (default)			

### 11. Options (Memory) Test Mode

No.		Unit check	3	5	9
	Storage Memory Composition Change				
3340	Processing for changing the card used by the RP to a configuration compatible with the			х	0
	current machine.				
33/1	PS7R Status Print		v	v	_
5541	Prints out the PS7R status.		^	^	0
No.	Data clear	Details	3	5	9
	Storage Memory Initialize (32M)	Initializes the storage device to delete data from the 32M			
3355		storage device or when an error related to storage device	х	х	0
		prevents data restoration.			
		Initializes the storage device to delete data from the 128M			
3356	Storage Memory Initialize (128M)	storage device or when an error related to storage device	х	х	0
		prevents data restoration.			
No.	Data check	Details	3	5	9
2261	Storage Memory Information	Displays the volume label, capacity, area used, and available	v	v	~
3361	storage area.		X	×	0

### 12. Options (Linked-Printer) Test Mode

No.		Data setting	3	5	9
	Linked printe	r - Print position adjustment (horizontally)			
	Description	Horizontal print position adjustment on all the linked printers.			
3570		Range : -50 to +50 (-5.0mm to +5.0mm)	x	0	0
	Setting	(+ values move the image to the left.)		Ŭ	Ŭ
	Setting	Unit : 1 (0.1 mm)			
		Default: 0 (0 mm )			
	Linked printe	r - Print position adjustment (vertically)			
	Description	Vertical print position adjustment on all the linked printers.			
3571	Setting	Range : -50 to +50 (-5.0mm to +5.0mm)	x	0	0
		(+ values move the image to the top.)		Ŭ	Ŭ
		Unit : 1 (0.1 mm)			
		Default: 0 (0 mm )			
	Zero print master-making warning				
		With the printer-auto-selection activated, master-making will be made, but the			
3572	Description	selection can be made to display the warning message [F60] or not, if the print	x	0	0
0072		quantity is selected as zero (0) in scanner mode.	~	Ŭ	Ŭ
	Setting	0: No warning displayed. (default)			
	Octaing	1: Warning displayed.			
	Link Duplex F	Print Auto-Repeat			
	Description	The selection to keep the duplex printing mode activated or to deactivate the mode			
3579	Description	after the duplex print job is finished on a linked printer.	×	0	0
	Setting	0: Deactivate			
	ocung	1: Keep activated (default)			

### 13. Options (Auto-Stacker) Test Mode

No.	Sensor	s, switches	Detection status	3	5	9
3600	Auto Stacking Gu	uide Home Sensor	Home position detected.	Х	Х	0
3601	Auto Stack. Stop	per Home Sensor	Home position detected.	х	х	0
3604	Auto Stack. Pape	er Release Button	Button is pushed.	Х	Х	0
3605	Auto Stacking Pa	aper Det. Sensor	Paper is detected.	Х	Х	0
No.			Unit check	3	5	9
3640	Auto Stacking Gu	uide Home Action		x	x	0
	Brings the	Brings the side fences to the HP position.		Â	Ĺ	Ŭ
3641	Auto Stack. Stopper Home Action.		x	x	0	
	Brings the	Brings the end fence to the HP position				Ŭ
	Auto Stacking Tra	ay Cycle Action				
	Makes fol	lowing movements:				
	1) Brings	the side fences to HF	P position.			
	2) Brings	the end fence to HP	position.			
3642	3) Brings	the side fences to the	e minimum width position (stops for 1 second).	x	x	0
	4) Brings	the side fences to the	e maximum width position (stops for 1 second).			Ũ
	5) Brings	the side fence to the	HP position.			
	6) Brings the end fence to the minimun width position (stops for 1 second).					
	<ol><li>Prings the end fence to the maximum width position (stops for 1 second).</li></ol>					
	8) Brings	the end fence to the I	HP position.			
No.			Data setting	3	5	9
	Auto Stacking Guide Home Adjustment.					
	Description Adjusts the HP position of the side guide fences.					
3670		Range: -5 to +5 (-5mm to +5mm)		х	х	0
	Setting	Unit: 1 (1 mm)				
		Default: -2 (-2 mn	ו)			
	Auto Stacking St	opper Home Adjustm	ient			
	Description	Adjusts the HP posi	tion of the end fence.			
3671		Range: -5 to +5 (-	5mm to +5mm)	х	X	0
	Setting	Unit: 1 (1 mm)				
		Default: 0 (0 mm				
	Auto Stacking Pa	attern (Card)				
0.070	Description	Adjusts the side gui	de fences position for receiving card papers on the tray.			
3672		Range: -20 to +20	(-20mm to +20mm)	X	X	0
	Setting	Unit: 1 (1 mm)				
		Default: 0 (0 mm)				
	Auto Stacking Pa	attern (Standard)				
	Description	Adjusts the end fend	e position for receiving standard papers on the tray.			
3673		Range: -20 to +20	(-20mm to +20mm)	X	х	0
	Setting	Unit: 1 (1 mm)				
		Default: 0 (0 mm)				

### 14. Options (Vendor) Test Mode

No.		Data setting 3			
	Vender Selection				
3770	Description	apanese machine only) Selection between coin vender or card vender.		x	0
	Setting	Range: 0: Coin vender (default) 1: Card vender			

### 15. Multi-Tray Paper Feeder Test Mode

No.	Sensors, switches	Detection status	3	5	9
3800	Multi-tray feed sensor 1	Detecting paper	х	х	0
3801	Multi-tray feed sensor 2	Detecting paper	х	х	0
3802	Multi-tray feed sensor 3	Detecting paper	х	х	0
3803	Multi-tray feed sensor 4	Detecting paper	Х	х	0
3804	Joint paper separation sensor	Detecting paper	х	х	0
3805	Multi-tray transfer safety SW	Pressed (Multi-tray transfer unit closed)	х	х	0
3806	Multi-feed tray 1 top sensor (upper	Detecting actuator (Tray No. 1 is at upper limit position)	v	v	0
3000	limit sensor)		^	^	U
3807	Multi-feed tray 1 paper sensor	Detecting paper	Х	х	0
3808	Multi-feed tray 1 size sensor	Detecting paper	Х	х	0
3809	Multi-feed tray 1 volume sensor 1	Detecting actuator	х	х	0
3810	Multi-feed tray 1 volume sensor 2	Detecting actuator	х	х	0
3811	Multi-feed tray 1 safety SW	Tray No.1 is set in position	х	х	0
3812	Multi-feed tray 2 top sensor (upper limit sensor)	Detecting actuator (Tray No.2 is at upper limit position)	x	x	0
3813	Multi-feed tray 2 paper sensor	Detecting paper	х	х	0
3814	Multi-feed tray 2 size sensor	Detecting paper	х	х	0
3815	Multi-feed tray 2 volume sensor 1	Detecting actuator	х	х	0
3816	Multi-feed tray 2 volume sensor 2	Detecting actuator	х	х	0
3817	Multi-feed tray 2 safety SW	Tray No.2 is set in position	х	х	0
3818	Feed joint passage cover SW	Cover is closed	х	х	0
3819	Multi-tray paper feed sensor	Detecting paper	х	х	0
3820	Multi-tray joint signal check	MTPF tray is attached	х	х	0
No.	Motor solenoid system	Remarks			
3860	Multi-feed tray transfer motor	One direction (feed direction)	Х	Х	0
3861	Multi-feed tray pickup motor	One direction (feed direction)	Х	х	0
3862	Multi-feed tray 1 feed clutch		Х	Х	0
3863	Multi-feed tray 2 feed clutch		Х	х	0
3864	Multi-feed tray transfer clutch 1		Х	х	0
3865	Multi-feed tray transfer clutch 2		х	х	0
3866	Multi-feed tray transfer clutch 3		Х	х	0
3867	Multi-feed tray transfer clutch 4		х	х	0
3870	Multi-feed nip release solenoid 1/2		Х	х	0
3871	Multi-feed nip release solenoid 3/4		Х	х	0
No.	Data check	Details			
3920	Feed-tray1 paper-width A/D data	Feed-tray 1 8-bit data after A/D conversion (raw data).	х	х	0
3921	Feed-tray 2 paper-width A/D data	Feed-tray 2 8-bit data after A/D conversion (raw data).	х	х	0
3922	Feed-tray 1 paper-width data (mm)	Feed-tray 1 paper width after adjustment (mm)	Х	х	0
3923	Feed-tray 2 paper-width data (mm)	Feed-tray 2 paper width after adjustment (mm)	Х	х	0
3924	Feed-tray 1 paper-ID data	Feed-tray 1 paper-ID	х	х	0
3925	Feed-tray 2 paper-ID data	Feed-tray 2 paper-ID	х	х	0
No.		Data setting		_	
	FL Assist Control				
3941	Description	Selection to activate or deactivate the paper feed assisting.	x	x	0
	Setting	Range: 0: Deactivated 1: Activated			
		Default: 1: Activated			
	FL Tray-1 Resist Loop Amount				
	Description	Adjustment of paper buckle in front of Timing Roller for Tray			
3942		No.1	x	x	0
		Range: 0 to 99 (0.0 mm to 9.9 mm)			
	Setting	Unit: 1 (0.1 mm)			
		Default: 18 (1.8 mm)			

	FL Tray - 2 Regist Loop Amount				
3043	Description	Adjustment of paper buckle in front of Timing Roller for Tray No.2		v	
0940	Setting	Range: 0 to 99 (0.0 mm to 9.9 mm) Unit: 1 (0.1 mm) Default: 18 (1.8 mm)			
	Multi-Feed Tray Selection				
	Description	Selects the tray for feeding paper during test-mode master	-		
3946	Description	making and printing.	х	x	0
	Setting	Range : 0: Standard Tray 1: Tray-1 2: Tray-2			
		Default: 0: Standard Tray			
	Multi-Feed Tray-1 Feed ON Timing	Adjustment			
	Description				
3949		Range: -300 to +300 (-30 degrees to +30 degrees)	х	х	0
	Setting	Unit: 1 (0.1 degrees)			
		Default: 0 (0 degrees)			
	Multi-Feed Tray-2 Feed ON Timing	Adjustment			
	Description	Sets the Tray-2 paper feed clutch ON timing against drum			
3950	Description	angle.	×	x	0
		Range: -300 to +300 (-30 degrees to +30 degrees)	Ê	Î Î I	Ŭ
	Setting	Unit: 1 (0.1 degrees)			
		Default: 0 (0 degrees)			
	Multi-Tray Assist 1 ON Timing				
	Description	Sets the Assist Feed start timing for the MIPF Trays (during			
3951	· · · · · · · · · · · · · · · · · · ·	Ine 2nd paper feed)	х	x	0
	Cotting	Range. $-128 \text{ to } +127 \text{ (-12.8 degrees to +12.7 degrees)}$			
	Seung	Default: 0 (0 degrees)			
	Multi-Tray Assist Speed 1 Adi	Delault. 0 (0 degrees)			
		Sets the Multi-Tray Assist Feed Speed during print speed			
	Description	No.1.			
3955	Setting	Range: 80 to 120 (80% to 120%)	×	X	0
		Unit: 1 (1%)			
		Default: 105 (105%)			
	Multi-Tray Assist Speed 2 Adj.				
	Description	Sets the Multi-Tray Assist Feed Speed during print speed			
3956	· · ·		х	х	0
	O a thin a	Range: 80 to 120 (80% to 120%)			
	Setting	Default: 105 (105%)			
	Default: 105 (105%)				
		Sets the Multi-Trav Assist Feed Speed during print speed			
	Description	No.3.			
3957		Range: 80 to 120 (80% to 120%)	х	X	0
	Setting	Unit: 1 (1%)			
		Default: 105 (105%)			
	Multi-Tray Assist Speed 4 Adj.				
	Description	Sets the Multi-Tray Assist Feed Speed during print speed			
3958	2000.1940.1	No.4.	x	x	0
	0.11	Range: 80 to 120 (80% to 120%)			
	Setting	Unit: 1 (1%)			
	Multi Trov Appiet Speed 5 Adi	Default: 105 (105%)			
	Multi-Tray Assist Speed 5 Adj.	Sets the Multi-Tray Assist Feed Speed during print speed			
	Description	No 5			
3959		Range: 80 to 120 (80% to 120%)	х	x	0
	Setting	Unit: 1 (1%)			
		Default: 105 (105%)			
	Joint Paper Separation Sensor ON	OFF			
3060	Description	ON or OFF selection of drag multi-feed detection by FL Multi	l .		
3900	Description	Tray-1 pickup sensor.	<b>`</b>	^	0
	Setting	Range: 0: OFF 1: ON (default)			

### MEMO

### CHAPTER 18: OTHER PRECAUTIONS

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### 1. Machine Setup During the Installation

### 1) Set-up Wizard

Set-up wizard is designed for enhancing customer satisfaction with his or her RZ9 unit, depending on the type of customer account. Until the Set-up wizard is completed at the time of the machine installation, the Set-up wizard display keeps popping up each time the machine power is turned ON.

Set-up wizard is deeply related in providing maximum functionality with the RISO i Quality System benefits.

In order to take the maximum advantage of the RISO i Quality System, the [setting of the machine clock] is essential.

### 2. Sales Test Mode

### 1) Easy access to change the machine settings by the Salesman and Serviceman.

### Turn the machine power ON, while pressing the + key and x key on the Operation Panel.

The [Sales Test Mode] is essential in setting the machine to the best condition to suit each customer.

There are total of 27 items under the Sales Test Mode. The first 4 items, starting with P are linked to the Admin. (user mode), and the remaining 19 items are linked to the serviceman test mode.

The [Sales Test Mode] is for the use by the Salesman and the Serviceman's use only, and is not intended for the customer (operator) use.

Code No.	Item		
P001	Displayed Language		
P002	Link-Free Volume		
P003	Base IP Address		
P004	Beep Sound		
0080	Test Print A		
0095	System Configuration Data Output		
0110	Clear Error Status Data		
0116	Set-up Wizard Initialize		
0126	Optional Configuration Check		
0146	Quick Scanning Selection		
0150	Print Quantity Repeat Setting		
0154	Min. Print Quantity Control		
0159	Warning Display Control		
0160	Auto Multi-Up Recovery		
0161	Program Print Repeat Setting		
0166	Max. Print Quantity Control		
0167	Paper ID Auto-Repeat Control		
0168	Fine Adjustment Button Display Control		
0169	Admin. Display Control		
0170	Consumable Storage Indication		
0177	Paper Size Detection Selection		
0951	Ink Color Code		
0977	Vertical and Horizontal Motion Distance Switching		
1201	Standard of Measurement Unit Selection		
1229	RLP Mode Enable control		
3572	Zero Print Master Making Warning		
3579	Link Duplex Print Auto-Repeat		

1604

### 3. Power-Saving (Low-Power) Mode

Heart-beat-LED

With no error status on the machine, if no operation is made on the machine for 30 seconds, the 24 volt supply to the machine components is terminated (the same when the machine is in test mode). This must be kept in mind when using a multimeter to check the 24 volts on the machine. Whether the machine is in the Power-Saving Mode or not can be confirmed by looking at the heart-beat-LED on the Mechanical Control PCB. The blinking of the LED is fast in normal condition, and the slower in the Power-Saving Mode. The machine will not go into the Power-Saving Mode when in Test Mode. The main motor free rotation button can be used when the machine is in power-saving mode.



< Mechanical control PCB >

### 4. Main Motor Free-Rotation Button (Print Drum Free-Rotation Button)

### Pressing wrong button may cause the Mechanical Control PCB to break.

Make sure to press the correct push button for the main motor free-rotation.

[SW2] is the correct push button. Do not push [SW1] button.



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### 5. Firmware Downloading Procedure

- (1) Switch OFF the machine power.
- (2) Remove the download slot cover from the side of the rear cover, on the paper-feed side of the machine, by removing one screw (M3x6 : 1 pc).
- (3) Insert a CF Card in an adaptor containing appropriate firmware for the Mechanical control PCB and SH4F PCB for the specific machine model.
- (4) Turn ON the machine power. The firmware for the Mechanical control PCB is automatically downloaded the first. The green LED 3 on the SH4F PCB, as well as the LED on the wake-up key on the operation panel starts to blink. The program is being downloaded.
- (5) When the green LED 3, green LED 2 and LED on the wake-up key changes from blinking to a solid light, the firmware downloading to the Mechanical control PCB is successfully finished. The firmware downloading to the SH4F PCB starts automatically. The green LED 3 lights solid, and both the green LED 2 and the wake-up key LED blinks to indicate that the downloading has started. The firmware downloading to the SH4F PCB is successfully finished when the green LED 3, green LED 2 and wake-up LED all lights solid.
  - \* If a red colored LED 1 aside the download slot blinks and the wake-up key LED changes to a solid light, the firmware downloading to the Mechanical control PCB went through an error and ended unsuccessfully.
  - \* If a red colored LED 1 aside the download slot lights up to a solid light and the wake-up key LED changes to a solid light, the firmware downloading to the SH4F PCB went through an error and ended unsuccessfully. The firmware downloading procedure must be repeated from the very start.
- (6) After the firmware downloading is successfully finished, switch OFF the machine power and remove the downloading CF card from the machine.
- (7) Mount the download slot cover back on the machine to complete the procedure.

### 6. DSP Software (Multi-Tray Paper Feed Unit) Downloading Procedure

- NOTE: The DSP Software is required to synchronize the paper feed timing between the MTPF (multi-traypaper-feeder unit) and second paper feeding of RZ977, RZ997 and RV9698. These three models must have the DSP Program downloaded in the MTPF PCB (refer to item-8, page 18-7). The software downloading is done from the same downloading slot used for the machine firmware. Since RZ970, RZ990 and RV9690 do not have the MTPF unit, the MTPF PCB is not available. Therefore, these thee models do not require the DSP Software. The DSP Software version should match with that of the Mechanical Control and SH4F PCB firmware. The compatibility information on the firmware program versions will be issued at the same time when updated DSP Software is announced.
- (1) Confirm that both the Mechanical control and SH4F PCBs are downloaded with the firmware with the version which matches with the version number of the DSP software to be downloaded.
- (2) Turn OFF the machine power and insert a CF Card in an adapter containing the DSP Software.
- (3) Turn ON the machine power in Test Mode, and activate test mode No. 108 to down load the DSP program.
- (4) After only about one minute, the downloading ends with the message that it is completed.
- (5) Turn OFF the machine power and remove the CF card from the downloading slot.
- (6) Start up the machine once again in Test Mode and activate test mode No.126 and check that the version number has upgraded.
- (7) If error message is displayed, start from the beginning again.

### 7. Replacement of the Mechanical control PCB

- 1. Turn OFF the machine power. Remove the EEPROM and BATTERY from the existing Mechanical control PCB.
- 2. Mount the EEPROM and BATTERY removed from the existing PCB onto the new Mechanical control PCB, and mount the new PCB on the machine.
- Download the Mechanical control PCB firmware onto the new Mechanical control PCB, referring to the instructions given on the previous page. Download the same version Firmware as the one which was in the removed Mechanical control PCB. If needing to upgrade the Firmware version on the Mechanical control PCB and SH4F PCB, do that only after completing this Mechanical control PCB replacement procedure.
- 4. Turn OFF the machine power. Then turn the machine power back ON in Test Mode.
- 5. Activate Test Mode No. 9874 to go into the protected area test mode and activate Test Mode No. 1198 to initialize the memory. Then turn the machine power OFF
- 6. Turn ON the machine power again in Test Mode to set the correct time on the machine by using Test Modes No. 171, 172 and 173. Activate Test Mode No. 101 at the end for the activation of the new time setting made by the previous Test Modes 171, 172 and 173.
- 7. Turn OFF the machine power and turn it back ON.
- 8. If the machine starts up in normal condition, the work is completed.

### NOTE:

Since the date and time can be input from the operation panel in user-mode, above step No. 6 can be skipped. In that case, make sure to input the correct date and time from the user-mode at the very end.



### 8. Replacement of the MTPF PCB

- 1. Turn OFF the machine power and replace the MTPF PCB.
- 2. Download the DSP Software.
- 3. Do the paper width potentiometer adjustments for Trays 1 and 2 on MTPF Unit.
- 4. If the machine starts up without any problem, the procedure is completed.

### 9. Replacement of the SH4F PCB

- 1. Turn OFF the machine power. Then insert a clean CF (compact flash) card, in a card adopter with no data inside, into the card slot on the SH4F PCB.
- 2. Turn ON the machine power in Test Mode and activate Test Mode No. 103 to upload the test mode settings from the existing SH4F PCB onto the CF card.
- 3. Turn OFF the machine power and remove the CD card from the slot.
- 4. Replace the existing SH4F PCB with a new one.
- 5. Download SH4F PCB firmware onto the new SH4F PCB, using another CF card in a card adopter. The firmware version to download must be the same version as the one which was in the removed SH4F PCB.
- 6. Turn OFF the machine power once the firmware is downloaded onto the new SH4F PCB, and remove the CF card from the slot.
- 7. Turn the machine power back ON in Test Mode. Activate Test Mode No. 9874 to access into the protected area test mode.
- 8. Without turning the power OFF, activate test modes No.110 (Jam status clear), No. 112 (test mode data clear), No. 111 (user area memory clear) and No. 1193 (REv data clear) in the order given.
- 9. Turn OFF the machine power and insert the CF card with the uploaded test mode settings removed from the machine in step No. 3 above.
- 10. Turn the machine power back ON in Test Mode and activate Test Mode No. 105 (downloading of the stored test mode settings back into new SH4F PCB).
- 11. Turn OFF the machine power and remove the CF card from the card slot.
- 12. Turn ON the machine power, and if the machine starts up in normal condition, the PCB replacement job is completed.

### **10. Battery Replacement**

Replace the battery on the mechanical control PCB with the machine power ON.

\* If the battery is removed from the machine with the machine power OFF, in certain conditions the internal clock of the machine initializes to programmed default and clock adjustment becomes necessary.

### 11. Replacement of the Print drum PCB

- 1. Turn OFF the machine power. Then insert a clean CF (compact flash) card, in a card adopter with no data inside, into the card slot on the SH4F PCB.
- 2. Turn ON the machine power in Test Mode and activate Test Mode No. 104 to upload the test mode settings from the existing Print Drum PCB onto the CF card. Keep the CFcard in the machine.
- 3. With the machine still powered ON and still in the Test Mode, open the front door of the machine and press the print drum release button (green button), and then pull out the Print Drum out of the machine.
- 4. Replace the Print drum PCB with a new one. Then insert the Print Drum back in the machine and close the front door.
- 5. Since the machine is still in the Test Mode, enter Test Mode 9874 to go into the protected area test mode.
- 6. Then activate Test Mode No.1211 and No.1212 to input the Serial Number of that Print Drum.
- 7. Activate Test Mode No. 106 to download the print drum test mode setting into the Print drum PCB, which was uploaded in the CF card by step No. 2 above.
- 8. Turn OFF the machine power, and remove the CF card from the machine.
- 9. Turn the machine power back ON and if the machine starts up in normal condition, the replacement procedure is completed.
- 10. If Error Message No. T97-990 [PC card access error: Specified file not found on the selected drive.] displays, it means that the Print Drum serial number input by Test Modes No. 1211 and No. 1212 are wrong. In this case, repeat the procedure from above step 5.

### 12. Print position adjustment procedures

### Conduct the print positioning adjustment in the steps given below.

- (1) Adjust the clamp amount.
- (2) Adjust the writing start position.
- (3) Adjust the print start position.
- (4) Adjust the FB scanning start position.
- (5) Adjust the master making image elongation and shrinkage.
- (6) Adjust FB scanning image elongation and shrinkage.

### Precaution in adjustment

Before making above test mode adjustments, it is important that all the mechanical components, such as the main drive area, paper feed area, print drum area, etc. are adjusted first.

If the machine is equipped with the optional Auto Document Feeder (AF), the test mode adjustment on the AF unit should be made after the adjustments on the FB (flatbed) scanning is made.

### CHAPTER 19: PCBs (WIRING DIAGRAMS)

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### 1. Wiring Diagrams

1) General Wiring Diagram



2) Power Supply Section



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Master

**Making Section** 



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PCBs (WIRING DIAGRAMS)



## 8) Master Removal Section

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9) Panel Section

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# 14) Multi-Tray Paper Feeder Section (1 of 2)

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# 15) Multi-Tray Paper Feeder Section (2 of 2)

CHAPTER 19:

PCBs (WIRING DIAGRAMS)

### 2. Power Supply PCB Fuse List

Fuse No.	System	Status after power reset	Connecting part
<b>F1</b> AC 100 V AC 200 V 10 A	Primary power system	Power does not go ON	Main power supply
<b>F4</b> 250 V 6.3 A	24 V - A	<b>T98-947</b> 24 V - A does not turn ON.	Paper Feed Clutch Elevator Motor Print Positioning Pulse Motor Print Drum Lock Solenoid Anti-Reverse Solenoid Guide Roller Nip Release Solenoid Pressure Solenoid Separation Pump Solenoid Read Pulse Motor Suction Fan Pre-Suction Fan
<b>F5</b> 250 V 6.3 A	24 V - B	<b>T98-948</b> 24 V - B does not turn ON.	Paper Ejection Wng Pulse Motor Master Making Unit Lock Solenoid Print Pressure Pulse Motor Clamp Motor Master Removal Motor Master Compression Motor Horizontal Movement Pulse Motor Separation Fan 1 Separation Fan 2
<b>F6</b> 250 V 3.15 A	24 V - C	<b>T98-983</b> 24 V - C does not turn ON.	Cutter Motor TPH Pressure Motor Inking Motor Load Pulse Motor Write Pulse Motor Stocker Solenoid FL Transfer Clutch 1 FL Transfer Clutch 2 FL Transfer Clutch 3 FL Transfer Clutch 4 FL Paper Feed Clutch 1 FL Paper Feed Clutch 2 Nip Release Solenoid 1 Nip Release Solenoid 2 Nip Release Solenoid 3 Nip Release Solenoid 4 FL Tray-1 Elevator Motor FL Transfer Motor FL Transfer Motor
<b>F3</b> 250 V 3.15 A	24 V - OP (OPTION)		None

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# CHAPTER 20: ELECTRICAL COMPONENTS

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#### 1. Motors



ltem	Part Name	Function	Test Mode No.
A	Read pulse motor	Drives the Lamp carriage and Mirror carriage.	0284
в	Clamp motor	Drives the Clamp opening cam and Position-A	0863
Б		compensation plate.	0864
С	Inking motor	Drives the Ink pump.	
D	Elevator motor	Elevates the Paper feed tray up and down.	0682
E	Cutter motor	Activates the cutter unit.	0480
F	Load pulse motor	Drives the Load roller and Clamping guide roller.	0464
G	Write pulse motor	Drives the Write roller	0462
6	while pulse motor		0463
Ц	Paper election wing pulse motor	Elevates the Paper elector wing up and down	0666
	Paper ejection wing pulse motor		0667
I	Pressure control pulse motor	Changes the printing pressure.	0905
J	Paper ejection motor	Drives the Suction unit belt.	0660
K	Main motor	Drives the Main drive.	0861
L	Print registration pulse motor	Changes the Vertical print position.	0901
М	Master compression motor	Drives the Master compression plate.	0493
N	Master removal motor	Drives the Master disposal rollers.	0470
0	Thermal procesure motor	Elevates the TDH up and down	0460
	mermai pressure motor	Lievales lie iPh up and down.	0461

2. Fans, Solenoids, Solenoid Clutches



ltem	Part Name	Function	Test Mode No.
A	Separation fan	Assists separation of the paper from the Print drum.	0662
В	Master making unit lock solenoid	Locks or unlocks the Master-making unit.	0488
С	Suction fan	Pulls the paper onto the Suction unit.	0661
D	Print drum lock solenoid	Locks or unlocks the Print drum.	0885
E	Master stocker solenoid	Up-down motion of the Master stocker guide plate.	0489
F	Pressure solenoid	ON/OFF of the Pressure roller UP/DOWN motion.	0886
G	Paper feed clutch	Drive transfer to the Scraper and Pickup rollers.	0688

### 3. Photoelectric Sensors



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ltem	Part Name	Sensor Type	Function	Test Mode No.
А	Stage cover sensor	Interruptive	Checks the open/close condition of the Stage cover.	0209
В	FB original detection sensor	Reflective	Checks the presence of the original on the Stage glass.	0201
С	Paper feed pressure sensor	Interruptive	Checks the position of the Paper feed pressure lever.	0614
D	Upper limit sensor B	Interruptive	Detects the Paper feed tray upper limit position.	0603
Е	Paper size detection sensor	Reflective	Detects the length of the paper on the Paper feed tray.	0601
F	Paper detection sensor	Reflective	Detects the presence of the paper on the Paper feed tray.	0600
G	Upper limit sensor A	Interruptive	Detects the Paper feed tray upper limit position.	0602
н	Paper sensor	Reflective	Checks the 1st paper feed area paper feed condition.	0605
I	Drum lock sensor	Interruptive	Checks the Print drum lock condition.	0807
J	Front cover set sensor	Interruptive	Checks the Front door open/close condition.	0817
к	Master making unit lock sensor	Interruptive	Checks the Master-making unit lock condition.	0408
L	Paper ejection wing HP sensor	Interruptive	Detects the home position of the Paper ejection wing.	0618
М	Paper ejection sensor	Reflective	Checks the paper ejection area paper receiving condition.	0606
Ν	Paper ejection FG sensor	Interruptive	Checks the speed of Paper ejction motor.	0612
0	Inking motor FG sensor	Interruptive	Checks the rotation of the Inking motor.	0812
а	Pressure HP sensor	Interruptive	Detects the print pressure home position.	0830
b	Position B sensor	Interruptive	Detects the machine B-position.	0801
С	Clamp sensor B	Interruptive	Checks the Clamp unit operation.	0804
d	Clamp sensor A	Interruptive	Checks the Clamp unit operation.	0803
е	Lower limit sensor	Interruptive	Detects the Paper feed tray lower limit position.	0604
f	Vertical centering sensor	Interruptive	Detects the home position of the vertical print position.	0831
g	Master disposal FG sensor	Interruptive	Checks the speed of Master disposal motor.	0426
h	Master compression plate HP sensor	Interruptive	Detects the home position of the Master compression plate.	0421
i	Master disposal jam sensor	Actuator	Checks the master disposal area master disposal condition.	0420
j	Compression FG sensor	Interruptive	Checks the Master compression plate position and the speed of the Master compression motor.	0425
k	Masersensor	Reflective	Looks for master on the drum.	0806
m	Master making unit upper cover set sensor	Interruptive	Checks for the set condition of the M-M-unit upper cover.	0407
n	Thermal pressure sensor	Interruptive	Checks the up/down position of the TPH.	0406
о	Master positioning sensor	Reflective (prism)	Detects the master waiting position, and checks the master cut status.	0400
р	Master detection sensor	Reflective	Looks for master set in the Master-making unit.	0401
q	Master end sensor	Transmittive	Detects the end of the master material.	0402

4. Other Sensor, Switches, Volume Dial



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ltem	Part Name	Function	Test Mode No.
A	Rear cover safety switch	Checks the presence of the Rear cover.	0005
В	Paper width potentiometer	Detects the width of the paper on the Paper feed tray.	
C	Master disposal box safety switch	Detects the presence of the Master disposal box.	0423
Ŭ		Acts as interlock safety switch.	0420
П	Print drum safety SW	Detects the presence of the Print drum.	0820
	Finit druin salety SW	Acts as interlock safety switch.	0020
E	Print drum release button	Releases the lock on the Print drum.	0818
F	Master making unit release button	Releases the lock on the Master making unit.	0410
	Master making unit safety switch	Detects the presence of the Master making unit.	0409
G		Acts as interlock safety switch.	
Н	Cutter HP switch	Detects the home position of the Cutter blade.	0403
I	Ink cartridge set switch	Detects the presence of the Ink cartridge.	0811
	Ink sensor	Detects the bead of the lnk.	0809
J	Overflow sensor	Detects the Ink overflow.	0810
K	Paper feed tray lower safety switch	Immediate stop of the Elevator motor.	0608
L	Paper feed tray button	Elevates the Paper feed tray up or down by pressing thi	0609
М	Paper feed tray upper safety switch	Immediate stop of the Elevator motor.	0607

### 5. AF (auto-document feeder) - Option



ltem	Part Name	Function	Test Mode No.
Δ	AF Read Pulse Motor	Drives the original transfer rollers on the AF Unit	3030
~~~~			3031
В	Original Registration Sensor	Detects the original feeding and transporting.	3001
С	Original IN Sensor		3002
D	Original OUT Sensor		3003
E	AF Original Detection Sensor	Detects if the original is on the feed table.	3004
F	AF Original Size Sensor 1	Detects the original size (length)	3006
G	AF Original Size Sensor 2		3007
Н	AF Unit Cover Set Sensor	Detects if the AF Unit is opened or closed.	3005
	AE Cuido notontiamotor	Detects the original size (width)	3045
'	AF Guide potentionfeter		3046
J	AF Unit Control PCB	PCB to control the AF operation.	



### 6. Electric parts particular to RZ 9 (1) - Duplex AF

ltem	Part Name	Function	Test Mode No.
Α	Feed Cover Sensor	Detects whether the feed-in cover is opend or not.	
В	Original Set Sensor	Detects if an original is on the feed table.	
С	Original Width Sensor Board		
D	Original Length Sensor 1	Detect the original size.	
E	Original Length Sensor 2		
F	DF Position Sensor	Detects whether the DF is lifted or not.	
G	Registration Sensor		
Н	Original Exit Sensor	Detect the original feeding and transporting.	3003
I	Original Reverse Sensor		3012
J	Original Trailing Edge Sensor	Detects the trailing edge of the last original on the table.	3011
к	Feed Motor	Drives the feed belt, separation, pick-up, and reverse table roller.	3032
L	Feed Clutch	Transfers transport motor drive to the pick-up roller and feed belt.	3034
М	Transport Motor	Drives the transport and exit rollers.	3033
N	Pick-Up Solenoid	Controls the up-down movement of the original table.	3035
0	Junction Gate Solenoid	Opens and closes the junction gate.	3036

7. Electric parts particular to RZ 9 (2) - Auto-Stacking Tray



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ltem	Part Name	Function	Test Mode No.
A	Paper guide HP sensor	Detects the home position of the paper guide.	3600
В	Paper stopper HP sensor	Detects the home position of the paper stopper.	3601
С	Paper guide limit sensor	Detects the over-running of the paper guide.	3602
D	Paper stopper limit sensor	Detects the over-running of the paper stopper.	3603
E	Paper fence HP button	Slides the paper guide and paper stopper to the extraction position of paper.	3604
F	Auto stacking paper det. Sensor	Detects the paper on the tray.	3605
G	Paper guide base SW (Front)	Detects the paper guide(Front) falling.	
Н	Paper guide base SW (Rear)	Detects the paper guide(Rear) falling.	
I	Paper stopper base SW	Detects the paper stopper falling.	
J	Paper guide motor	Slides the paper guides.	
K	Paper stopper motor	Slides the paper stopper.	

8. Electric parts particular to RZ 9 (3) - Multi-Tray Paper Feed-1



ltem	Part Name	Function	Test Mode No.
A	FL transfer motor	Drives the rollers of paper transfer area.	3860
В	FL multi-feed tray pickup motor	Drives the rollers of paper pickup area.	3861
С	MTPF elevator motor 1	Lifts up the tray 1.	
D	MTPF elevator motor 2	Lifts up the tray 2.	
E	FL tray 1 feed clutch	Feed clutch of tray 1.	3862
F	FL tray 2 feed clutch	Feed clutch of tray 2.	3863
G	FL transfer clutch 1		3864
Н	FL transfer clutch 2	Clutchs of naner transfer area	3865
I	FL transfer clutch 3		3866
J	FL transfer clutch 4		3867
K	Nip release solenoid 1	Nin release solenoid for transfer roller 3	3870
L	Nip release solenoid 2		3070
М	Nip release solenoid 3	Nin release solenoid for transfer roller 4	3871
N	Nip release solenoid 4		0071
0	MTPF Transfer Safety Sw	Detects whether the door of the MTPF transfer unit is closed or not.	3805
Р	Multi-Feed Tray 1 Safety Sw	Detects whether tray 1 is closed or not.	3811
Q	Multi-Feed Tray 2 Safety Sw	Detects whether tray 2 is closed or not.	3817
R	FL Jam release cover safety SW (PRINTER)	Detects whether the pass cover is closed or not.	3818
S	FL Jam release cover safety SW (MTPF)	Detects whether the pass cover is closed or not.	
Т	Multi-Tray 1 Paper width potentiometer	Detects the paper width of tray 1.	
U	Multi-Tray 2 Paper width potentiometer	Detects the paper width of tray 2.	

9. Electric parts particular to RZ 9 (4) - Multi-Tray Paper Feed-2



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ltem	Part Name	Function	Test Mode No.
A	FL feed sensor 1		3800
В	FL feed sensor 2		3801
С	FL feed sensor 3		3802
D	FL feed sensor 4		3803
E	FL multi-tray 1 pickup sensor		3804
F	FL tray-1 upper limit sensor		3806
G	FL tray-1 paper det. sensor		3807
Н	FL tray-1 paper size sensor		3808
I	FL tray-1 paper volume sensor 1		3809
J	FL tray-1 paper volume sensor 2		3811
K	FL tray-2 upper limit sensor		3812
L	FL tray-2 paper det. sensor		3813
М	FL tray-2 paper size sensor		3814
N	FL tray-2 paper volume sensor 1		3815
0	FL tray-2 paper volume sensor 2		3816

#### 10. Electric parts particular to RZ 9 (5) - Others



ltem	Part Name	Function	Test Mode
			No.
Α	Suction fan		0661
В	Pre-suction fan		0669
С	Horizontal pulse motor		0903
	Paper feed reverse-rotation		0697
	prevention solenoid		0007
E	Guide roller relese solenoid		0690
F	Separation pump solenoid		0684
G	Flat bed original size sensor 1		0202
Н	Flat bed original size sensor 2		0203
I	Flat bed original size sensor 3		0204
J	Flat bed original size sensor 4		0205
К	Flat bed original size sensor 5		0206
L	Flat bed original size sensor 6		0207
М	Flat bed original size sensor 7		0208
N	Paper volume sensor A		0610
0	Paper volume sensor B		0611

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