QSS-31 Training Materials

Published: 2003.03

[Fourth edition]

Technical Training Department
Technical Support Group

31D_1

Chapter 1
Specifications

1000

31D_1

The point of this chapter

Key points

- Study the specifications of the machine.
  Processing capacity
  Main options
  Spec of PC

Upon completion of the lesson, you will be able to:

*Understand what you can do with the machine and explain it to users.
*Understand processable media and format and explain it to users.
*Understand the standard parts and options and explain it to users.
*Understand the spec of built-in PC.

How to proceed the training

Explain, using the Training materials.

Refer to the “Specifications” manual for details.

1010

31D_1

Concept (QSS-3101)

Full digital mini-lab system which outputs from scanning image to the photographic paper by digital signal. This is the second digital mini-lab with the laser engine installed at Noritsu. (The QSS-30 is the first digital mini-lab with laser.)
Comparing with the QSS-30, the laser engine of QSS-31 has the high processing speed ,and which is available for the wider paper. This machine is responsive to a lot of needs.
"SI-2600 which is similar with the QSS-28" is used for the Input section, LP-2200 is used for the Printer section and PP-1223 is used for the Processor section.

QSS-3101Digital :

127 x 89 2,369 prints / hour
127 x 89 552 prints / hour (3 slots, Digital camera/media)
127 x 89 912 prints / hour (5 slots, Digital camera/media)

Explanation

•Printing condition for making 2,369 prints (127 x 89) (With Index print, Without Panorama print)

6-frame PJP 135F-24EX 24-frame exposed

•Printing condition for making 552/912 prints (127 x 89) (With Index print)

digital camera with 2,500,000 pixels (fine mode)
24-frame exposed high quality 1,712 x 1368
Without Index print, With digital camera correction
JPEG image size: 490KB to 560KB
When the Digital camera correction is ON:
432 prints/h (3 slots)
625 prints/h (5 slots)

•305 x 457 282 prints/hour

Note

•Processing capacity of QSS-2801/02

89 x 127 1901 prints/hour 2,598 prints/hour

•Processing capacity of QSS-2901

127 x 89 1480 prints 305 x 457 192 prints/hour

•Processing capacity of Frontier 370

127 x 89 approx. 1,550 prints/hour

1020

31D_1

Concept (Network printer system)

Only receiving the print orders from network is available by connecting LP-2200 and Printer control unit instead of SI-2600.
Possible to output from various application using the Printer Driver.
Impossible to output from the Printer control unit itself.

Processing capacity: 102 x 152 1,400 prints / hour
254 x 203 600 prints / hour

Maximum input size: 5,000 x 7,400 pixels

Explanation

- The processing capacity may be different depending on the PC spec which sends the image data or the status of network line.
- The role of Printer control unit is to control the printer processor. So, it is impossible to output from media.

1060

31D_1

Types of QSS-3101

Name	Specification
QSS-3101Digital	Standard
QSS-3101SM Digital	SM specification

Name
QSS-3101 Network printer system

Explanation

•There are two types of display monitors.

Northern hemisphere model and Southern hemisphere model

The specification of cathode-ray tube is different.

(The winding direction of coil for cathode ray tube is reversed.)

* Northern hemisphere model: CDT-17102-3B (I074121-00)

* Southern hemisphere model: CDT-17102-2B (I074120-00)

1090

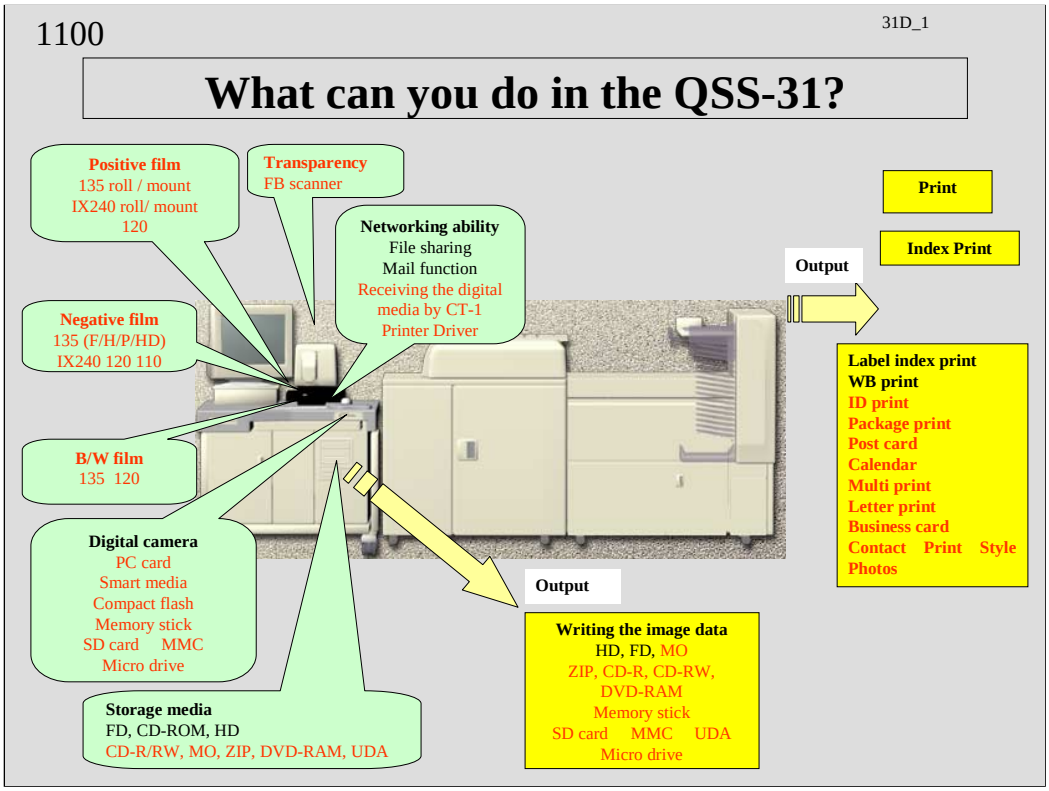
31D_1

Name of QSS-3101 system

	Input section	Output section	
		Digital printer	Paper processor
QSS-3101Digital	SI-2600	LP-2200	PP-1223
QSS-3101 network printer system	Printer control unit	LP-2200	PP-1223

Note

•SI-2600	Scanner&Image processor
	Scanning ability
	135F 2,600 frames / hour
•PP-1223	Paper processor
	Paper advance speed: 2,300 mm / min
•LP-2200	Laser printer
	Repeat print ability
	3R (89x127) 2,200 prints /hour



Explanation

- The image can be stored to one CD until the capacity of media is full. (So, the number of negatives to be stored is not decided.) (However, up to 5 orders can be seen with the CD-Viewer.)
- [CD-R writing device] can be selected as an OUTPUT media.
- DCP cannot be connected.
- EZ-mall cannot be installed.
- Memory stick, SD card, MMC and Micro drive are available with Five slots card reader.

Note

- Standard: Black letter, Function of options: Red letter
- When the Printer control unit is connected, Printing is possible only from the Printer control unit.

1110

31D_1

Usable media 1

x = possible

Types of media	Input	Output	Additional writing	Note
FD	x	x	x	Standard equipment
CD-ROM	x			CD-ROM (standard) or CD-R/RW (option) is necessary.
CD-R	x	x		The CD-R/RW drive (option) is necessary.
CD-RW	x	x		
MO	x	x	x	The MO drive (option) is necessary.
ZIP	x	x	x	The ZIP drive (option) is necessary.
DVD-RAM	x	x	x	The DVD-RAM drive (option) is necessary.
DVD-ROM	x			
DVD-R	x			
DVD-RW				
Reflective	x			The flatbed scanner (option or procured parts at customer's site) is necessary.

***Explain the spec of each drive, etc. separately.**

Explanation

•It is possible to process by CT-1.

•12cm CD's and 8cm CD's are supported. Business card CD's and other uniquely shaped CD's are also supported.

•It is now possible to write in multiple sessions. (except CD-R/RW)

Note

•In the 31, when the Printer control unit is connected, 'processing from media' is not available.

•The media capacity of CD is different depending on a maker.

1120

31D_1

Usable media 2

Types of media	Input	Output	Additional writing	Note
Compact flash (Type I)	x	x	x	The PC card reader (option) or five slots card reader (option) is necessary.
Smart media	x	x	x	
PC card	x	x	x	
Memory stick	x	x	x	The five slots card reader (option) is necessary.
SD card	x	x	x	
Compact flash (Type II)	x	x	x	
MMC (Multi media card)	x	x	x	
Micro drive	x	x	x	

x = possible

***Explain the spec of each drive, etc. separately.**

Explanation

- As for the digital camera media, there are the media with security. Some of them cannot process the copyright protected data.
- Even if the media is with security, it can process the data except the copyright protected data.
- It is now possible to write in multiple sessions.

Note

- The copyright protected data is the encrypted data, and it cannot be created and edited.
- In the QSS-31, when the Printer control unit is connected, 'processing from media' is not available.
- Follow the attached Operator's Manual for handling the PC card adapter.

1130

31D_1

Processable Format

	Image format
Input	**Exif 1.0 (Thumb nail can be used in distinction from JPEG.)** **JPEG (includes Progressive JPEG, CMYK Format)** **FlashPix** **Bitmap (non-compressed)** **PSD (includes Photo Shop Document, CMYK Format)** **PCD (Photo CD)** **PCX, DCX (Paint Brush Format)** **TGA (Targa)** **TIFF (RGB non-compressed)**
Output	**JPEG (except Progressive JPEG, CMYK Format)** **FlashPix** **Bitmap (non-compressed)** **TIFF (RGB non-compressed)**

Explanation

•JPEG 2000 is not available.

•As for the input image format, in case of RGB, 8-bit gradation only is available.

16-bit gradation or gray scale is not available.

•Media (Windows format) only is available.

1140

31D_1

DPOF and Exif

Functions supported by QSS		
Format	Contents of data	Function in the QSS side
DPOF	Date, Title, Image file name, Frame No., Comment, Image title	Front print
	Setting for the number of prints	Number of prints
	Cropping of the image	Print
Exif	Date	Front print
	Name of image input device maker	Distinguish between the data taken by the digital camera and other image data.

Explanation

- If there is name of image input device maker (Exif data), it is recognized as the image data from digital camera. If not, it is recognized as the image data from normal media.
- If [Digital image auto correction (Digital camera)] is not used, remove a check for [Image file selection] screen or [Operator Selections] -> [Corrections] -> [Digital image auto correction (Digital camera)].
- When saving image data taken by digital camera to normal media in the QSS, the name of image input device maker (Exif data) is overwritten from ‘maker name of camera’ to ‘Noritsu’. This disables [Digital image auto correction (Digital camera)] effective when reprinting.
- Refer to Chapter 3 [Front print] for the date of Exif data.

1150

31D_1

Processable DVD

Processable Format	Capacity	Format
DVD-RAM (Input/Output)	Single side 2.6G Double side 5.2G (PC-NRT-3, 3A, 4, 4A) Single side 4.7G Double side 9.4G (PC-NRT-4, 4A)	TYPE1 (Cartridge-type, Impossible to remove the disk)
		TYPE2 (Cartridge-type, Possible to remove the disk)
DVD-ROM (Input) DVD-R (Input)	Single side 4.7G (PC-NRT-3, 3A, 4, 4A)	Disk-type (“Play” only)

Explanation

•If you remove the disk from DVD-RAM TYPE2 and use it, it is impossible to write the data.

•In the QSS-31, PC-NRT-3(3A) does not exist.

1160

31D_1

Main options (Film carriers)

Types of masks	Film type	Size	Note
135/240 AFC	Negative/Positive/Black&White/(Roll) Sepia/Black&White (orange base)	135F, H, P, HD IX240	Minimum number of frames:2-frame
120AFC	Negative/Positive/Black&White Sepia/Black&White (orange base)	6x4.5, 6x6, 6x7, 6x8, 6x9	Minimum advance length:43 mm (6 x 4.5 1 frame)
110AFC	Negative	110	Minimum number of frames:3-frame
135/240MMC	Negative/Positive/Black&White Sepia/Black&White (orange base)	135F, 135H, IX240	IX240: Positive only can be processed. Length of mount 50 mm x 50 mm Thickness: 1.0 mm – 3.2 mm Glass mount is not available.
135/240AMC			

Show each AFC.

Explanation

•Refer to the Specification Manual for the part No.

•Explain, showing each AFC.

•135/240AFC became an option because it is possible to process only from media.

•1-frame (135F) is not available with 135/240AFC and 135AFC. (Available with 135MMC/AMC.)

•With 135MMC/AMC, Negative/Positive/Black&White/Sepia/ Black&White (orange base) are processable. As for IX240, however, the positive film only is processable.

•In the QSS-28, as for the machine with ENV attached, when using the AMC, AMC kit for ENV is necessary for machines in the early shipping. Refer to the Specification Manual for details.

•Film insert direction

In the 3rd modification, insert the film from the rear end. In the 4th modification, however, the rewinding part is improved. So, the inserting from front end became possible, but tell a trainee the cautions when inserting a film from front end, same as the conventional machines.

The sticker of attention “Be sure to insert the front end of film without any remaining splicing tape or its glue” is attached.

1180

31D_1

Main options (Around Film carriers)

Name	Description/Explanation
IX240 auto supplier	Unit to supply an IX240 cartridge automatically Including the IX240 auto supplier PCB
Film set feeder	Used to supply two of 135 films automatically
Rail unit	Unit via which the IX240 auto supplier and the film set feeder are attached
135/240 AFC modification kit	Kit for modifying a 135/240AFC when the IX240 auto suppliers is attached to the machine.
Long roll feeder	Used to supply 135 film automatically (135F 24 prints, approximately 100 rolls) In the QSS-2801, when attaching it, the expand memory unit (Z018855-01) should be attached with it.
Sleever (6 frames specification)	Used to cut the scanned film and insert it into a film sheet automatically In the QSS-2801, When attaching it, the expand memory unit (Z018855-01) should be attached with it.
Sleever (4 frames specification)	
Expanded memory unit	Used to speed-up the printing by expanding the memory onto the image processing PCB (Up to the images with 60 frames can be stored.) This is an option only for the QSS-2801. (This is equipped as a standard equipment for the QSS-2802.) When attaching the LRF and ENV, attach them as a set.

Explanation

•Refer to the Specifications Manual for the parts No.

1200

31D_1

PC Options (PC-NRT-4, PC-NRT-4A)

Name	Description/Explanation
DIMM(256MB PC133) DIMM(512MB PC133)	Extended memory unit for Personal Computer, for the stable use of the Photoshop, and for enabling to read the image size of up to 37,000,000 pixels. (However, it should not exceed 5,000 pixels in vertical/horizontal. And, it should not exceed 7,500 pixels for one side.) There are two types - 256MB and 512MB-, up to 1GB is available. (In the QSS-28, 512MB memory is not set.)
ZIP drive unit	Unit to save/read the image data to a ZIP
MO drive unit	Unit to save/read the image data to a MO
DVD-RAM drive unit	Unit to save/read the image data to a DVD-RAM
Five slots card reader	Unit to save/read the image data from PC card, Compact flash, Smart media, SD card and Memory stick, MMC, Micro drive, xD-Picture card (USB connection)
CD-RW drive unit	Used to save/read the image data to a CD-R/RW
Flatbed scanner	Used to read the reflective (e.g. photograph) as image data In the QSS-29, used also when calibrating the uniformity. (manufactured by UMAX)
LAN board	Used to connect the QSS with network

***The spec, etc is mentioned separately.**

Explanation

•You cannot use an option except above items. In the QSS-28/29/31, PC-NRT-4/4A is used.

•Refer to the Specification Manual for the part No.

•The conventional PC card reader was discontinued.
It is replaced with five slots card reader when the following System version is released.
QSS-28: Ver.F001 or later
QSS-29: Ver.D001 or later
QSS-31: Ver.B001 or later

•When the expanded 256 MB memory unit for PC is used, the maximum readable image size is 37,000,000 pixels.
However, it should not exceed 5,000 pixels in vertical/horizontal.
And, it should not exceed 7,500 pixels for one side.
When the expanded 256 MB memory unit for PC is not used, it is possible to read the image size of up to 7,600,000 pixels.
If the size exceeds, the ATTENTION [No. 1516 The data is too large to write.] appears.

1201

31D_1

PC Options (PC-NRT-5)

Name	Description/Explanation
RIMM(128MB PC800) RIMM(256MB PC800)	Extended memory unit for Personal Computer, for the stable use of the Photoshop, and for enabling to read the image size of up to 37,000,000 pixels. (However, it should not exceed 5,000 pixels in vertical/horizontal. And, it should not exceed 7,500 pixels for one side.) There are two types - 256MB and 512MB-, up to 1GB is available. (In the QSS-28, 512MB memory is not set.)
ZIP drive unit	Unit to save/read the image data to a ZIP
MO drive unit	Unit to save/read the image data to a MO
DVD-RAM drive unit	Unit to save/read the image data to a DVD-RAM
Five slots card reader	Unit to save/read the image data from PC card, Compact flash, Smart media, SD card, Memory stick, MMC and Micro drive (USB connection)
CD-RW drive unit	Used to save/read the image data to a CD-R/RW
Flatbed scanner	Used to read the reflective (e.g. photograph) as image data In the QSS-29, used also when calibrating the uniformity. (manufactured by UMAX)
LAN board	Used to connect the QSS with network

***The spec, etc is mentioned separately.**

Explanation

- You cannot use an option except above items. PC-NRT-5 is used in the QSS-28/29/31.
- Refer to the Specification Manual for the part No.
- When the expanded 256 MB memory unit for PC is used, the maximum readable image size is 37,000,000 pixels. However, it should not exceed 5,000 pixels in vertical/horizontal.

  And, it should not exceed 7,500 pixels for one side.

  When the expanded memory unit for PC is not used, it is possible to read the image size of up to 7,600,000 pixels.

  If the size exceeds, the ATTENTION [No. 1516 The data is too large to write.] appears.

1230

31D_1

PC options (Combination example of memory: QSS-31)

Installed DIMM	PC-NRT-4, 4A
Standard (256MB)	**Available** **DIMM1 (standard)**
Standard (256MB) + Option (256MB) Total:512MB	**Available** **DIMM1 (standard)** **DIMM2 (256MB option)**
Standard (256MB) + Option (256MB) + Option (512MB) Total:1GB	**Available** **DIMM1 (standard)** **DIMM2 (256MB option)** **DIMM3 (512MB option)**

Note

- If you use in the other combination except above list, the movement is not guaranteed. Refer to the Service Manual 6521.
- In the PC-NRT-4, 4A, DIMM with more than 1GB cannot be attached.
- PC-NRT-4 (A) installs DIMM only.

1230

31D_1

Installed RIMM	PC-NRT-5
Standard (256MB)	**Available** **RIMM 1 (128MB standard)** **RIMM 2 (128MB standard)** **Install a dummy module to RIMM 3 (standard)** **Install a dummy module to RIMM 4 (standard)**
Standard (256MB) + Option (256MB) Total: 512MB	**Available** **RIMM 1 (128MB standard)** **RIMM 2 (128MB standard)** **RIMM 3 (128MB option)** **RIMM 4 (128MB option)**
Option (1GB) Total: 1GB	**Available** **RIMM 1 (256MB option)** **RIMM 2 (256MB option)** **RIMM 3 (256MB option)** **RIMM 4 (256MB option)**

Explanation

- If you use in the other combination except above list, the movement is not guaranteed. Refer to the Service Manual 6521.
- PC-NRT-5 installs RIMM.
- In the PC-NRT-5, there is no setting for RIMM with 1GB or more.

1240

31D_1

Main options (Package contents of image edition)

Name	Description/Explanation
Card/Calendar Creation Software (Package-A)	Calendars
	Greeting Cards (Poster card prints)
	Card Prints
	Business Cards
	Frame Prints
	Letter printing
Multi-Frame Print Creation Software (Package-B)	Multi-Frame Prints
	Album Prints
	Package Prints
	Contact Print Style Photos
	ID Photos
Red Eye Removal Software	Red eye removal function

Explanation

•The image edition software package is installed and protected when shipping a machine from factory.

•Release the protect of the image edition software package with key CD.

•DIMM256MBPC133 (option) is necessary except for Red-eye correction software. It is not necessary when a total of memory of 512MB or more is attached.

•Refer to the Specifications Manual of each machine for the parts No.

•The standard templates are included in the image edition software in the above list.

Note

•You can add the templates separately.

There are 4 types below as an option.

Templates for Frame (29 types)

Templates for Calendar (21 types)

Templates for Album (21 types)

Template for Business card

(67 types, appendix: 14 types of cards, 16 types of Multi)

1250

31D_1

Main options (Others 1)

Name	Description/Explanation
Digital ICE	Used to remove scratches, etc. from image in negative or positive which is scanned by the built-in scanner. (In the QSS-28/31, it is necessary to attach the D-ICE PCB. In the QSS-29/30, it is already attached, so it is necessary to install the software and put the sticker of D-ICE mark.)
Noritsu CD-R Engine (Windows/Mac)	Used for saving the Viewer software for Macintosh to CD/RW. Also necessary when saving the images to optional QSS CD.
QSS CD (TYPE A)	CD-R to which the viewer software (Deluxe Viewer) has been written. CD-R label is printed. (100 CD-Rs) (Common among the QSS-28/29/30/31)
QSS CD (TYPE B)	CD-R to which the viewer software (Deluxe Viewer) has been written. CD-R label is not printed. (100 CD-Rs) (Common among the QSS-28/29/30/31)
Bar code reader	Used to read the order sheet of the consumer terminal CT-1. (Common among the QSS-28/29/30/31)
Image rotation booster	Possible to shorten the time for displaying the image when rotating the image slightly. Image rotation booster itself is common among the QSS-29, 30, 31, but the option No. is different because the attaching part is different.
Package print format creation software	Used for making templates for package print as you like.
USB expansion code	Used when there is not enough USB ports for peripheral devices to be connected to QSS. (Standard: 2 USB ports, Option: 2 USB ports are added.) (Common between the QSS-28 and 31. Only for the QSS-29 and 30 each.)

Explanation

- Refer to the Specification Manual for details.
- The part No. of [USB expansion cable] is different between QSS-3001 and 3011. (The connector on the mother board side is different.)
- The image rotation booster is available when the following System version is released.

  QSS-29: Ver.E001 or later

  QSS-30: Ver.E001 or later

  QSS-31: Ver.C001 or later
- In the QSS-31 (SI-2600), the attaching procedure of image rotation booster kit is different depending on the manufactured No. Therefore, there are two kinds of image rotation kit. Refer to the Installation Manual of Image rotation booster kit for details.

1260

31D_1

Main options (Others 2)

Name	Description
UDA unit	The device to be used for saving the Image data scanned from film. The data of certain number of films is stored in the Hard disk. Possible to make a print/output to storage media from the stored image data. (Common among the QSS-28/29/31)
CD-R external writing system	Using the CD-R external writing system made by Rimage, write the image data to CD-R at the same time of printing, and make a label print. (Common among the QSS-28/29/31)
CD-R writing kit for external PC	Required kit for the connection of CD-R external writing system (Rimage) This consists of PCB, cable and software. (Common among the QSS-28/29/31)
CD-R external writing system connecting kit	Using the CD-R drive of external PC prepared by a customer, write the image data to CD-R at the same time of printing. (Common among the QSS-28/29/31)
QSS Printer Driver	Used as Driver software to print the image data with QSS, which is saved in the PC connected with QSS. (Install this software in the external PC.) (Common among the QSS-28/29/30/31)

Refer to the Training material [CD-R External Writing System].

Refer to the Training material [UDA unit].

Refer to the Training material [QSS Printer Driver].

Explanation

•Refer to the Specification Manual for details.

•The UDA unit is available when the following System version is released.

QSS-28: Ver.F002 or later

QSS-29: Ver.E001 or later

QSS-31: Ver.B002 or later

•Each component of part for [CD-R writing kit for external PC] and [CD-R external writing system connecting kit] is different between QSS-28/31 and QSS-29.

1270

31D_1

Main options (Others 3)

Name	Description/Explanation
CVP	Only for QSS-28/29/30/31 each
Compact ribbon cassette	Common among the QSS-28/29/30/31
Pricing unit	Used to calculate prices and issue statements automatically (Common between QSS-28 and 31. Only for the QSS-29 and 30 each.)
Monitor hood	Common among the QSS-28/29/30/31
Storage cabinet	Cabinet in which an auto film carrier, an IX240 auto supplier and a film set feeder are stored. (Only for each machine. This is not set for the QSS-30.)
Film cleaner kit	Common among the QSS-28/29/30/31
Negative cleaner	There are 3 types of specifications. (Only for each machine. This is not set for the QSS-30.) 100V, 120V, 220V-240V

Note

•Refer to the Specifications Manual for the parts No.

1270

31D_1

Name	Description/Explanation
Hour meter	Meter which displays the accumulated working time (Common among the QSS-28/29/31. Only for the QSS-30)
Non-resettable counter	(Only for each machine. This is not set for the QSS-30.)
One-touch dark bag	Used when paper is repacked to paper magazine (Frame type) (Common among the QSS-28/29/31. This is not set for the QSS-30.)
Sorter modification kit (for 82 prints)	Kit for modifying the print sorter unit to that for 82 prints in one order. Number of orders which can be stocked: 14 (Only for each machine. This is not set for the QSS-30.)

Explanation

•Refer to the Specifications Manual for the parts No.

•The standard sorter is for 50 prints.

Number of orders which can be stocked: 17

1280

31D_1

Main options (Others 4)

Name	Description/Explanation
Side table	Table which is used to extend the table width to the left or right (Common between the QSS-28/31)

Note

•Refer to the Specifications Manual for the parts No.

1310

31D_1

Main options (magazines)

Standard magazine	Compatible between Normal and Kodak specification. (Carry out the unit replacement only as it is already adjusted.)
QL magazine	For QL paper (Carry out the unit replacement only as it is already adjusted.) The core unit is different from the standard magazine.

Width Regulation Guide Kit (1)

Name	Magazines	Paper width
Width Regulation Guide Kit (1) (For standard magazine)	Roller guide (1) Width Regulation Guide (movable length:1 mm)	82.5 to 178 mm
Width Regulation Guide Kit (2) (For standard magazine)	Roller guide (2) Width Regulation Guide (movable length:1 mm)	203 to 254 mm
Width Regulation Guide Kit (3) (For standard magazine)	Roller guide (3) Width Regulation Guide (movable length:2 mm)	279 to 305 mm
Width Regulation Guide Kit (4) (For QL magazine)	Roller guide (1) Width Regulation Guide (movable length:1 mm) For QL paper only	89 to 165 mm
Width Regulation Guide Kit (5) (For QL magazine)	Roller guide (2) Width Regulation Guide (movable length:1 mm) For QL paper only	203 to 254 mm

Explanation

- Refer to the Specification Manual for the parts No. The magazine is compatible between QSS-29 and 31.
- When you order a magazine, each width regulation guide is attached to all magazines.
  The Width Regulating Guide Kit is set as an option in case that a customer loses or breaks it.
- Replace the magazine assembly (magazine main body + paper regulating plate) as a whole unit.
- Replace the Spindle assembly (spindle main body + reel plate) as a whole unit.

1320

31D_1

Compatible table of unit for processor

Compatibility of unit among the type of machine	QSS-2801	QSS-2802	QSS-2901	QSS-3101
	PP-1216	PP-1223	PP-1216	PP-1223
Processing solution	A	B	C	B
Dryer rack (upper)	D	D	E	E
Dryer rack (lower)	F	F	F	F
Note	Processing in 3-lane		Processing in double-lane and Processing of wide-width paper	

*If the unit has same letter with another one, there is a compatibility between two types of machines.

Explanation

- The above compatible table is mentioned in the case of Standard type, and the above compatible table will be applied to SM also.
- Differences of processing racks between QSS-2801 and 2802 [Comparison of A and B]

  The number of racks and length are different. (The shape of roller is the same.)

  Shape of roller: Taper-shaped roller which center part is thick

  This is used for both of center roller and side roller.

  But, you cannot check that it is the taper-shaped center roller by naked eyes.
- The processing racks are compatible between the QSS-2802 and 3101.
- Differences of processing racks between QSS-2801 and 2901 [Comparison of A and C]

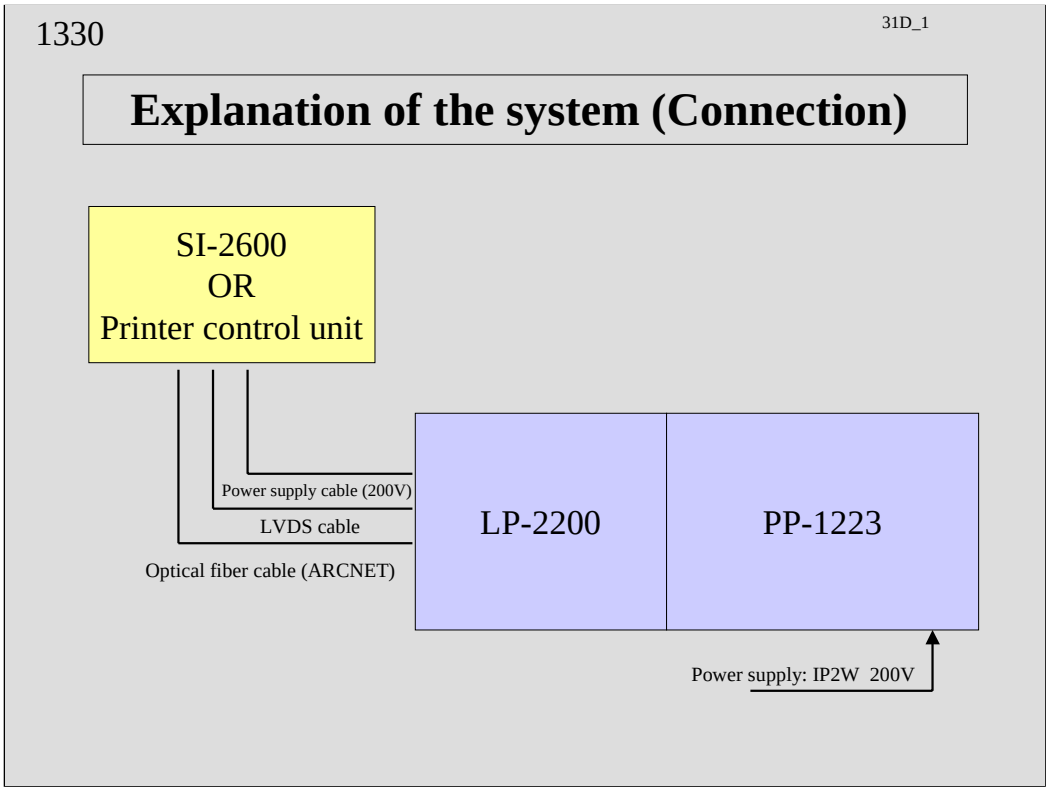
  The number of racks and length are the same, but the shape of side roller is different.

  Shape of roller: Flat roller is used for Side roller.
- As for the dryer rack (upper), QSS-28 does not have a lane selection function for the wide-width paper, but the QSS-2901 and 3101 have the function.

  From this cause, the unit is different depending on the type of machine.

Note

- The shape of processing roller is different depending on the type of machine. And, it depends on the difference of transportation “3-line processing and 2-line processing” (balance of pressure advance power), matching with processing solution and the cost.



Explanation

•When the standard type cable is used, the interval between SI-2600, Printer control unit and LP-2200&PP-1223 is approx. 5 m (max.).

Note

•The reason of using LVDS

Comparing with the IEEE1394 used in the QSS-28, the image transfer speed is higher.

In the QSS-28, the connector section of DLP engine PCB is IEEE1394.

1340

31D_1

Table of compatible consumable parts

Scanner + Printer section

Name	Part No.	QSS-31	QSS-29	QSS-28	QSS-27
Scanner lamp	I061219-00	√	√	√	
Air filters (scanner)	A056917-01	√	√	√	
MLVA lamp	I061219-00		√		
Air filters (MLVA)	A056917-01		√		
Ribbon cassettes	H086035-01	√	√	√	

√ = compatible with the QSS-31

The connector code of scanner lamp is different between the QSS-28/29/31 and QSS-27.
***For QSS-28/29/31: White**
***For QSS-27 : Black**

Note

•The lamp for QSS-27 is not compatible with that for QSS-28/29/31.

- The position of filament is different a little.
  (You cannot tell it by looking at.)
- The gas amount in the lamp is different.
- The heat dissipation is different.

1350

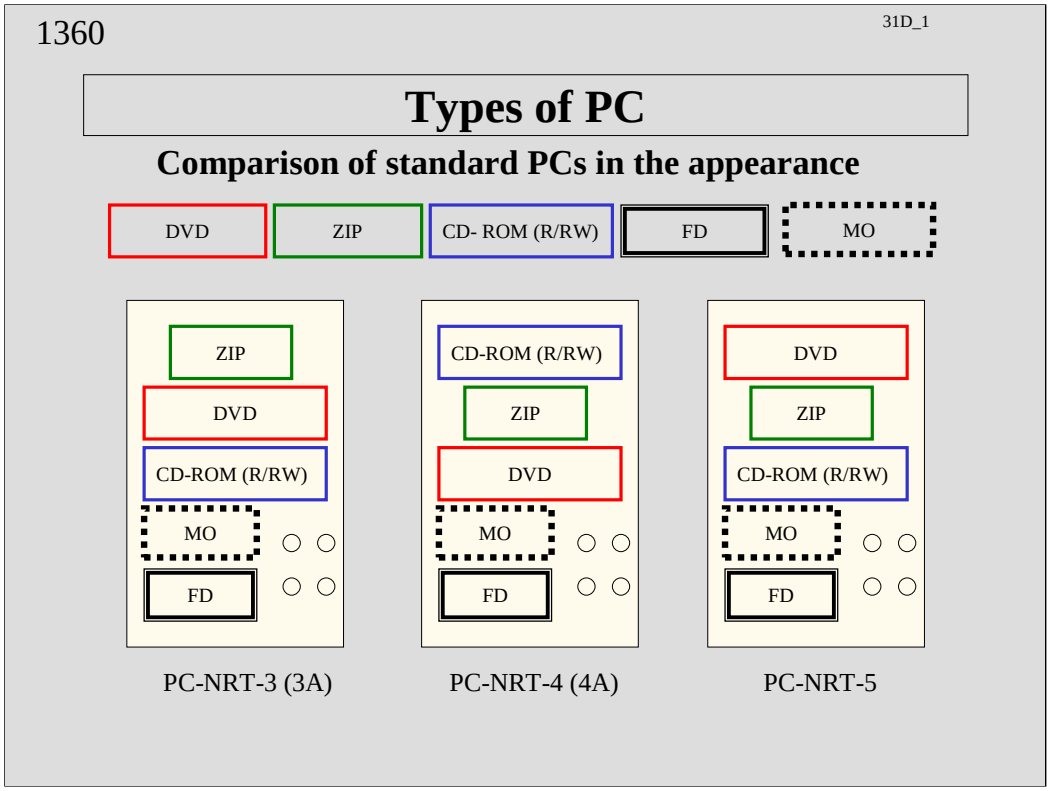
31D_1

Print sizes

Processable paper width	82.5 mm to 305.0 mm
Paper advance length	82.5 mm to 457.0 mm
Maximum print size	305.0 mm to 457.0 mm

Usable paper

Maximum diameter of paper	250 mm (180 m length)
Usable paper	Thin paper (0.2 mm) is supported.



Note

- Standard PC to be used as a standard

  QSS-28/29: 3 types

  QSS-31: 2 types
- How to distinguish

  Check the sticker of type on the slot for MO drive.
- Difference in appearance

  Slot positions of each drive -CD-ROM, CD-R/RW, DVD, ZIP-.
- Other differences

  PC-NRT-3: CD drive is SCSI connection.

  PC-NRT-4, 5: CD drive is ATAPI connection.
- In the PC-NRT-5, the power control management is changed from APM to ACPI.

Note

- APM and ACPI is the standard for power control for the purpose of PC's power saving.

1380

31D_1

Specifications of personal computers (PC-NRT-4)

Spec table of standard PC

	Product name	**Specifications**
CPU	Pentium III	1GHz
Mother board	CA64-BN	
Memory	PC-NRT-M256	256MB PC133
3.5FDD	FD-235HF	2 modes
Hard disk	QML20400ASA-A	20GB
CD-ROM drive	CR-594J (existing model)	48x ATAPI
	CR-564B (discontinued model)	
Video board	MILL G450 DUAL H. 32MB	SGRAM
Keyboard (Japanese)	FKB8724-501	
Keyboard (English)	FKB8725-401	
Mouse	Microsoft PS/2 mouse	
OS	Windows 2000 professional	Dedicate version

Explanation

•It is impossible to replace the ATX mother board unit only itself.

•Replace the mother board unit as a whole set. (ATX mother board, CPU and CPU cooler)

1390

31D_1

Specifications of personal computers (PC-NRT-4A)

Spec table of standard PC

	Product name	Specifications
CPU	Pentium III	1GHz
Mother board	CA64-TN	
Memory	PC-NRT-M256	256MB PC133
3.5FDD	FD-235HF	2 modes
Hard disk	6E040L0 (existing model)	40GB 7200rpm
	6L040J2 (discontinued model)	
CD-ROM drive	CR-594J (existing model)	48x ATAPI
	CR-594B (discontinued model)	
Video board	MILL G450 DUALH 32MB	SGRAM
Keyboard (Japanese)	FKB8724-501	
Keyboard (English)	FKB8725-401	
Mouse	Microsoft PS/2 mouse	
OS	Windows 2000 professional SP2.	

Explanation

- It is impossible to replace the ATX mother board unit only itself.
- Replace the mother board unit as a whole set. (ATX mother board, CPU and CPU cooler)

1391

31D_1

Specifications of personal computers (PC-NRT-5)

Spec table of standard PC

	Product name	Specifications
CPU	Pentium IV	2GHz
Mother board	D850EMV2	
Memory	PC-NRT-RIMM	256MB PC133
3.5FDD	FD-235HF	2 modes
Hard disk	6E040L0	40GB 7200rpm
CD-ROM drive	CR-594J	48x ATAPI
Video board	MILL G450 DUALH 32MB	SGRAM
Keyboard (Japanese)	FKB8724-501	
Keyboard (English)	FKB8725-401	
Mouse	Microsoft PS/2 mouse	
OS	Windows 2000 professional SP3.	

Explanation

- It is impossible to replace the ATX mother board unit only itself.
- Replace the mother board unit as a whole set. (ATX mother board, CPU and CPU cooler)

1430

31D_1

Spec table of media drive (PC-NRT-4, 4A)

	Machine type	Maker	Types of media	Data capacity	Interface	
MO	MCM3064SS [MCE3064SS]	FUJITSU		640MB 540MB 230MB 128MB	SCSI-2	
Zip	Zip250	Iomega	ZIP	250MB 100MB	IDE (ATAPI)	
CD-R/RW (PC-NRT-4)	PX-W1610TA	PLEXTOR	CD-ROM CD-R CD-RW	650MB 700MB*1	IDE (ATAPI)	Read: 40x Write: 16x Overwrite: 10x
CD-R/RW (PC-NRT-4A)	PC-W4012TA [PX-W2410TA] [RW7200A]	PLEXTOR	CD-ROM CD-R CD-RW	Can be set	IDE (ATAPI)	Read: 40x Write: 40x Overwrite: 12x

[ ]: Discontinued No.

Both of old type and new type hard disks can be used.

Explanation

- Set the data capacity of CD-R/RW in the [Option registration] -> [Media] -> [CD-ROM (CD-R/RW)], depending on the capacity of CD-R/RW used for data output.
- According to the capacity of CD-R/RW set in the QSS, it is judged whether the data can be written to the CD-R/RW which you set or another CD-R/RW is necessary.
- Confirm the media capacity to be set in the QSS and the one to be set actually before storing the image to CD-R/RW.

(example)

Setting of media capacity: 700MB CD-R to be used (650MB)

When the data capacity to be written is 650MB or more

The message “No. 1546 Failed to write the data. Confirm Setting of Media Capacity.”

1430

31D_1

	Machine type	Maker	Types of media	Data capacity	Interface	
DVD	LF-D291NS	Panasonic	DVD-RAM	Single side 4.7, 2.6GB Double-side 9.4, 5.2GB	SCSI-2	
			DVD-ROM DVD-R	Single side 4.7GB		

1431

31D_1

Spec table of media drive (PC-NRT-5)

	Machine type	Maker	Types of media	Data capacity	Interface	
MO	MCM3064SS	FUJITSU		640MB 540MB 230MB 128MB	SCSI-2	
Zip	Zip250	Iomega	ZIP	250MB 100MB	IDE (ATAPI)	
CD-R/RW	PX-W4012TA	PLEXTOR	CD-ROM CD-R CD-RW	Can be set	IDE (ATAPI)	Read: 40x Write: 40x Overwrite: 12x
DVD	LF-D291NS	Panasonic	DVD-RAM	Single side 4.7, 2.6GB Double side 9.4, 5.2GB	SCSI-2	
			DVD-ROM DVD-R	Single side 4.7GB		

[ ]: Discontinued No.

Both of old type and new type hard disks can be used.

Explanation

• Details are the same with the PC-NRT-4A.

1460

31D_1

Spec table of peripherals (PC card reader)

Drive	Type	Maker	Types of media	Data capacity	Interface
Card reader	PCD-47B	Microtek International	Smart media	2 to 128MB*1	SCSI-2
			Compact flash	*2	
			PC card	*3	

*1: compliant with Smart Media Physical Specifications Version 1.2
Drive Voltage: 3.3V, 5V
*2: compliant with Compact Flash Specification Version 1.4
No limit in the capacity. Type I only can be set. Type II (micro drive) cannot be set.
*3: compliant with PC Card Standard Release 8 PC Card ATA Specification
No limit in the capacity.

Explanation

- Common among PC-NRT-3, 3A, 4 and 4A.
  The PC card reader is compatible with the QSS-3001/3011. However, the part No. is different because the attached part is different.
- As for memory stick and SD card, when using the PC card adapter with write-protected, it may be impossible to read the image data.

1470

31D_1

Spec table of media drives (Five slots card reader)

Five slots card reader [Common between QSS-3001 and 3011]

Drive	Type	Maker	Types of media	Data capacity	Interface
Five slots card reader	PCD-50N	Microtek International	Smart media	4 to 128MB*1	USB
			Compact flash	*2	
			PC card	*3	
			SD card	8 to 128MB*4	
			Memory stick	8 to 128MB*5	
			MMC	4 to 64MB*6	

*1: compliant with Smart Media Physical Specifications Version 1.2
Drive Voltage: 3.3V
*2: compliant with Compact Flash Specification Version 1.4
No limit in the capacity. Both of Type I and II (micro drive) can be set.
*3: compliant with PC Card Standard Release 8 PC Card ATA Specification
No limit in the capacity.
Drive voltage: 5V, 3.3V/5V
*4: compliant with SD Memory Card Specification Version 1.0
*5: compliant with MS Specification Version 1.2
*6: compliant with MMC System Specification Version 2.1

Explanation

- Common among the QSS-28, 29, 31.
  Also compatible with the QSS-3001/3011. However, the part No. is different because the attached part is different.
- The media with security cannot be accessed.
- The PC card which drive voltage is only for 3.3V cannot be processed.
- As for memory stick and SD card, when using the PC card adapter with write-protected, it may be impossible to read the image data.

1480

31D_1

Spec of flatbed scanner (Astra3400)

Type	**Astra3400**
Maker	**UMAX**
Color scanning method	**Color CCD (Single Pass)**
Maximum area of scanning	**216 x 297 mm (8.5 x 11.7-inch)**
Optical resolution	**600 x 1200 dpi**
Maximum resolution	**9600 x 9600 dpi**
Interface	**USB**

•This type is discontinued and replaced with Astra4400.
•AC adapters which are necessary for the flatbed scanner are divided into 7 types because the shape of power supply and plug socket is different depending on the country.

Note

- Common among QSS-28/29/30/31.
- The maximum input size: A4
- When you order the flatbed scanner, check the type of power supply and the shape of plug socket for country each.

1490

31D_1

Spec of flatbed scanner (Astra4400)

Spec of flatbed scanner (option)

Type	**Astra4400**
Maker	**UMAX**
Color scanning method	**Color CCD (Single Pass)**
Maximum area of scanning	**216 x 297 mm (8.5 x 11.7-inch)**
Optical resolution	**1200 x 2400 dpi**
Maximum resolution	**9600 x 9600 dpi**
Interface	**USB**

•AC adapters which are necessary for the flatbed scanner are divided into 7 types because the shape of power supply and plug socket is different depending on the country.

Note

- Common among QSS-28/29/30/31.
- The maximum input size: A4
- When you order the flatbed scanner, check the type of power supply and the shape of plug socket for country each.

1500

31D_1

PC spec of printer control unit

Spec table of PC (PC-NRT-PS1)

	Product name	Specifications
CPU	**Pentium4**	**1.6GHz**
Mother board	**NT70SC**	
Memory	**MC-4R256FKE6D-845**	**256MB PC800 x 4**
3.5FDD	**FD-235HF**	**2 modes**
Hard disk	**6L049J2**	**40GB 7200rpm**
CD-ROM drive	**FX-54**	**54x ATAPI**
Video board	**MILL G450 /DDR32MB/DH/AGP/OEM**	**32MB AGP**
Keyboard (Japanese)	**FKB8724-501**	
Keyboard (English)	**FKB8725-401**	
Mouse	**ECM-S500Z**	
OS	**Windows 2000 Professional SP2.**	

Explanation

•It is impossible to replace the ATX mother board only itself. Replace as the mother board unit.

(ATX mother board, CPU, CPU cooler)

•1GB memory is equipped as a standard equipment. (RIMM)

1510

31D_1

Procured parts at customer's site

It is possible to connect the image scanner (on the market) with the QSS for Print to Print.

It is necessary that a customer prepare the device to be used separately.

The followings are the products specified by Noritsu.

Name	Product name	Maker	Connection	Description
Image scanner	**Prefection2450**	**EPSON**	**USB**	Used for "Print to Print". Up to A4 size
Image scanner	**Perfection3200**	**EPSON**	**USB**	Used for "Print to Print". Up to A4 size
Image scanner	**GT-10000+**	**EPSON**	**SCSI**	Used for "Print to Print". Up to A3 size

Necessary options (part No.: I090199)

Color input target + Floppy	Used for the calibration of flatbed scanner.

Explanation

- Refer to the operating instructions attached to each device for handling the peripherals and connecting method.
- As for some problems concerning the image scanner, contact each maker.
- The necessary option is not sold on the market, so it is necessary to purchase it as an option.

Note

- In the QSS-29, GT-9800F will be available in software version E002.

1900

31D_1

Comprehension check

[Specifications]

*Do you understand available print sizes?
*Do you understand processable media types and format?
*Can you explain which option is necessary depending on the customer's request?
*Can you change the magazine width?
*Can you explain when you are asked about the PC spec?
*Can you explain the differences among PC-NRT-3 (3A), PC-NRT-4(4A) and PC-NRT-5?
*Do you understand the processable films?
*Can you explain the differences between card reader and five slot card reader?
*Do you understand about the media capacity setting of CD-R/RW?
*Do you understand the processable image sizes?

[Question]

*What kind of index print is available?
*What kind of index print is there as a standard?
*In which print, is the optional software necessary to output?
*What is the processable format?
*What option is necessary for making the Contact print style photos?
*What option is necessary for letter printing?
*When using the paper with 254 mm width, which guide should be attached to a magazine?
*When using the paper with 305 mm width, which guide should be attached to a magazine?
*What is the standard memory of PC? What is the maximum memory size with an option?
*What MHz is used for the CPU?
*What GB of HDD is used?
*Is there a compatibility of HDD between PC-NRT-3, PC-NRT-4 and PC-NRT-5?
*What is compatible among PC-NRT-3, PC-NRT-4 and PC-NRT-5?
*What setting is required for using a CD-R of 700MB?
*What is the kind of media which is available for additional writing?

31D_2

Chapter 2
Outline of the system

2000

31D_2

The point of this chapter

Key points

* Explain the outline of the system for each machine.
  Scanner, Exposure engine, Image size, Paper size, Digital-ICE, Paper advance system

Upon completion of the lesson, you will be able to:

*Understand the specifications and structure of scanner.

*Understand the number of pixels for scanning and the number of resolution for print.

*Understand the dust and scratches which can be processed with the Digital ICE and its theory.

*Understand the paper advance way.

*Understand the structure of exposure engine and the function of each section.

How to proceed the training

Explain the items referring to the training materials and using the actual machine.

2010

31D_2

Scanner light source

Light source :

The halogen lamp of 30.5V and 370W is used for the light source of film scanner.
(Voltage of connector part of lamp: 27.7V)
The lamp and socket are assembled in one, and the heat sink is attached. There is no compatibility with the conventional model. (The scanner lamp is common among the QSS-28/29/31.)

Light source parts :

The reflector is not a consumable part, so it is unnecessary to replace it.
The lens box is slit condenser type.
(The lens box is common among the QSS-28/29/31.)

Explanation

•The life of halogen lamp is approx. 900 hours.

•Explain not to operate with putting the negative sheet onto the lens box.
(This is different from the conventional machines.)
Putting the negative sheet onto the lens box causes the curl of film because of the high temperature.

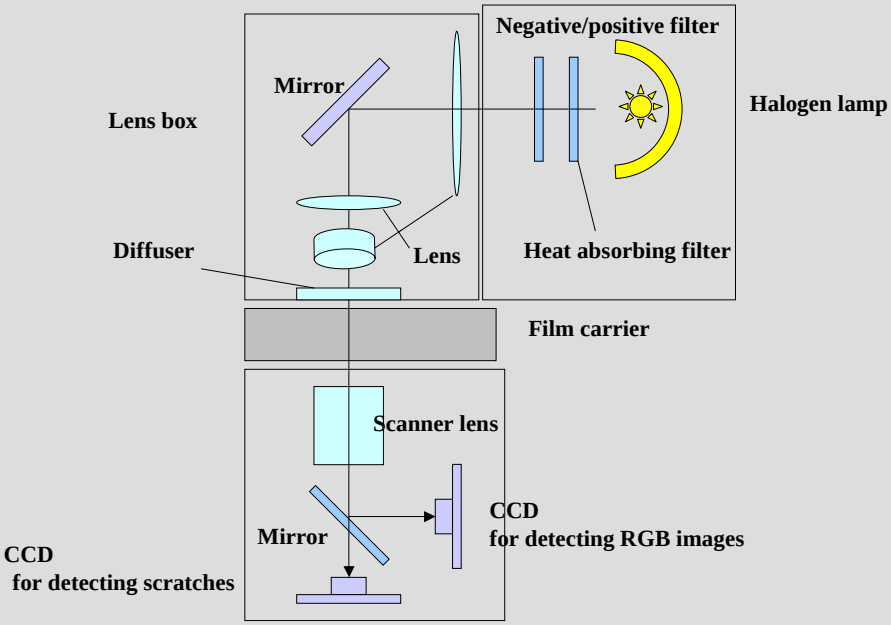
•The lens box is changed from a machine of the end of August, 2001 or later.

•As for the modified lens box, the lens is manufactured for increasing the diffusivity of transmitted light.

2020

31D_2

Structure of scanner unit



Note

•The scanner unit is common among the QSS-28/29/30/31.

2030

31D_2

Scanner

Image capture method	
Optical resolution (Main or the CCD line)	Input one line image with line CCD.
Scan pitch (Sub scanning)	Film is moved.
CCD	Scan RGB each with line CCD (5,000 pixels).
Others	ISL filter*1 is available. Automatic dust and scratch removal for films is available. (Digital ICE) (option)*2

Sticker for permission of use

*1 QSS *2 digital ICE

Explanation

•ISL filter = image data conversion software [conversion of White&Black, Sepia (of color image), etc.)] *1

•Digital ICE stands for Digital Image Correction Enhancement. and it is a trademark of Applied Science Fiction. *2

•In the QSS-28, the scanning speed is constant.

135F: approx. 1 frame/second

•In the QSS-29/30, the necessary hardware (PCB, etc.) is already installed in all machines when shipping a machine. It does not depend on the customer's order.

It is necessary to purchase the Digital ICE software separately as it is the optional software.

2050

31D_2

Scanning movement

Film size	Paper width	Scanning method	Note
135/240	82.5 mm to 152.0 mm	Final scanning only	Possible to use ENV, LRF and Film set feeder
	165.0 mm to 305.0 mm	Pre-scanning + Final scanning	Impossible to use ENV, LRF and Film set feeder
120	82.5 mm to 127.0 mm	Final scanning only	When marking the check for 120 scan type
	130.0mm to 305.0mm	Pre-scanning + Final scanning	
110	All	Pre-scanning + Final scanning	
Mount	All	Final scanning only	

Explanation

- The scanning method varies depending on the paper width, but it is not affected by the paper advance length.

  The reasons why the scanning method varies depending on the paper width are as follows.

  When using narrow-width paper size that do not require large image sizes, only final scanning is carried out to increase the scanning speed.

  When using wide-width paper sizes that require large image sizes, pre-scanning and final scanning is carried out to get higher resolution images.
- In case of the interspersed channel for narrow width and wide width, select the scanning method for wide width (Pre-scanning + Final scanning).
- When processing 120 films, the scanning is done for each paper size by checking the mark for [120 scan type] in the Print channel setting. If the mark is not checked, all of 120 film is scanned twice.
- If the mount is enlarged, depth of field is getting narrow, so the zoom value is constant.

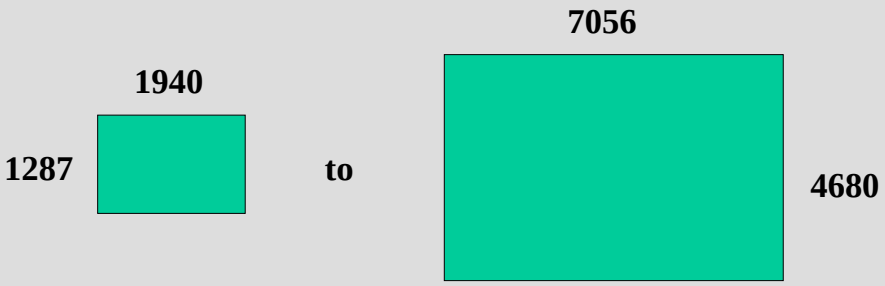
2060

31D_2

Resolution of the image

- Input resolution (resolution of the image) is different depending on the film size and paper width each.

  Change the resolution of the image by the zoom lens of scanner.



Resolution of the image when scanning 135 film (Unit: pixel)

2070

31D_2

Resolution of the image (film size each)

Film size	Minimum	Maximum
135F	1287 x 1940	4680 x 7056
135H	1287 x 907	4680 x 3299
135P	685 x 1944	2491 x 7071
240C	951 x 1427	3170 x 4757
240H	951 x 1667	3170 x 5557
240P	692 x 1667	2307 x 5557
110	1593 x 2096	2500 x 3290
6 x 4.5	1147 x 840	4591 x 3362
6 x 6 (6 x 6V)	1149 x 1132	4599 x 4530
6 x 6H	1132 x 1149	4530 x 4599
6 x 7	1145 x 1404	4582 x 5617
6 x 8	1166 x 1572	4666 x 6290
6 x 9	1166 x 1698	4666 x 6794

Explanation

•In the 120 film, the resolution of the image is constant, but the width [6] of [6*#] is slightly different depending on each size on the basis of the 120 size standard. Therefore, even if you scan it at the same magnification, the resolution of image is to be the present size as a result, because the film width with image is different.

•As for mounts, if the image is enlarged, the depth of field is shallow, so the zoom value is constant.

Note

•In case of wide scanning for 120 and mount, the number of resolution for scanning is as follows.

6*4.5W ---------- 4748*3673
6*6W (6*6VW) ---------- 4748*4720
6*6HW ---------- 4748*4834
6*7W ---------- 4748*5995
6*8W ---------- 4748*6755
6*9W ---------- 4748*7143

2070

31D_2

Resolution of the image (film size each)

Film size	Minimum	Maximum
135F mount	1916 x 2937	The resolution of the image is fixed.
135H mount	1916 x 1254	
240 mount	1260 x 2214	

Note

•In case of wide scanning for mount, the number of resolution for scanning is as follows.

135F mount W ---------- 2178*3265
135H mount W ---------- 2178*1546
240 mount W ---------- 1518*2745

2080

31D_2

Minimum necessary pixels for paper size each

Size (mm)	Pixel	Size (mm)	Pixel
82.5	1040	178	2243
89	1122	203	2558
102	1286	254	3200
127	1600	305	3843
152	1915	457	5758

Note

•Calculating formula

Size (mm) / 25.4 x 320 (dpi) (resolution of printer) = Resolution of the image for one side

The above is just the calculated number. Actually the image is scanned a little larger.

2090

31D_2

Scanning

The zoom value of scanner is decided on the basis of the largest among the paper sizes, which are registered in the print channel (C/P/H).

Example)

In the 135F, when setting “C: 89 x 127” and “P: 305 x 457”, the resolution of image is 4680 x 7056. (Pre-scanning + Final scanning)

The resolution of image for 89 x 127 channel only is 1287 x 1940. (Final scanning only)

The quality is different depending on the combination of print sizes.

Explanation

•The quality is different depending on the combination of print sizes.

The size of output data is different because the output resolution is different.

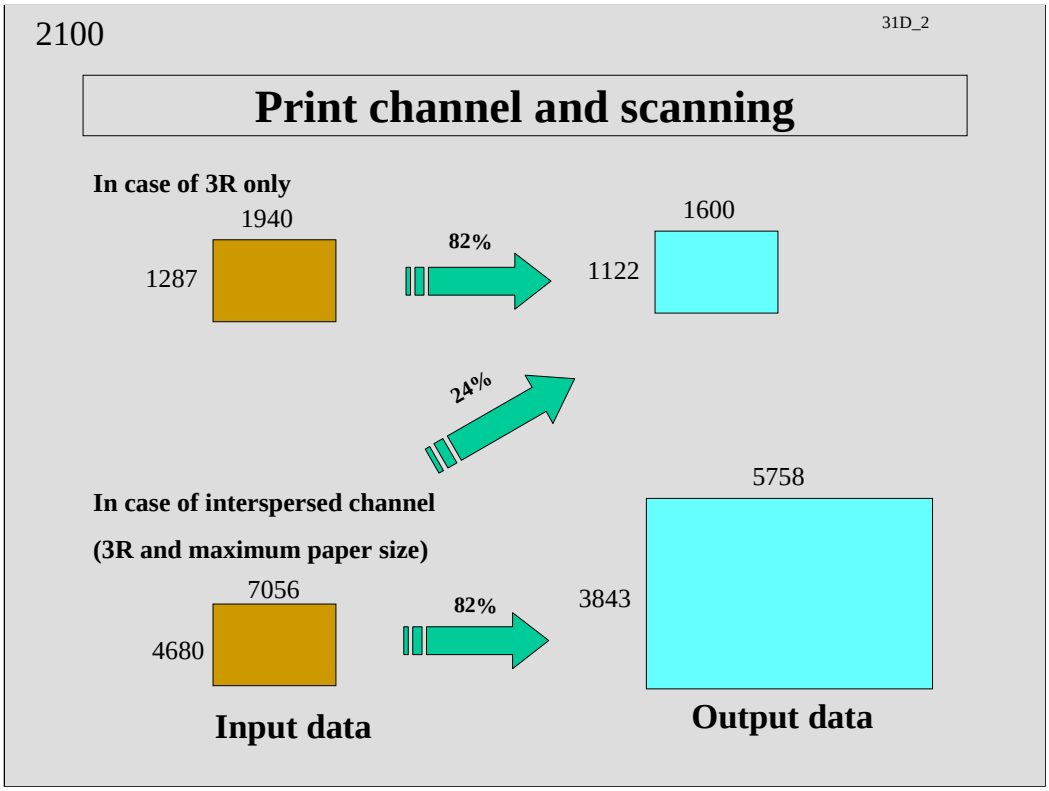
•When two types of paper width below are set in the same print channel,

Pre-scanning + Final scanning is done.

Paper width for final scan only

Paper width for (Pre-scanning + Final scanning)

(Scan for the wider paper.)


2100
31D_2
Print channel and scanning
In case of 3R only
1940
1287
82%
1600
1122
24%
In case of interspersed channel
(3R and maximum paper size)
7056
4680
82%
5758
3843
Input data
Output data

2100

31D_2

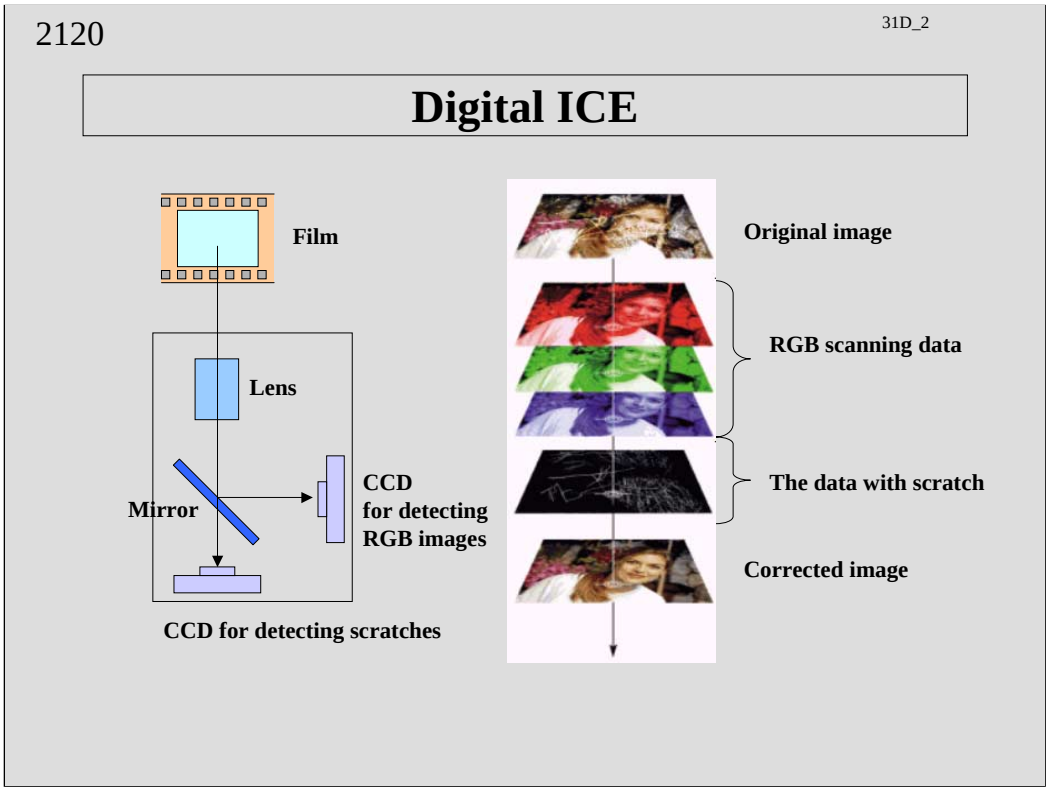
Pre-scanning

Film sizes	Resolution	Film sizes	Resolution
135F C	257 x 388	6 x 4.5	286 x 210
135F HD	216 x 388	6 x 6	286 x 283
135F P	136 x 388	6 x 7	286 x 351
135H	257 x 181	6 x 8	291 x 393
240C	252 x 379	6 x 9	291 x 424
240H	252 x 442	135 mount F	319 x 489
240P	183 x 442	135 mount H	319 x 209
110	343 x 452	240 mount	210 x 369

Explanation

•Same with the QSS-29/30.

•The image data scanned in the Pre-scanning is used for the index prints, label index prints, index prints of contact print style photos and for monitor display.



Explanation

•The technology to make the images without scratch, dust, etc.
In addition to the CCD which takes the color information of RGB, the another CCD is added. It detects the dust, scratch, etc. on the film. This corrects the scanned image information.

2130

31D_2

Corrections by Digital ICE

Comparison table with the conventional models

Correct function	**The image is corrected automatically by Digital ICE (option)**

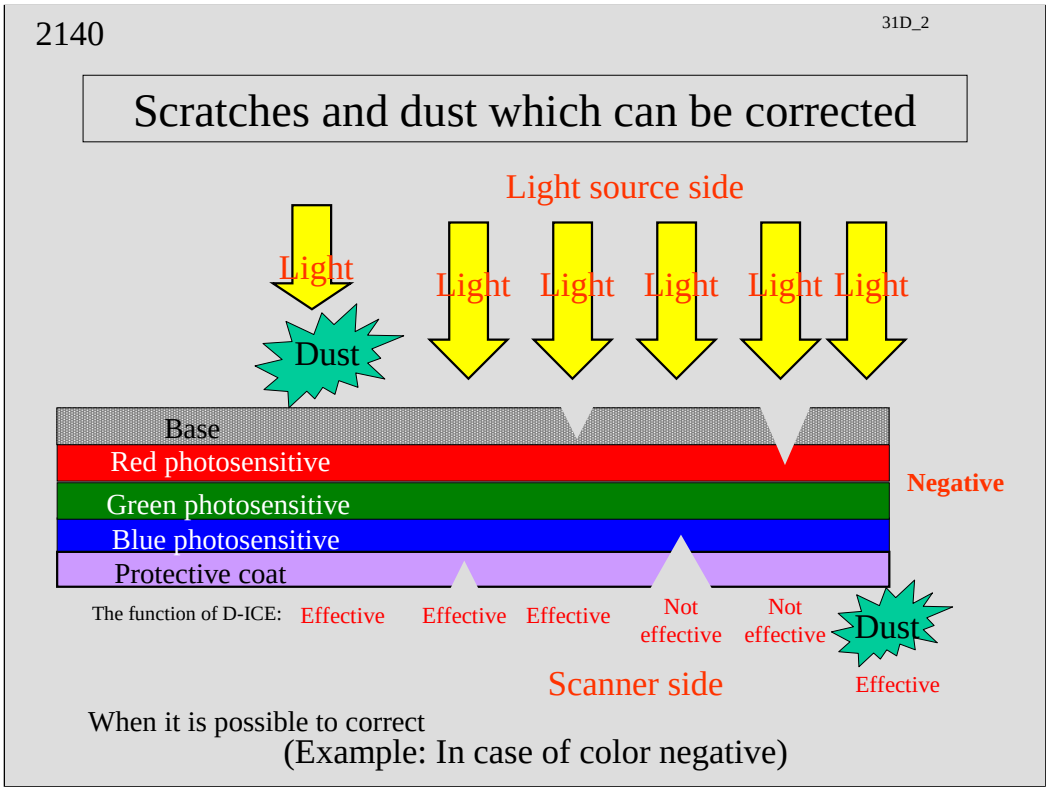
The conditions for functioning the Digital ICE

	QSS-29/30	QSS-28/31
PCB, power supply	**Already attached when shipping from the factory**	**Replace the image input PCB with the D-ICE PCB (option).** **Attach DC power supply 3.**
Installing the software	**Reading the software of Digital ICE (Z809072-01)**	**Read the system software program of D-ICE PCB. (The D-ICE program is included in the QSS system program CD.)**
Registration in the mode	**Mark the check box in the "Operator selection" .**	**Mark the check box in the "Operator selection" .**

Explanation

•In the QSS-28, 31, the Digital ICE PCB also has a function of image input PCB.

•In the QSS-29, 30, the D-ICE software has the role of protect key.



Explanation

•The Digital ICE deletes the dust, scratch, finger print or mold, which is stuck to the film surface, automatically.

•The scratch types below cannot be corrected.

Deep scratch goes though the emulsion side to base side of a film

Big scratch

•The Digital ICE does not function normally when a lot of silver is included in the part where the image is created, like in case of monochrome films and desilvering. In the KodakChrome films, the effect of Digital ICE is weak to the high density or low density of a film, and the scanned image will deteriorate.

Turn OFF the function of Digital-ICE before printing.

•You can set the function of Digital ICE ON or OFF in the “Operator Selection”. (However, in case of monochrome film, the Digital ICE is turned OFF automatically.)

•The “blurring caused by the roller pressure” cannot be corrected.

Note

•The density of base for negative is light and the image cannot be detected when scanning. In this case, turn OFF the D-ICE. It may enables to detect the images.

2150

31D_2

Colorimeter

* The colorimeter is adopted for the precise color matching when carrying out the CMS.
* The conventional colorimeter measures the density of the color of the paper. Therefore, there is a difference between the actual print and the measured value.
*This colorimeter has an ability to distinguish like from the human's eye, and the precision of color matching between the monitor and print is increased.

* There are three types of colorimeter – spectrophotometer, colorimeter, densitometer. The colorimeter is used for this machine.
* The colorimeter can measure the color in CIE-XYZ/Lab value, and color matching for difference devices is possible.

Explanation

- Comparing with the conventional densitometer, the colorimeter costs more. However, the colorimeter is employed as the necessities to carry out CMS.
- The measured range is same with that of conventional densitometer.
- For the maintenance of colorimeter, use the cleaning sheet for densitometer. (Service tool)

2160

31D_2

Paper sizes and transportation

Paper advance

In the QSS-31, there are two types of advance way.
Paper advance in single row, Paper advance in double rows
The condition of paper advance is as follows.

Condition of paper advance	Advance way
Paper width : 152 mm or less Paper advance length: 216 mm or less	In double rows
Paper width : 152.1 mm or more Paper advance length: 216.1 mm or more Leading of order 50th print in one order When feeding the leading edge of paper When feeding the fogged paper When feeding the spliced paper	In single row

*** Refer to the Service Manual Chapter 5 for details.**

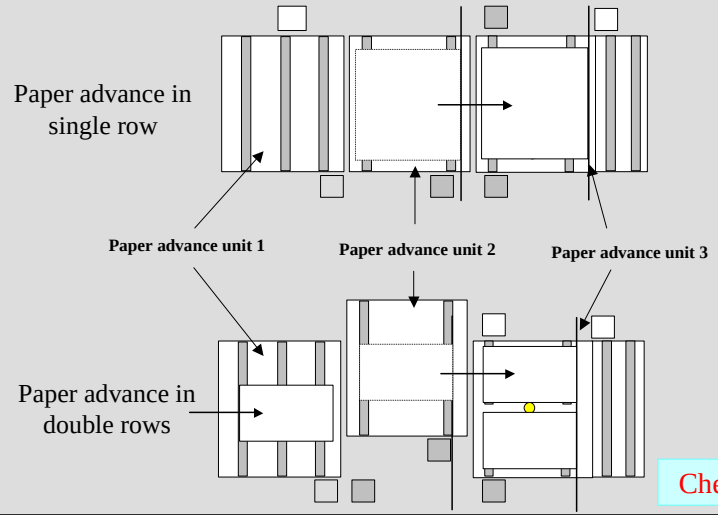
2160

31D_2

Paper sizes and transportation

The paper lane selection is carried out in the paper advance section after exposure.

Lane selection is carried out by paper advance unit 2.



Check the actual machine.

2370

31D_2

Laser Engine

Laser:
Abbreviation of
Light Amplification by Stimulated Emission of Radiation

In both the QSS-30 and 31, the exposure method by Visible Radiation is employed.

Note

• Merit

1.It is possible to reduce the power consumption in the printer.

2.The uniformity calibration is unnecessary.

3.The laser is not affected by the magnetism.

2380

31D_2

Cautions concerning the laser

R laser is ON only when printing, but B, G laser is always ON.
Before servicing the machine, be sure to follow the following instructions to avoid laser radiation exposure.

*Do not perform any work other than that which is specified in the manual.
*Do not reflect the laser beam by inserting a mirror or the like in the light path of the laser beam.
*Do not change the light path of laser beam.
*Do not replace the optical parts while the electricity of the laser is ON.
*Do not turn ON the electricity in the removed exposure advance unit.
*Do not turn ON electricity in the removed laser unit.
*Do not disassemble the laser unit.

Explanation

• The QSS-30 and 31 is IEC Class1 laser product.

2400

31D_2

(Note) IEC standard of Laser output

Class	Evaluation of danger	Labeling	Explanation label
Class1	Produce radiation that causes no damage to human body.	Unnecessary	Class 1 laser products
Class2	Eyes are protected by the aversion (e.g. blink of eyes).	Necessary	Do not look into the beam. Class 2 laser products
Class3A	Eyes are protected by the aversion (e.g. blink of eyes). However, it is dangerous to look into the beam directly by the optical means.	Necessary	Do not look into the beam. Do not look the beam directly with optical devices. Class 3A laser products
Class3B	It is dangerous to look into the beam directly. However, the diffuse reflection does not cause the damage to eyes.	Necessary	Do not look into the beam directly, and do not touch it. Class 3B laser products
Class4	The diffuse reflection causes the damage to eyes at high risk, and it may cause the skin disorder and fire.	Necessary	Both of Direct light and beam are dangerous. Do not look or touch it. Class 4 laser products

2410

31D_2

Printer Exposure Engine

Exposure way	Line exposure method by the Laser engine
Output gradation	4096 gradation
Maximum exposure width	QSS-30: 216 mm (8.5-inch) QSS-31: 325 mm (approx. 12.8-inch)
Print resolution	320 dpi (Main Scanning) × 640 dpi (Sub Scanning)
Exposure speed	QSS-30: 50.8 mm/sec QSS-31: 89 mm/sec
Light source	B laser, G laser, R laser

Explanation

- The exposure speed does not change depending on the input status (Under/Over).
- The maximum exposure width is the value including the hem for adjusting the exposure center.

The maximum exposure width to the paper is as follows.

QSS-30: 210 mm QSS-31: 305 mm

- Differences of laser unit between the QSS-30 and 31

1. There is only one laser synchronous sensor in the QSS-31 laser.
   (Comparing with the QSS-30, the precision of f θ lens is improved, there is not much difference between the refractive indexes of each RGB color.)
2. The polygon mirror of QSS-31 has 8 faces. QSS-30 has 6 faces.
   The revolution speed of QSS-31 is higher than the QSS-30.

Note

- Frontier: 300 dpi x 600 dpi
- Differences of engines

CRT: Displays the image on the exposure surface by the electron beam, and exposes.

HRCRT: Makes 3 colors B, G, R shine on the line by the electron beam, and exposes.

MLVA: Controls the opening and shuttering time of minute electronic shutters, and exposes.

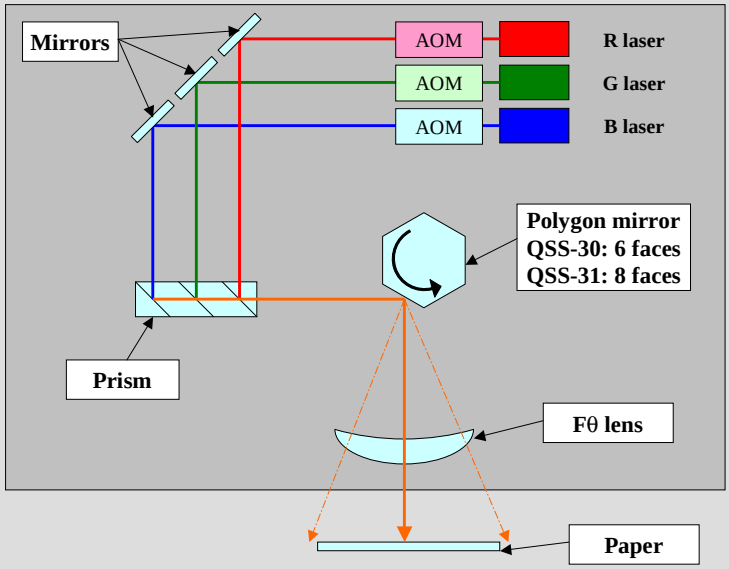
DMD: Controls the reflecting time of minute mirrors, and exposes.

Laser: Controls the intensity of light, and exposes.

2420

31D_2

Structure of Laser Unit



Explanation

•In the QSS-31, the polygon mirror has 8 faces.

Note

•Show the picture. (image data)

•Role of lens

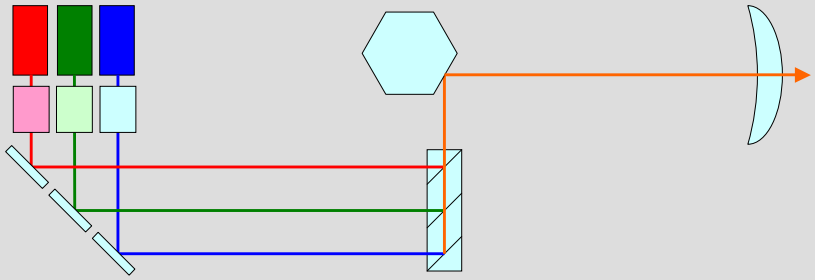
Enlarge --> Parallel --> Convergence

2430

31D_2

Explanation of laser unit

Laser	Visible Radiation Laser for R, G, B each
AOM	Acousto-Optic Modulator Adjusts the strength and weakness of laser light.
Mirror	Changes the direction of laser light.
Prism	Mix R light, G light and B light into one light.
Polygon mirror	Rotates in a certain speed and scans in the Optical resolution (Main line). [QSS-30: 6 faces, QSS-31: 8 faces}
Fθ lens	Changes the angle of laser light according to the angle of incoming light, and maintains the constant speed.



Explanation

- Rotational speed of polygon mirror

  QSS-30: 12,800rpm

  QSS-31: 16,819rpm.

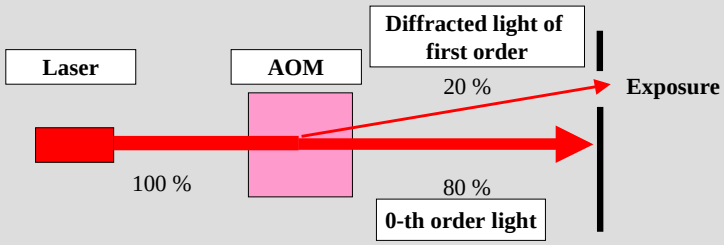
- In the QSS-31, the polygon mirror has 8 faces.

2440

31D_2

Structure of Laser Unit (AOM)

*AOM controls the strength of laser light.
*The diffracted light of first order is used for exposure.



NOTE
The direct light is called 0-th order light.

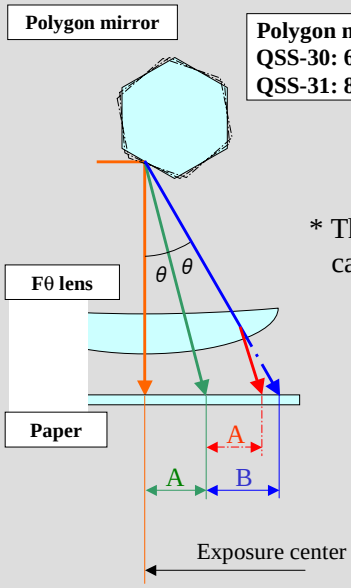
Explanation

- When the voltage is not turned ON to AOM, the incoming laser beam passes through as it is. (0-th order light)
- When turning ON the high frequency voltage, the ultrasonic waves occurs, and the diffracted light which is separated from 0-th order light occurs. (Diffracted light of first order)
- Change the rate of 0-th order light and the diffracted light of first order by changing the high frequency voltage on AOM, and control the strength of light (diffracted light of first order) to be used for exposure.

2450

31D_2

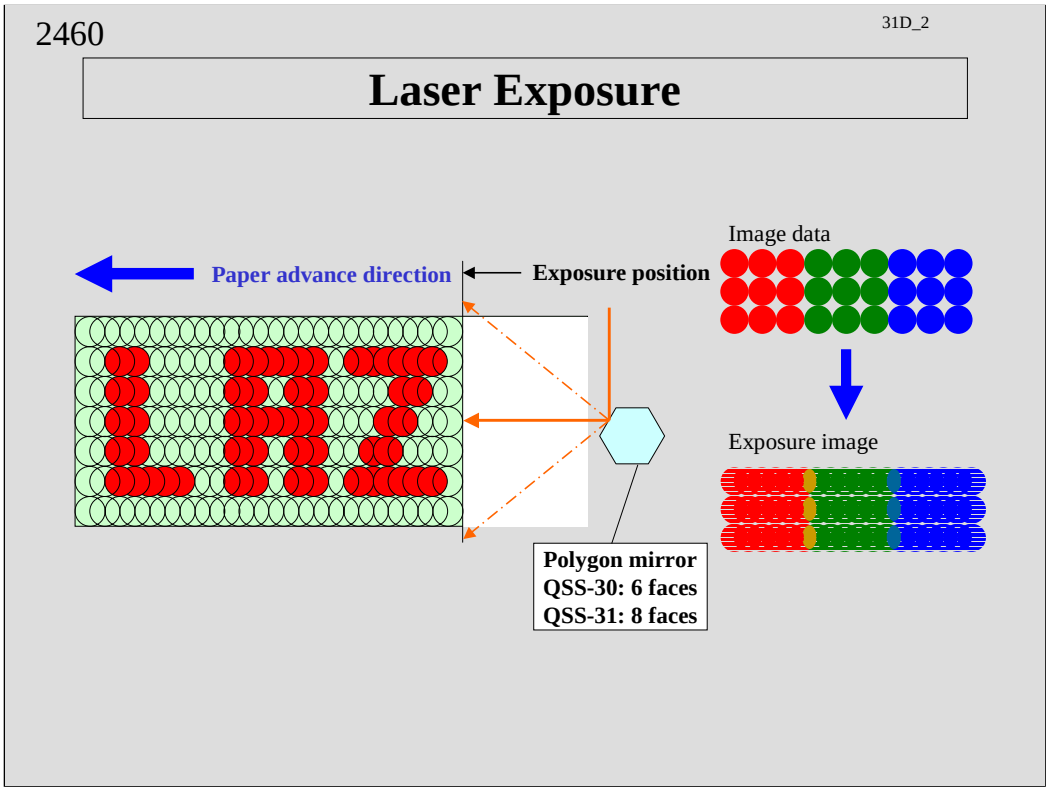
Structure of Laser Unit (Fθ lens)



* The Fθ lens corrects the dispersion of linear velocity caused by the angle of incoming beam.

Explanation

- The travel (distance) on the paper is different between “the light outputted from the exposure center at the angle θ” and “further output light at the angle θ” (As shown in the illustration, length A, B).
- The Fθ lens changes the angle of diffracted light according to the angle of incoming beam, and corrects the difference of travel (distance) on the paper.
- In the QSS-31, the polygon mirror has 8 faces.



Explanation

- Resolution
  Optical resolution (Main or the CCD line): 320 dpi
  Scan pitch (Sub Scanning): 640 dpi
- In the main scanning: Expose for 1 dot pitch each. In the sub scanning: Expose for 0.5 dot pitch each
- In the sub scanning, the same color is exposed in 2 consecutive dots.
- Reason of "In the sub scanning, the same color is exposed by 0.5 dot pitch each in 2 consecutive dots."

1. Not to occur the open caused by the time-lag between the advance and exposure.
2. Not to show the uneveness of color when the time-lag of exposure occurs.

- In the sub scanning, the same color of 0.5 dot is exposed in 2 consecutive dots, so the color mixture of 0.5 dot appears.

When there is an abrupt change of color (e.g. primary colours to primary colours), the color difference with the complementary color is bigger.

But, in the general images, it does not effect so much.

- In the QSS-31, the polygon mirror has 8 faces.

2480

31D_2

Auto tuning

As for B, G laser, to get the stable outgoing laser beam, the temperature of inside of laser is adjusted to the optimum status automatically.

Timing to execute

When turning ON the power supply	Fine tuning is executed. "Laser temperature are being adjusted." appears on the monitor.
In the close down checks	Before going into the program timer, Auto tuning is executed. No message appears on the monitor.
Occasion	When the Attention "1049. Execute auto tuning" appears, execute the auto tuning in the Function of laser unit adjustment.

Explanation

- The time to execute the fine tuning: 5 minutes (max.)
- The time to execute the auto tuning: 30 minutes (max.)
- Start the Fine tuning when the temperature around the B,G laser head is within the allowable range (20 to 45 degrees). If the adjustment is not completed in the Fine tuning (max. 5 minutes), the Auto tuning (max. 30 minutes) begins automatically. "Laser temperature are being adjusted" appears from "before the allowable range" to "fine tuning or auto tuning is completed", and it is necessary to wait.
- It is desirable to execute the auto tuning once a day. So, when turning OFF the breaker immediately after the close down checks, carry out the close down checks after executing the auto tuning manually.

Note

- In the QSS-30, when the temperature of operational environment for machine is low (out of regulated temperature), it takes a lot of time to reach above processable temperature. (When the room temperature is 13° C or less, an approx. 5 hours is required.)

  The heater is attached to the laser unit for preventing it. (Available from Ver.C001)

2900

31D_2

Comprehension check

[Outline of the system]

*Do you understand the role of 2 CCDs inside of the scanner?
*Do you understand the specification of scanner?
*Do you understand the processable films by D-ICE?
*What is necessary for using the D-ICE?
*Do you understand that the number of pixels for scanning varies depending on the print sizes?
*Do you understand the conditions of [advance in single row] and [advance in double rows]?
*Do you understand the specification of laser?
*Do you understand when the Auto tuning/Fine tuning is executed?

[Question]

*What is the role of 2 CCD each of scanner?
*What is the number of pixels for scanner?
*What is necessary for using the Digital ICE?
*What films cannot be processed with the Digital ICE (out of specification)? And, what is the reason for that?
*What is the print size that the number of pixels for scanning is different from “89 x 127 (135F)”?
*What is the condition of paper advance in double rows?
*What is the exposure time of laser?
*When is the Auto tuning executed?
*How long does it take for Fine tuning at the maximum?

31D_3

Chapter 3
Operation

3000

31D_3

The point of this chapter

Key points

- Study the operations.

  Printing operations, Start up checks, Close down checks
  ON/OFF procedure of power supply, Status display of LED
  CD-Viewer, CVP (Correction Value Print), Index prints

Upon completion of the lesson, you will be able to:

*Explain each printing operation to users.
*Explain the image storing to media to users.
*Explain printing operations in the EDIT mode to users.
*Explain the input from Flatbed scanner to users.
*Explain the start up checks and close down checks.
*Explain ON/OFF procedure of power supply to users.
*Explain the status display of LED, details of CVP and index prints.
*Understand about the CD-Viewer.

How to proceed the training

Carry out the practical training, or explain the items using the sample prints.

3010

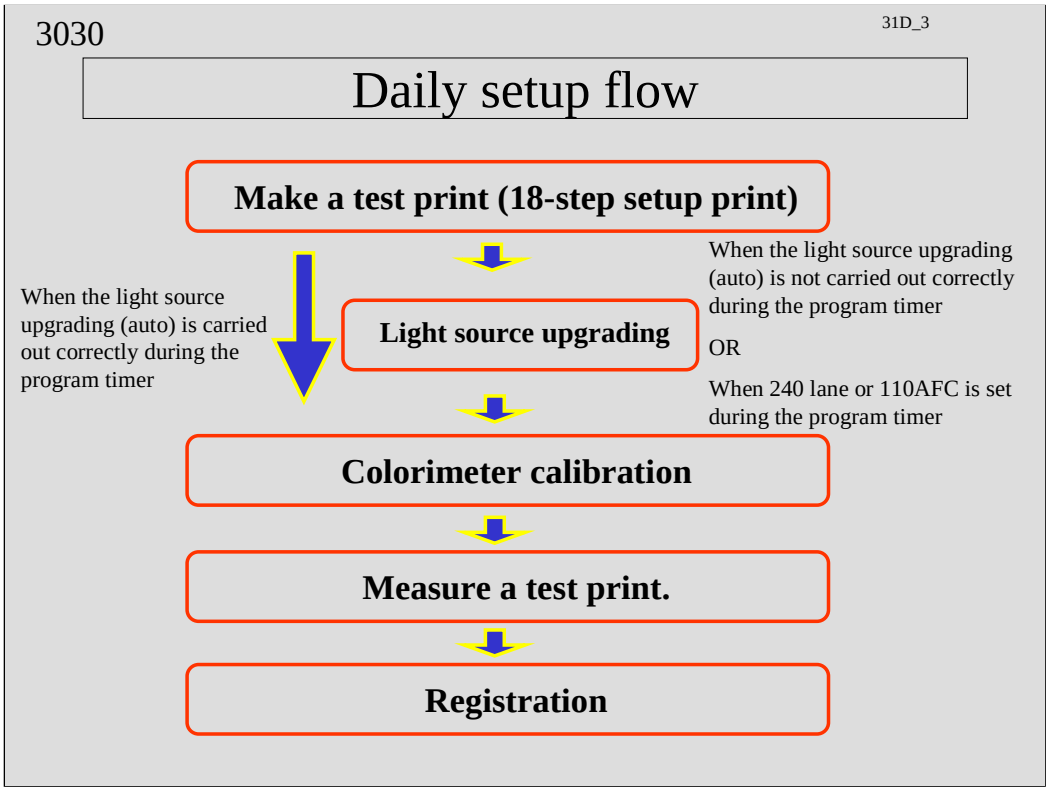
31D_3

Setup during the start-up checks

Daily setup	Execute once a day for each paper type to be used.
	Correct the temporary aging of exposure engine, light source and processing solution.
	Make a 18-step test print.
Weekly setup	Execute once a week. This is displayed instead of the daily setup.
	After carrying out the daily setup, carry out the printer profile calibration to correct the temporary aging of data characteristics for each printer. (Execute it for each paper type).
	Make test prints. 18-step setup prints (daily setup) 16-step setup prints (printer profiles)
Monthly setup	Execute once a month. After completing the daily setup or weekly setup, execute it.
	Carry out the monitor profile calibration to correct the temporary aging of monitor.
	Adjust the monitor again.

Explanation

- When you do not carry out the weekly setup and monthly setup at the start-up checks, the display appears at every start-up checks until you carry out the setup.
- The laser engine causes the temporary aging by the fall of maximum output, change of output wavelength and dirt of optical parts.



Explanation

- Carry out the “Colorimeter calibration” only when measuring first print. It is not necessary to execute it every time when measuring the prints.
- When the colorimeter calibration is not necessary, the input section judges it and skips the display “Colorimeter calibration” automatically.
- The light source is upgraded during the program timer as follows.

  As for 135/240AFC, 110AFC, when the lane is set to 135 lane (135/240AFC), it is executed automatically. When 240 lane or 110 AFC is set, it is not executed.

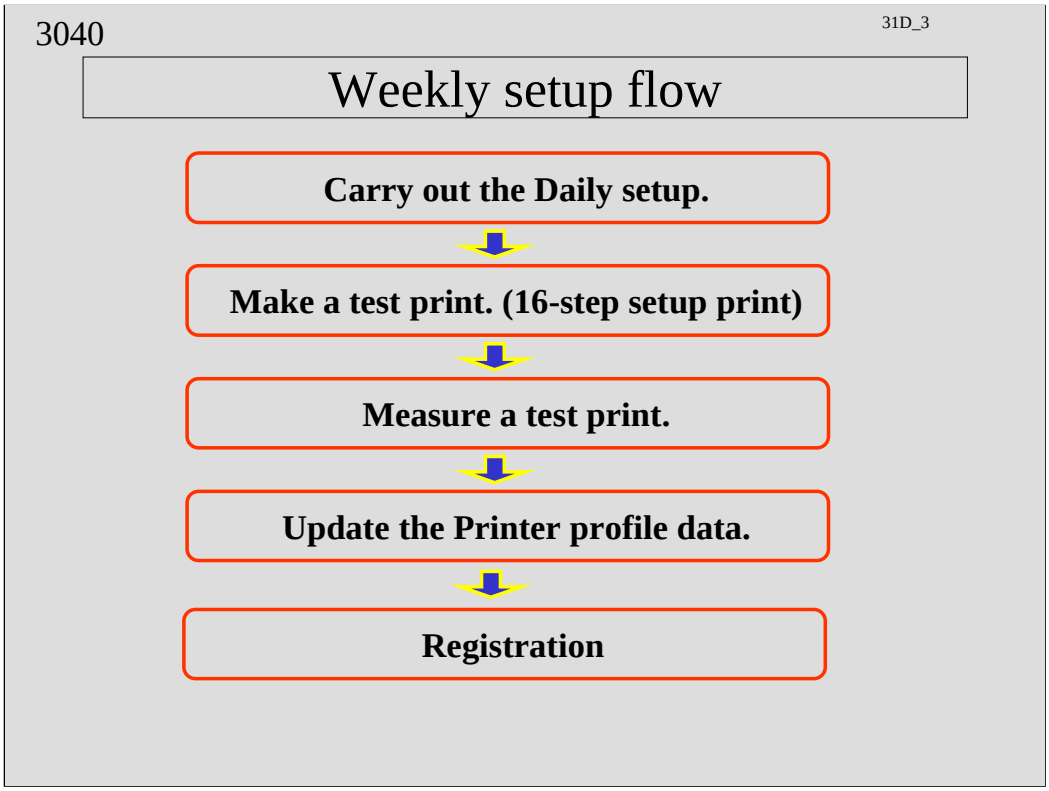
  As for 120AFC, MMC/AMC, it is executed automatically for the carrier to be set.
- When the light source upgrading is not carried out during the program timer, it is carried out again automatically for the carrier to be set in the daily setup.

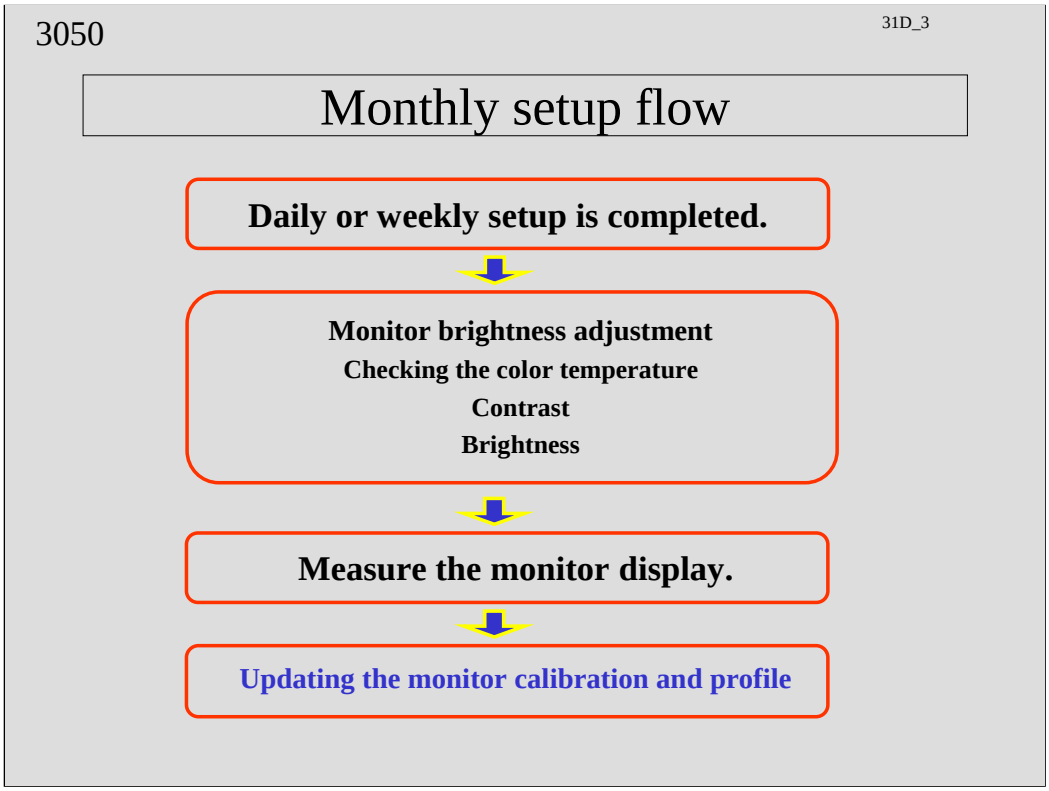
  And, when the 240 lane or 110AFC is set, the light source is updated for 135 lane during the daily setup.

Note

- As for the other carriers except the one to be set during the program timer, update the light source when replacing the carrier and switching the lane.

  However, update the light source when 24 hours have passed from the last update.
- When the Printer control unit is connected, the light source update is not executed.


3040
31D_3
Weekly setup flow
Carry out the Daily setup.
Make a test print. (16-step setup print)
Measure a test print.
Update the Printer profile data.
Registration



Explanation

•When adjusting the monitor at the monthly setup, the adjustment (monitor side) is necessary.

Note

•In the QSS-31, when the Printer control unit is connected, the monthly setup is not executed.

Explanation of operations

- Explain with the actual machine.
  - Start-up checks
  - Explanation of [HELP]
- Explanation of printing operations
- Carry out the practical training.
  - Albums
  - AMC
- Explanation of printing operations
  - Carry out the practical training.
  - Explanation of operation of FB scanner

Explanation

•As for AMC, up to 40 mounts can be set.

•Use the dummy mounts of AMC when switching the order.

•AMC is available for PJP.

•Components of AMC

Main body, Insertion stocker, Ejection stocker

Dummy mount (for switching the orders) Quantity: 5

Single adapter, Packing unit

•The operation screen is different between FB scanner manufactured by UMAX and manufactured by EPSON.

•When the media output destination is CD-R/RW, it is possible to specify [Number of media] and [number of label index prints].

[Number of media]: Can be set on the message [No.1527 Write the Data. Set the media].

[Number of label index prints]: Can be set on the Order display.

•The following contents can be specified on the [Print operation] tab of Operator selection screen.

[Color selection of print blank of positive]: Possible to select White or Black for the unexposed part.

[Paper remaining count display]: Possible to select [Count distinct paper magazine A and B] or [Count mix paper magazine A and B].

3070

31D_3

Explanation of modes

*Explain the modes, checking the actual machine.

Explanation

•Paper temperature change correction

R light changes by the temperature change of inside of laser unit and surrounded temperature. The color development of paper may be different.

In this case, input the correction value in the “Paper temperature change correction”.

Corrections: Refer to the Operator’s Manual (Additional operations Chapter 3-6).

•The role of synchronous sensor is to control the start timing when the paper is exposed by the laser light.

“Synchronous sensor Automatic Adjustment” is to adjust the Laser Output.

‘Laser light irradiated around the synchronous sensor’ is reflected and it is prevented from diffusion inside of the laser unit.

This adjustment is required when replacing the laser unit.

•CCD noise suppression strength

Correction which is effective only for Under/Over part of films.

Noise is likely to occur in parts where there is not much light, so the correction is done only for the part.

Note

•As for the setup and mechanical adjustment, carry out the practical training, so skip the explanation here.

3080

31D_3

Shortcut key

- Explain, checking an actual machine.

Shortcut key		Mode
PASS (F11)	REP (F2)	Setup
	Y (F5)	Maintenance
	M (F6)	Version check
	C (F7)	History of movement
	D (F8)	Machine specification
	-1 (F9)	Operator selection
	N (F4)	List of Print channel
	+1 (F10)	Option registration

( ) : Shortcut key in the Full keyboard

Explanation

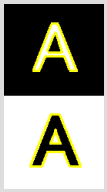
• The above Shortcut key is used very often.

3140

31D_3

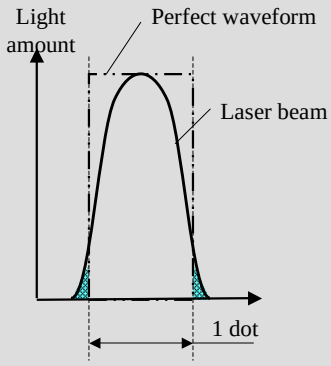
NCE mode

It is possible to control the output of laser and correct the color (Cyan, Yellow, etc.) around the letter by inputting the correction value in the “NCE” mode.
(e.g.)
Outline characters on the black background
The part around black letter on the white background
However, the trend of color changes depending on various conditions (Font type, Font size, condition of processing solution, etc.). So, even if you make a perfect correction to a condition, the same quality cannot be gotten for the other conditions.



Description**********

Light amount of laser is not constant in one dot, not like the ideal waveform (illustration). The light amount is maximum at the center, and it is getting smaller gradually as it is close toward the radial rake.
Therefore, the low density part appears on the half-tone dot meshing part (illustration), and this part may be colored Cyan, Yellow, etc. depending on the chromogenic property of paper.
It is not noticeable in the consecutive color. But, it is noticeable in the following scene.
The scene that the density difference appears clearly, especially outline characters on the black ground, black letter around the white background.



Note

- This mode is open to the users. But, the trend of color changes depending on the conditions (which are mentioned in the above Slide) and the perfect correction is impossible. Now, use this mode following a service person’s instructions. Refer to the Service Manual 3065.

  If the customer is not satisfied with the quality when the correction value is not inputted, input the value in this mode.

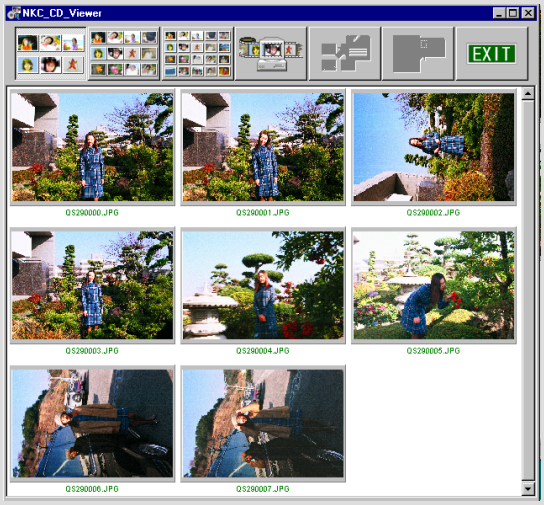
- The part around the letters may be colored also when the exposure position adjustment and exposure zoom fine adjustment are not carried out correctly. Before carrying out the correction in the NCE mode, check the exposure position adjustment and exposure zoom fine adjustment.

3150

31D_3

CD Viewer

Simple Viewer Software



In the QSS-27 or later, the Viewer Software is standard.

Up to 5 orders can be displayed.

If you install the CD viewer utility software, you can set the customer's shop information and logo data on the viewer software.

Explanation

<Explanation of Main function>

• Select the image data of film.

The images are put in order for each film. (Maximum: 5 orders)

• Set the image size for display.

You can select the display from 3 patterns.

Big size/ Middle size/ Small size

• Slide show

You can select various slide display patterns.

• Store the image to each media.

You can specify the image form and store it to the media.

• Mail attachment

You can attach your favorite photos in the mail automatically.

• Pint order form

You can make a print order sheet. The enables to make a print from the images in the CD.

• Set the display screen

You can select the image quality for image display.

3160

31D_3

CD Viewer

Deluxe viewer software

Up to 5 orders can be displayed.

If you install the CD viewer utility software, you can set the customer's shop information and logo data on the viewer software.

The deluxe viewer software is not sold as the software.

So, you can not write the deluxe viewer software from a machine to generic CD-R and R/W.

The QSS CD is supplied from NORITSU.

The Deluxe Viewer software is contained in the QSS CD in advance.

Explanation

<Function of explanation>

- Image display

  1 frame, 3 frames, 6 frames, 15 frames, Index display

  Slide show

  Store in my photo

- Corrections

  Red-eye Correction, Brightness, Noise Removal, Contrast, Sharpness, UnSharp, Saturation

- Special effects

  Puzzle, Solarize, Monotone, Sepia, Mosaic, Blur, Pointillize, Emboss

- Print order

  Make a print order sheet, and you can order through DPEgg.

- Make the post cards

3170

31D_3

QSS CD

The QSS CD is supplied from NORITSU as an option.

The Deluxe Viewer software is contained in the QSS CD in advance.

<Kinds>

Name	Contents		Source of Supply	Attachment
	Record	Label		
QSS CD (TYPE A)	Deluxe Viewer	QSS CD	NORITSU	Nonwoven fabric Manual
QSS CD (TYPE B)	Deluxe Viewer	Printable		

Each CD has part number.

The attachment is stored in the CD-R case.

Explanation

•The deluxe viewer software is not sold as the software.

So, you cannot write the deluxe viewer software from a machine to CD-R and R/W.

3180

31D_3

CD-R Engine

*In the QSS-27 or later, the CD-R Engine is the software to write the image to QSS-CD that contains the Deluxe viewer software. (Windows/Mac)

*In the QSS-27 or later, this software is required to see the Simple viewer software in the Mac.

*There are two types of CD-R Engine. The QSS software version and installing method is different, but there is no difference in the function.

CD-R Engine (Windows/Mac)

Noritsu CD-R Engine (Windows/Mac)

Explanation

•CD-R Engine software (Windows/ Mac) is necessary for the availability of the Deluxe viewer software .

•Noritsu CD-R Engine (Windows/Mac) is made by Noritsu.

Note

•The Viewer software is available for both of Windows and Mac. But, the viewer starts up automatically only in the Windows.

3190

31D_3

Compatible software version for CD-R Engine

Compatible software version for CD-R Engine (Windows/Mac)	
QSS-2701D	Ver.F001 or later
QSS-2801D	Ver.D001 or later
QSS-2901D	Ver.C001 or later
QSS-3001D	Ver.C001 or later
QSS-3101D	Ver.A001 or later

Software version which is compatible or will be compatible with Noritsu CD-R Engine (Windows/Mac)	
QSS-2701D	Not supported
QSS-2801D	Ver.G001 or later
QSS-2901D	Ver.E001 or later
QSS-3001D	Ver.E001 or later
QSS-3101D	Ver.C001 or later

Explanation

- CD-R Engine (Windows/Mac) is replacing Noritsu CD-R Engine (Windows/Mac) in turn. (except QSS-27)
- Even when CD-R Engine (Windows/Mac) is used, it can be used in the software version (mentioned in the above list) or later.

3200

31D_3

Installing the Mac CD for compatible software version each

QSS software	Type of CD-R Engine to be installed	Installing the Mac CD
QSS software which is compatible with Noritsu CD-R Engine (Windows/Mac)	Noritsu CD-R Engine (Windows/Mac)	Unnecessary
	CD-R Engine (Windows/Mac)	Necessary
QSS software which is not compatible with Noritsu CD-R Engine (Windows/Mac)	CD-R Engine (Windows/Mac)	Necessary

Explanation

- Installing the Mac CD is different depending on the combination of QSS software version and type of CD-R Engine.

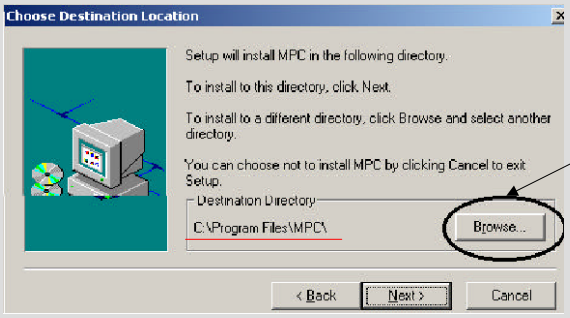
3210

31D_3

Procedure of installing the CD-R Engine (Windows/Mac)

1. Install the CD-R Engine software (Windows/Mac) in the Win 2000.

*Caution



When the display appears during the installation, set like below by pressing [Browse].

(as show in the left illustration)

C:¥Program Files¥ cdr

2. Install the software from Mac CD folder in the system program CD of each machine.

If you do not install the CD-R Engine software, the Viewer software for Mac does not start up.

Explanation

•As for Noritsu CD-R Engine (Windows/Mac), there is no special caution.

Refer to the Service Manual [3874].

3220

31D_3

CD Viewer Utilities

This is the software to edit the display contents of CD Viewer.

You can set the customer's shop information and logo data.

Simple viewer software and Deluxe viewer software are common.

Install the software from "CD_Viewer_Utility" folder in the system program CD of each machine.

3230

31D_3

Setting of the CD-R/RW writing

- When writing to the QSS CD

  Set in the "Image Save" of "Operator Selections".

  Mark the check box for "Switch for Deluxe Viewer".

  Set the "Shop data" folder.

- When writing the generic CD-R/RW

  Set in the "Image Save" of "Operator Selections".

  Remove the check box "Switch for Deluxe Viewer".

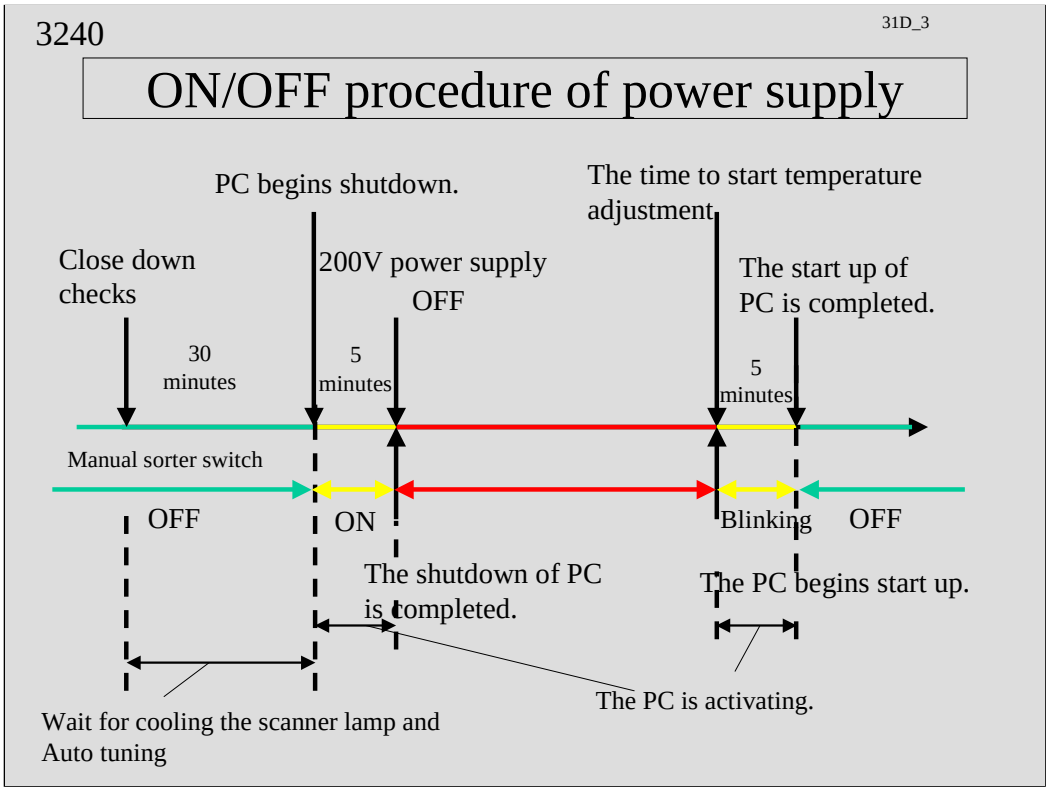
  Mark the check box "Writing Viewer Software".

  Set the "viewer software" folder.

  (The simple viewer software which is standard of this product is set in the initial setting.)

Explanation

- If you install "CD-R Engine (Windows/Mac) software, you can set the "Switch for Deluxe Viewer".
- As for the registration of "shop data", refer to the "CD Viewer Utility software" Operator's Manual.



Explanation

•After the close down checks, the time to start PC shutdown is 30 minutes. This is the maximum time required for Auto tuning.

This time is different depending on the operational temperature of machine. The time is normally approx. 15 to 20 minutes.

If the Auto tuning (max.30 minutes) is not completed normally, the shutdown of PC is started after more 30 minutes have passed. (In this case, it takes max.60 minutes in total.)

Note

•The waiting time for cooling the scanner lamp (12 minutes) is necessary. It is executed at the same time, so it is completed within above time.

3250

31D_3

Normal shutdown movement

(Close-down check is completed.) Scanner lamp is OFF “Program timer is activating.” is displayed (on the monitor).
Shutdown of PC [30 minutes (max.) later after the close-down check] The switch of QO is ON.
The power supply (200V supply) is OFF. [35 minutes (max.) later after the close-down check] The power supply of peripheral CPU and cooling fan is OFF.

Explanation

•The power consumption can be decreased at 40 % when the program timer is activated.

3260

31D_3

Normal start up movement
(when the program timer is activated.)

During the Program timer

(“After the PC shutdown is completed” to “The time to start the temperature adjustment”)

(The time to start the temperature adjustment)

The power supply is ON. (200V supply) The power supply of peripheral CPU is ON.

The PC is started up. (3 minutes later after the power supply is turned ON.)

“The processing solution temperatures are being adjusted” is displayed (on the monitor).

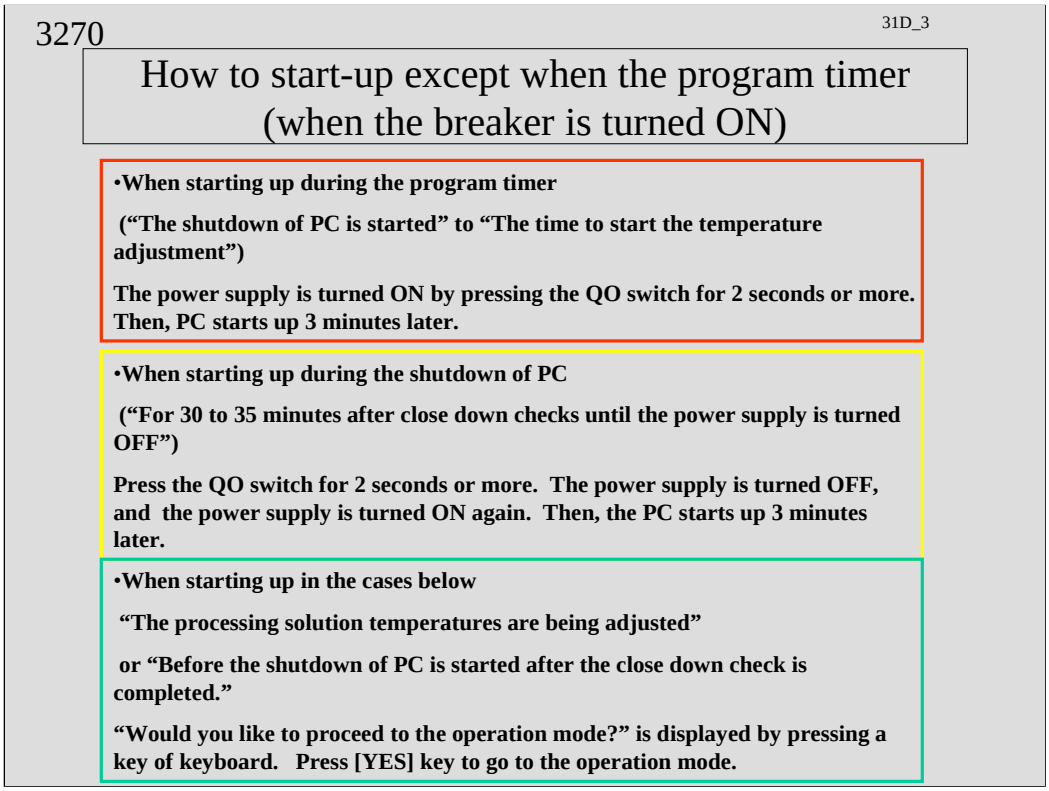
After the temperature adjustment is completed, “Would you like to proceed to the operation mode?” is displayed (on the monitor).

Press [YES] key to go to the operation mode.

Explanation

•Set the program timer so that the start time of temperature adjustment is 1H and 15 minutes or more before the work.

It is required to stable the scanner lamp before executing the light source upgrade. So, the light source upgrade starts 50 minutes later after PC starts up.



Explanation

•As for the re-start immediately after the close down checks, it can be carried out until the display "Program timer is being activated." disappears. (= until the Auto tuning is completed.)

3280

31D_3

How to start-up after the breaker is turned OFF

*** When turning the breaker OFF during the program timer**
("The shutdown of PC is completed" to "The time to start the temperature adjustment")
The program timer becomes activating by turning the breaker ON. The power supply is turned ON by pressing the QO switch for 2 seconds or more. Then, the PC starts up 3 minutes later.

*** When turning the breaker OFF except during the program timer**
The power supply of printer section and processor section is turned ON. Then, the PC starts up 3 minutes later.

***When the PC does not start up (error)**
Turn the breaker OFF and attach the jumper for start-up on J/P678 of power PCB 2. Then, turn the breaker ON.

Explanation

•As with the QSS-28/29, the QSS-31 has the jumper for start up.

3290

31D_3

How to turn OFF the breaker

*** How to turn OFF the breaker after the close down checks (e.g. When you do not use the function of the program timer) When 30 minutes (max.) have passed after the close down check is completed, the shutdown of PC is started. When 35 minutes (max.) have passed after the close down check is completed, the power supply is turned OFF. At this time, turn OFF the breaker.**

*** When turning the breaker OFF in case of troubleshooting, etc, press [F] key in the "Close down check" mode and select "Turn OFF the power supply". After confirming that the power LED of PC is OFF, turn OFF the breaker.**

Caution

***Turn OFF the scanner lamp, and wait for 10 minutes or more. After that, turn OFF the breaker. The lamp may be damaged.**

3300

31D_3

How to turn OFF the breaker when the PC has been freezing

1. **Check the LED of HD.**
   When the LED of HD is lighting or blinking, the HD is activating.
   If turning the power supply OFF when the HD is activating, the HD may be damaged.
   Wait until the LED is turned OFF.
2. **Turn OFF the power supply of PC by pressing the SW of PC for 4 seconds or more.**
3. **Turn OFF the breaker of processor.**
   Wait for approx. 10 seconds after turning the breaker OFF. And then turn the breaker ON.

Explanation

- The movement time of HD is different depending on the data capacity which is being processed.
- In the movement time of HD, the processing speed is getting slower as you increase the data capacity.
- When the LED of HD is not turned OFF, turn OFF the power supply of PC after confirming that the data is not being processed.

3310

31D_3

How to turn OFF the breaker in an emergency

*** When turning OFF the breaker in an emergency, turn OFF the breaker of the processor.**
The UPS activates and the PC is shutdown.
The time to shutdown changes depending on the status of PC.
(for a few minutes to 20 minutes)

*** When turning OFF the breaker of the input section**
Use the breaker of input section only when you cannot turn OFF the breaker of processor section in an emergency.

*** How to turn OFF the breaker of input section**
1. Turn OFF the breaker of output section.
2. Turn ON the breaker of input section.
3. Turn ON the breaker of output section.
The power supply of input section and output section is turned ON and the PC is started up 3 minutes later.

Explanation

•"In an emergency" means the cases below.

-Smoke is pouring out of the machine.

-It may hurt a person unless you stop the machine.

And, the abnormal sound is heard, open the processor upper cover or the printer door and stop processing the paper.

3320

31D_3

Status display of the processor

Status lamp of processor	Condition of display	Note
Lighting Green	The temperature adjustment is completed.	
Blinking Green 	During the program timer (From “After the close down checks is completed.” to “The time to start the temperature adjustment”)	**Slow blinking**
Blinking Red 	When it is impossible to activate the temperature adjustment (When the error occurs or the interlock switch is activated.)	**Slow blinking**
Dark 	The input section is not started-up. During the temperature adjustment	

Sorter switch	Condition of display	Note
Dark 	The PC is being functioned.	
Blinking 	While the PC is being started-up.	**Slow blinking**
Lighting 	During the program timer or the power supply of PC is turned OFF.	

3330

31D_3

Status display of AFC

Ready lamp	Condition of display
Lighting Green	Processing films is possible. (You can insert a film.)
Blinking Green 	Film is being processed. (You cannot inset a film).
Blinking Red 	Films cannot be processed. (You cannot process a film.) *The error occurs. (You cannot process a film.) * The error occurs. (You cannot print.)
Dark 	Films cannot be processed.(You cannot process a film.) *When the “Film” is not selected for “Image input” in the print channel setting. *During the start-up checks and close-down checks *During the program timer *When the message “Insert a film.” does not appear on the adjustment mode. *During the initial movement

3340

31D_3

Details of the back print (Film/Media)

* Film and media except 240

NORITSU <12> 005 © FBS T
(X) (I) (K) (D) (E) (F)

284 15 +1+1+1+1 +30 AC01 Acs –10 Ach -10 AS02 SA200 GR10 MSu10 RE01 SF02 FC01 XF02 R090 Z123/200
(J) (L) (M) (N) (O) (P) (Y) (Z) (U) (Q) (R) (S) (T) (V) (W)

* For 240 (TYPE1)

BIRTHDAY EL25 MGhi FFn BVvh Alh PAc SUn CH1 LAB01 _ CD T
(A) (B) (C) (D) (E) (F)

01.05.29 11:57A 001-001 (12) 284 005 15 +1+1+1+1 +30 *Digital correction data
(G) (H) (I) (J) (K) (L) (M) (N) **(Same with films except 240)**

* For 240 (TYPE2)

BIRTHDAY EL25 MGhi FFn BVvh Alh PAc SUn CH1
(A) (B)

29/MAY/01 11:57A ID001-001 (12)FTPM LAB01 ©
(G) (H) (I) (C) (D)

Explanation

•Blue letter: the data for digital correction

3340

31D_3

(A)	Title	(K)	Print count
(B)	Camera information	(L)	Print channel
(C)	LAB ID	(M)	Color, density correction (YMCD)
(D)	Copyright mark	(N)	Scanner correction
(E)	Input medias	(O)	Auto contrast correction value
(F)	Template	(P)	Auto sharpness correction value
(G)	Date, Time 240 TYPE2: the month is displayed in 3 letters (English letter).	(Q)	Red-eye correction value
		(R)	Soft focus correction value
		(S)	Color conversion Color image: FC, Monochrome: MoF, Sepia: SeF
(H)	Film ID (FID) 240TYPE2: ”ID” is displayed before the number.	(T)	Cross filter correction value
		(U)	Moire repression
		(V)	Rotation angle of the image
(I)	Frame number 240TYPE2: FTPM or SERIES is displayed after the frame number. In the case of input from storage media, the file name is printed. (file name + extension)	(W)	Zoom and crop of the image
		(X)	Backprint
		(Y)	Chroma correction
(J)	Order number	(Z)	Graininess repression correction

Explanation

•Blue letter: the data for digital correction

•The Digital correction data is not printed if the correction is not done.

•The number of letters for the CVP is different depending on the paper advance length.

(e.g.)

In the APS, if the paper advance length is 152 mm or less, the date is not printed.

If there is not enough space for printing on the paper, the digital correction value may not be printed.

The “contrast” value has a first priority, and the data is printed as much as possible.

The margin is 4 mm on the both side of the paper.

•Details of the Auto contrast

AC: Auto contrast (The Whole)

ACs: Auto contrast (Shadow)

Ach: Auto contrast (Highlight)

•Details of scanner correction

When printing with the “Digital image auto correction” ON, [NN] is imprinted.

When printing with the “Positive film auto correction” ON, the scanner correction value is imprinted.

This is available when the following system program version is released.

QSS-28: Ver.G001 or later

QSS-29: Ver.D004 or later

QSS-30: Ver.E001 or later

QSS-31: Ver.C001 or later

3350

31D_3

Details of the back print (EDIT)

* Edit

```
BIRTHDAY 123 © T
   (A)      (K)(D)(F)
284 15 〈CUSTOMERINFO.mdb 1234
(J) (L)    (1)           (2)
```

* Back print data only for editing

(1)	File name for customer information	(2)	Customer number for customer information

3370

31D_3

Types of index prints

Normal index prints	Make normal index prints. The data for displaying on the PJP mode is used.
Label index prints	Index print for the media case size of storage media No index print for smart media, PC and compact flash
Contact Print Style Photos	Make Contact Print Style Photos. 135F only

As for the index prints in the above list, the print quality can be selected. (Operator Selection)

Standard: Default

High quality: The quality of image is improved, but the processing capacity is slightly lower.

*High quality: This is different from the HQ print of QSS-27.

Explanation

•The pre-scanning data is used for the output of index print when both of "Standard" or "High quality" is selected.

•The pre-scan data is enlarged and prints are made.

•High quality: The image is enlarged, but the image quality is improved.

•Index logo data size

When you make an original logo data;

Image size: 164 x 494 pixels

Storing format: bitmap (bmp)

•In the QSS-28, explain to the users that DLP logo print can be used for index prints. (Be sure to explain above contents on the contract of TI company.)

3380

31D_3

Index print sizes (135/240 films)

Normal index prints
135/240 films

O : Available
- : Not Available
Δ : Printing is possible, but a whole of the image does not appear on the print.

Format	Paper size (mm)	135 film		240 film		
		28-frame	40-frame	15-frame	25-frame	40-frame
3HS	82.5 x 158	-	O	-	-	-
3R	89 x 127	O	O	O	O	O
3HD	89 x 158	O	O	O	O	O
3W	89 x 178	-	-	O	O	O
3WS	89 x 178	O	O	O	O	O
4R	102 x 152	O	O	O	O	O
4HD	102 x 178	O	O	O	O	O
5R	127 x 178	O	O	O	O	O
6R	152 x 203	O	O	O	O	O
6HD	152 x 254	O	O	O	O	O
6W	152 x 305	O	O	O	O	O
8RS	203 x 254	O	O	O	O	O
8R	203 x 305	O	O	O	O	O
8HD	203 x 356	O	O	O	O	O
CD_40	120 x 120	-	O	-	-	Δ
CD_40A	89 x 120	-	O	-	-	Δ
CD_40B	102 x 120	-	O	-	-	Δ

Explanation

- There are 3 types of Index print sizes for CD.
- 135 film restrictions

  When selecting 3HS, CD_40/40A/40B, it is printed in 40-frame format.
- 240 film restrictions

  When selecting CD_40/40A/40B, it is printed in 40-frame format.

  But, a whole of the image does not appear on the print because the aspect ratio is not constant.

Note

- 110 film restrictions

  Same with the restrictions of 135 films. But, a whole of the image does not appear on the print because it is printed in 135 format.
- Media

  Same with the restrictions of 135 films. But, a whole of the image does not appear on the print because the aspect ratio is not constant.

3390

31D_3

Index print sizes (120 films)

Normal index prints
120 films

Format	Paper size (mm)	Index	
		12-frame	18-frame
3HS	82.5 x 158	Δ	Δ
3R	89 x 127	Δ	Δ
3HD	89 x 158	Δ	Δ
3W	89 x 178	-	-
3WS	89 x 178	Δ	Δ
4R	102 x 152	●	●
4HD	102 x 178	Δ	Δ
5R	127 x 178	Δ	Δ
6R	152 x 203	Δ	Δ
6HD	152 x 254	Δ	Δ
6W	152 x 305	Δ	Δ
8RS	203 x 254	Δ	Δ
8R	203 x 305	●	●
8HD	203 x 356	Δ	Δ
CD_40	120 x 120	Δ	Δ
CD_40A	89 x 120	Δ	Δ
CD_40B	102 x 120	Δ	Δ

- : Not Available

●: Printing is possible, but the logo data is not printed.

6*4.5, 6*6 : 18-frame format

6*7, 6*8, 6*9 : 12-frame format

Δ : Printed in 28/40-frame format (same with 135 film), but a whole of the image does not appear on the print.

Explanation

- There are 3 types of Index print sizes for CD.
- 120 film restrictions
  - The logo data is not printed.
  - When selecting 4R, 8R, the number of frames to be printed is different.
    Film size 6 x 4.5, 6 x 6: 18-frame format
    Film size 6 x 7, 6 x 8, 6 x 9: 12-frame format
  - When selecting the size except [4R] and [8R], it will be printed in 28-frame and 40-frame format and a whole of the image does not appear on the print.
  - When selecting CD_40/40A/40B, it is printed in 40-frame format, and a whole of the image does not appear on the print.

3400

31D_3

Background color for index prints

*The color can be selected as a background color of an index print.

1. Gray
2. White
3. Pink
4. Yellow
5. Orange
6. Green
7. Light blue
8. Purple

9. Black is for Contact print style photos.

Note

•Select the background color for [135/120/110/Media], [IX240] and [Contact print style photos] each.

3410

31D_3

Label index prints

Types of media	FD	MO	Zip	CD/DVD/HD
Size	89 x 114	89 x 117	97 x 120	120 x 120 (12 cm CD's) 80 x 85 (8 cm CD's) 89 x 120* 102 x 120*
Format (number of frames)	6, 20, 35	6, 20, 35	6, 20, 35	40
Index logo	Used	Used	Used	Used
Note	The number of frames are switched automatically.	The number of frames are switched automatically.	The number of frames are switched automatically.	The number of frames are fixed.

*:

[89 x 120] or [102 x 120] is selected automatically.

When the magazine with 102 paper width is not set: [89 x 120]

When the magazine with 89 paper width is not set: [102 x 120]

Explanation

- The label index is made automatically at the same time of storing the images to media.
  However, you can set "None" for the label index print.
- When the paper width is larger than the print size, the image is centered, so the unexposed part appears on both sides of the print.
- The size of Label index prints for CD are switched automatically according to [CD type] setting which is selected in [Option registration] → [Media] → [CD-ROM (CD-R/RW)].
  And, the size of Label index prints for Business card CD's and other uniquely shaped CD's are also the same.

3420

31D_3

Index print sizes for Contact Print Style Photos

Paper sizes for 6-frame

Name	CP6_1	CP6_2	CP6_3	CP6_4	CP6_5	CP6_6	CP6_7
Paper width (mm)	82.5 or more	82.5 or more	120 or more	165 or more	203 or more	240 or more	240 or more
Paper advance length (mm)	228.6	228.6	228.6	228.6	228.6	228.6	263

Paper sizes for 4-frame

Name	CP4_1	CP4_2	CP4_3	CP4_4	CP4_5	CP4_6	CP4_7	CP4_8
Paper width (mm)	82.5 or more	82.5 or more	120 or more	152 or more	152 or more	152 or more	152 or more	152 or more
Paper advance length (mm)	152	152	152	152	191	227	263	300

Name	CP4_9	CP4_10	CP4_11
Paper width (mm)	152 or more	152 or more	152 or more
Paper advance length (mm)	336	372	407

Size:
When printing the paper to be used with the minimum necessary paper width.

135F/110/120 only is available.

Explanation

- The frame (format) of contact print style photos can be selected in the Index setting of print channel.
- When making contact print style photos with 120/110 films, the print is made with 135 frame.
- It is possible to read the frame data of contact print style photos. (Bitmap, 3632 x 549 pixel)

Note

- CP of CP4_1 stands for Contact Print Style Photos.

3430

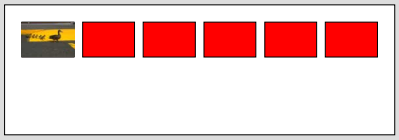
31D_3

Index prints for Contact Print Style Photos

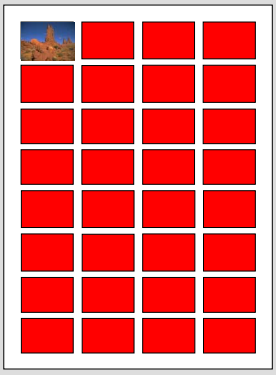
*Contact index prints

CP4_1

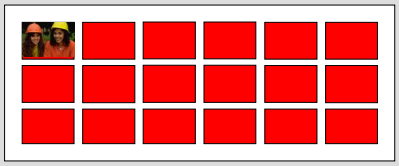
CP6_1



CP4_8



CP6_3



Explanation

•As for the Contact Print Style Photos, the following types are available for each machine.

Contact Print Style Photos with 4-frame:

QSS-28: (1-line to 8-line)

QSS-29/31: (1-line to 11-line)

QSS-30: (1-line to 9-line)

Contact Print Style Photos with 6-frame:

QSS-28: (1-line to 3-line)

QSS-29/31: (1-line to 7-line)

QSS-30: (1-line to 5-line)

•The Contact Print Style Photos are not available for IX240.

•In the Contact Print Style Photos, the printing direction (horizontal or vertical) is changed, depending on the paper width.

3440

31D_3

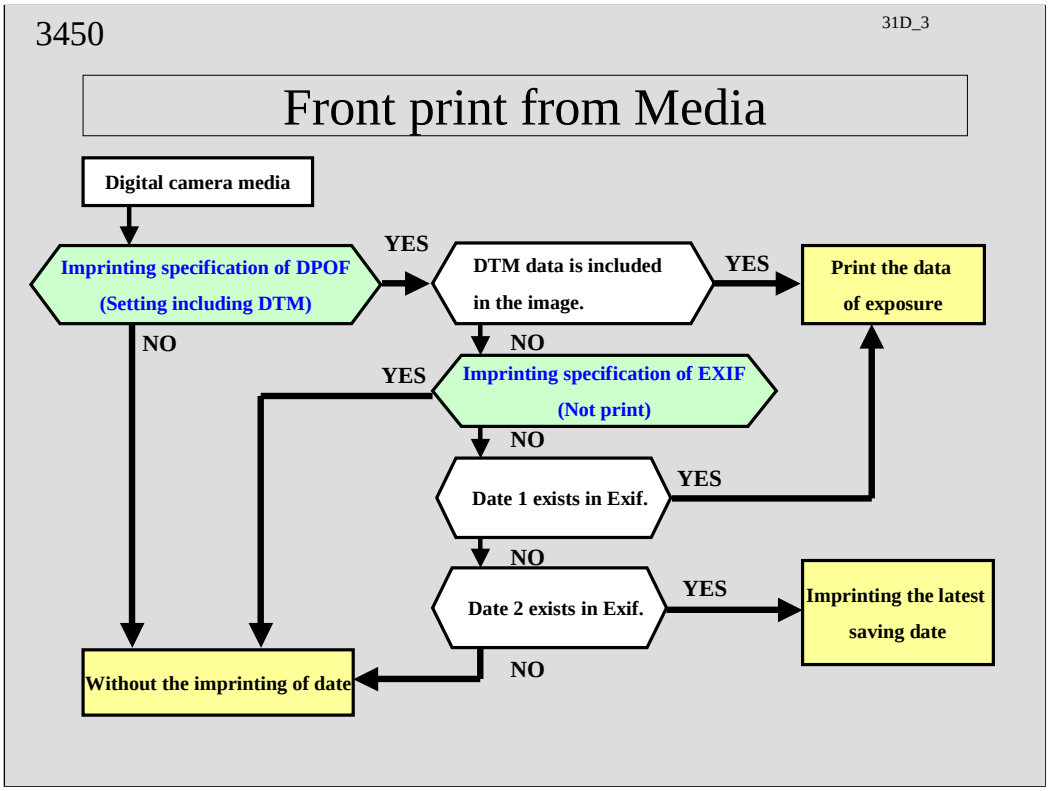
Practical training

*Carry out the practical training.

- How to exit from the close down checks mode.
- How to finish the application.
- At the close down checks, set the 135/240AFC to 135 lane.

Explanation

•If you carry out the disk defragmentation regularly, it can shorten the required time to defrag.



Explanation

- Refer to the Operator's Manual –Additional operations- for the Front print setting.
- If there is no DPOF data even when the front print setting is ON, it is not imprinted. If [Print] is selected for Exif imprinting setting, however, date of Exif data for image is printed.
- [DTM] : {DATA TIME}, data of date of exposure
- Date 1 (Exif) : {Data Time Original}, data of date of exposure
- Date 2 (Exif) : {Data Time Digitized}, date of edit by Photoshop, etc.

3900

31D_3

Comprehension check

[Operations]

*Can you explain the display contents of [ORDER] screen?
*Can you explain the operations of [HELP]?
*Can you explain the image storing to media?
*Can you explain the image sizes (16base, 4base,…..)?
*Can you explain the cautions in handling the smart media or compact flash?
*Can you do “Print to Print”?
*Do you understand the input resolution and output resolution?
*Can you explain the differences (merit/demerit) of letter printing in Edit mode and Frame print?
*Can you explain how to make ID Photos?
*Can you explain the start up checks and close down checks?
*Can you explain the procedure of daily setup?
*Can you explain the procedure of weekly setup?
*Can you explain the procedure of monthly setup?
*Can you explain the procedure of power reset?
*Can you explain the kind of CD-Viewer?
*Can you explain the role of NCE mode?

[Question]

*Explain the meaning of each icon in the [ORDER] display.
*Register the page (item) of manual you usually use in the HELP.
*Explain how to store the images to CD (images of 2 orders).
*Explain the differences between 16Base, 4Base, Base and 1/4base
*As for the smart media, the images are sometimes damaged. What is the cautions in handling it?
*Explain how to make 7R print from 3R print.
*What are the merits and demerits of Edit mode and letter printing (Frame print)?
*Explain how to make ID photos.
*Explain weekly maintenance of upper turn racks and squeeze rack.
*In which case is the light source upgrading done during the daily setup?
*Explain the flow of weekly setup briefly.
*Explain the flow of monthly setup briefly.
*”The movement of printing is a little strange. You want to reset the power supply.” What is the procedure at this time?
*”Keyboard and mouse do not work. You want to reset the power supply.” What is the procedure at this time?
*”The paper is jammed in the processor, and the abnormal sound is heard in the racks. You want to turn OFF the power supply.” What is the procedure at this time?
*Which tool is necessary for making the Deluxe Viewer CD?

3900

31D_3

[Operations]

*Can you explain [Shortcut] function?

*Can you explain Noritsu CD-R Engine (Windows/Mac)?

*Can you explain the role of disk defragmentation?

*Can you explain the data which is effective for Front print?

[Question]

*Explain how to make label index print of 8 cm CD's.

*Explain the method of disk defragmentation.

31D_4

Chapter 4
Installation

4000

31D_4

The point of this chapter

Key points

- Study the installation of the machine.

  Width for carrying a machine, Space for installation, Packing items,
  PC peripherals, Allocation of drives, Setting the language specification

Upon completion of the lesson, you will be able to:

*Understand the width for carrying a machine and space for installation and judge whether it is possible to bring a machine to a customer's shop.

*Understand the packing parts and judge whether all parts are prepared in the installation.

*Understand the angle brackets to be removed in the installation and the parts to be attached, and work smoothly.

*Execute the following things. - Setting of language specifications, Each setting after attaching each drive, Allocation of drives -

How to proceed the training

•The trainer will provide an oral explanation of the cautions, referring to "Installation Manual" and a machine.

•Carry out the mechanical adjustment or installation of options in the other chapter. You do not carry out the practical training here.

4010

31D_4

The width to carry a machine

Unit : mm

	The minimum height	The minimum width
SI-2600	1,285	800
LP-2200	1,205	770
PP-1223	1,500	780
Printer control unit	1028	500

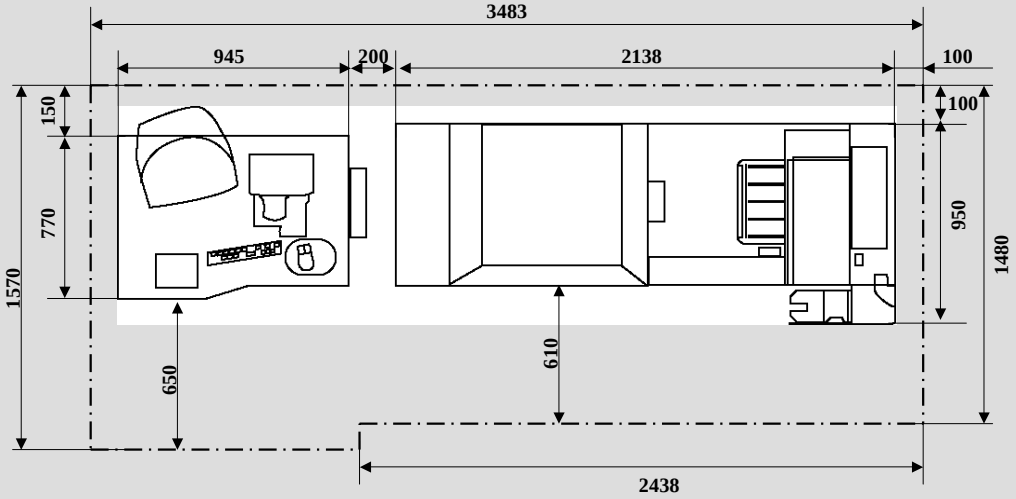
4020

31D_4

Space for installation

3101

Unit: mm



Refer to the Specification Manual for details.

Explanation

•Confirm the following contents, referring to the Installation Manual.

·Temperature condition

·Ground resistance

·Vibration condition

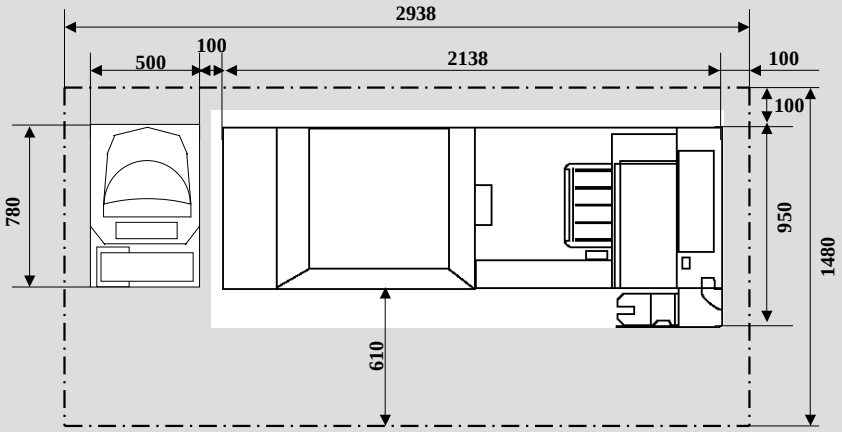
4030

31D_4

Space for installation

Network printer system

Unit: mm



Refer to the Specification Manual for details.

Explanation

•Confirm the following contents, referring to the Installation Manual.

·Temperature condition

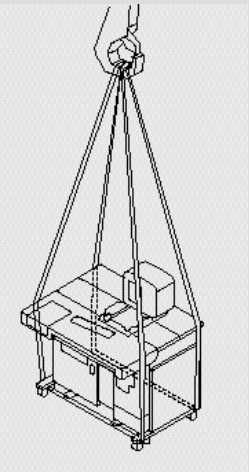
·Ground resistance

·Vibration condition

4050

31D_4

Lifting the machine (SI-2600)



***Lift the machine with strap,**

as shown in the illustration.

Caution

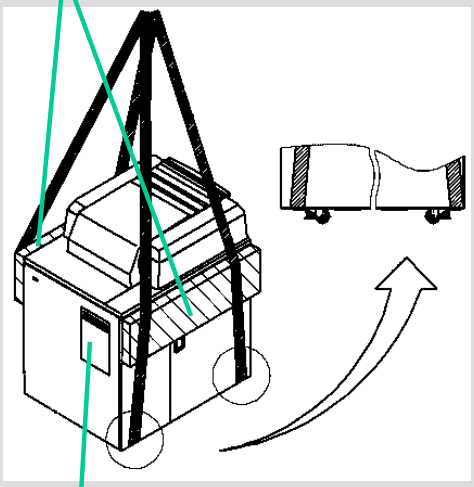
Do not tie the table from the front of table with strap.

4090

31D_4

Lifting a machine (LP-2200)

Cushion material



Indication of lifting the machine

***Lift the machine with strap, as shown in the illustration.**

Caution

***Splint the machine, referring to the "Indication of lifting the machine".**

***When lifting the machine, set the cushion material so that the power is not applied onto the printer door and cover.**

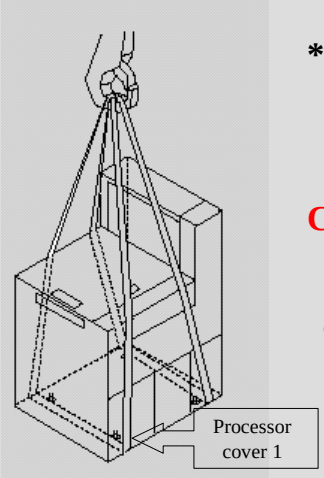
Note

•The "Indication of lifting the machine" is attached with a machine.

4100

31D_4

Lifting the machine (Processor section)



***Lift the machine with strap,**

as shown in the illustration.

Caution

The strap should be outside of the jack bolts.

Explanation

•The cover may be bent if the strong power is applied on processor cover 1.

4110

31D_4

Packing items (SI-2600)

Packing parts	
SI-2600 main body	Lens box
Monitor	Scanner lamp unit
Personal computer	Monitor mount
Full keyboard	Film stopper
Mouse	Film carrier
Mouse pad	

Explanation

•The mouse, keyboard for inputting the letters, operation keyboard are shipped together with a machine main body.

4160

31D_4

Packing items (LP-2200)

Packing parts	
LP-2200 main body	Assist jack-bolt
Wiring box (front) cover (with light tight material)	Ribbon cassette (option)
Wiring holder	Magazine pressure
Shutter angle	

Explanation

•The magazine is shipped with a machine.

4170

31D_4

Parts for installation (PP-1216/1223)

Packing parts	
Chemical filters	Dryer rack (upper) (depends on the shipping condition from the factory)
Print conveyor unit	
Print classification unit	

Parts for installation (135/240AFC)

Packing parts	
Cleaning leaders	

Explanation

•In the dryer unit, there are two packing ways below.

It depends on the situation for corresponding the sudden shipping flexibility (e.g. changes of specification).

- It is packed with the main body.
- It is packed separately.

•The type of processor is different depending on a machine.

QSS-28: PP-1216/1223

QSS-29: PP-1216

QSS31: PP-1223

4180

31D_4

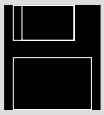
Packing items (Printer control unit)

Packing parts	
Main body	Mouse pad
Monitor	Air filter case
Personal computer	Air filters
Full keyboard	Optical fiber cable
Mouse	Power supply cable

4190

31D_4

Packing items (accessories)

Types	Name		Description
	INITIAL DATA 1	For Scanner	Contains the adjustment data for each machine One FD for input section, printer section and processor section each.
	INITIAL DATA 2	For Processor	
	INITIAL DATA 3	For Printer	
	SYSTEM PROGRAM		Contains the necessary system files to activate the system
	PROFILE DATA		Contains the profile data
	PC attachments		Recovery CD for OS, Operator's Manual, driver software, etc. Necessary for the maintenance of the PC attachments

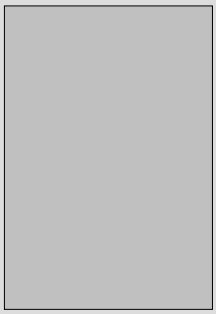
Explanation

•INITIAL DATA 1, 2, 3 is not used for the initial setup.

4200

31D_4

Packing items (Sample prints)

Gray print x 1 **(305 x 457 mm)**	WB print x 2 (305 mm x 152 mm)
	**Magazine A**  **Magazine B** 
For checking the banding	**For checking the zigzagging**

Explanation

•The image of gray print for TEST is included in the hard disk of QSS.

4210

31D_4

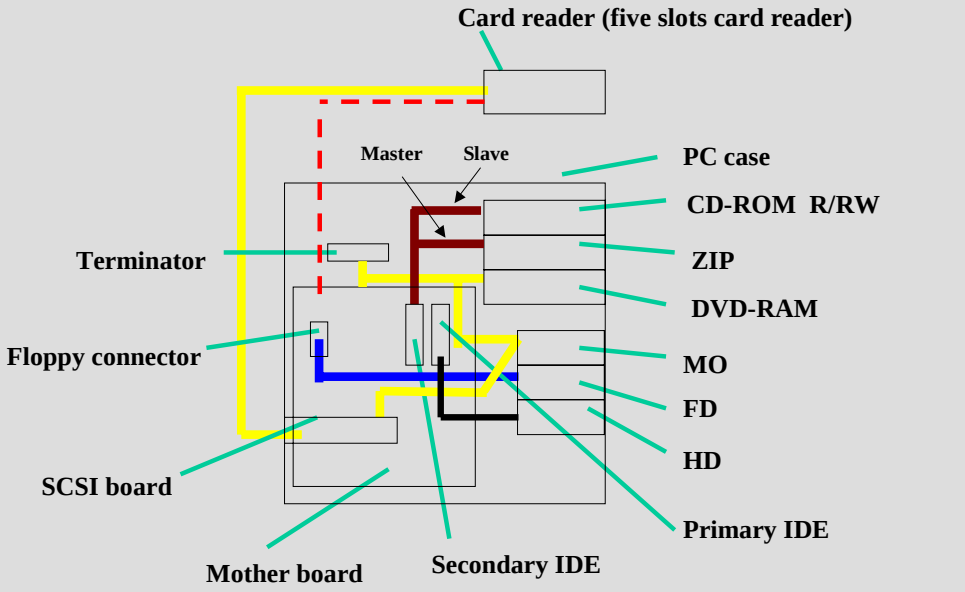
Practical training

*** Install a machine, referring to the Installation Manual.**

4230

31D_4

Location of PC peripherals (PC-NRT-4, PC-NRT-4A)



Explanation

•If you order an option in advance, it is assembled before shipping.

•If you install it at site, set the drive letter in the “Media setting” of “Option registration”.

•Connection

Zip: Secondary IDE/Master

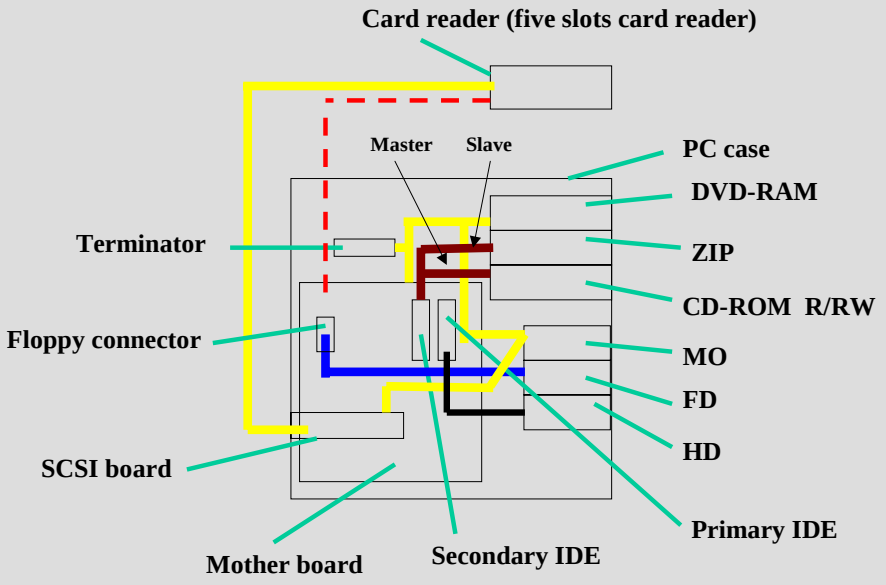
CD-ROM.R/RW: Secondary IDE/Slave

•When the drive which makes SCSI connection is not attached, in order to prevent incorrect operation, remove a SCSI cable from a SCSI board.

4231

31D_4

Location of PC peripherals (PC-NRT-5)



Broken line - - - - - - : USB connection line

Explanation

- If you order an option in advance, it is assembled before shipping.
- If you install it at site, set the drive letter in the “Media setting” of “Option registration”.
- When the drive which makes SCSI connection is not attached, in order to prevent incorrect operation, remove a SCSI cable from a SCSI board.
- Connection

  The connection position of secondary IDE differs from PC-NRT-4.

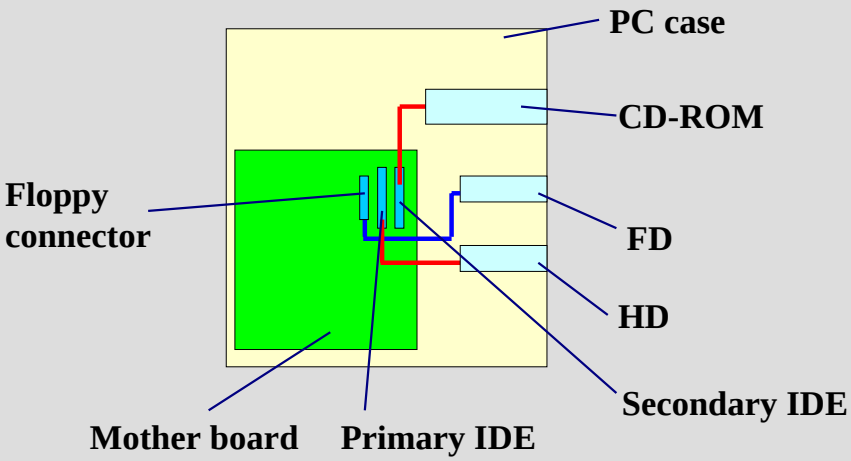
  Zip: Secondary IDE/Slave

  CD-ROM R/RW: Secondary IDE/Master

4260

31D_4

Layout drawing of PC peripherals (PC-NRT-PS1)



Explanation

• Connect the CD-ROM drive to Secondary IDE/Master.

4270

31D_4

SCSI ID No.

Drive	PC-NRT-3 (3A)	PC-NRT-4 (4A) or later
	ID No.	ID No.
MO	0	0
CD-ROM, CD-R/RW	1	-
PC card (card reader)	2	2
Smart media (card reader)	3	3
Compact flash (card reader)	4	4
Flatbed scanner A3 type by EPSON	5	5
DVD-RAM	6	6
SCSI board	7	7
ZIP	-	-
HD	-	-
FD	-	-
A4 type Flatbed scanner by Astra Flatbed scanner by EPSON	-	-

Explanation

- In the PC-NR-4 (4A), 5, CD-ROM, CD-R/RW drive is ATAPI specification.

  Because the communication errors occur a lot in the SCSI connection.
- When making SCSI connection of Flatbed scanner A3 type (procured parts at customer's site) by EPSON, set SCSI ID No. to [5].
- The followings are the drives that the SCSI connection is not used.

  CD-ROM, CD-R/RW: Secondary IDE/Slave [PC-NRT-4 (4A)]

  CD-ROM, CD-R/RW: Secondary IDE/Master [PC-NRT-5]

  ZIP: Secondary IDE/Master [PC-NRT-4 (4A)]

  ZIP: Secondary IDE/Slave [PC-NRT-5]

  HD: Primary IDE

  FD: FD connector

  Five slots card reader: USB

  Flatbed scanner: USB
- In the QSS-31, PC-NRT-3 (3A) is not used.

4300

31D_4

Cautions when attaching the PC peripherals at site

Drive	Installing the driver	Setting and Check of the SCSI ID and IDE jumper switch
ZIP	√	√
MO		√
CD-ROM, CD-R/RW		(PC-NRT-4, 4A, 5)
CD-ROM, CD-R/RW		√ (PC-NRT-3, 3A)
DVD-RAM	√	√
Card reader		√
Five slots card reader	√	
Flatbed scanner	√	√ (A3 type by EPSON)
		(A4 type by UMAX) (A4 type by EPSON)

√ **= necessary**

As for the CD-R External Writing System, the details are mentioned in the CD-R External Writing System Training Material.

Explanation

- The card reader main body is common among the QSS-28/29/30/31. However, the parts No. is different because the metal fitting is different depending on a machine. (Common between the QSS-28 and 31.)
- As for the flatbed scanner and five slots card reader, install the driver with removing USB code.
  If connecting USB code when the driver is not installed, the OS installs general driver. Therefore, be sure to install the driver with removing the USB code.
- When installing the drive of flatbed scanner by EPSON (procured parts at customer's site), do not install the other application software except the driver. It may cause the malfunction of QSS.

4320

31D_4

Allocation of drives

- The drive letter differs depending on the installing turn of the drive.
- Set the drive allocation in the “Media setting” of “Option registration” by the drive letter of OS.

  If you set the wrong drive letter, the malfunction occurs. (e.g. it accesses to the wrong drive.)

  Be sure to set the drives correctly. Set the same drive with the drive letter of OS.
- The drive letters below are fixed.

  A: FD C: Hard disk Z: CD-R External Writing System
- Refer to the Service Manual [3871] for the allocation of drives.

Explanation

•After executing the Recovery, confirm the allocation of drives.

•‘How to check the allocation of Five slots card reader drive’ is different from the case of other drives.

The procedure is as follows.

Open the [Explorer]. → Click an icon of each drive. → Check that the lamp of each loading slot is blinking.

4330

31D_4

Setting the language specifications

- When you use in the other languages except English, it is necessary to set the dictionary of language which is to be used. And install the translated QSS message data.
- When the various kinds of functions (e.g. postal code dictionary) are necessary, carry out the setting again.

Note

- The ”Message data (except English)” is translated from English to the local language at the subsidiary company, etc. And, the translated ”Message data” is stored to the media (e.g. FD). Then, it is equipped with a machine when shipping a machine from the subsidiary company.

4900

31D_4

Comprehension check

[Installation]

*What is the minimum size of shop entrance so that you can carry a machine without removing the table?

*Do you understand what kinds of packing parts there are?

*Do you understand the places of angle brackets and units to be installed?

*Do you understand that the specification of language can be changed?

*Do you understand how to measure the ground resistance?

[Question]

*The shop owner said to you “Move a machine so that the back side of machine is as close as possible to the wall”, what should you do?

*What packing item should be attached to a machine?

*Where is the angle bracket?

*For the availability of Spanish, French, etc…., what should you do?

*When measuring the ground resistance of SI and PP, do you measure it after connecting LVDS between SI and LP? Or, before connecting?

31D_5

Chapter 5
Setup

5000

31D_5

The point of this chapter

Key points

- Study about the setup.

  Setup in the installation, Data configuration, Setup flow

  Print channel setting, Monitor setup, CMS, Profile

Upon completion of the lesson, you will be able to:

*Prepare for the setup.

*Execute the Scanner light source registration/Focus adjustment.

*Execute the Monitor setup.

*Understand the initial setup flow and its theory.

*Execute the Paper specification registration/Magazine registration.

*Set Print channels.

*Input the appropriate correction (color, DSA).

How to proceed the training

Carry out the practical training, or explain the items using the sample prints.

5010

31D_5

Setup when installing a machine

- There are two patterns of setup procedure when installing a machine to shorten the installing time. There are two procedures for the conditions below.

  During the temperature adjustment

  After the setup is completed.
- As for the setup except when installing a machine, it is not always necessarily to follow the procedure.

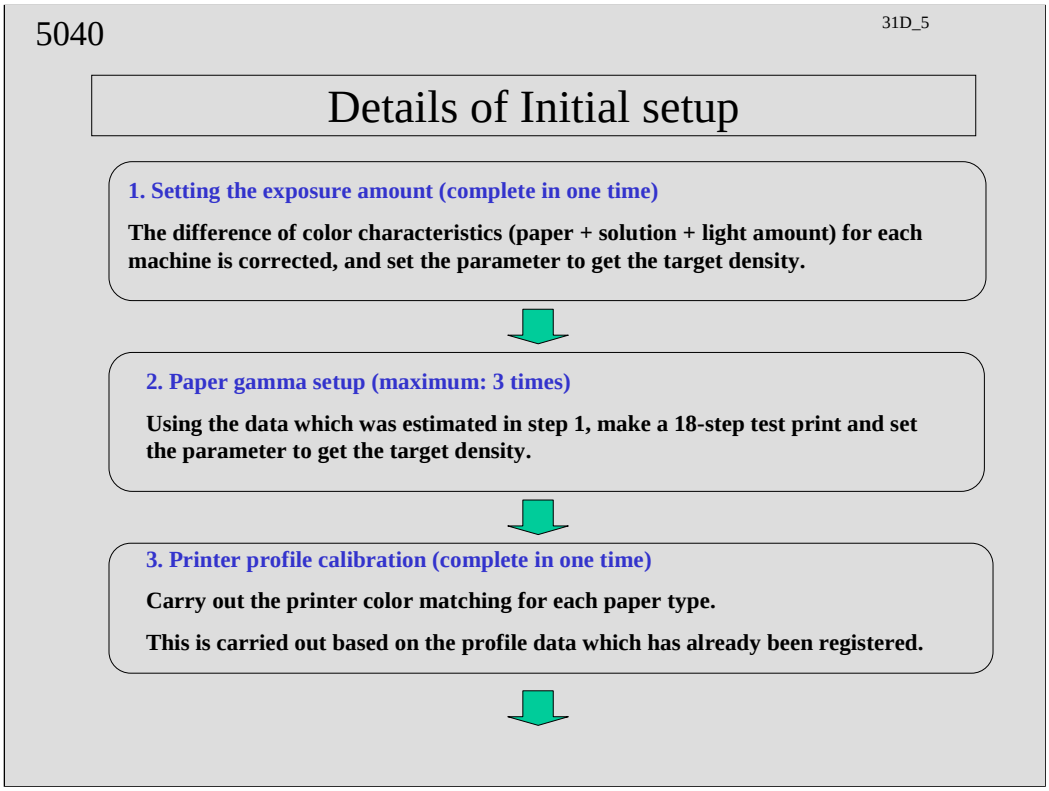
  Refer to the Service Manual 7001, 7002.

Note

•The target time is as follows after from installing a machine into a place to start printing. (This is calculated in the summer season.)

QSS-28/29: 6 hours (for one kind of paper type)

QSS-30/31: 4 hours (for one kind of paper type)



Explanation

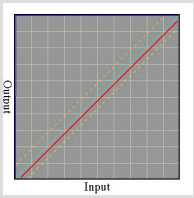
- When starting the setup without reading the initial data, the initial data which has already been registered is used.
- The setup time will take within 1 hour (approx. 35 to 40 minutes) for one material.

5040

31D_5

Carry out the printer profile calibration for each paper specification.

And carry out it also in the weekly setup. (for paper type each)



This graph is the result of test print measurement. Three lines for B, G, R are displayed.

It is ideal if all of three lines slant at the angle of 45° .

This is the standard for checking the tendency of calibrated data.

4. Updating the AOM data (once)

Adjust the gain of light source amount output from the laser.

Update the characteristic data of AOM bias.

NOTE

Tester print: 18-step setup print (number of prints: 3)

Explanation

- There is no problem if the lines are within the broken lines.
- The printer profile is not set for chemical specification each.
- When the new paper type is released, the profile on CD will be released.

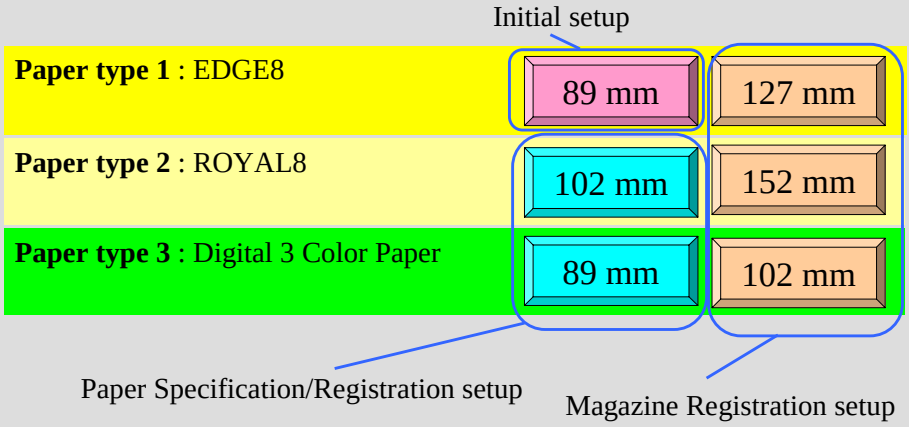
5050

31D_5

Setup flow

The setup flow at the installation is explained here.

(e.g.) Prepared paper types



Explanation

- The paper type for the initial setup or Paper Specification Registration will also be used for the daily setup.

5060

31D_5

Monitor setup

1. Monitor brightness adjustment
   * Color and temperature setting (6500K)
   * Contrast adjustment
   * Brightness adjustment

   Adjust it, referring to the Operator's Manual of the display monitor.

Adjust the color of monitor here.

2. Monitor profile calibration

Note

•The colorimeter is not used for the brightness adjustment.

•The display monitor is compatible with the QSS-29/30.

•In the QSS-31, when the Printer control unit is connected, the Monitor setup does not function.

5060

31D_5

3. Monitor gamma correction

The difference occurs between the color of print and that of monitor, depending on the light source of the place where you work.

Improve the precision of color matching by setting the color difference freely.

Make a test print, and compare the color chart with the monitor and adjust it.

Note

•Be sure to carry out this adjustment after completing the color matching with the colorimeter.

5070

31D_5

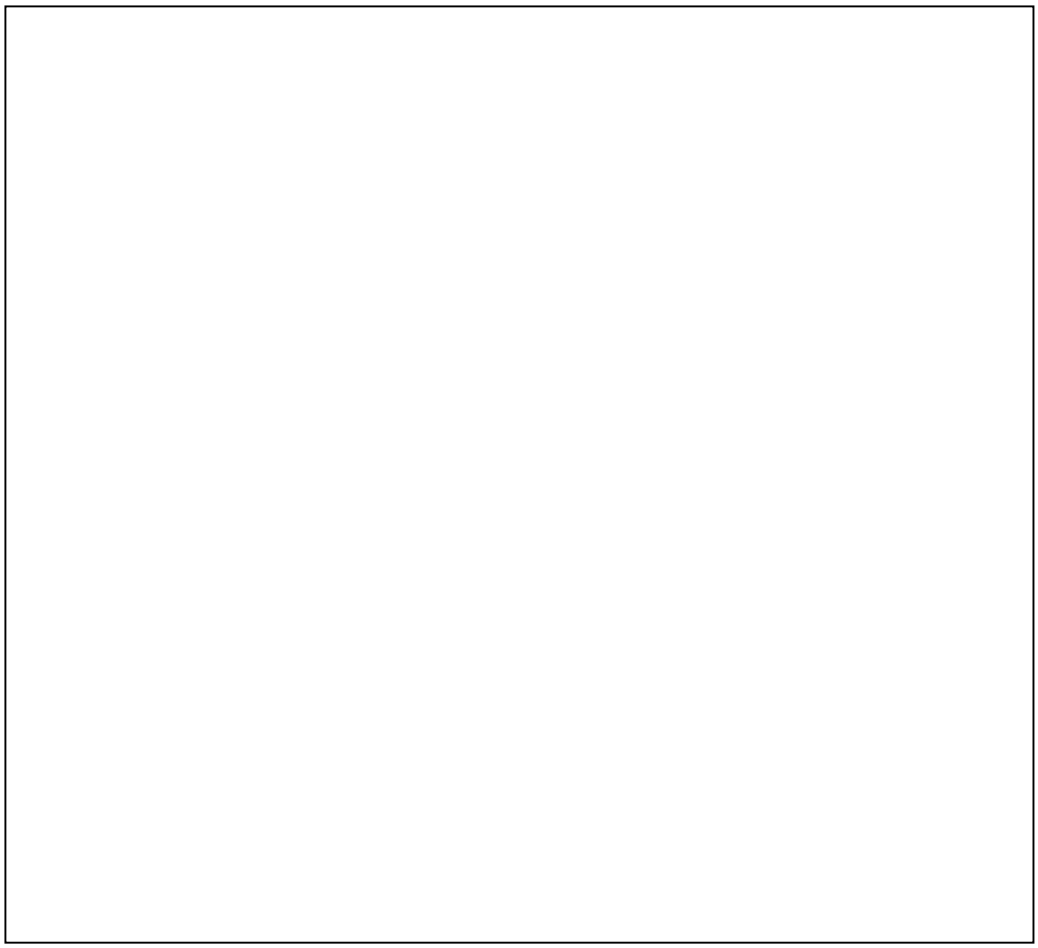
Initial setup (Practical training)

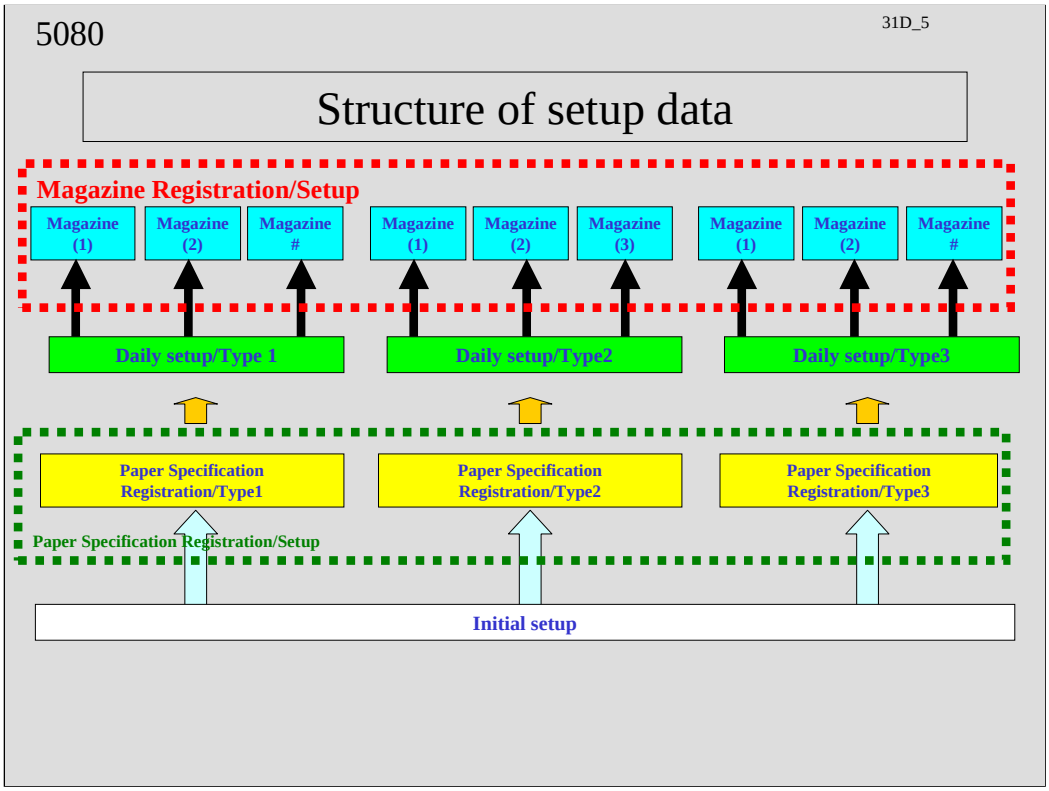
* Carry out the initial setup.
  Initial setup
  Paper Specification/Registration Setup
  Magazine Registration Setup

* Monitor setup

* Making print channels

  Making print channels





Explanation

•Execute the initial setup with the paper which a customer mostly uses.

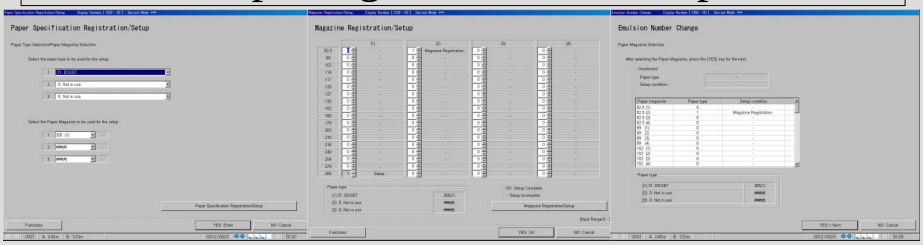
•Execute the Paper Specification/Registration setup for all paper types which has been registered in the “Paper Specification/Registration”. (Except the paper type which the Initial setup is executed)

•When registering plural paper types, it is necessary to execute the daily setup for all paper types registered in the Paper specification registration setup.

5090

31D_5

Paper registration and setup



Kinds of registration	Contents
Paper Specification Registration/Setup	Register the paper type and the magazine which are to be used. Up to 3 types can be set.
Magazine Registration/Setup	When newly adding the paper with different paper width and different paper surface, register a new magazine and carry out the correction.
Emulsion number change	Correct this when the paper specification and the emulsion number is changed.
Paper setup	Carry out the color correction for magazine each. In “NCE” of “Function” mode, the color around the letter is corrected. (e.g.) The part around black letter on the white (light-color) background Outline characters on the black background. This is not the correction for the whole print.

Explanation

- The paper specification/setup is the setup when installing a machine.

  Carry out this also when adding a new paper with different specification.
- You can check the setup status (“OK” or “-”) for each magazine in the following mode.

  Paper Specification, Magazine Registration, Emulsion number change
- You cannot carry out the “Emulsion number change” if the “Paper Specification/Setup”, “Magazine Registration/Setup” has not been completed yet.

Note

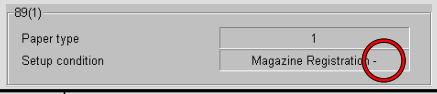
- Explain the meaning of the sign for setup status in the “Emulsion number change”.

5100

31D_5

Emulsion number change

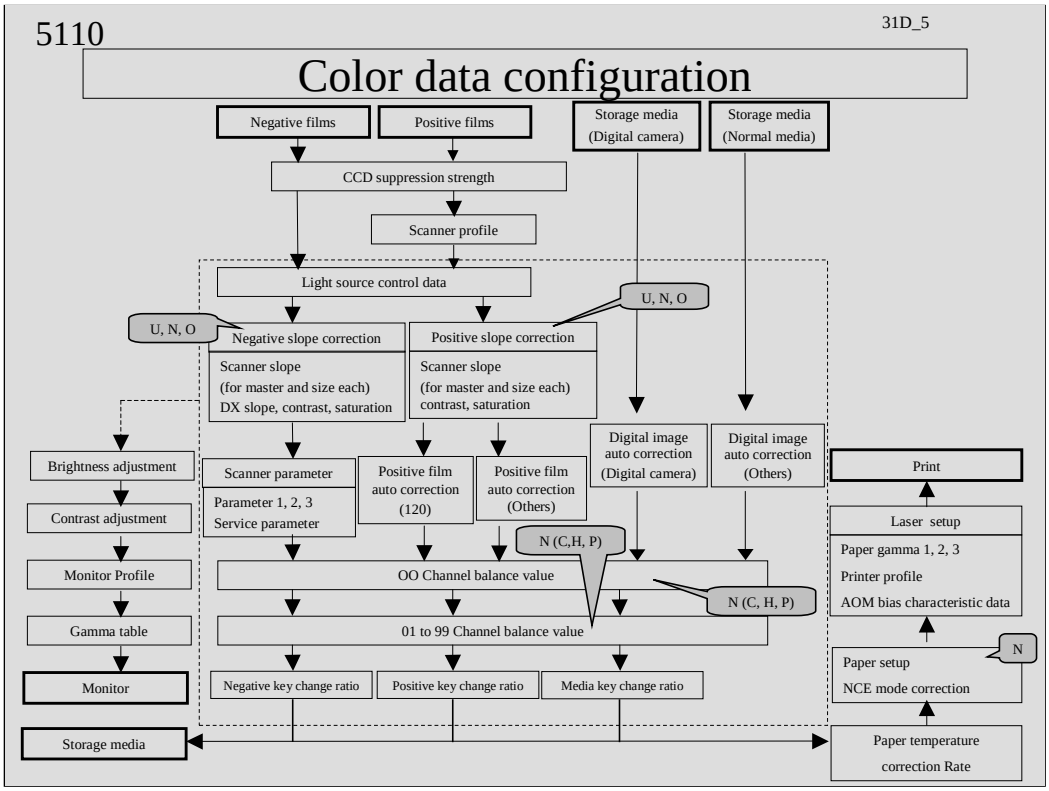
You can check the setup status which is used for emulsion number change.
"OK" or "-" is displayed.
The emulsion number change is possible when "OK" is displayed for the paper setup or magazine registration.
In the other cases, set it so that "OK" is displayed. After that, carry out the emulsion number change.



Sign	
Setup -	[Paper Specification Registration Setup] has never been carried out or has not been completed yet.
Setup OK	[Paper Specification Registration Setup] has been completed successfully.
Magazine Registration -	Not to be registered in the [Magazine which is to be used for the setup]. Only [Magazine Registration] is carried out. But, [Magazine Registration Setup] has never been carried out or has not been completed yet.
Magazine Registration OK	Not to be registered in the [Magazine which is to be used for the setup]. Only [Magazine Registration] is carried out. And, [Magazine Registration Setup] has been completed successfully.
--	Both of [Magazine which is to be used for the setup] and [Magazine Registration] are not be carried out.

Note

- The setup status is controlled by each magazine.



Explanation

- Color data correction

  Film: Make a correction for the scanner slope.

  Media: Make a correction for CH balance and set the channel only for media if necessary.

  [Important] Do not input the correction value in 00CH balance.

- Explain the contents of Parameter 1 and service parameter.

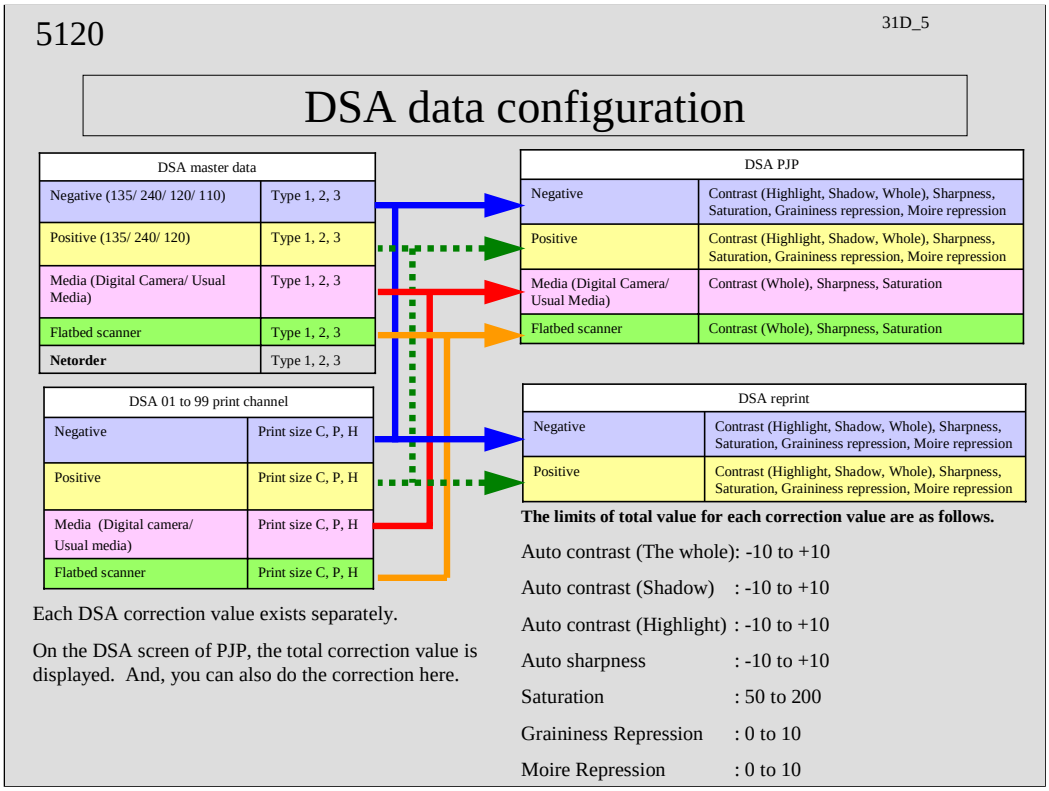
  Refer to the Service Manual [3061], [3081].

- The storage media is classified into types as follows.

  When the data is Exif : [Digital camera]

  When the data is other than Exif : [Others]

- As for the images scanned from FB scanner, [Digital Image Auto Correction] is not effective.



Explanation

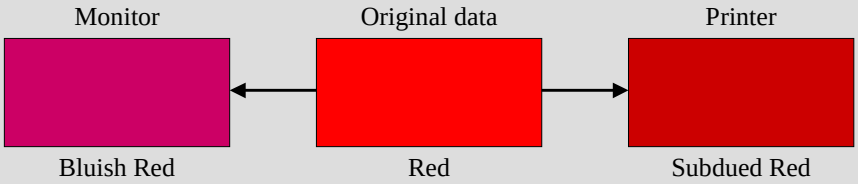
- You can input the DSA master data for each kind of film for negative or positive.
- DSA master data for Media is roughly divided into "Digital camera" and " Usual media", and each has own DSA correction data.
  "Digital camera" indicates the input image of Exif format.
  “Usual media” means the input image of format except Exif.
- In case of Net order, the correction of Master data DSA only (e.g. contrast, sharpness, saturation) is effective. “Print channel DSA”, “DSA PJP”, “DSA reprint” are not effective.
- DSA of 00CH is not effective.

5130

31D_5

Outline of CMS

CMS (Color Management) in the QSS is to transmit the color information correctly (Color Matching). Therefore, the beautiful color is expressed beautiful as it is, and the subdued color is expressed subdued as it is. It is not to correct the color and make the color beautiful.
When outputting (image display or print) the same image data (RGB color space) with the different output device (monitor or printer), the expressed color is different by looking at.
This is caused by the difference of expressional characteristics for color depending on the devices.



To clear the color difference, CMS (Color Management) (Color Matching) is executed.

Note

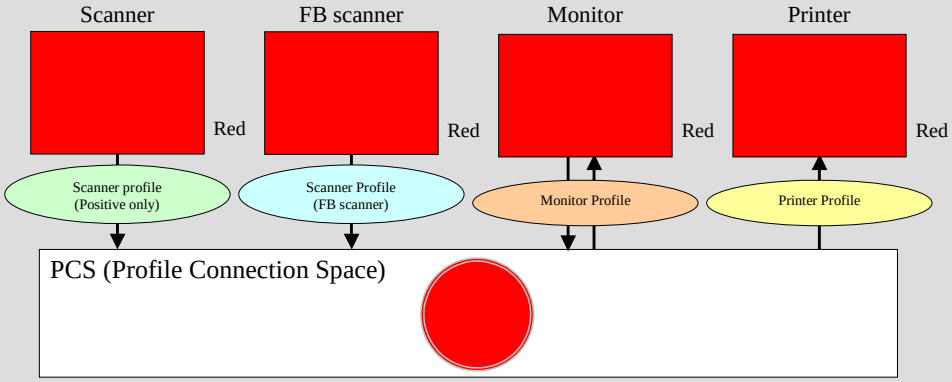
•The following contents are generally called “Color Management”, but it is different from the color management in the QSS.

- Make the color of image more vivid.
- Restore the discolored image.
- Make the beautiful image.

5130

31D_5

Make a standard data (Lab color space) for CMS.
The standard data is stored in the virtual space called “PCS” which is at the center of device.
INPUT: Convert “RGB color space data which is inputted from the input device” into the “Lab color space data” thorough the scanner profile.
OUTPUT: Convert “Lab color space data” into “RGB (or CMYK) color space data” through the monitor profile (or printer profile).



Note
- The standard data which is expressed by Lab color space has the role of standard language in languages.
- There is no profile for negatives. The monitor profile is applied for the images displayed on the monitor, and make the standard data.

5140

31D_5

Scanner profile

The scanner profile is stored in the following place.

SCN_DIR (The place where the scanner profile is stored)		
File name	Contents	Note
S0000100.nkp	Profile data for Microtek ScanMaker X6	Not in use
S0010000.nkp	Profile data for Umax Astro 3400/4400	
S0020000.nkp	Profile data for EPSON Perfection2450	
S0020100.nkp	Profile data for EPSON GT-10000+	
S0020200.nkp	Profile data for EPSON Perfection3200	
S0990100.nkp	Profile data for positive films	
S1020000.nkp	Profile data which will be made by executing the FB scanner setup.	Use for various setup.

Explanation

- S1020000.nkp is necessary when executing the daily setup.
- When there is no S1020000.nkp, it is possible to substitute the files of white part (in the above list).
- There is no profile for negatives. The monitor profile is applied for the images displayed on the monitor, and make the standard data.

5150

31D_5

Printer profile

The profile data is stored in the following place.

PRN_DIR (The place where the printer profile data and the printer calibration data is stored)		
File name	Contents	Note
P0**##00.nkp	Printer Profile Basic data (The data which was registered when shipping at the factory.)	
P0**##00.cal	Printer Calibration Basic data (The data which was registered when shipping at the factory.)	
P1**##00.nkp	Printer profile data which is actually used	Changes by the profile calibration (Weekly setup)

*The printer profile exists for paper type and processing solution type each.

*"p1**##00.nkp" is made based on the following data.

- Data of Paper specification and registration/Setup [which is calculated by the measurement vale and p0**##00.cal (standard data)]
- P0**##00.nkp

Explanation

•The number of [**] is different depending on each machine.

QSS-28: 08

QSS-29: 09

QSS-30: 10

QSS-31: 11

•Be sure to use "p0**##00.nkp" and "p0**##00.cal" as a set.

•To update "p0**##00.nkp", install the profile data from CD. But, the profile data of CD should be newer than that in the HDD.

•When updating the printer profile data, the installer deletes "p1**##00.nkp" in the HDD. "p0**##00.nkp" of CD is overwritten to the HDD.

•After updating, be sure to carry out the weekly setup.

5160

31D_5

Printer profile form

p 0 ** **2D** 00.nkp

- **Chemical specification (No setting for chemical type each)**
- **Number which means paper type (e.g. ROYAL8)**
- **Number which means the machine** Make "p1**##00.nkp" based on 2 files.
- **File which is registered when shipping a machine from the factory**

P0**##00.cal

Only "extension" is different from the "p**##00.nkp", and be sure to use those as a set.

p1 **##00.nkp

The file which is created and stored at site

(This is created and stored when carrying out the "Printer profile calibration" and "Weekly setup".)

Explanation

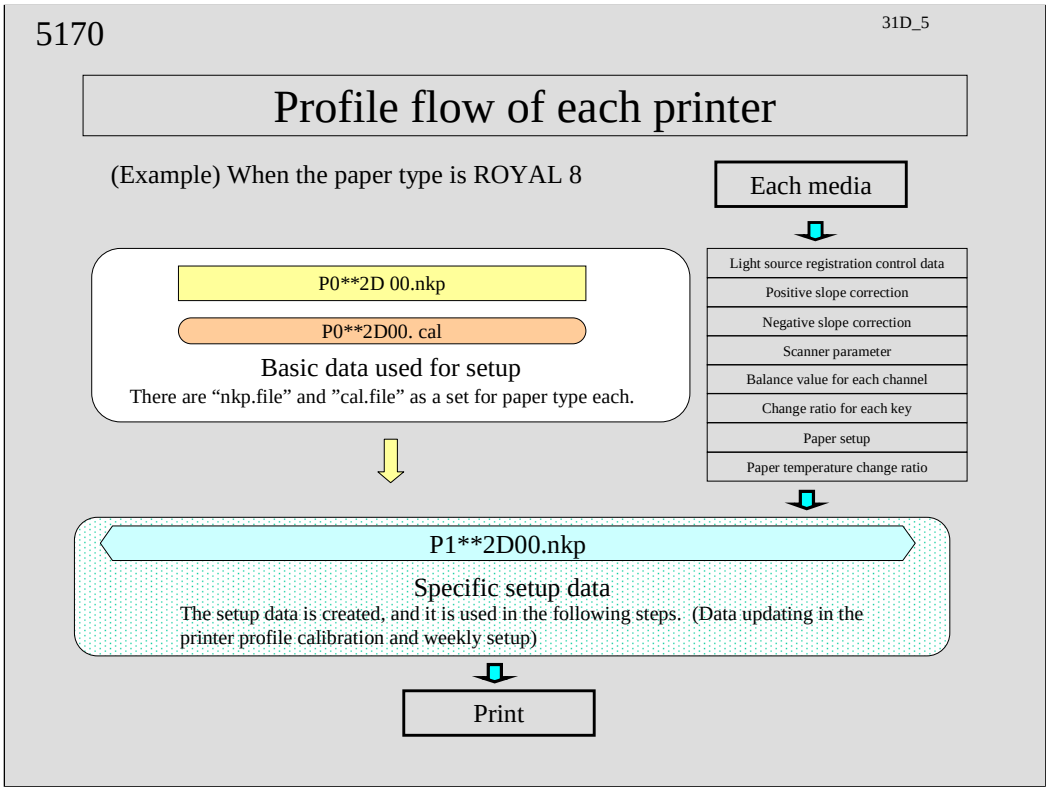
•The number of [**] is different depending on each machine.

QSS-28: 08

QSS-29: 09

QSS-30: 10

QSS-31: 11



Explanation

•The number of [**] is different depending on each machine.

QSS-28: 08

QSS-29: 09

QSS-30: 10

QSS-31: 11

5180

31D_5

Monitor profile

The monitor profile is stored in the following place.

MON_DIR (The place where the monitor profile data and the monitor gamma adjustment data is stored)		
File name	Contents	Note
m0010000.nkp	Monitor Profile Basic data (The data which was registered when shipping from the factory.)	Basic data which is set for type of monitor (Maker, Lot)
m1010000.nkp	Monitor Profile Basic data (The data which was registered when shipping from the factory.)	Initial data which is measured by the colorimeter (Contains in the profile CD)
m2010000.nkp	Monitor profile which is actually used.	Changes by the profile calibration (Monthly setup)

Note

- When installing a machine, there are “m0010000.nkp” and “m1010000.nkp”, and “m2010000.nkp” is made in the monthly setup.
- To update “m0010000.nkp”, install the profile data from CD. But, the profile data of CD should be newer than that in the HDD.
- When updating the monitor profile data, the installer deletes “m1010000.nkp” and “m2010000.nkp” in the HDD. “m0010000.nkp” and “m1010000.nkp” of CD is overwritten to the HDD.
- When updating the monitor profile data, be sure to execute the monitor profile calibration.

5190

31D_5

Monitor profile form

m 0 01 ## ##.nkp

Number which means monitor of the machine

0: File which is registered when shipping a machine from the factory

1: File for monitor profile calibration which is executed at site

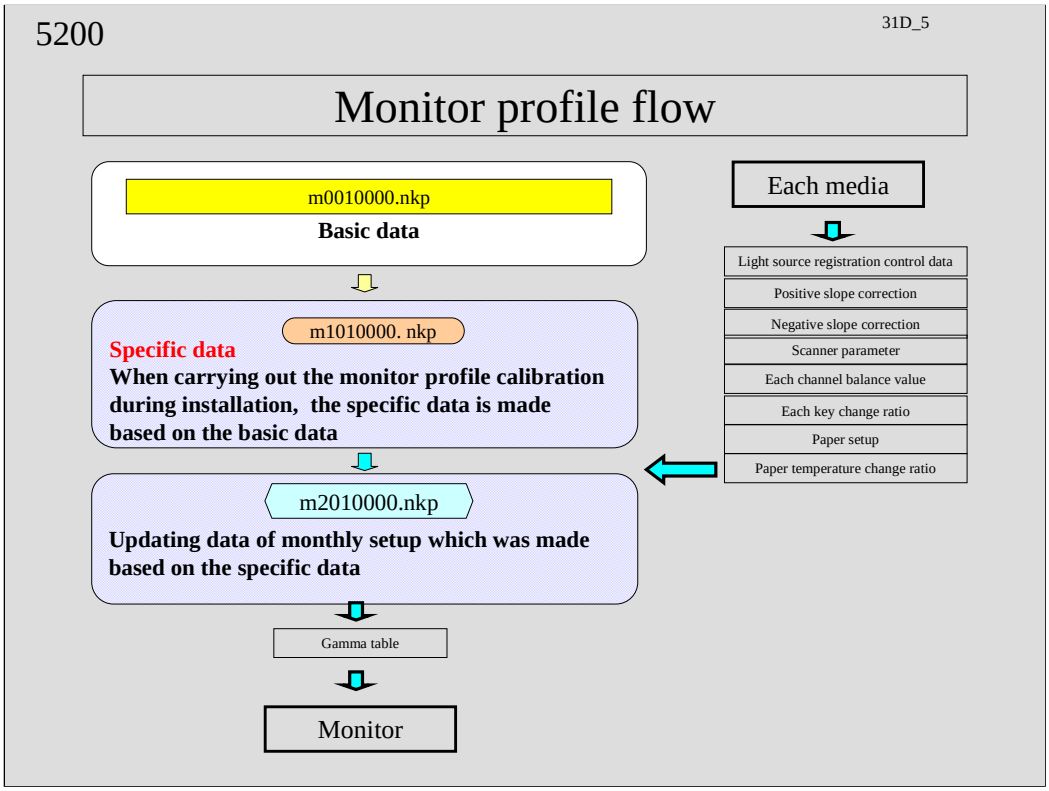
2: File for monthly setup which is executed at site

About the monitor profile, the other files are created based on “m001”.

Note

•The monitor to be used is TOTOKU CV-721.

•When the type of monitor is changed, the new profile is necessary. (The changing way has not been decided yet.)



Note

•There are no monitor profiles for each specification.

5900

31D_5

Comprehension check

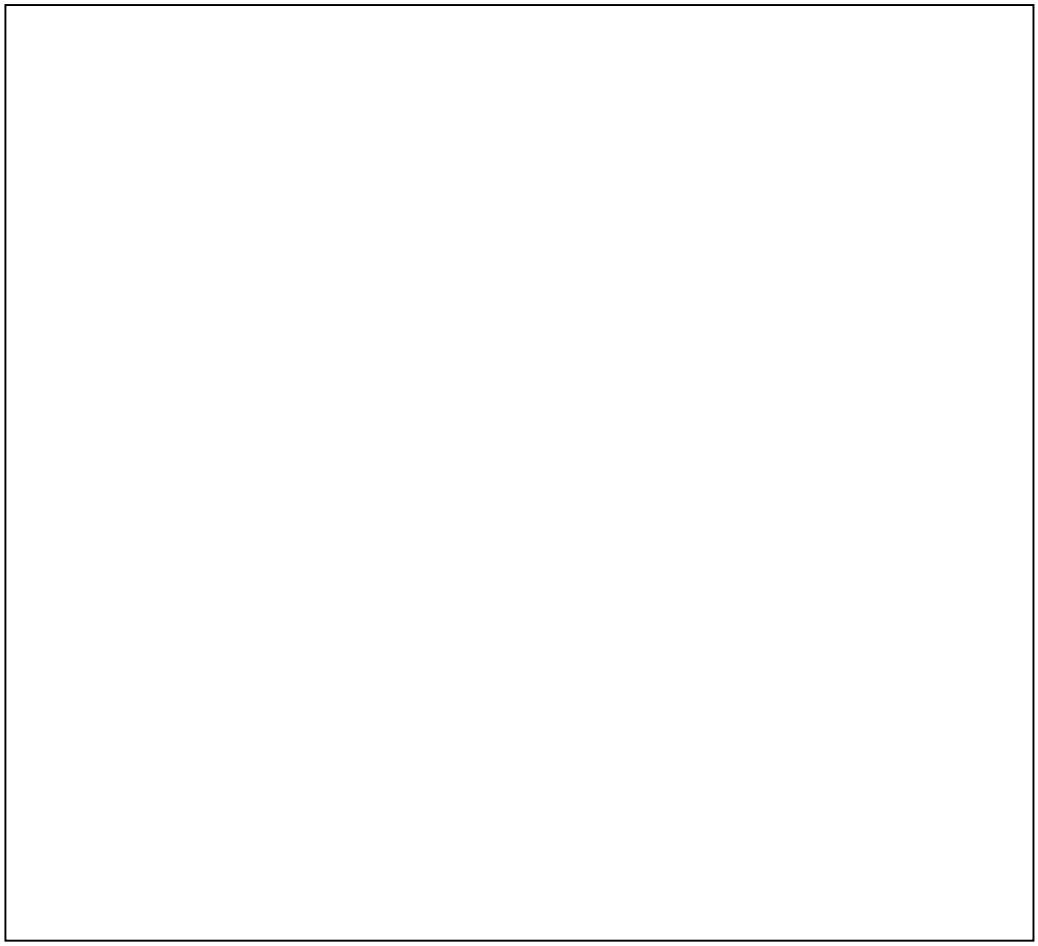
[Setup]

*Do you understand required work before setup?
*Can you execute the Scanner light source upgrading/Scanner focus adjustment?
*Can you execute the monitor setup?
*Can you execute the initial setup?
*Can you execute the setup of other paper type and paper size?
*Can you set the print channel according to the request from customer?
*Can you judge in which mode the correction is done according to the output print and monitor display?
*Can you explain the procedure of Emulsion number change?
*Can you explain the difference between the [Digital camera] and [Usual media] of DSA master data?

[Question]

*Give a few required works before setup.
*Why is the Scanner focus adjustment required after executing the Scanner light source registration?
*Explain the procedure of monitor setup briefly.
*Explain the flow of initial setup briefly.
*When the other paper type exists, what setup is necessary?
*When the other size paper exists, what setup is necessary?
*Is the interspersed processing (WB and BL) available in the same print size?
How is it available?
*A customer said to you “It is necessary to switch [for 16Base] and [for 4Base] for CD burning.”
What should you do?
*The software of Print like contact prints is installed. How will it be able to make a print?
*All prints from Negative/Positive/Media is yellow. In which mode do you make a correction?
*The main paper of shop is Royal8 89 (1). You are to add the paper Royal8 102 mm.
Explain the setup procedure briefly.
After that, the emulsion of Royal8 102 mm paper is changed. Explain the procedure at this time.
*[Switch of Scanner color correction (Negative)]
For what purpose is this used?
*[Mild] of [Switch of Scanner density correction (Negative)]
For what purpose is this used?

Chapter 6
Mechanical adjustment



6000 31D_6

The point of this chapter

Key points

- Study the disassembly and adjustment of machine.

  Removing/reattaching each unit, Adjustment of each unit, Screws which should not be loosened, Maintenance and adjustment, Recovery

Upon completion of the lesson, you will be able to:

*Remove each unit of printer.

*Adjust after replacing the unit.

*Understand the place where should not be adjusted and screws which should not be loosened at site.

*Understand the adjustment method for each section of printer.

How to proceed the training

Carry out the practical training mainly and explain the cautions, referring to the materials.

Practical training

* Removing and attaching the scanner unit
  - Swing and Tilt Adjustment
  - Light axis adjustment
  - Light source registration
  - Focus adjustment
* Show the scanner unit for disassembly to a trainee.

Explanation

•The allowable range of Swing and Tilt Adjustment and Light Axis Adjustment in the installation is mentioned in the Service Manual 7001.

•The scanner unit is compatible with the QSS-28/29/30.

Note

•Before replacing the scanner unit, it is necessary to copy Logdata and memory data to media. Refer to the Service Manual 3401, 3402.

6420 31D_6

Practical training

* Adjusting the AMC/MMC
  - Position adjustment of mount carrier
  - Position adjustment of AF emission sensor
  - Position adjustment of AF detection sensor
  - Adjustment of MMC auto focus section

* Adjusting the Colorimeter unit
  - Removing the colorimeter unit/Replacing the calibration plate
  - Head height adjustment of colorimeter unit

Practical training

* Adjusting the paper supply unit
  - Removing the paper supply unit.
  - Right angle adjustment of paper cutter/Replacing the manual cutter
* Adjusting the Pre-Exposure advance unit
  - Removing the Pre-Exposure advance unit
  - Paper guide width correction
  - Pressure release adjustment
  - Pressure adjustment of CVP
* Adjusting the Paper advance section
  - Removing Paper advance unit 1, 2, 3
  - Stop position adjustment of paper advance unit 2
* Adjusting the Exposure advance section
  - Removing the Exposure advance unit
  - Banding adjustment
* Adjusting the Engine section
  - Removing the laser unit.

Note

•Explain the screws which should not be loosened during the practical training.

6420 31D_6

Mechanical adjustment (Film carrier section)

1. AFC

Point 1: In some of the sensors, only connector section itself can be replaced. The other sensor should be replaced as a whole of sensor PCB.

Point 2: After replacing the AFC, the AFC focus adjustment for each magnification is necessary for each AFC to be used.

2. 135/240AMC, MMC

Point 1: Explain the position adjustment of AF sensor.

Point 2: Explain the adjustment of MMC auto focus section.

Explanation

•Refer to the Service Manual 2071 to 2080 (AFC).

There are 2 types of “mount for adjusting the scanner” and “head height adjustment tool” to be used for MMC/AMC adjustment.

(currently used type and initial type)

Refer to the Service Manual 3154 and 3155.

•The scanner adjustment mount (currently used type) is available for AMC/MMC.

•The scanner adjustment mount (initial type) is not available for AMC.

Show both of scanner adjustment mounts.

•The auto focus section of 135/240AMC cannot be adjusted.

Mechanical adjustment (Scanner section)

1. Scanner unit

Point 1: Impossible to disassemble

(If you disassemble it, it is out of warranty.)

Point 2: Compatible with the scanner unit of QSS-28/29/30

Note

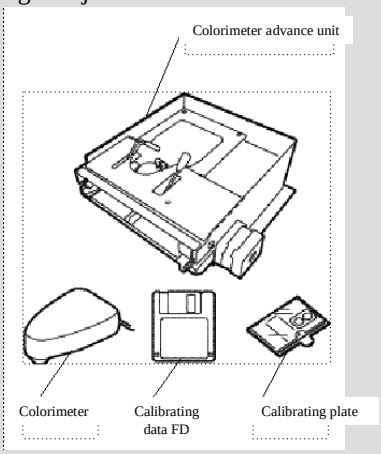
•Refer to the Service Manual 2061.

Mechanical adjustment (around the table)

1. Colorimeter

Point 1: The colorimeter has its own data.
(The data is contained in the attached FD.)

Point 2: When replacing the colorimeter, it is necessary to check the head height adjustment.



Note

- Refer to the Service Manual 2111, 2112.
- As for the colorimeter unit, the following items are a set.
  Colorimeter advance unit, Colorimeter, Calibration plate, Attached FD(Calibrator)
- You cannot order the colorimeter advance unit only itself.
  As for the colorimeter advance unit, the part only itself can be replaced.
- When replacing the colorimeter, it is necessary to replace the calibration plate and attached FD as a set.
- When replacing the calibration plate, it is necessary to replace the calibration plate and attached FD as a set.

6423 31D_6

Mechanical adjustment (Paper supply section)

1. Magazines

Point 1: As for the positioning adjustment of magazine, put the shim to adjust the positioning pin.

Point 2: Finally, check with the wide-width paper, WB print and with the minimum advance length.

2. Magazine mount

Point 1: Possible to remove and reattach the magazine mount without tools.

Point 2: Zigzagging adjustment of paper supply unit is possible by adjusting the positions of positioning pins (for magazine mount A, B).

Point 3: When carrying out the zigzagging adjustment of magazine mount, the following adjustments are necessary.

Head height adjustment of magazine mount

Position adjustment of magazine mount

Position adjustment of magazine detection sensor

Point 4: The position adjustment of paper end sensor A is necessary for magazine mount A.

Explanation

•There are two types of shims (0.1 mm, 0.2 mm) for the position adjustment of magazine, and adjust the position of magazine by putting the shim(s) to the positioning pin.

•The shims are attached in the printer.

Note

•Refer to the Service Manual 3209. (Position adjustment of magazine)

•Refer to the Service Manual 2514. (Zigzagging adjustment of paper magazine mount)

6423 31D_6

Mechanical adjustment (Paper supply section)

1. Paper supply unit

Point 1: This is compatible with the paper supply unit (QSS-29).

Point 2: Even after removing/reattaching the paper supply unit, the position of unit is regulated by the positioning pin.

Point 3: The positioning adjustment is necessary when replacing the unit.

Note

•Refer to the Service Manual 2524 (Paper supply unit A)

•Refer to the Service Manual 2522 (Paper cutter unit)

Mechanical adjustment (Paper supply section)

2. Paper cutter unit

Point 1: This is compatible with the cutter unit (QSS-29).

Note

- Refer to the Service Manual 2524 (Paper supply unit A)
- Refer to the Service Manual 2522 (Paper cutter unit)

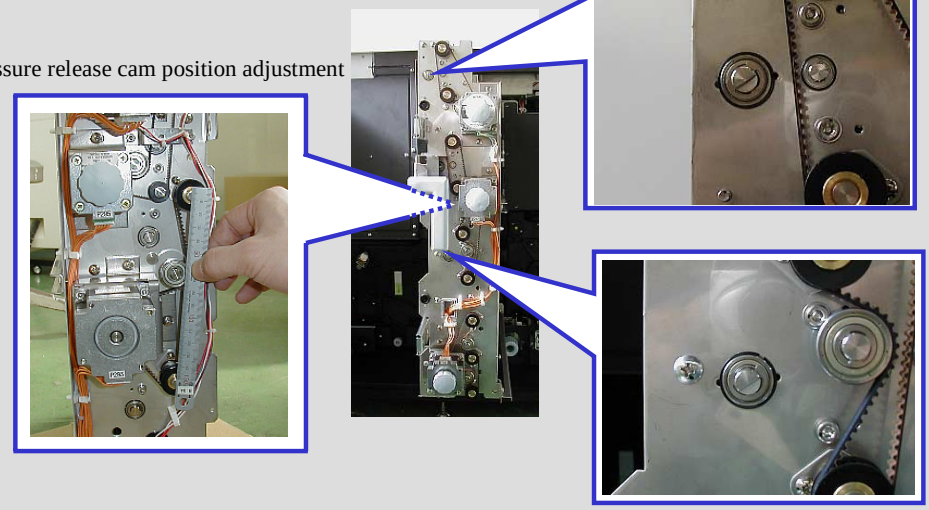
6424 31D_6

Mechanical adjustment (Pre-exposure advance section)

1. Pre-Exposure advance unit

Pressure release adjustment

Pressure release cam position adjustment



Note

- Refer to the Service Manual 2565. (Adjusting the position of pressure release cam)
- Refer to the Service Manual 3202. (Pressure release adjustment)

  Check by the naked eye.

Mechanical adjustment (Pre-exposure advance section)

3. CVP (Correction Value Print) unit

Point 1: The ink ribbon cassette is same with the QSS-28/29/30.

Point 2: The special ink which will not stick around is used. It is improved, comparing with the conventional ones.

Note

•Refer to the Service Manual 2525. (CVP unit)

Mechanical adjustment (Paper advance unit 1, 2, 3)

1. Paper advance unit 1

   Adjusting the gap between the pressure roller (1) –inlet side- and loop open/close angle bracket

2. Paper advance unit 2

   Adjusting the position of the paper advance unit 2

Note

•Refer to the Service Manual 2652

Adjusting the gap between the pressure roller (1) –inlet side- and loop open/close angle bracket

•Refer to the Service Manual 3203

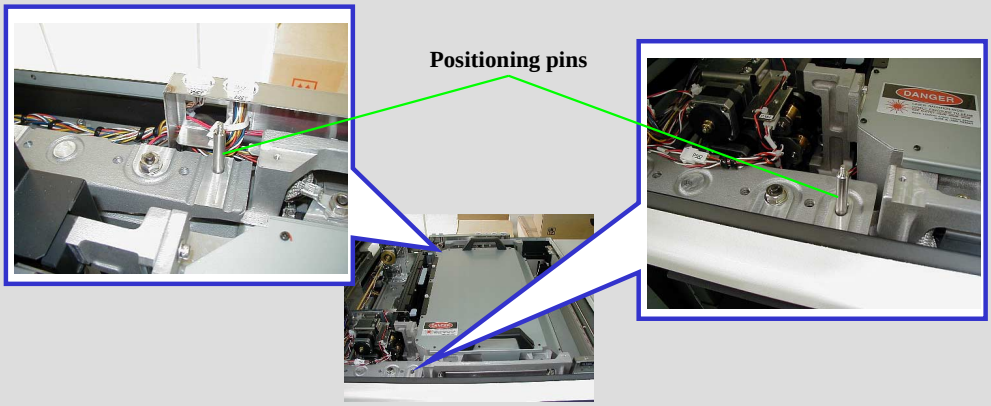
Adjusting the position of the paper advance unit 2

6426 31D_6

Mechanical adjustment (Exposure advance unit)

1. Exposure advance unit

Point 1: When attaching the exposure advance unit, carry out the position adjustment with the positioning pins.



Explanation

- The positioning pins are attached with the machine main body.
- The thickness of positioning pins is different between the screw tip and screw head.

Note

- Refer to the Service Manual 2581, 2582.
- The trainee should carry out the position adjustment of unit at least once, to get the feel of connecting/disconnecting the positioning pins.

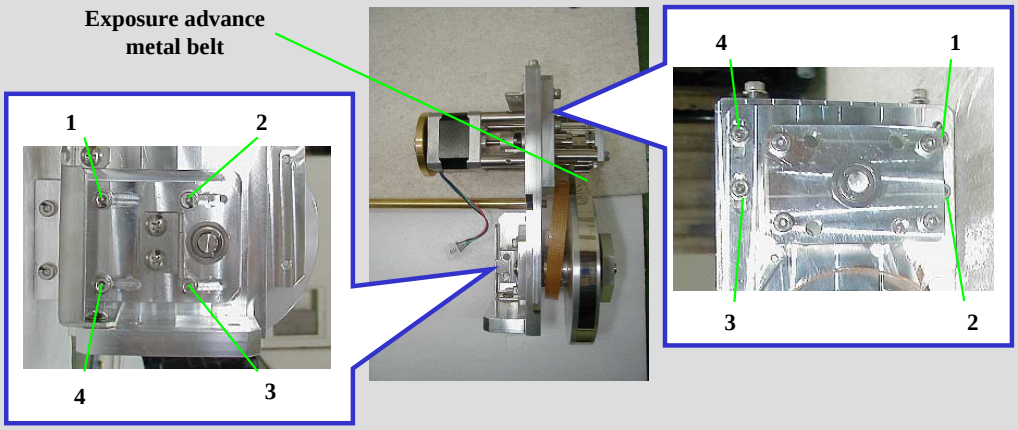
6426 31D_6

Mechanical adjustment (Exposure advance section)

1. Exposure advance unit (metal belt)

Point 1: When replacing the metal belt of exposure advance motor, use the clean gloves.

Point 2: Be sure to tighten the screws in the correct order.



Explanation

•The merits of using a metal belt are as follows.

It does not stretch.

It does not wear down.

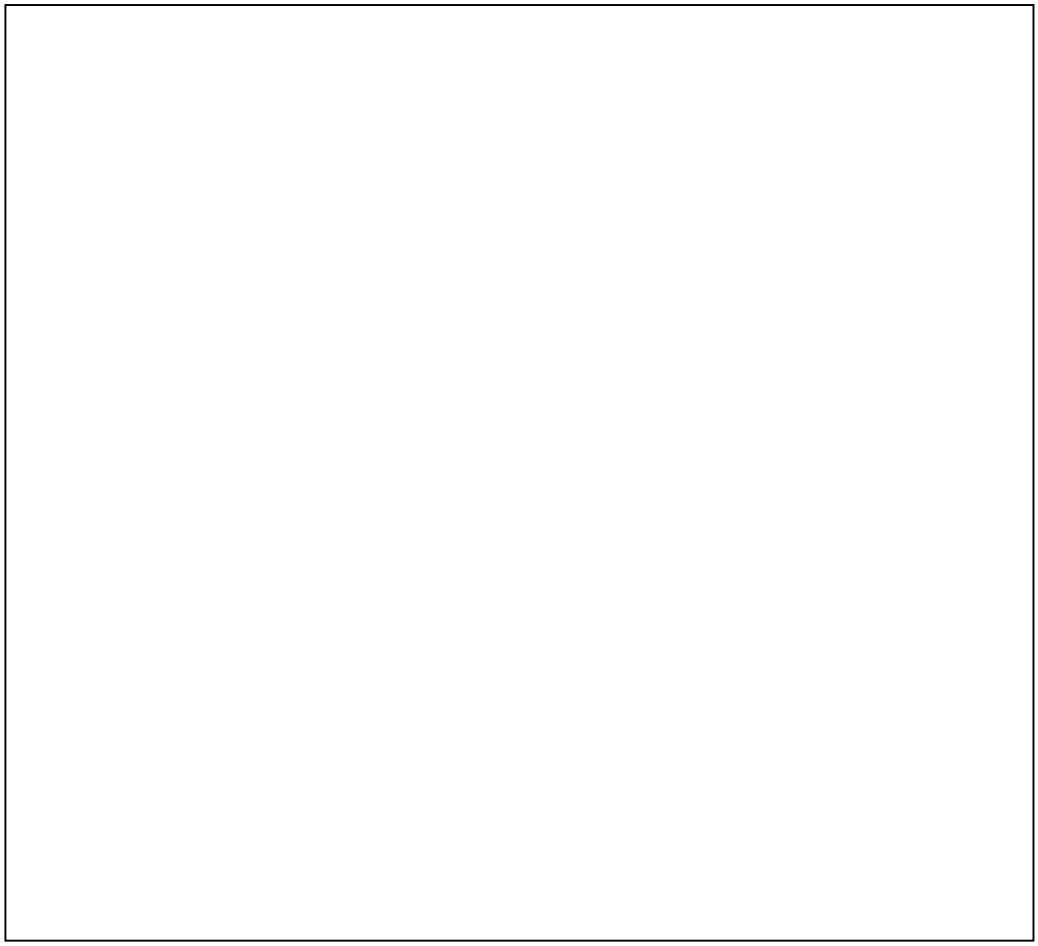
No unevenness

Banding does not occur

6426 31D_6

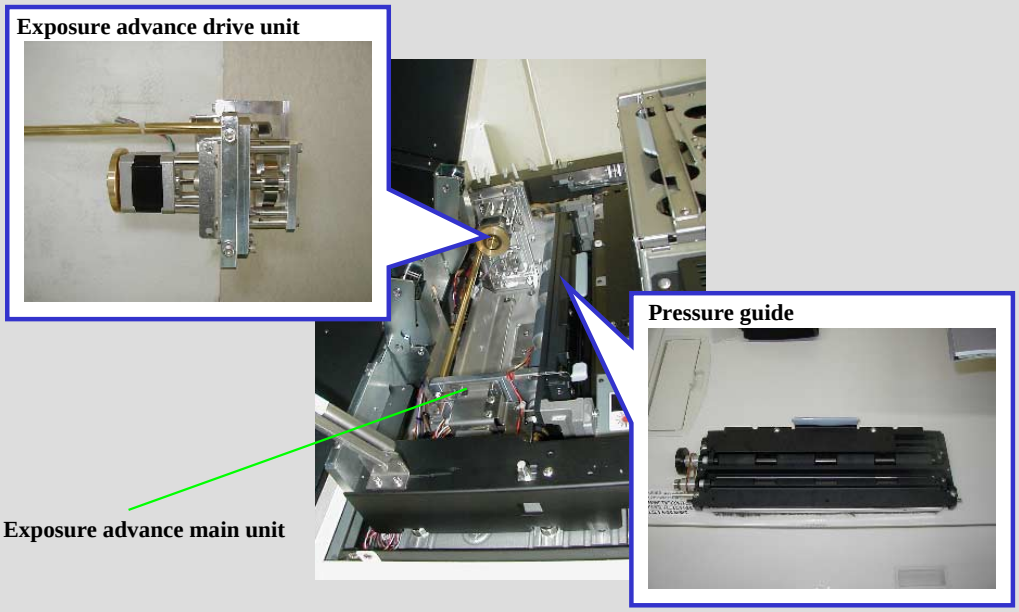
Mechanical adjustment (Exposure advance section)

Point 3: Carry out the banding adjustment of exposure advance unit by adjusting the installing position of exposure pressure release motor.



6426 31D_6

Mechanical adjustment (Exposure advance section)



Explanation

- When replacing the exposure advance drive unit, be sure to follow the turn to tighten the screws of metal belt.
- When replacing the pressure guide and exposure advance main body unit, it is necessary to adjust the paper zigzagging and the position of pressure release motor.

Mechanical adjustment (Laser unit section)

1. Laser unit

Point 1: Remove the exposure advance unit before removing the laser unit.

Point 2: Replace the laser unit as a whole unit.

Point 3: Impossible to disassemble/adjust the laser unit

Note

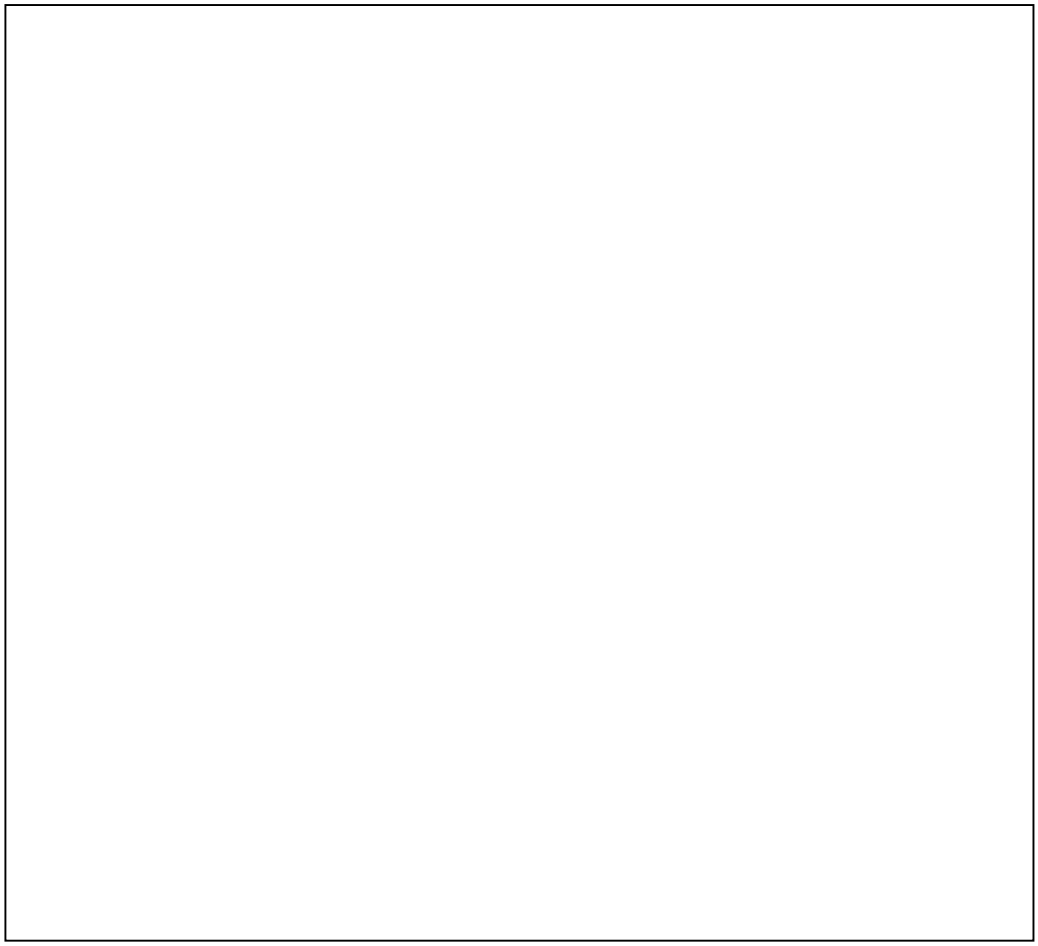
•Refer to the Service Manual 2671.

6428 31D_6

Mechanical adjustment (Option)

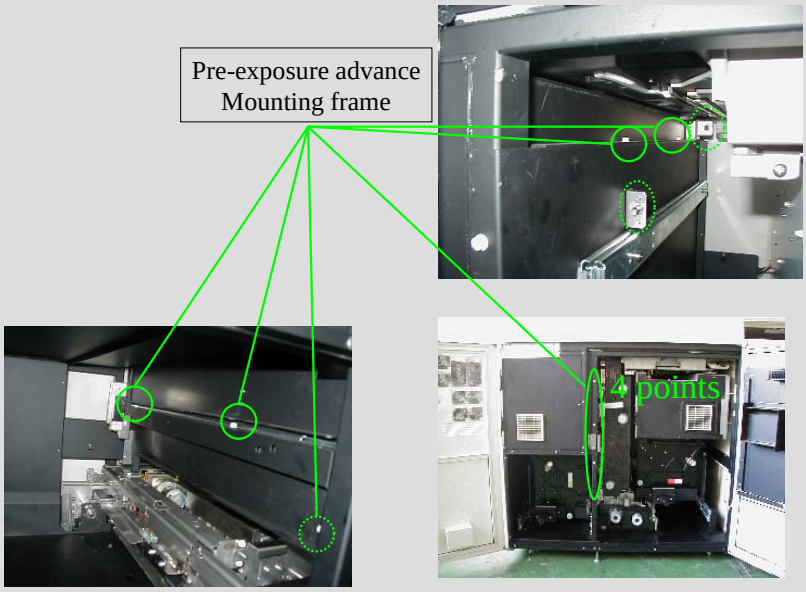
1. Magazines

Point 1: Compatible with the QSS-29



6440 31D_6

Screws which cannot be loosened

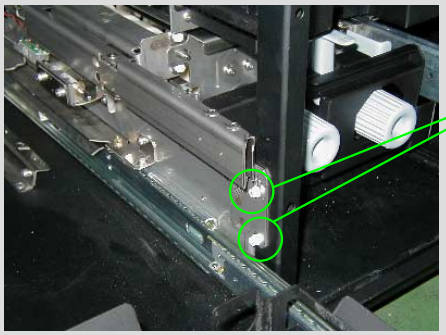


Explanation

•The attaching screws are marked.

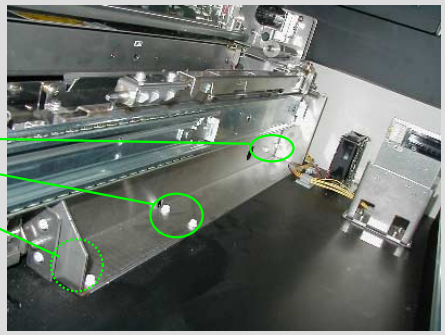
6440 31D_6

Screws which cannot be loosened



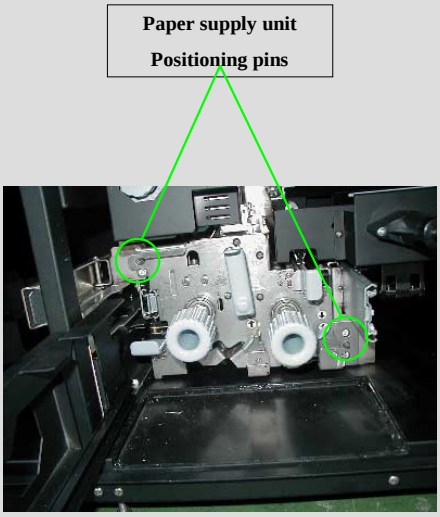
Paper supply unit
Mounting frame

Paper magazine mount B rail
Mounting frame



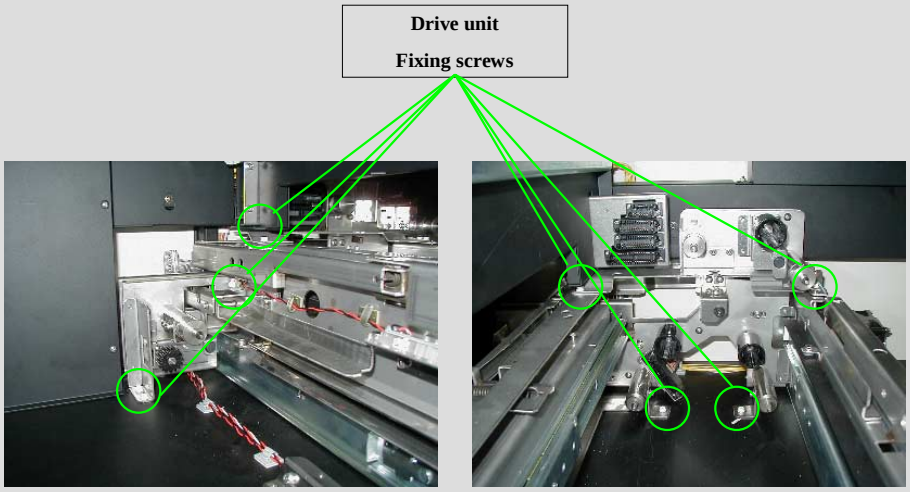
6442 31D_6

Screws which cannot be loosened



6443 31D_6

Screws which cannot be loosened



Explanation

•There are screws which are marked in the other place except the above illustration. Do not loose the screws which are marked. It is impossible to adjust at site because it is assembled with the special tool.

6450 31D_6

Maintenance and Adjustment

- Paper advance length correction
- Exposure advance adjustment
  - Exposure image correction
  - Exposure start timing adjustment
- Exposure zoom rate correction
- Exposure center correction
- Exposure position correction
- Exposure zoom rate fine adjustment
- Exposure center correction (paper magazine each)
- Exposure size correction

Note

•Make an oral explanation.

6460 31D_6

Practical training

- Recovery
- Installing the QSS software
- Installing the profile data

Note

- The recovery method of QSS-31 became easy. Refer to the Service Manual 3801.
- The recovery procedure is different depending on the types of PC to be used.
- Two Recovery CDs (Disk1/2, Disk2/2) are attached.

  Disk2/2 CD is prepared when the setting changes of Windows2000 are necessary. Now, it is not necessary.
- When the USB-adopted devices (FB scanner, Five slots card reader, etc.) are attached, remove the USB cable to be connected with the PC before executing the recovery.
- The ZIP driver is included in the QSS software.
- 'Installation of UDA software' is included in the QSS software (Ver.B001 or later).

  Click "Setup.exe" in the "UDA" holder.

  After the installation, register the UDA in the "Option registration" and execute "Initializing the UDA unit". Refer to the Service Manual 3878.
- When installing the profile data, it is necessary to do [selecting the machine] and [selecting the scanner].

6460 31D_6

Practical training

- Installing the driver
- Software upgrading

Explanation

•There are two types of flatbed scanner driver.
manufactured by UMAX (option)
manufactured by EPSON (procured parts at customer's site)

*Driver of UMAX
Astra 3400: 3 types (Ver.3.73, Ver.3.75Rev, 3.82)
Astra 4400: 1 type (Ver.3.77)

*Driver of EPSON
GT-9700F/9800F: [EPSON Scan]
ES-6000HS : [TWAIN PRO]

•As for the driver of EPSON, do not install other application except above driver. It may cause the malfunction.

•The Zip driver is contained in the QSS software.

•Just before or in the middle of software upgrading, do not receive an order from CT-1 and external PCs. The software upgrading may not be completed correctly. Be sure to confirm that there is no order from the CT-1 and external PCs. When CD-R external writing system is connected, do not turn ON/OFF the power supply in the middle of software upgrading.

6900 31D_6

Comprehension check

[Disassembly and adjustment of machine]

*Do you understand the cautions in removing/reattaching each unit of printer?

*Do you understand the adjustment procedure after replacing each unit?

*Do you understand the places where should not be adjusted and the screws which should not be loosened?

*Can you execute each adjustment in the “Maintenance” mode?

*Do you understand how to copy Logdata and memory data to media?

[Question]

*What is the caution in removing each unit?

*What is the caution in attaching each unit?

*When replacing the metal belt of exposure advance unit, tighten the fixing screws of belt tension. At this time, there are turns. If you attach screws in wrong turn, what problem occur?

*What should you do after replacing laser unit?

*What should you do after replacing the scanner?

*What should you do after replacing 135AFC?

*How do you judge the screws which should not be loosened?

*The paper advance length is different between ‘a print immediately after loading’ and ‘the other prints’. What should you do?

*Explain 2 cautions when installing the profile data.

Chapter 6-1
Paper zigzagging adjustment

6800 31D_6-1

The point of this chapter

Key points

- Study the zigzagging adjustment.
- Understand the check of banding and adjustment method.

Upon completion of the lesson, you will be able to:

*Adjust the zigzagging of magazine mount.
*Adjust the zigzagging of pressure roller.
*Adjust the position of magazine.
*Adjust the guide width.
*Adjust the banding.

How to proceed the training

Carry out the practical training mainly and explain the cautions, referring to the materials.

Zigzagging adjustment (Printer section)

1. Paper guide width correction

   Point 1: Check that the the paper guide width of pre-exposure advance unit is 130 mm.

2. Zigzagging adjustment of the magazine mount

   Point 1: Carry out the zigzagging adjustment between the magazine mount and just before the paper guide of pre-exposure advance unit.

3. Right angle adjustment of the cutter

4. Zigzagging adjustment of exposure advance unit

   Point 1: Carry out the zigzagging adjustment of exposure advance unit only.

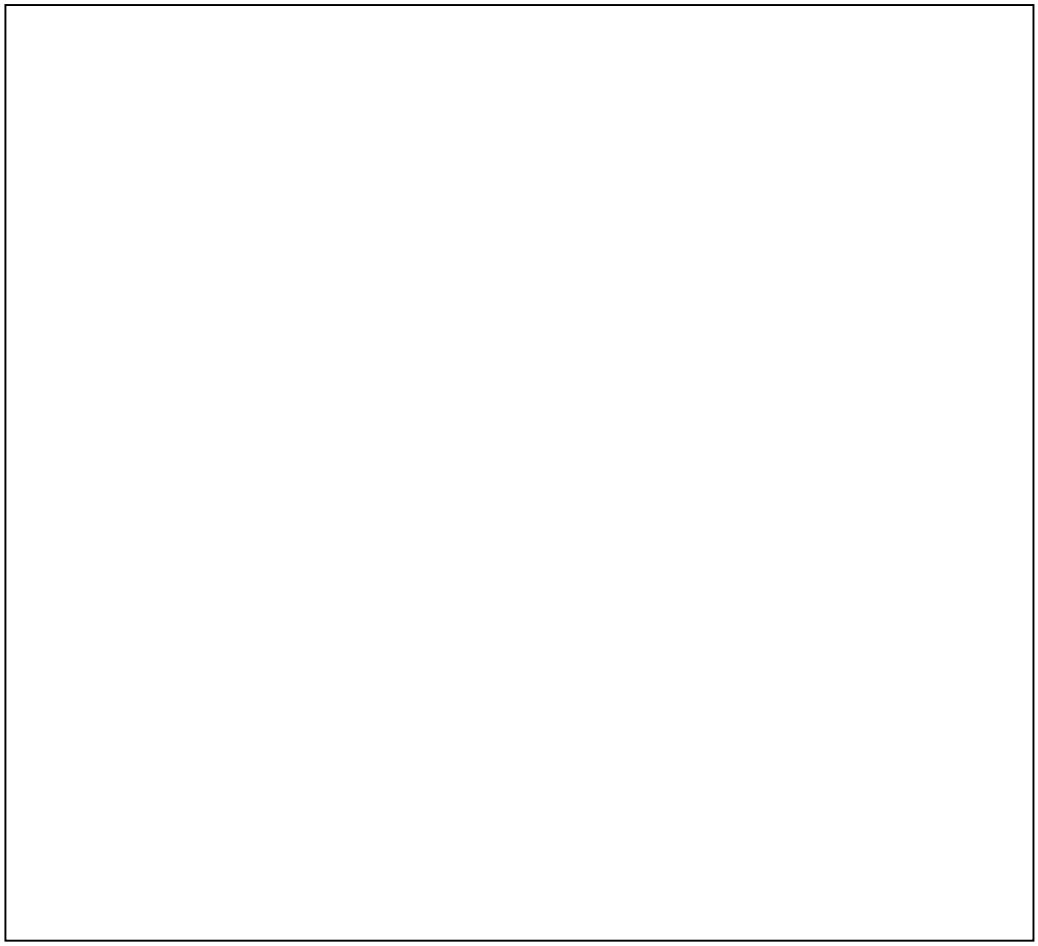
Zigzagging adjustment (Printer section)

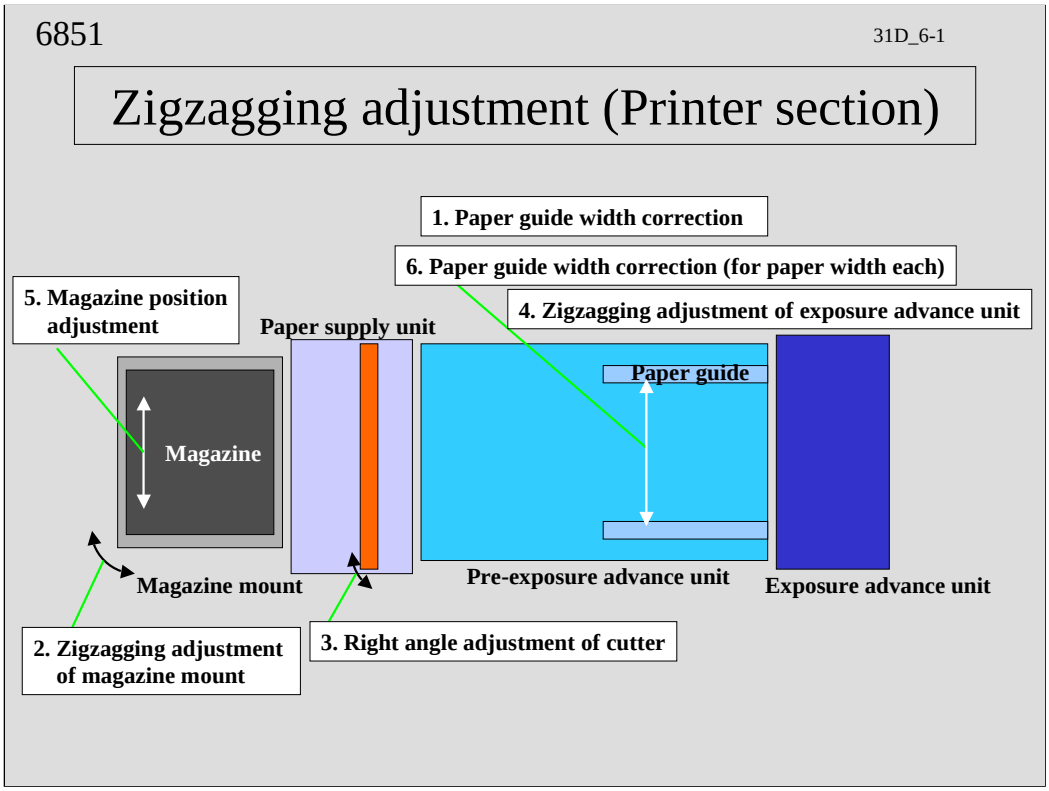
5. Magazine position adjustment

Point 1: Adjust the position of paper magazine so that “the paper which is advanced from the magazine” is at the center of paper guide.

6. Paper guide width correction (for paper width each)

Point 1: When the adjustment is not completed in step 1 to 5, adjust the guide width for paper each.



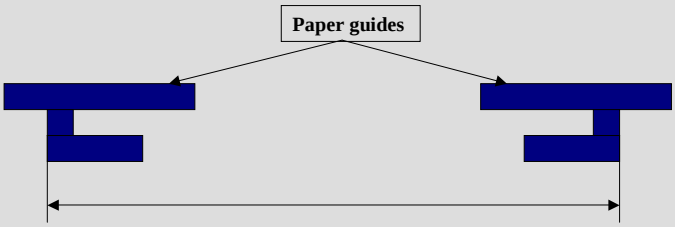


Explanation

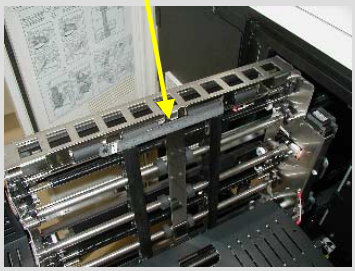
- The positions of paper supply unit, pre-exposure advance unit and exposure advance unit are fixed. (The position is fixed by the regulated pin.)

6852 31D_6-1

Paper guide width correction



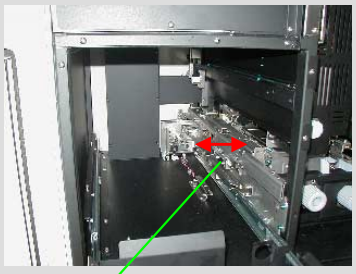
Adjust so that the outside of paper guides is 130 mm.



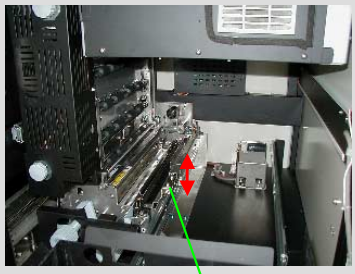
6853 31D_6-1

Zigzagging adjustment of magazine mount

Procedure 1: Adjust the positioning pins.



Positioning pin
Magazine mount (A) side



Positioning pin
Magazine mount (B) side

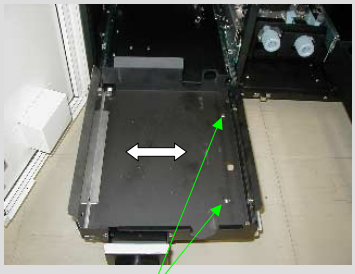
Note **Adjust the zigzagging of magazine mount A, B by moving the positioning pins in the arrow direction.**

6853

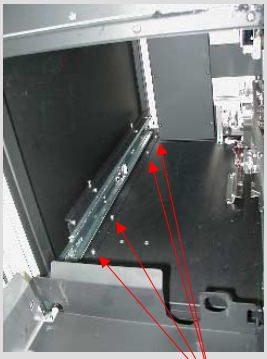
31D_6-1

Zigzagging adjustment of magazine mount

Procedure 2: Adjust magazine mount A.
(Adjust so that the positioning pins can be removed/attached smoothly.)



Loosen 2 fixing screws of magazine mount A

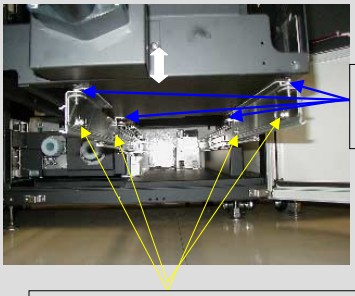


Loosen 4 fixing screws of rail angle (magazine mount A)

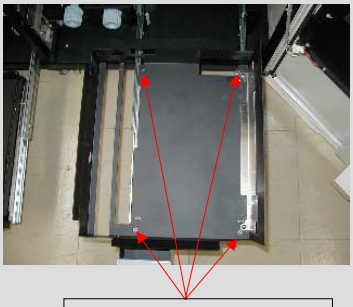
6853 31D_6-1

Zigzagging adjustment of magazine mount

Procedure 3: Adjust magazine mount B.
(Adjust so that the positioning pins can be removed/attached smoothly.)



Loosen 4 adjusting screws of magazine mount B



Loosen 4 fixing screws of rail angle (magazine mount B)

Loosen 4 adjusting screws of magazine mount B

6853 31D_6-1

Zigzagging adjustment of magazine mount

Procedure 1: Make a print with the maximum width which is used in the "Paper zigzagging adjustment"→ "FUNCTION".

Procedure 2: Put both side of test print together, and check the zigzagging.

CVP
(Correction value print)

NOTE

Check the position of standard line on the print.

The gap should be within 0.3 mm, as shown in the illustration.

(The gap of standard line between the leading edge and rear end of the paper)

Adjust the positioning pins for magazine mount A, B each.

Explanation

- When the CVP is not attached, adjust attaching the tool for zigzagging adjustment.
- Paper guide of pre-exposure advance: Paper width + 6.0 mm

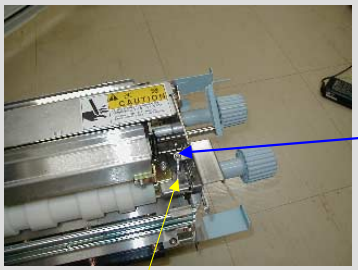
Note

- Check the CVP only. Here, it is not necessary to check the image on the print surface.

6854

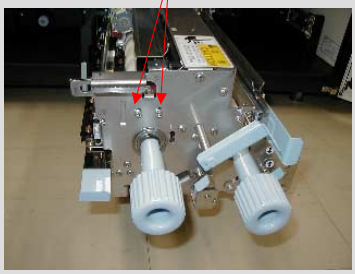
31D_6-1

Right angle adjustment of paper cutter



Adjust the screws of cutter right angle adjustment.

Loosen fixing nuts of cutter.



Loosen the fixing nut for screw of cutter right angle adjustment.

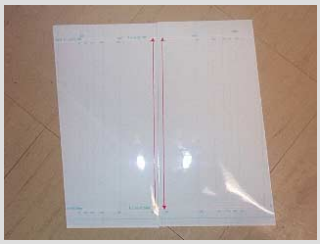
6855 31D_6-1

Zigzagging adjustment of exposure advance unit

Zigzagging adjustment of exposure advance unit (Pressure roller 1, 2)

Procedure 1: Make a print with the maximum paper width which is used in the “FUNCTION” of “Exposure adjustment unit zigzagging adjustment”.

Procedure 2: Check the zigzagging amount of output test print.



NOTE

As shown in the above illustration, tear the test print at the center, and check the amount of zigzagging on the right side and left side.

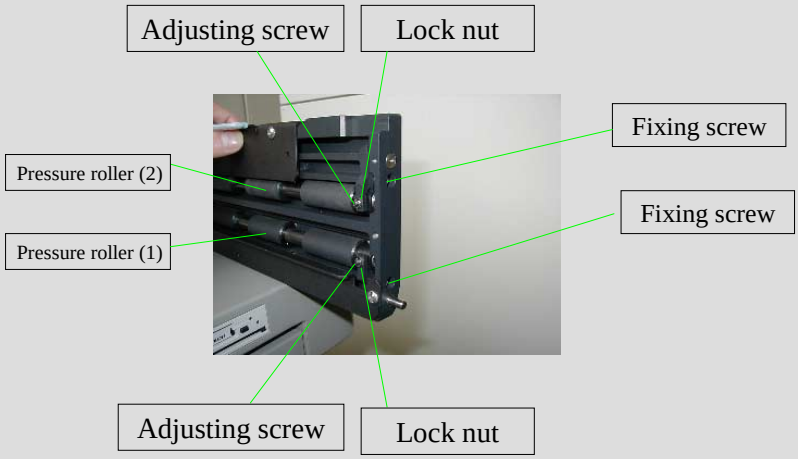
Explanation

- The gap of the length on both side of test print is within 0.2 mm, the adjustment is not necessary.
- The length of test paper is short because the zigzagging of exposure advance unit only should be checked.
- The test print is advanced with the paper guide (pre-exposure advance unit) being 6.0 mm wider than the paper width.

6855 31D_6-1

Zigzagging adjustment of exposure advance unit

Procedure 3: Loosen the fixing screws of Pressure roller 1, 2 and lock nuts, and then adjust with the adjusting screws.



Explanation

- After adjusting the adjusting screws, be sure to adjust the exposure advance pressure release motor (inlet) (exit).
- If the position of pressure release motor is not adjusted correctly, it may cause the banding.

Note

- The standard of position adjustment is the position where the roller and roller are pressed and the pressure release cam and roller are touched.
- The target is as follows.

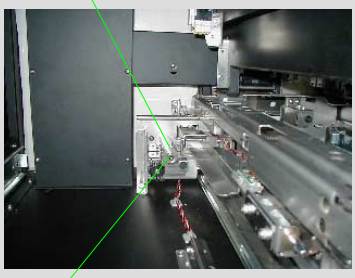
When rotating the pressure release cam, the bearing for pressure release is rotated. But, when rotating the bearing, the cam does not rotate.

6856

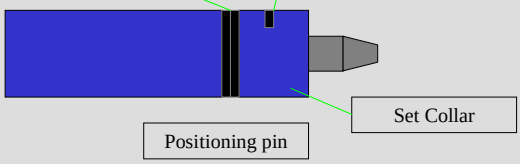
31D_6-1

Position adjustment of magazine

Magazine A



Magazine B



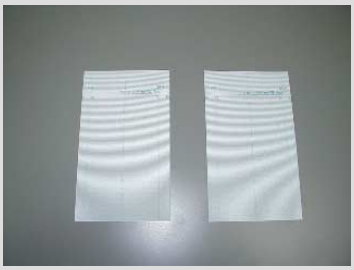
6856 31D_6-1

Position adjustment of magazine

Position adjustment of magazine (rough adjustment)

Procedure 1: Make test prints with the paper width being 89 mm or the width which is most close to 89 mm.

Procedure 2: Compare the length between center and the edge of 1st and 2nd test prints.



Note: The difference of length is 0.3 mm or more, carry out the magazine adjustment.

Explanation

- The reason for using narrow-width paper is that wide-width paper is comparatively flimsy and therefore may curl.
- When making a print, input the correction value in the “Paper guide width adjustment (for each paper width)” so that the paper guide width is the actual measured value.
- The 1st test print is advanced with the paper guide being 0.2 mm wider than the paper.
- The 2nd test print is advanced with the paper guide being 6.0 mm wider than the paper.

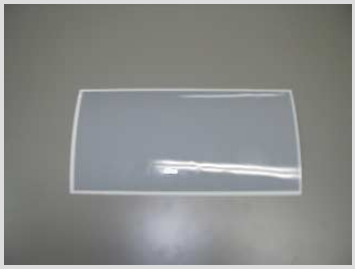
6856 31D_6-1

Position adjustment of magazine

Position adjustment of magazine (fine adjustment)

Procedure 1: Make a 152 mm WB print with the maximum width to be used.

Procedure 2: Measure the difference of white border width in the paper advance direction.



Note Confirm that the difference between the leading edge and rear end of white border is within 0.5 mm.

Explanation

•When making a test print, input the correction value below.

Input the paper guide width in the “Paper guide width correction (for paper width each)”

Input the correction value so that the width is measurement value of print + 0.5 mm.

(+0.5 mm: Empirical by the person who develop)

(Because the wide-width paper is comparatively flimsy.)

•After the adjustment, set the paper guide width in the previous position.

6857 31D_6-1

Paper guide width correction (for paper width each)

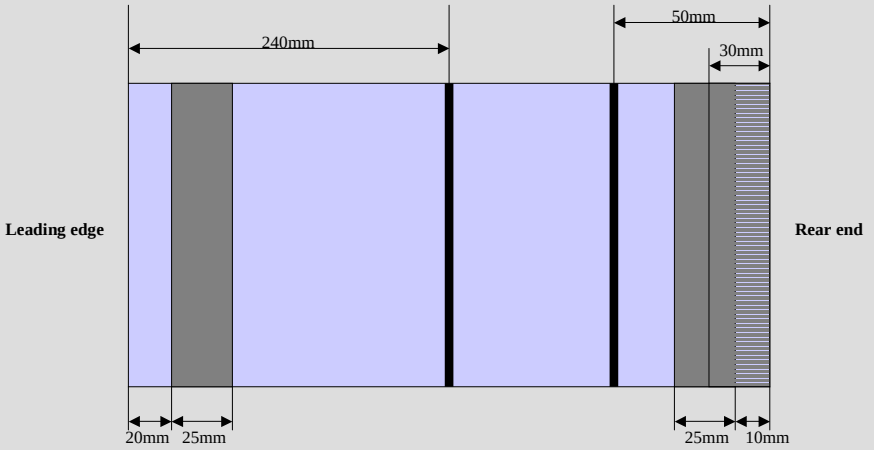
When the zigzagging adjustment is not completed in the procedure (mentioned in the previous steps), input the correction value only for the paper width that the zigzagging occurs.

Explanation

- As for the paper guide width, even if the you do not input the correction value, the paper is slightly different. So the correction value is input to some extent.
- When inputting the correction value, refer to the Service Manual 3210.

6858 31D_6-1

Banding



Explanation

- As for the banding from the rear end of paper to around 50 mm, it is impossible to adjust/replace at site. The adjustment with tools at the manufacturing section is necessary.

Note

- Refer to the Service Manual 2591 for the banding.

6950 31D_6-1

Comprehension check

[Zigzagging adjustment/Banding adjustment]

*Can you find the place where paper zigzagging occurs?

*Can you carry out each zigzagging adjustment?

*Can you check the banding?

[Question]

*The paper is zigzagging. What should you do at first?

*As for the test print of [Paper zigzagging adjustment], the line of CVP is off. At this time, what adjustment is required?

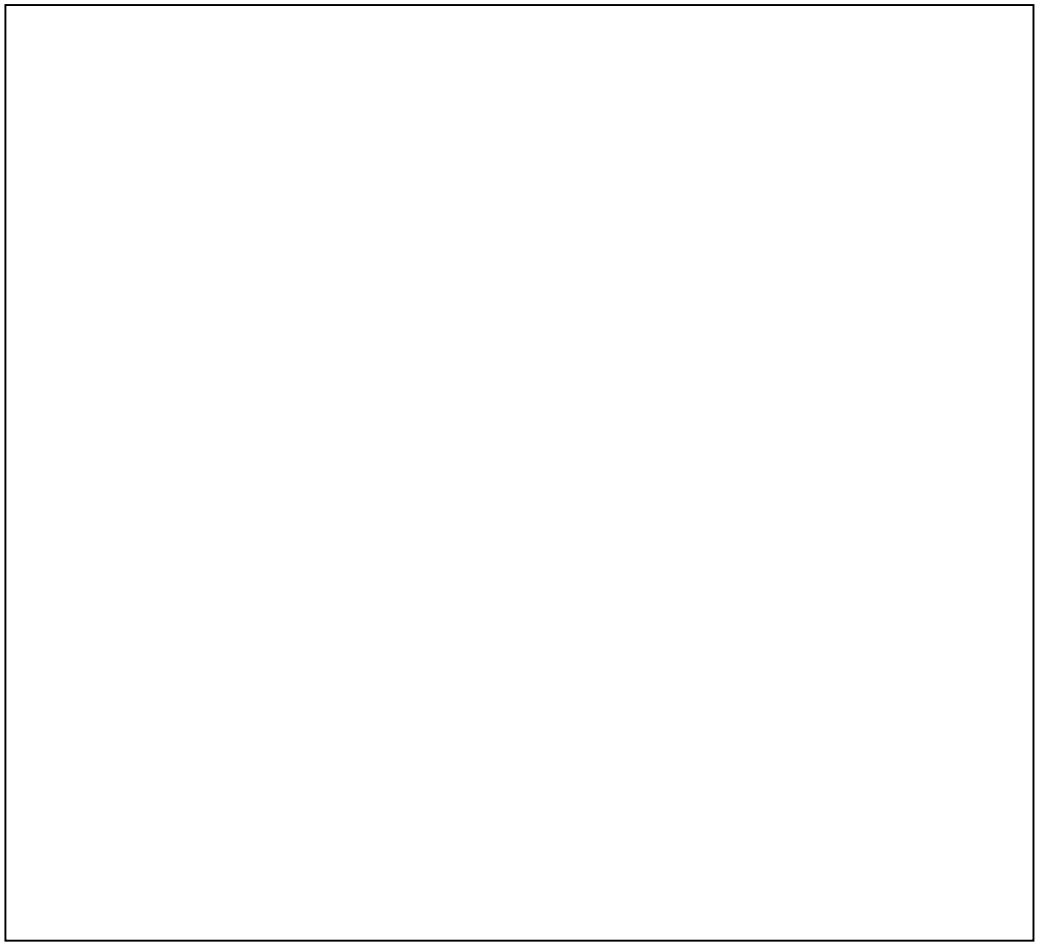
*As for the test print for checking the paper zigzagging, the vertical length of the image is different between the left side and right side. At this time, what adjustment is required?

*As for the test print of [Magazine position adjustment] mode, the positions of center lines are different between 1st and 2nd test print. At this time, what adjustment is required?

*After adjusting the pressure power of of pressure rollers (exposure advance unit), adjust the positions of motor for pressure change cams. If the position correction is not done correctly, what problem occurs?

31D_7

Chapter 7
Service items



The point of this chapter

Key points

- Study the service items.

  Cautions when replacing PCBs, Image data flow, Outline of advance section and Operation, Errors and countermeasures, Maintenance

Upon completion of the lesson, you will be able to:

*Understand each data flow when printing.

*Understand the cautions when replacing PCBs.

*Understand the paper advance in the paper advance section.

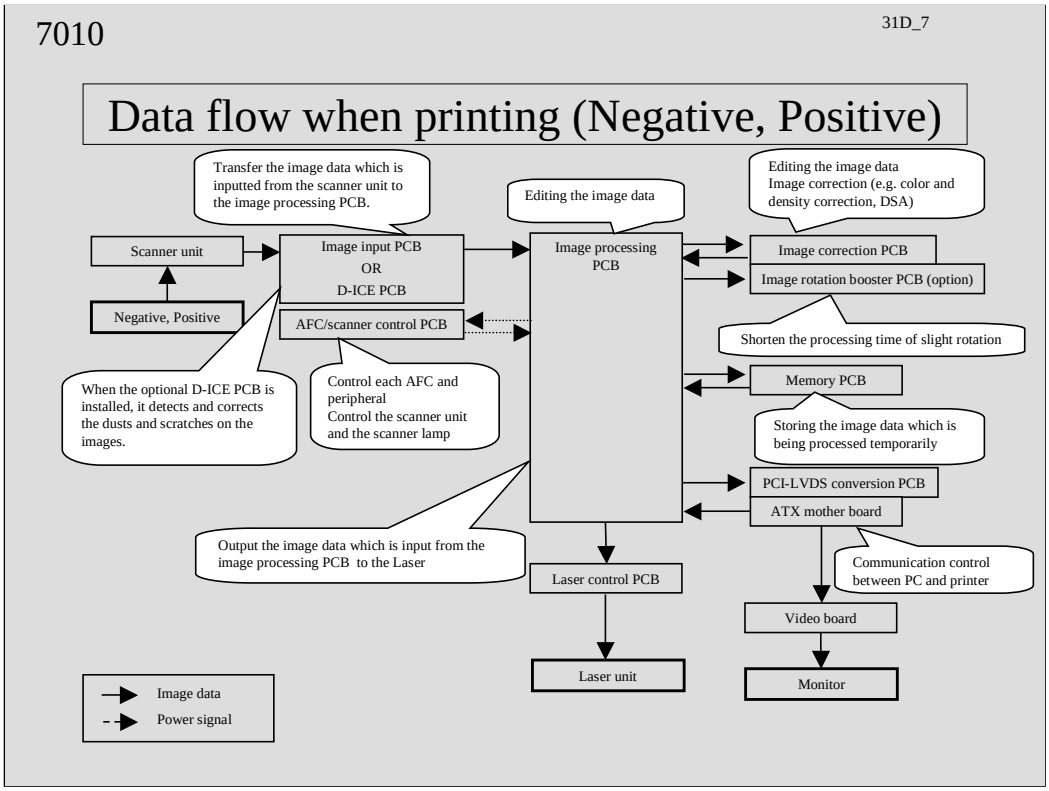
*Understand the maintenance and explain to a customer.

*Understand the parts to be replaced regularly.

How to proceed the training

Explain the items, referring to the training materials and a machine.

Explain the PCBs which are necessary to be replaced with care.



Explanation

•When the optional Digital ICE is used, replace the image input PCB with the D-ICE PCB.

•The functions of the Digital ICE are as follows.

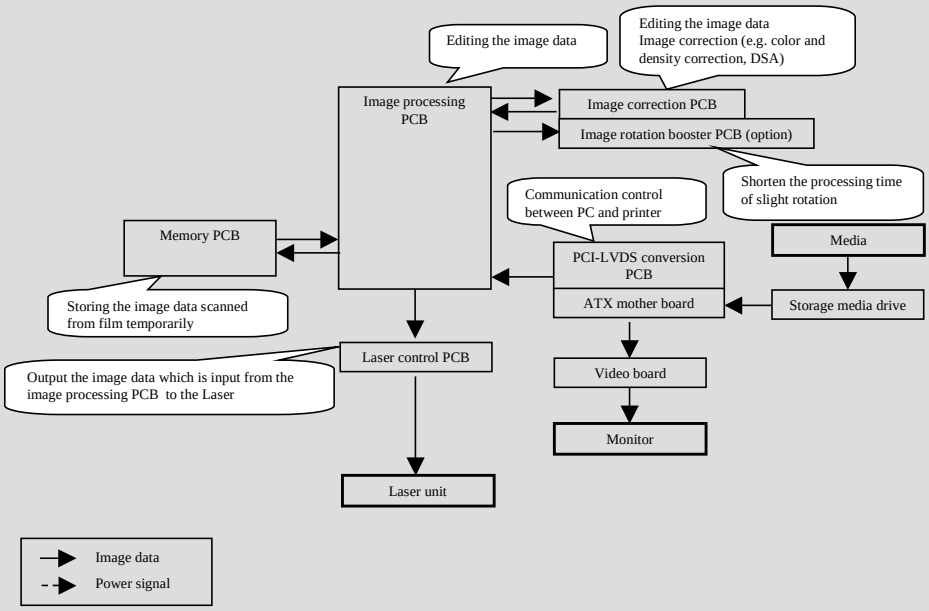
Same function with the image input PCB

The function which detects and corrects the dusts and scratches on the images

7020

31D_7

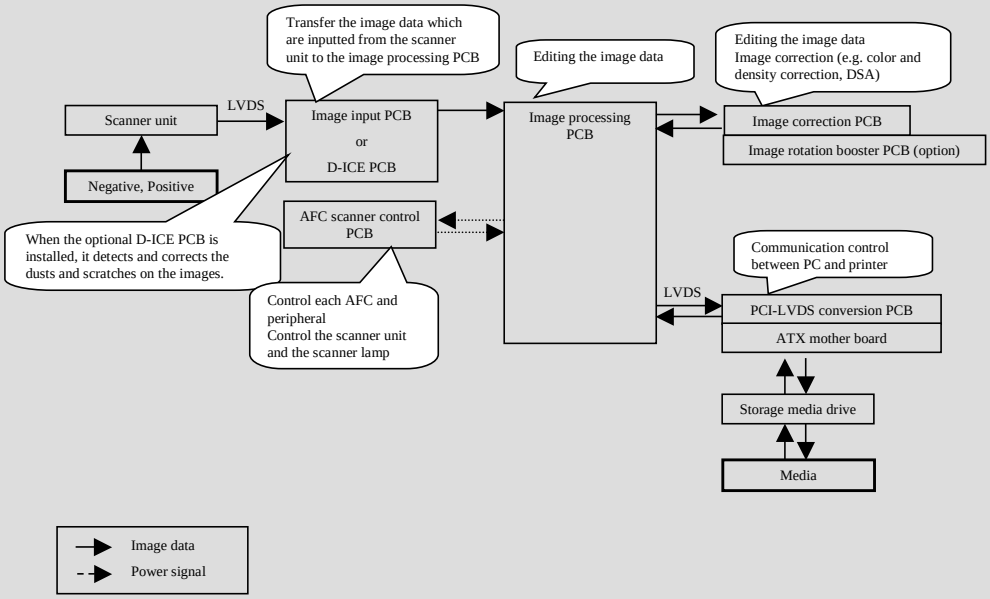
Data flow when printing (Media)

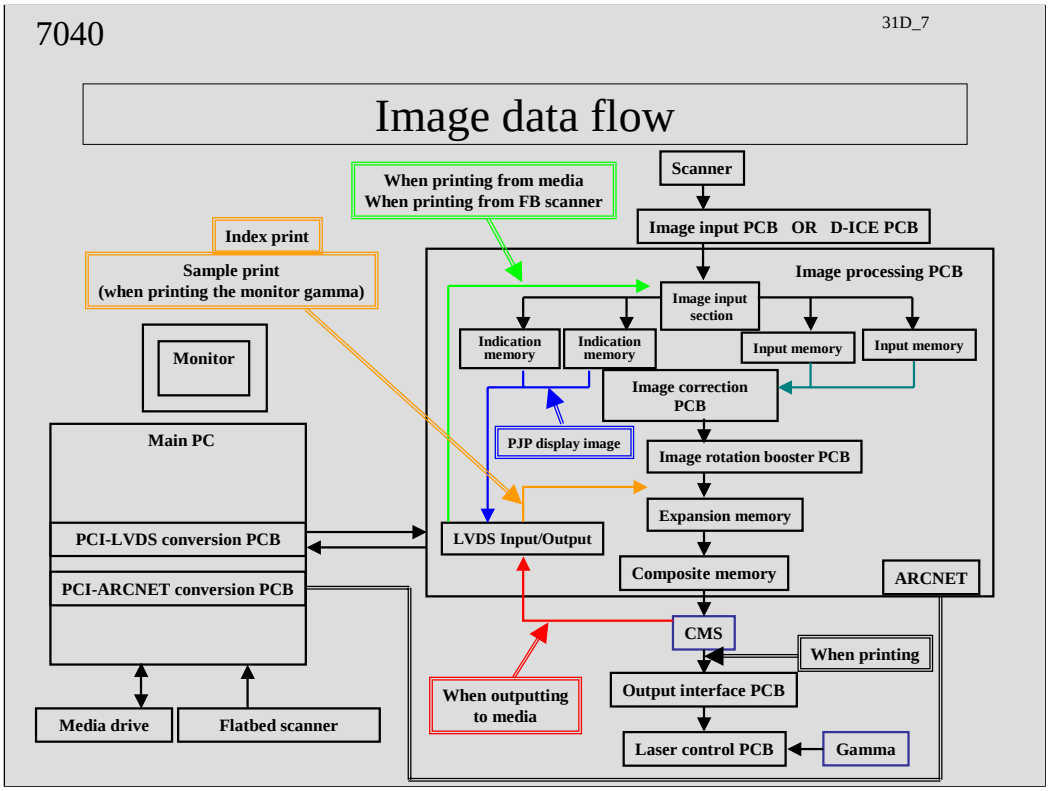


7030

31D_7

Data flow when storing the images





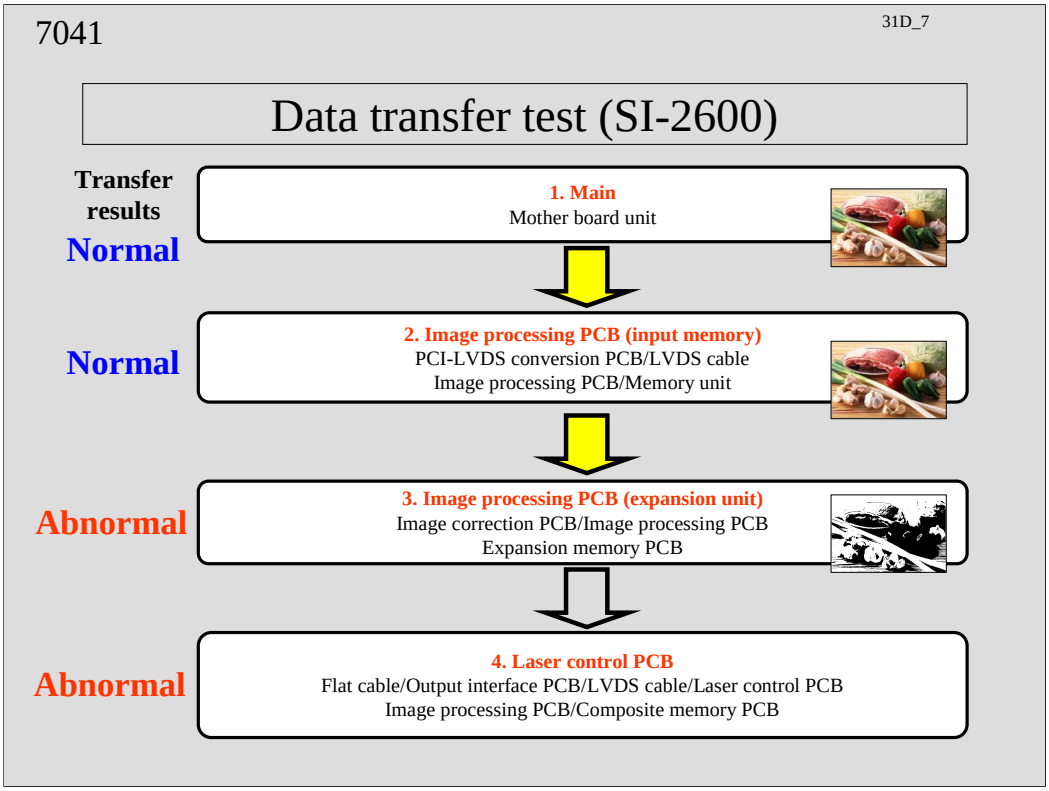
Explanation

•When printing the sample data which is stored in the HD, CMS correction is not effective.

•The input memory is the memory unit (memory control PCB and memory sub PCB).

Note

•The circuit which has the same function with the indication memory is assembled in the image processing PCB.



Explanation

- When an abnormal print appears, place around problem part can be defined to some extent by transferring the image data.
- Transfer the data from “1. Main” to “4. Laser control PCB”, check transferred image data in each section, and [Abnormal] is displayed at the place where the problem occurs.

  Refer to the Service Manual 3182.
- When an abnormal print appears even if all transfer results are [Normal], check around the laser unit section.

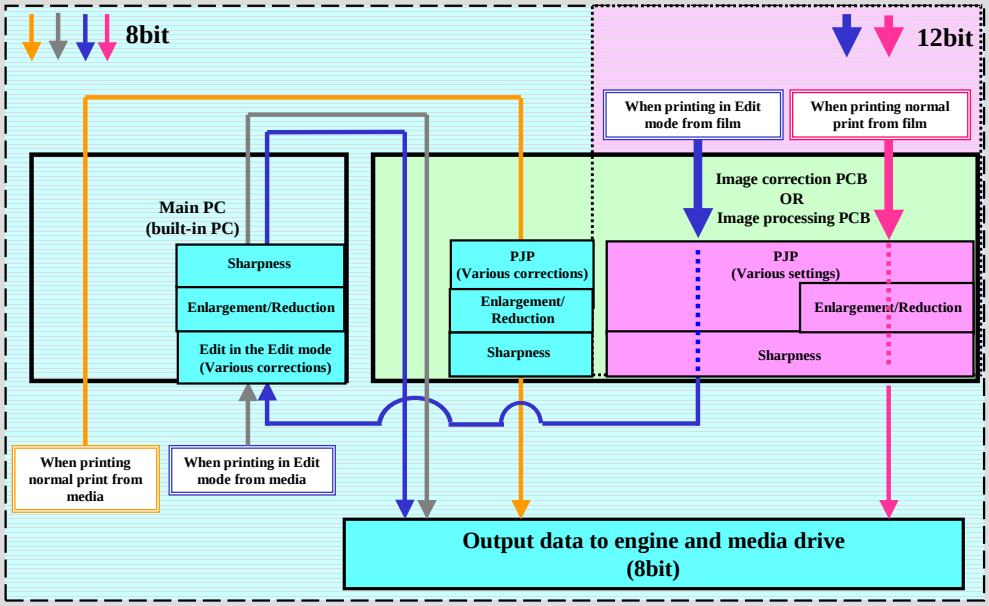
Note

- When an optional image rotation booster PCB is attached, check at the image processing PCB (expansion memory).
- This mode is effective only when an abnormal print appears in spite of an error having not occurred

7050

31D_7

Difference of processing between normal print and print in Edit mode



Explanation

Color and density, DSA

- [Normal print from film]

  Each correction in PJP is processed in 12 bit data. After PJP processing, 8 bit data is made as an output data.

- [Print in the Edit mode from film]

  Each correction is processed in 12 bit when selecting an image, but it is processed in 8 bit after it is taken in the Edit screen.

- When making each correction in 12 bit data and making each correction in 8 bit data, the data will be different even if same correction is done.

- When making each correction in 12 bit data, it is possible to get more great data as compared to 8 bit data. In Edit mode, it is recommended to make a correction when selecting an image. As for sharpness, however, refer to the following one.

Sharpness

- [Normal print from film]

  The data is enlarged and reduced for print sizes and the sharpness is corrected optimally.

- [Print in the Edit mode from film]

  The data is not enlarged and reduced, and the data which the sharpness correction is done is outputted to the built-in PC.

  The data which is taken in PC is enlarged and reduced for print sizes and the sharpness correction is done again. So, there is a slight difference between the output data of [Normal print from film] and [Print in the Edit mode from film] even if various corrections are not done.

- Output data of [Normal print from film] and [Print in the Edit mode from film] is adjusted as a default so that they look like same on a print. But, there are differences among individuals depending on a person who looks a print. To reduce the difference, adjust with Sharpness in Edit screen.

  This is why the data will be more great if sharpness correction is done after the data is enlarged and reduced.

Note

- Each correction is processed with the image correction PCB in the QSS-28,29,31 and with the image processing PCB in the QSS-30.

7060

31D_7

Cautions when replacing PCBs (Input section)

PCB	D	J	S	B	V	Others
Image processing PCB	1	-	1	-	-	
Image correction PCB	1	-	1	-	-	
D-ICE PCB (option)	1	1	1	-	-	
AFC/scanner control PCB	1	-	1	1	-	Sensor standard adjustment for each AFC
Colorimeter control PCB	1	-	1	-	-	"Paper Front End Advance Length Correction" and "Paper Feed Error Correction" in the "Colorimeter Unit Adjustment"
Scanner lamp power supply	-	-	-	-	-	When measuring the power supply in the scanner lamp connector section, confirm that it is within the range of "DC+27.7V±0.3V".

D: DIP switch setting (Set it as same as before replacing.)
J: Confirming the connector for the jumper (Set it as same as before replacing).
S: Reading the System program.
B: Reading the backup data.
V: The volume adjustment is necessary.

1: Execute
- : Not execute

Note

•When replacing the PCBs which are not mentioned in the above table, it is no need to do it with great care.

Cautions when replacing PCBs (Printer control unit section)

PCB	D	J	S	B	V	Others
Image processing PCB	1	-	1	-	-	
Image correction PCB	1	-	1	-	-	
Switch control PCB	-	-	1	1	-	
Colorimeter control PCB	1	-	1	-	-	“Paper front end advance length correction” and “paper feed error correction” in the “Colorimeter unit adjustment”.

D: : DIP switch setting (Set it as same as before replacing.)
J: : Confirming the connector for the jumper (Set it as same as before replacing).
S: : Reading the System program
B: Reading the backup data
V: Necessary to adjust the potentiometer

1: Execute
- : Not execute

7090

31D_7

Cautions when replacing PCBs (Printer section)

PCB	D	J	S	B	V	Others
Printer control PCB	1	-	1	1	-	
Laser control PCB	1	-	1	1	-	Reading the laser history
Polygon mirror driver	-	-	-	-	-	
B, G laser driver	-	-	-	-	-	
B, G, R-AOM driver	-	-	-	-	-	

D: DIP switch setting
J: Confirming the connector for the jumper (Set it as same as before replacing).
S: Reading the System program
B: Reading the backup data
V: Necessary to adjust the potentiometer

1: Execute
- : Not execute

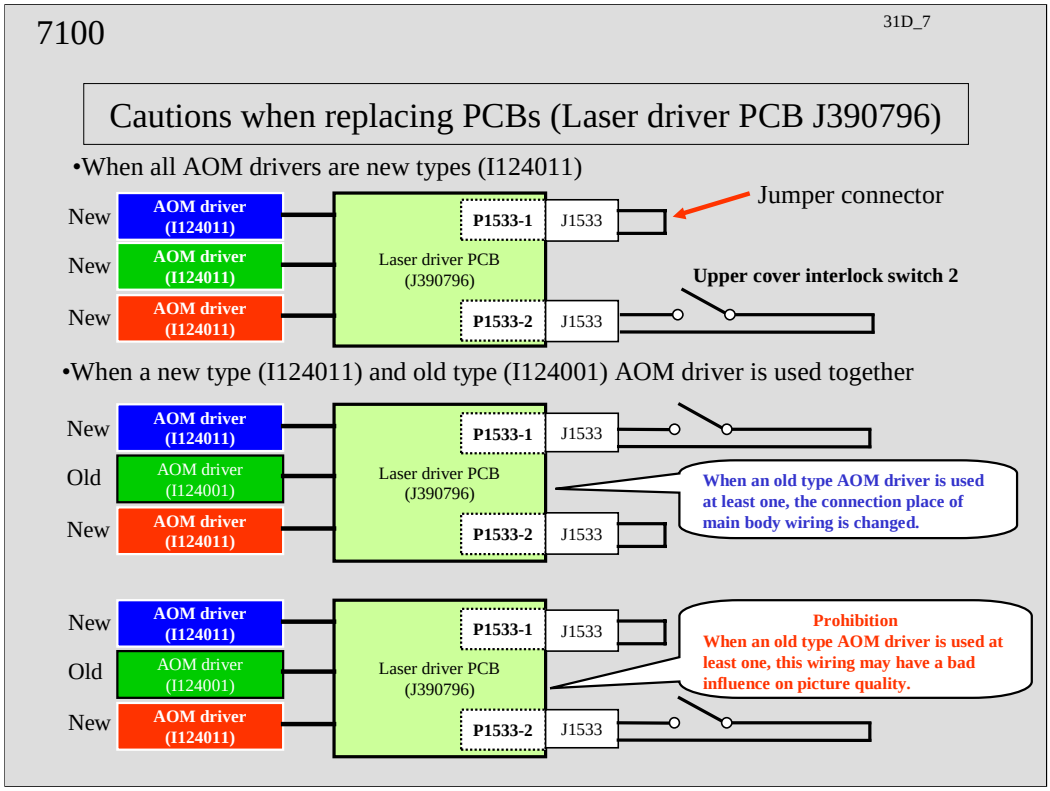
Note

•When replacing the PCBs which are not mentioned on the above table, there is not a special caution for doing it.

7090

31D_7

PCB	D	J	S	B	V	Others
Multi power supply	-	-	-	-	-	
Printer power supply	-	-	-	-	-	
Laser power supply 1	-	-	-	-	-	
Laser power supply 2	-	-	-	-	-	
Laser power supply 3	-	-	-	-	-	
Laser power supply 4	-	-	-	-	-	



Explanation

- Laser driver PCB --- two kinds, J390614 and J390796
  AOM driver --- two kinds, I124001 and I124011
- In case of laser driver board (J390796), the connection position of a connector (P1533-1, 2) changes with combination with the AOM driver to connect.
  Refer to the Service Manual 6555, 6559.

Note

- If new type B, G, and a R-AOM driver (I124011) are combined with a laser driver board (J390796), the standby time after printer upper cover opening/closing is shortened from 5 minutes to 30 seconds.
  (Corresponded from Ver.C001)
  Refer to the Technical Information No. TI503525.

7110

31D_7

Cautions when replacing PCBs (Processor section)

PCB	D	J	S	B	V	Others
Processor control PCB	1	1	1	1	-	
SM I/O PCB	-	-	-	-	1	Sensor sensitivity adjustment for replenisher solution sensor
Processor power supply	-	-	-	-	-	

D: DIP switch setting
J: Confirming the connector for the jumper (Set it as same as before replacing).
S: Reading the System program
B: Reading the backup data
V: Necessary to adjust the potentiometer

1: Execute
- : Not execute

7120

31D_7

Cautions when replacing PCBs (Options)

PCB	D	J	S	B	V	Others
PU control PCB	1	-	1	1	-	
CVP PCB	-	-	-	-	-	
LRF control PCB	1	1	1	1	-	Sensor Standard Adjustment
LRF connecting PCB	-	-	-	-	1	Sensor Standard Adjustment
ENV control PCB	1	-	1	1	-	Sensor Standard Adjustment, Sensor Sensitivity Calibration
ENV driver PCB 1	-	-	-	-	1	Sensor Standard Adjustment, Sensor Sensitivity Calibration
ENV driver PCB 2	-	-	-	-	1	Sensor Standard Adjustment, Sensor Sensitivity Calibration
Frame detect control PCB	1	-	1	-	-	Sensor Standard Adjustment, Sensor Sensitivity Calibration
Photo PCB, LED PCB	-	-	-	-	1	Sensor Standard Adjustment, Sensor Sensitivity Calibration
ENV power source	-	-	-	-	-	
Image rotation booster PCB (QSS-31 only)	1	-	1	-	-	
Image distribution PCB	-	-	-	-	-	

Cautions when replacing PCBs (Personal computers)

PCB	D	J	S	B	V	Others
ATX mother board (PC-NRT-4, 4A)	1	1	-	-	-	BIOS setting
ATX mother board (PC-NRT-5)	-	1	-	-	-	BIOS setting
ATX power supply battery pack	-	-	-	-	-	Turn ON the ATX power supply
Hard disk drive	-	1	1	1	-	Following the recovery procedure, it is necessary to carry out the items below. Reading the OS Reading the QSS software Reading the DVD-RAM driver (option) Reading the Zip driver (option) Reading the driver of flatbed scanner (option) Reading the Five slots card reader (option) Reading the profile data Reading the backup data Setting each drive allocation

Components of service parts for PC

Components of SI-2600 service parts

For PC-NRT-4 : Z020046-01

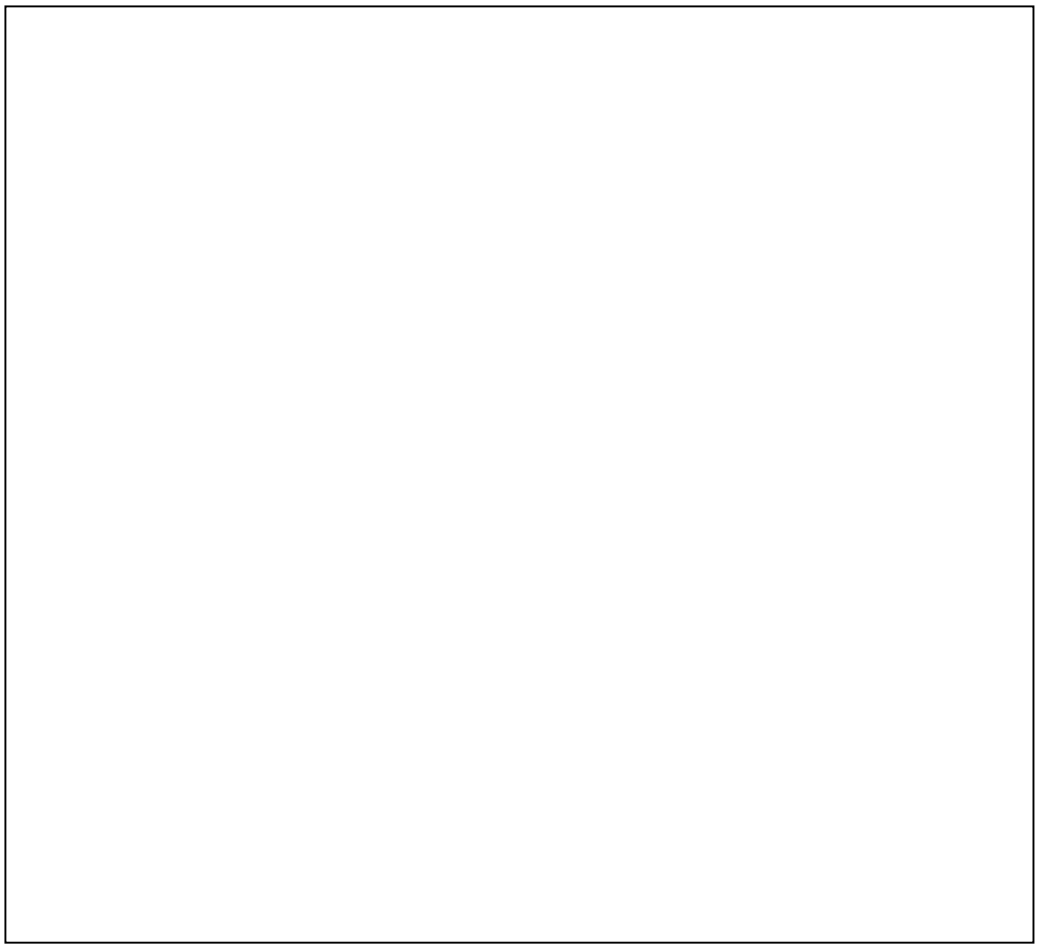
For PC-NRT-4A : Z020483-01

Mother board	Video card	CD-ROM drive
CPU (Pentium III 1GHz)	SCSI card	Floppy disk drive
DIMM (256MBPC133)	Non-stop power supply	Hard disk drive
DIMM (512MBPC133)	Mouse	

Components of SI-2600 service parts

For PC-NRT-5 : Z020708-01

Mother board	Video card	CD-ROM drive
CPU (Pentium IV 2GHz)	SCSI card	Floppy disk drive
RIMM (128MBPC800)	Non-stop power supply	Hard disk drive
RIMM (256MBPC800)	Mouse	



7150

31D_7

Errors and countermeasures

*Film jam

*Paper jam

7160

31D_7

Maintenance

*Time to replace **Service Manual 8011**

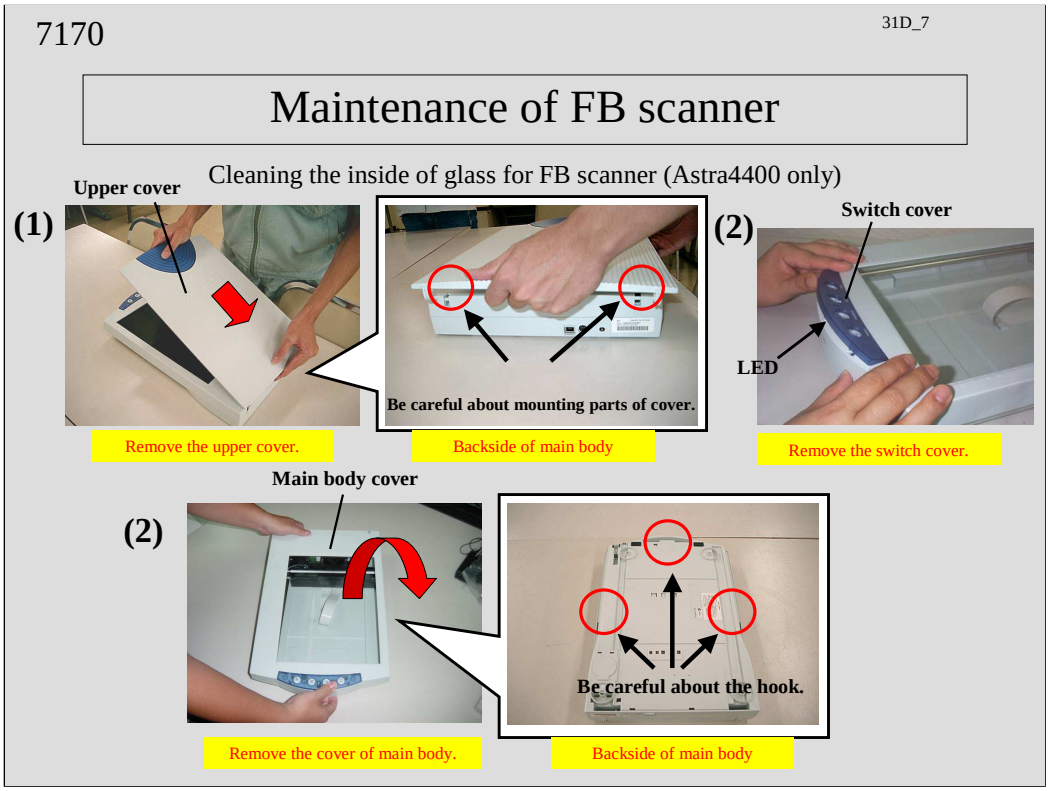
*Cleaning the drives

Regular cleaning with MO head cleaner (dirt of lens)

When using an optional MO, recommend to purchase the MO head cleaner (option: I090374) and clean regularly (every three months).

Explanation

•Cleaning of MO drive by MO head cleaner prevents writing/reading error caused by the dirt of lens. Perform the cleaning except when processing in the QSS system.



Explanation

- When the inside of glass for FB scanner is dirt or fogged, disassemble and clean it. This maintenance is basically by service personnel.
- Possible to clean the inside of glass by removing the upper cover, switch cover and main body cover of FB scanner. [Disassemble in the procedure (1) -> (2) -> (3)]
- The circled parts in the illustration may be damaged if you open the covers by force.
- Tools are not necessary for the maintenance.
- Clean with dry cloth (for cleaning).
- Execute the Flatbed scanner setup after cleaning.

Important

- When you remove the upper cover, hold the blue part [as shown in illustration (1)] and push it straightforward.

  If you push the cover sidlingly, one side of two circled parts (Illustration 1) is off and the other side is not off. So, it is difficult to remove the cover.

  And, if you open the cover too much, it may be damaged.
- Be sure to remove the switch cover. If you do not remove the cover, LED may be damaged when removing and attaching the main body cover.
- In the Astra3400, it is impossible to disassemble an clean it. (If you disassemble it, it will be out of warranty.)

7170

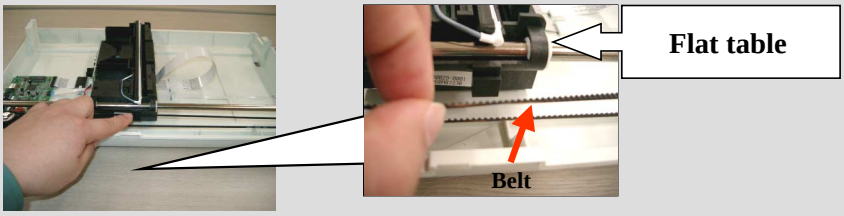
31D_7

Cleaning the inside of FB scanner (Astra3400 only)

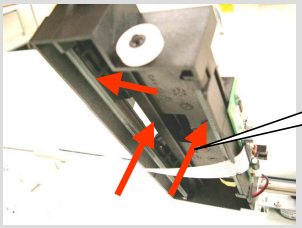
(1) The method of removing the upper cover and main body cover is the same with the Astra4400.

(There is not a switch cover.)

(2) Remove the table (inside) and flat cable.



(3) Clean each part. (Wipe with a cleaning sheet.)



(4) Clean the inside of glass for FB scanner.

Then, reattach as they were.

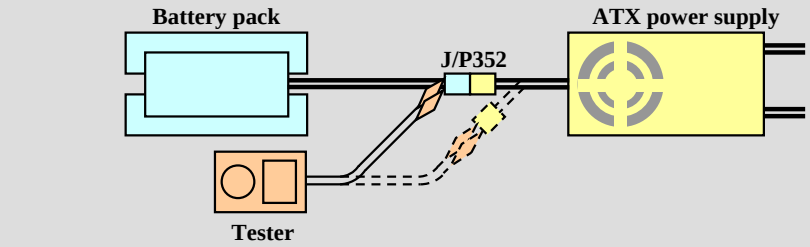
Explanation

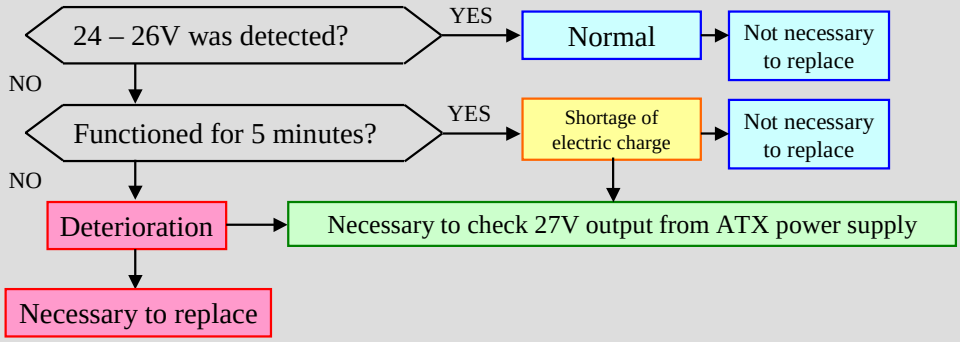
- Tools are not necessary for the maintenance.
- Clean with dry cloth (for cleaning).
- Execute the Flatbed scanner setup after cleaning.

7180

31D_7

How to check the voltage of battery pack





Note

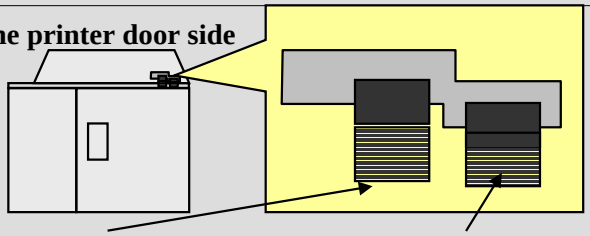
•Refer to the Service manual 6526 for details of procedure.

7190

31D_7

Interlock switch (Printer upper cover)

Viewed from the printer door side



Interlock switch 1 (printer upper cover)

Interlock switch 2 (printer upper cover)

When opening (5 minutes specification)
Interlock switch 1 (printer upper cover)
Power supply of paper advance section: OFF
Laser signal: OFF
↓
Interlock switch 2 (printer upper cover)
Power supply of laser: OFF

When closing (5 minutes specification)
Interlock switch 2 (printer upper cover)
Power supply of laser: ON
↓
Interlock switch 1 (printer upper cover)
Power supply of paper advance section: ON
Laser signal: ON

When opening (30 seconds specification)
Interlock switch 1 (printer upper cover)
Power supply of paper advance section: OFF
Laser signal: OFF
↓
Interlock switch 2 (printer upper cover)
Power supply of AOM driver: OFF

When closing (30 seconds specification)
Interlock switch 2 (printer upper cover)
Power supply of AOM driver: ON
↓
Interlock switch 1 (printer upper cover)
Power supply of paper advance section: ON
Laser signal: ON

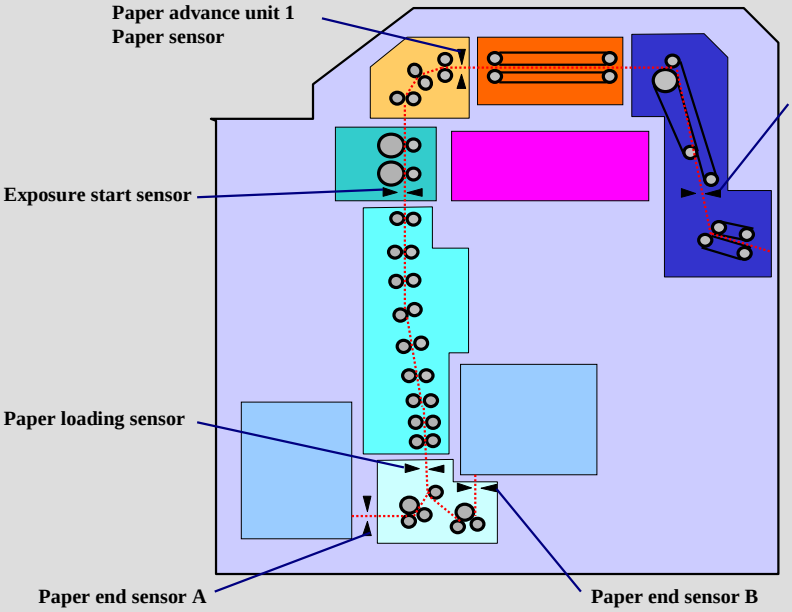
Explanation

- If you use when the printer upper cover opens and the limit switch is turned ON compulsory, the Laser Class will be IEC Class3B. Your eyes may be exposed to laser beam radiation. So, do not perform any work when the upper cover opens.
- Interlock switch 1 (printer upper cover) turns ON/OFF the power supply and laser signal of paper advance section.
- When the standby time is 5 minutes specification, Interlock switch 2 (printer upper cover) turns ON/OFF the power supply of laser.
- When the standby time is 30 seconds specification, Interlock switch 2 (printer upper cover) turns ON/OFF the power supply of AOM driver, instead of turning ON/OFF the power supply of laser.
- When the standby time is 5 minutes specification, if the turn which an interlock switch commits becomes reverse, the laser unit may be broken.

7200

31D_7

Printer advance section



31D_7

Comprehension check

[Service items]

*Do you understand “the image data flow when printing from Negative/Positive” and “the image data flow when printing from Media”?

*Do you understand which adjustment/setting is required after replacing a PCB?

*Do you understand how to clean the surface of laser?

*Do you understand how to clean the rollers inside of printer?

[Question]

*Via which PCB does the scanned image data go through before ‘output to Laser’?

*What is the replacing procedure of PCBs below?

Image processing PCB

Printer control PCB

Printer I/O PCB

*When cleaning the surface of laser, do you use the alcohol? Wipe with water? Wipe with a dry cloth?

*When cleaning the rollers inside of the printer, can you use alcohol?

Revision History: Chapter 1

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/01/23	3	Revised	Changed the number of processing prints from Digital camera/media.	2nd Edition
2	2002/01/23	6	Revised	[Note] Deleted the sentence “HQ index is …..”	2nd Edition
3	2002/01/23	8	Revised	Changed from ‘JPEG II’ to “JPEG 2000”.	2nd Edition
4	2002/01/23	10	Revised	Added Note.	2nd Edition
5	2002/01/23	12	Revised	[Note] Corrected from “152 mm” → “165 mm”.	2nd Edition
6	2002/01/23	14	Revised	[Note] Corrected from “1GB or more” to “More than 1GB”.	2nd Edition
7	2002/01/23	15	Revised	[Note] Changed from “standard template” → “sample template”.	2nd Edition
8	2002/01/23	18	Revised	Deleted ‘Negative cleaner 120V’ and ‘Negative cleaner 220-240V’.	2nd Edition
9	2002/01/23	21	Revised	Changed to “Thin paper is supported.”	2nd Edition
10	2002/01/23	18	Revised	Deleted ‘Negative cleaner 120V’ and ‘Negative cleaner 220-240V’.	2nd Edition
11	2002/01/23	21	Revised	Changed to “Thin paper is supported.”	2nd Edition
12	2002/08/01	3	Revised	Added the processing capacity of Five slots card reader.	3rd Edition
13	2002/08/01	4	New		3rd Edition
14	2002/08/01	5	Revised	Added the Network Printer System.	3rd Edition
15	2002/08/01	6	Revised	Added the Network Printer System.	3rd Edition

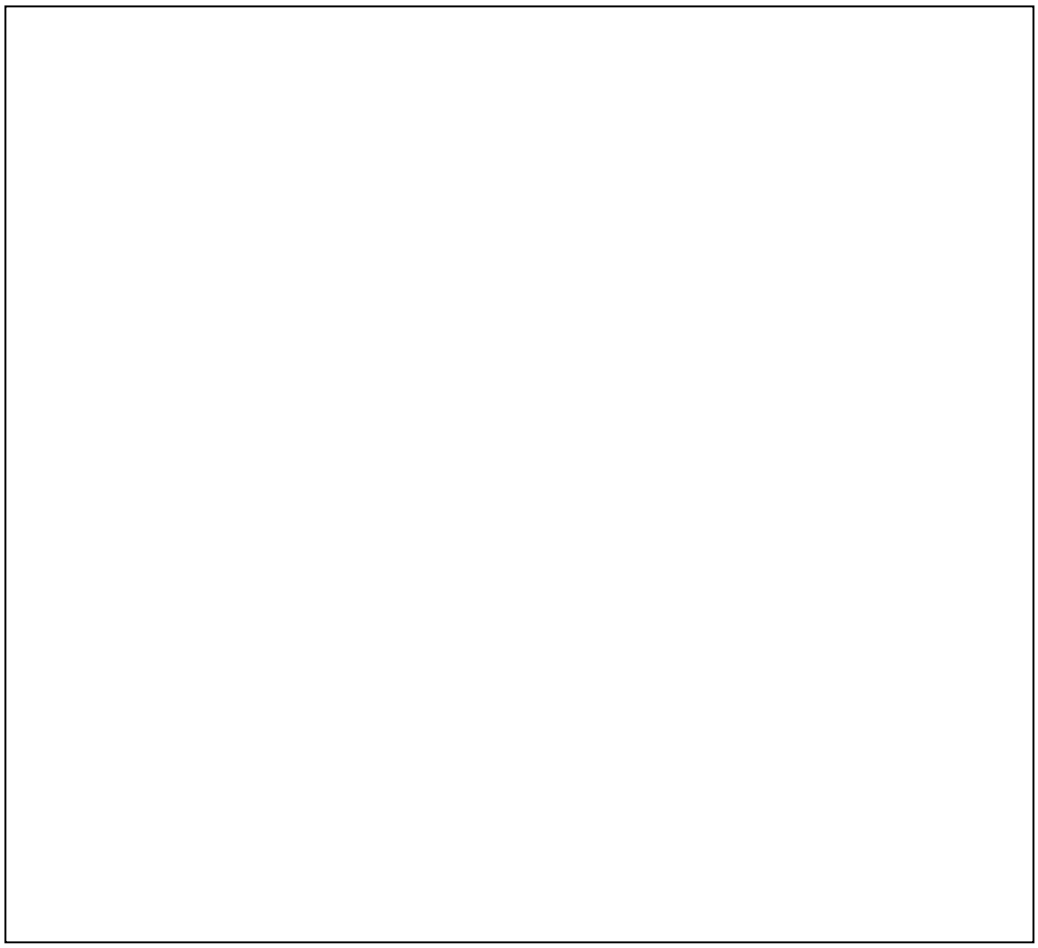
Revision History: Chapter 1

No.	Date	Material Number	Revised / New	Description	Publication
16	2002/08/01	7	Revised	Added the Five slots card reader and UDA.	3rd Edition
17	2002/08/01	8	Revised	Moved the 'Digital camera media'.	3rd Edition
18	2002/08/01	9	Revised	Availability for Five slots card reader.	3rd Edition
19	2002/08/01	10	Revised	Corrected from [Included] to [Except]. Added 'Windows format only' in the Explanation.	3rd Edition
20	2002/08/01	11	Revised	Corrected the list.	3rd Edition
21	2002/08/01	12	Revised	Corrected the availability for 1-frame negative.	3rd Edition
22	2002/08/01	15	Revised	Added the Five slots card reader. Added the reading limit in the Explanation.	3rd Edition
23	2002/08/01	16	Revised	Added 4A.	3rd Edition
24	2002/08/01	17	Revised	Corrected the type of template in the Note.	3rd Edition
25	2002/08/01	18	Revised	Moved the CD-R Engine.	3rd Edition
26	2002/08/01	19	New		3rd Edition
27	2002/08/01	20	New		3rd Edition
28	2002/08/01	24	New		3rd Edition
29	2002/08/01	25	Revised	Added the Printer Control Unit.	3rd Edition
30	2002/08/01	27	Revised	Changed the part No. of scanner lamp.	3rd Edition
31	2002/08/01	29	New		3rd Edition

Revision History: Chapter 1

No.	Date	Material Number	Revised / New	Description	Publication
32	2002/08/01	30	Revised	Corrected about 'For PC-NRT-4A'.	3rd Edition
33	2002/08/01	31	Revised	Peripherals → Media Drive	3rd Edition
34	2002/08/01	32	New		3rd Edition
35	2002/08/01	34	New		3rd Edition
36	2002/08/01	35	New		3rd Edition
37	2002/08/01		New	Added [Key points] and [Comprehension check].	3rd Edition

Publication	Material No.	Revised/New	Contents
4th edition	-	Revised	Layout change for the compatibility of training material QSS-28, 29, 30, 31.
4th edition	1110	Revised	Added the column of 'Additional writing'. Added the explanation about FB scanner. 8cm CD's is supported.
4th edition	1120	Revised	Deleted xD-Picture card from the table. Added 'Additional writing'.
4th edition	1130	Revised	Added that thumb nail can be used in distinction from Exif 1.0 (JPEG).
4th edition	1140	New	DPOF and Exif
4th edition	1201	Revised	PC Options (PC-NRT-5)
4th edition	1230	Revised	Changed by the addition of PC-NRT-5.
4th edition	1250	Revised	Added there are two types of image rotation booster kit.
4th edition	1360	Revised	Changed by the addition of PC-NRT-5.
4th edition	1380	Revised	Added that ATX mother board cannot be replaced as itself.
4th edition	1390	Revised	Changed by the discontinuer of hard disk.
4th edition	1391	New	Specifications of personal computers (PC-NRT-5)
4th edition	1430	Revised	Changed by the CD-R/RW discontinued. Deleted the explanation that the disk cannot be used by the wrong setting of CD-R.
4th edition	1431	New	Spec table of media drive (PC-NRT-5)
4th edition	1470	Revised	Changed by the addition of PC-NRT-5.
4th edition	1510	Revised	Added the Perfection 3200.
4th edition	1520	New	Procured parts at customer's site
4th edition	1900	Revised	Changed by the addition of PC-NRT-5.



QSS-31

Revision History: Chapter 2

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/01/23	12	Revised	Changed the number of resolution for scanner of '135H' and '6 x 7'.	2nd Edition
2	2002/01/23	25	Revised	Changed from 'Diffracting light' to "Outgoing beam".	2nd Edition
3	2002/01/23	26	Revised	[Note] Changed from 'complementary color' to "color mixture".	2nd Edition
4	2002/01/23	27	Revised	[Note] Changed from 'should' to "desirable".	2nd Edition
5	2002/02/07	20	Revised	Added the explanation	2nd Edition
6	2002/02/07	21	Addition	Moved "IEC standard of laser class" from chapter 7.	2nd Edition
7	2002/02/07	22	Addition	Moved "IEC standard of laser class" from chapter 7.	2nd Edition
8	2002/08/01	13	Revised	Moved the Explanation.	3rd Edition
9	2002/08/01	14	Revised	Corrected the corrections of DLS.	3rd Edition
10	2002/08/01	20	Revised	Corrected the explanation of laser class.	3rd Edition
11	2002/08/01	26	Revised	Moved the explanation.	3rd Edition
12	2002/08/01	27	Revised	Moved the explanation.	3rd Edition
13	2002/08/01	28	Revised	Moved the explanation.	3rd Edition
14	2002/08/01		New	Added [Key points] and [Comprehension check].	3rd Edition

QSS-31

Publication	Material No.	Revised/New	Contents
4th edition	-	Revised	Layout change for the compatibility of training material QSS-28, 29, 30, 31.
4th edition	2070	Revised	Devided '6 x 6' into H and V. Added Wide of 135, 120 sizes.
4th edition	2380	Revised	Added the supplementary explanation about the cautions concerning the laser. Added the explanation about IEC standard.
4th edition		Deleted	(Note) IEC standard of Laser output

Revision History: Chapter 3

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/01/23	8	Revised	[Note] Corrected the Noise supression strength.	2nd Edition
2	2002/01/23	9	Revised	[Note] Corrected the explanation.	2nd Edition
3	2002/01/23	17	Revised	Corrected the time when 200V power supply is OFF.	2nd Edition
4	2002/01/23	18	Revised	Corrected the time when 200V power supply is OFF.	2nd Edition
5	2002/01/23	20	Revised	Corrected the time when 200V power supply is OFF.	2nd Edition
6	2002/01/23	22	Revised	Corrected the time when 200V power supply is OFF.	2nd Edition
7	2002/01/23	30	Revised	Added the sizes.	2nd Edition
8	2002/01/23	33	Revised	Added the sizes.	2nd Edition
9	2002/08/01	4	Revised	Added the Printer control unit.	3rd Edition
10	2002/08/01	6	Revised	Added the Printer control unit.	3rd Edition
11	2002/08/01	8	Revised	Corrected the whole of Explanation.	3rd Edition
12	2002/08/01	17	Revised	Corrected the maximum time of auto tuning in the Explanation.	3rd Edition
13	2002/08/01	19	Revised	Added the Explanation.	3rd Edition
14	2002/08/01		Deleted	Index Print Sizes (Old)	3rd Edition
15	2002/08/01	30	Revised	Added the Explanation.	3rd Edition
16	2002/08/01	31	New		3rd Edition
17	2002/08/01	32	New		3rd Edition

Revision History: Chapter 3

No.	Date	Material Number	Revised / New	Description	Publication
18	2002/08/01	33	Revised	Added the background color for Contact Print Style Photos.	3rd Edition
19	2002/08/01	34	Revised	Added the label index print sizes for CD.	3rd Edition
20	2002/08/01	35	Revised	Added the Explanation.	3rd Edition
21	2002/08/01	36	Revised	Changed the title (Added the Contact Print Style). Corrected the number of line for contact print style photos in the Explanation.	3rd Edition
22	2002/08/01		New	Added [Key points] and [Comprehension check].	3rd Edition

Publication	Material No.	Revised/New	Contents
4th edition	-	Revised	Layout change for the compatibility of training material QSS-28, 29, 30, 31.
4th edition	3060	Revised	Added the explanation of printing operations. Corrected from Astra to UMAX.
4th edition	3080	New	Short cut key
4th edition	3180	Revised	Added the explanation about Noritsu CD-R Engine.
4th edition	3190	New	Compatible software version for CD-R Engine
4th edition	3200	New	Installing the Mac CD for compatible software version each
4th edition	3340	Revised	Added the details of scanner correction value.
4th edition	3410	Revised	Added the contents of 8 cm CD's.
4th edition	3440	Revised	Added the contents of disk defragmentaion.
4th edition	3450	New	Front print from media

Revision History: Chapter 4

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/08/01	3	Revised	Added the Network Printer System.	3rd Edition
2	2002/08/01	5	New		3rd Edition
3	2002/08/01	12	Revised		3rd Edition
4	2002/08/01	14	Revised	Added the sample prints. Added the Explanation.	3rd Edition
5	2002/08/01	15	Revised	Added the Five slots card reader and 4A.	3rd Edition
6	2002/08/01	16	Revised	Added the Five slots card reader in the Explanation.	3rd Edition
7	2002/08/01	17	Revised	Added the Five slots card reader.	3rd Edition
8	2002/08/01	18	Revised	Added the Five slots card reader in the Explanation.	3rd Edition
9	2002/08/01	20	New		3rd Edition
10	2002/08/01			Added [Key points] and [Comprehension check].	3rd Edition

Publication	Material No.	Revised/New	Contents
4th edition	-	Revised	Layout change for the compatibility of training material QSS-28, 29, 30, 31.
4th edition	4020	Revised	Added the temperature/installation/vibration condition.
4th edition	4030	Revised	Added the temperature/installation/vibration condition.
4th edition	4230	Revised	Added the explanation about the SCSI cable setting. Added [Master] and [Slave] in the illustration.
4th edition	4231	Revised	Location of PC peripherals (PC-NRT-5)
4th edition	4270	Revised	Changed by the addition of PC-NRT-5. Added [manufactured by UMAX] and [manufactured by EPSON] to FB scanner.
4th edition	4300	Revised	Changed by the addition of PC-NRT-5.

Revision History: Chapter 5

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/01/23	11	Revised	Corrected the daily setup in the figure.	2nd Edition
2	2002/08/01	7	Revised	Added the Printer control unit in the Note.	3rd Edition
3	2002/08/01	11	Revised	Corrected totally.	3rd Edition
4	2002/08/01	14	Revised	Added the route of media.	3rd Edition
5	2002/08/01	15	Revised	Corrected totally.	3rd Edition
6	2002/08/01	20	Revised	Printer → Monitor	3rd Edition
7	2002/08/01			Added [Key points] and [Comprehension check].	3rd Edition

Publication	Material No.	Revised/New	Contents
4th edition	-	Revised	Layout change for the compatibility of training material QSS-28, 29, 30, 31.
4th edition	5010	Revised	Corrected the time to start printing, in the installation.
4th edition	5110	Revised	Changed the classification of storage media to 'Digital camera' and 'Others'. Changed the table.
4th edition	5140	Revised	Added the profile data of EPSON FB scanner.

QSS-31

Revision History: Chapter 6

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/01/23	21	Revised	Deleted a part of explanation.	2nd Edition
2	2002/08/01	8	Revised	Added the colorimeter in the Note.	3rd Edition
3	2002/08/01	25	Revised	Corrected the turn.	3rd Edition
4	2002/08/01	26	Revised	Added the Note.	3rd Edition
5	2002/08/01		New	Added [Key points] and [Comprehension check].	3rd Edition

Publication	Material No.	Revised/New	Contents
4th edition	-	Revised	Layout change for the compatibility of training material QSS-28, 29, 30, 31.
4th edition	6410	Revised	Added the explanation that it is necessary to copy Logdata and memory data to media when replacing the scanner unit.
4th edition	6460	Revised	Added the installation of profile data/installation of driver/software upgrading. Changed from the addition of PC-NRT-5.

Revision History: Chapter 6-1

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/01/23	15	Revised	Changed the picture.	2nd Edition
2	2002/01/23	16	Revised	Changed the picture. Changed the illustration. Deleted 'shim + 0.2 mm'.	2nd Edition
3	2002/01/23	17	Deleted	Deleted 'Magazine position adjustment'	2nd Edition
4	2002/08/01		New	Added [Key points] and [Comprehension check].	3rd Edition

QSS-31

Revision History: Chapter 7

No.	Date	Material Number	Revised / New	Description	Publication
1	2002/02/07		Deleted	Moved “IEC standard of laser class” to Chapter 2.	2nd Edition
2	2002/08/01	7	Revised	Added the Weekly setup.	3rd Edition
3	2002/08/01	11	New		3rd Edition
4	2002/08/01	14	Revised	Added 4A.	3rd Edition
5	2002/08/01		New	Added [Key points] and [Comprehension check].	3rd Edition

Publication	Material No.	Revised/New	Contents
4th edition	-	Revised	Layout change for the compatibility of training material QSS-28, 29, 30, 31.
4th edition	7010	Revised	Added the image rotation booster PCB.
4th edition	7020	Revised	Added the image rotation booster PCB.
4th edition	7030	Revised	Added the image rotation booster PCB.
4th edition	7040	Revised	Added the image rotation booster PCB.
4th edition	7041	Revised	Data transfer test (SI-2600)
4th edition	7042	Revised	Data transfer test (Printer control unit section)
4th edition	7060	Revised	Changed the lamp voltage from 27.7±0.3V to 27.7±0.2V.
4th edition	7080	Revised	Added the laser driver PCB. Deleted the weekly setup from the note of image processing PCB.
4th edition	7100	New	Cautions when replacing PCBs (Laser driver PCB J390796)
4th edition	7130	Revised	Changed from the addition of PC-NRT-5.
4th edition	7140	New	Changed from the addition of PC-NRT-5.
4th edition	7170	New	Maintenance of FB scanner
4th edition	7190	Revised	Changed the explanation of 5 minutes processing and 30 minutes processing.

QSS-31 Training Materials

Published
December, 2001 Limited shipment version [First edition]
January, 2002 [Second edition]
August, 2002 [Third edition]
March, 2003 [Fourth edition]

Published by
Noritsu Koki
Technical Training Department