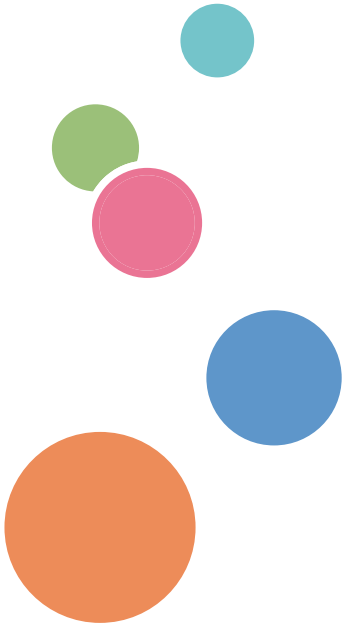
Pro C7200/C7200x/C7210/C7210x
Pro C7200s/C7200sx/C7210s/C7210sx

Operating Instructions

Advanced Settings for Custom Paper Adjustment



For safe and correct use, be sure to read Safety Information before using the machine.

TABLE OF CONTENTS

1. Introduction

2. Mechanism

3. Details of Advanced Settings

1. Introduction

This chapter provides an overview of the Media Library.

Basic Procedure

This machine is capable of printing on a wide variety of media using the latest technologies in digital printing such as the AC transfer and elastic fusing belt.

Also, the introduction of the Clear/White toner - available in the 5-color model - is capable of adding further value to print products.

In addition to the above new technologies and features, support of various media is also made possible by the Media Library database, which is registered with tested and proved media and programmed with optimized print parameters by media type/weight.

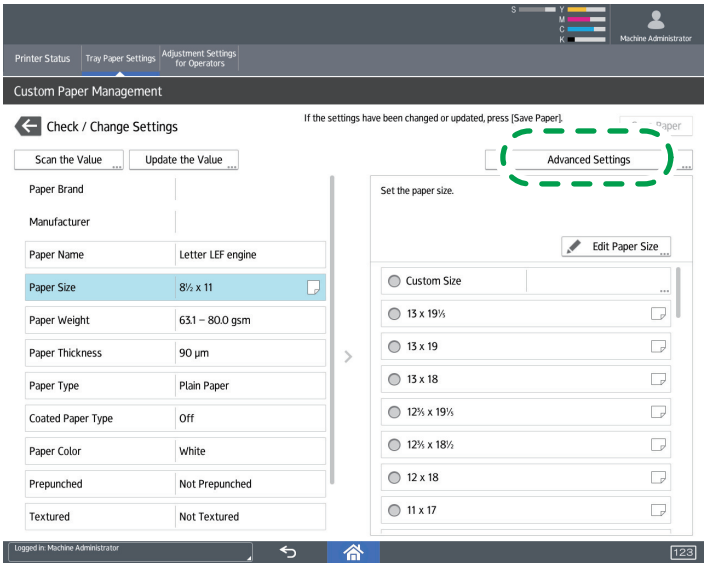
How to use the Media Library:

1. Select a media from the library and associate the media to a tray.
2. Set the media on the associated tray.
3. Specify the media in Job Properties of the color controller.

Advanced Settings

As described in the previous slide, printing from the Media Library is possible with a simple procedure, however, precise adjustments (such as the transfer and fusing conditions) may be required depending upon the media attributes, which differ by each and every media.

Such precise adjustments can be made from [Tray Paper Settings] → [Advanced Settings].



DZH201

In this menu, the followings can be adjusted:

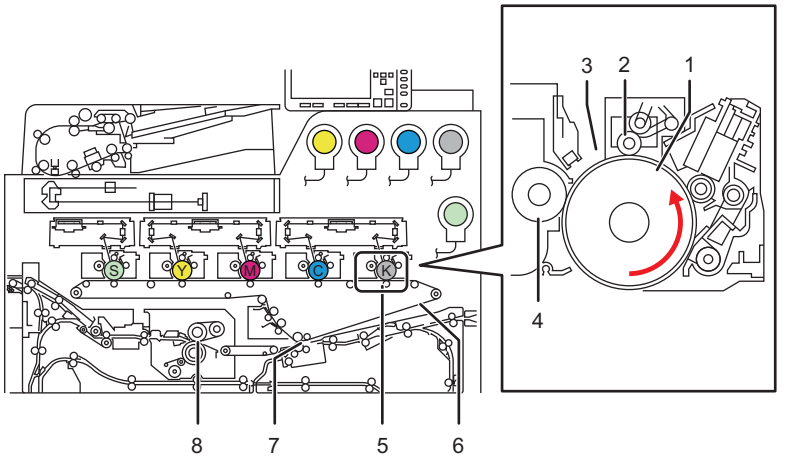
- Machine: Image Position
- Machine: Image Quality
- Machine: Paper Feed / Output

To effectively adjust the above, it is important to have a basic understanding of how the printer works.

2. Mechanism

This chapter provides explanation on the basic Xerographic process of the engine by referring to the items of the Advanced Settings.

Xerographic process - Overview



1. **OPC drum**
2. **Charger roller**
3. **Laser unit**
4. **Development roller**
5. **Image transfer roller**
6. **Intermediary transfer belt(ITB)**
7. **Paper transfer roller(PTR)**
8. **Fusing unit**

The electrophotography process consists of the following steps:

Drum charge → Laser exposure → Development → Transfer → Fusing

- Drum charge ..... The charge roller [2] gives an equal charge across the surface of the OPC drum [1].
- Laser exposure ..... Laser beam [3] creates an electrostatic latent image on the OPC drum [1].
- Development ..... The development roller [4] carries toner to the latent image on the OPC drum [1].
- Image transfer

Drum-to-belt transfer ..... Toner images created on each OPC drum [1] are transferred sequentially to the ITB [6].

Belt-to-paper transfer ..... Toner image on the ITB [6] is transferred onto the paper when the paper passes through the PTR [7].

- Fusing ..... The fusing unit [8] applies heat and pressure to fuse the toner image onto the paper.

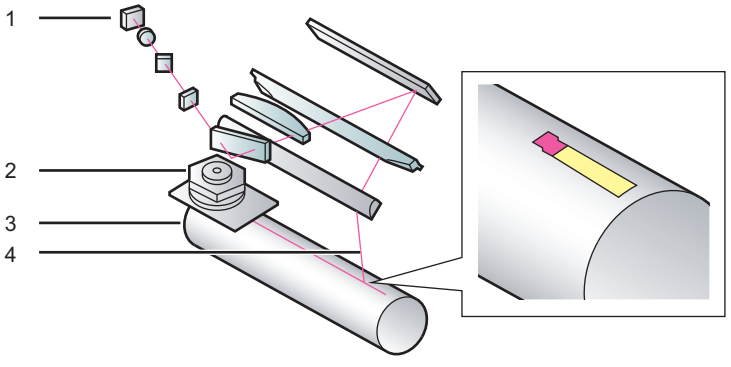
Xerographic Process-Laser Exposure

Laser Unit (Exposure)

The laser unit is equipped with the Vertical Cavity Surface Emitting Laser (VCSEL) technology.

40 laser beams are emitted to produce 2400dpi×4800dpi.

Laser beams are reflected on the polygon mirror and lenses to create a latent image on each of the photoconductive drums by imparting static electricity on the surface of the drum.



DZH003

1. **VCSEL**
2. **Polygon mirror**
3. **OPC drum**
4. **Laser beam**

Adjusting the start timing and frequency of this latent image creation process in both main and sub scan directions enables registration, masking and scaling of the image.

Related Advanced Settings

page 28 "Image Position/Magnification"

page 36 "Erase margin: leading/trailing edge"

Xerographic Process – Development

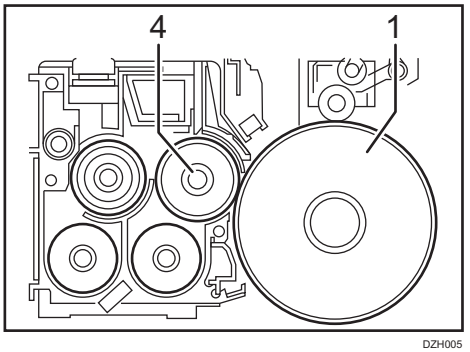
Development

The development system employs the dual-component*1 development method.

The developer is pre-mixed*2 to prevent image quality degradation caused by deterioration of the developer that occurs over time.

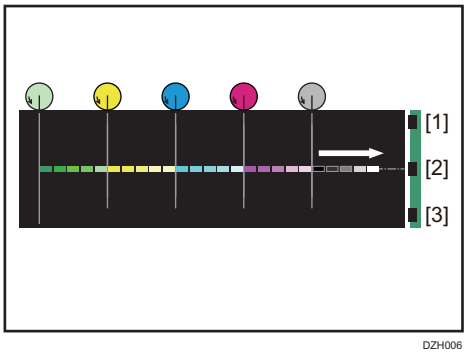
Electrostatic latent image areas of the drum attract negatively charged toner particles from the development roller [4].

To maintain consistent amount of toner attraction from the development roller [4] to the drum [1] and stable image quality(toner density), image quality adjustment process runs automatically when turning on the machine power and at optimum timings.



DZH005

During the image quality adjustment process, toner patterns in 5 gradients are created on the ITB for each toner color, which are read by the toner mark sensors. Xerographic conditions are adjusted according to the sensor readings, maintaining consistent development (maximum image density).



DZH006

*1 The developer consists of positively charged carrier (+) and negatively charged toner (-).

*2 The carrier is pre-mixed with the toner in the toner bottle and the mixture is supplied to the development unit to constantly refresh old developer in the development unit with new developer.

Related Advanced Settings

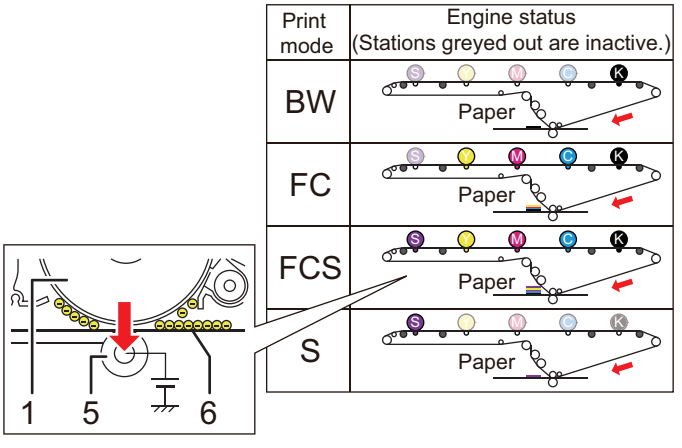
page 29 "Maximum Image Density"

Xerographic Process – Drum-to-Belt Transfer

Drum-to-Belt Transfer

To enable printing in all five toner colors as well as printing using only special color, the mechanism to contact/separate the ITB and ITB rollers was modified in the drum-to-belt transfer process for the machine. Among the following four print modes, the correct mode is selected according to the print data sent from the printer controller.

- BW mode: Job contains only black data.
- FC mode: Job contains color data.
- FCS mode: Job contains color and special color data.
- S mode: Job contains only special color data.



DZH207

1. OPC drum

5. Image transfer roller

6. Intermediary transfer belt(ITB)

By applying a positive (+) bias (transfer current) to the image transfer roller, negatively charged toner (-) on the drum is attracted to the ITB that positions between the roller and the belt. Any remaining toner on the drum is cleaned by the drum cleaning unit.

Related Advanced Settings

page 29 "Image Transfer Current"

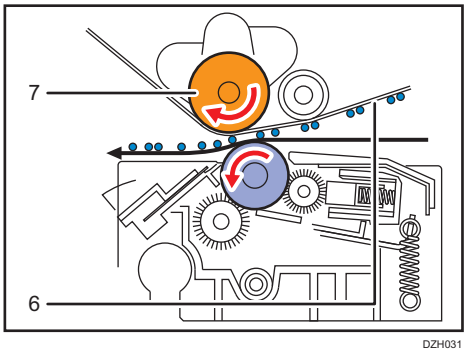
Xerographic Process – Belt-to-Paper Transfer

Belt-to-Paper Transfer

Applied voltage

The AC transfer technology is used for the belt-to-paper transfer, to support printing on textured media.

Negatively charged toner image (-) on the ITB [6] is transferred to the paper by applying a negative bias (-) to the paper transfer bias roller [7].



Following are the two types of negative bias applied to the paper transfer bias roller:

- DC bias: For all media types
- AC bias: When 1218: [Paper Transfer Output: Textured Paper Mode] is enabled

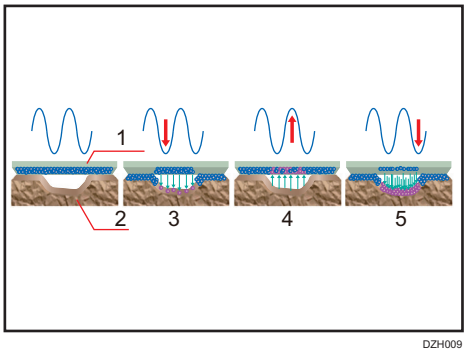
Bias is adjustable by print mode because the optimum bias level is dependent on the amount of toner transfer.

(Bias is higher for FC than for BW/Special due to the greater amount of transferred toner.)

The illustration below describes how AC transfer transfers toner to textured media.

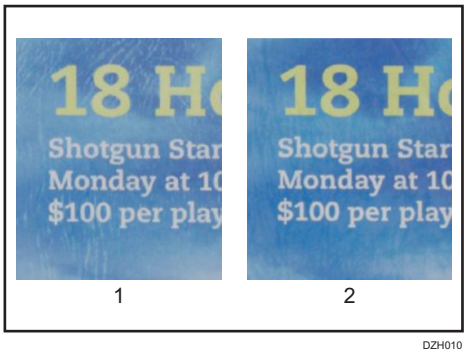
By nature of AC, in which the current flows in an alternating up-and-down movement, toner particles sync with this movement. Toner transferred to the media is pulled back to the ITB to gain further transferability, enabling toner particles to fall into the indentations on the rough surfaced media.

Textured paper mode



DZH009

1. **ITB**
2. **Textured paper**
3. **Toner is partially transferred.**
4. **Toner transferred to the paper returns to the belt and combines with toner remaining on the belt.**
5. **Toner is transferred to the indentations on the surface of the paper.**



DZH010

1. **AC transfer inactive**
2. **AC transfer active**

Bias correction can be adjusted for each imaging mode, because the optimum bias correction value varies depending on the transferred toner. (More bias correction is required for printing in FC/FCS mode, which consumes more toner than printing in BW/S mode.)

Related Advanced Settings

- DC bias

  page 30 "Paper transfer current"
- AC bias

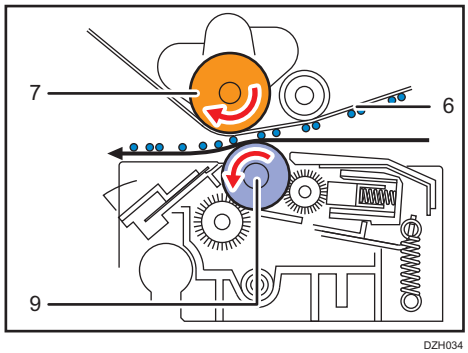
  page 30 "Textured paper mode"

Leading/Trailing edge correction

To prevent image quality problems caused by the unstable condition of the paper when it enters the nip of the PTR, the belt-to-paper transfer bias is adjusted for the leading/trailing edges.

The following are the three bias correction settings that adjust the bias level and duration.

- Belt-to-paper transfer: Constant voltage
- Belt-to-paper transfer: Leading edge correction
- Belt-to-paper transfer: Trailing edge correction



Note

- Current vs. Voltage
  - Bias is applied using 'constant current' for drum-to-belt and belt-to-paper transfer, as this method is resilient to changes in operational environment and thickness of the media.
  - On the other hand, 'constant voltage' is used for AC bias and as this method does not require adjustments according to paper width.

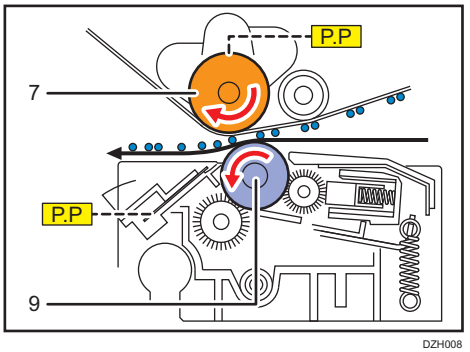
Related Advanced Settings

page 30 "Paper transfer current: TE"

Shock-jitter canceller

The shock generated and the change in speed when the leading edge enters and the trailing edge exits the nip between the PTR [9] and ITB bias roller [7] may cause image quality problems where unwanted lines appear perpendicular to the paper feed direction (shock-jitter).

To ease the shock, the PTR unit is equipped with the "shock-jitter canceller" function, in which the PTR [9] moves up when the paper enters the nip and moves down when the paper exits the nip.



DZH008

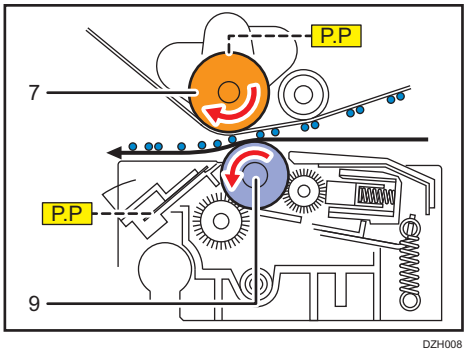
Related Advanced Settings

page 31 "Paper transfer gap"

PTR Rotation Speed

The PTR [9] has the function to deliver the paper from the paper transfer timing roller.

Since the paper transport speed is controlled by the PTR, if the PTR rotation speed is slower than the target the image will shrink, if faster the target the image will stretch.



DZH008

Since the paper is simultaneously gripped by the PTR and the paper transfer timing roller, uneven density and banding problems may occur, if the speed differs between these rollers. PTR rotation speed (and paper transfer timing roller speed) is made adjustable for this reason.

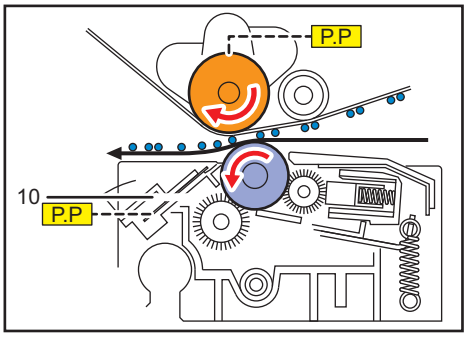
Related Advanced Settings

page 47 "Paper transfer roller feed speed"

Paper Separation

Paper is applied with charge when it passes through the PTR.

To discharge this charge, AC bias is applied to the discharge brush [10].



Feeding black or metallic media without selecting the correct media from the library will stop the machine.

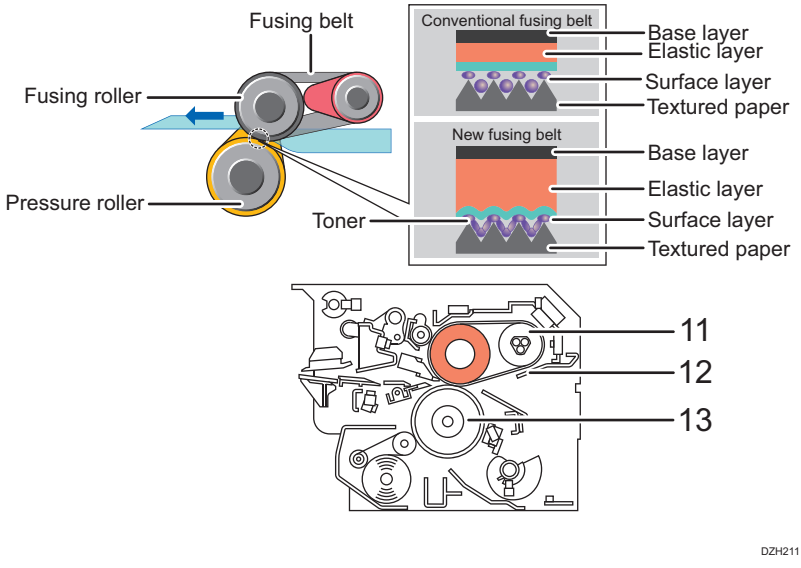
This is because the constant voltage control used for separating the media from the ITB causes a ground fault due to the conductive carbon substance contained in the media.

If "Black" or "Metallic/Pearl" is selected as the paper type in [Advanced Settings] for the custom paper, the paper transfer separation voltage is automatically to set to zero. Accordingly, this setting does not need to be adjusted if the paper type setting is specified properly.

Xerographic Process - Fusing

Fusing Unit

The fusing belt has a thick elastic layer, as with the previous model, to allow the belt to reach farther into the surface indentations of textured media.



A total of four heaters are used in the fusing unit: three in the heating roller [11], one in the pressure roller [13].

Toner is fused onto the media by applying heat to the fusing belt [12] via the heating roller [11], maintaining consistent temperature and pressure on the media.

The heater in the pressure roller [13] functions as a supplementary heater, to maintain consistent temperature at the nip between the fusing and pressure rollers.

The fusing temperature can be adjusted by print mode(BW/FC/FCS/S), as the optimum fusing temperature is dependent on the amount of toner.

(The more there is toner, the more heat needed for fusing. Clear toner also requires high fusing temperature to yield the gloss effect.)

The fusing temperature is momentarily increased one notch immediately before the paper passes through the nip, to compensate for the slight temperature drop of the fusing belt [12] due to the heat absorption by the paper.

In addition, the target fusing temperature is momentarily increased another notch immediately before the pressure roller [13] contacts the fusing belt, to compensate for the slight temperature drop due to the contact.

Printing starts when the fusing belt temperature reaches the prescribed temperature range against the target.

Image quality issues originating in the fusing unit, for example, residual gloss images, river marks, can be prevented by adjusting the target fusing temperature.

Related Advanced Settings

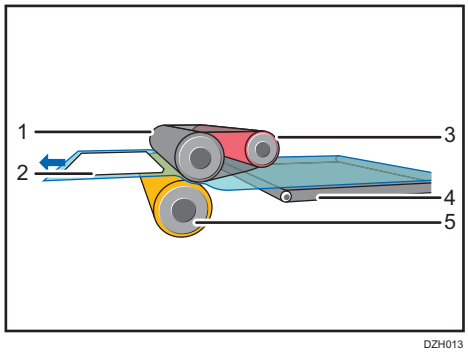
page 32 "Fusing temperature" / page 33 "Fusing temperature correction"

Fusing Nip width Adjustment

The width of the fusing nip (or nip pressure) is made adjustable to prevent wrinkles.

This adjustment can be performed with precision when selecting [Envelope] from the media library.

Even for paper other than envelopes, the nip width can be narrowed to any of 4 levels including the initial value.



DZH013

1. **Fusing roller**
2. **Envelope**
3. **Heating roller**
4. **Paper transfer belt**
5. **Pressure roller**

Related Advanced Settings

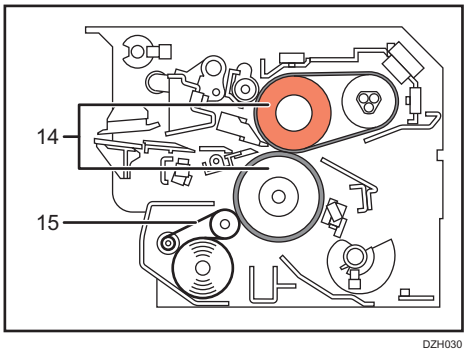
page 37 "Fusing nip width adjustment: envelope"

Fusing Cleaning Unit

The cleaning web [15] is pressed against the pressure roller [14], to rub off toner and paper dust adhered to the fusing belt.

The web is soaked with silicone oil, which is supplied to the pressure roller and the fusing belt in very small amounts.

The interval between each cleaning operation can be adjusted to any of 4 levels.



DZH030

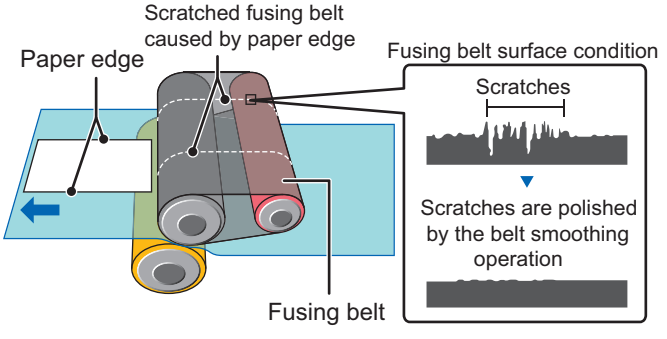
Related Advanced Settings

page 35 "Fusing cleaning"

Fusing Belt Smoothing Roller

Printing continuously on a particular paper size causes the paper edges to nick the fusing belt, and when switched to a job printed on a larger size, the nicked fusing belt produces unwanted gloss streaks on the prints.

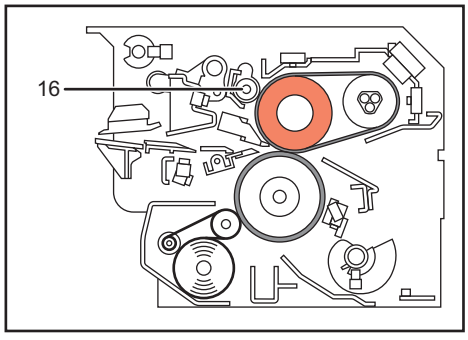
Also, continuous printing of high image coverage pages causes the wax content of toner to gradually adhere to the fusing belt, affecting the gloss consistency of the prints.



DZH214

Image quality issues such as gloss streaks and uneven gloss can be resolved by polishing the surface of the fusing belt with the fusing belt smoothing roller [16].

The belt smoothing operation can be run manually or automatically. The setting can be selected in the Advanced Settings.



Related Advanced Settings

page 37 "Smoothing roller rotation interval"

Paper Delivery

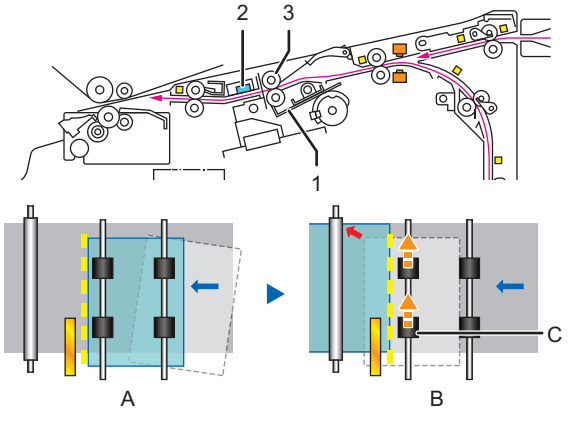
Mainframe

The paper feed/delivery system consists of various technologies to meet high front-to-back registration requirements demanded in the commercial printing market. The paper fed from the tray is first checked for double-feed and is then adjusted of skew and main/sub scan registration before the belt-to-paper transfer process.

Skew detection & main scan registration

A Ricoh original technology is applied to separately control skew correction and main scan registration, to achieve high accuracy in front-to-back registration.

1. Skew is corrected when the leading edge hits the skew correction gate.
2. CIS measures the amount of skew.
3. The registration roller shifts sideways and corrects main scan registration.



DZH015

- A. Skew correction gate

  Leading edge hits the skew correction gate
- B. Contact Image Sensor (CIS)

  CIS calculates the amount of correction
- C. Registration roller

  The registration rollers correct the registration in main scan direction.

*Contact Image Sensor

Related Advanced Settings

page 45 "Skew detection"

Leading edge detection mechanism in more detail

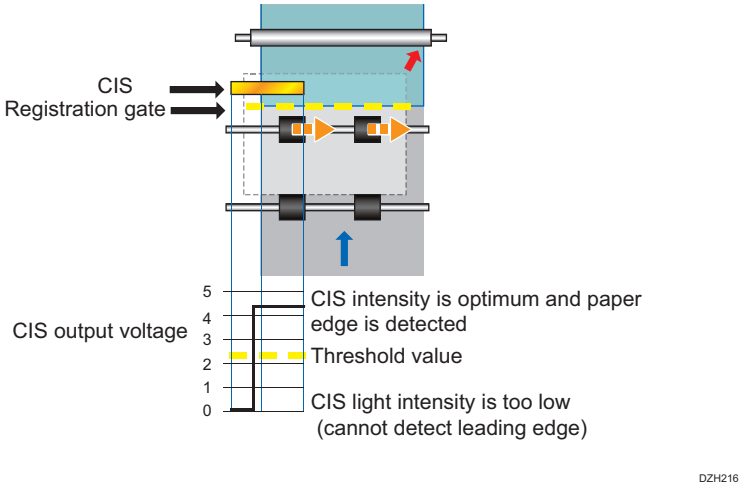
When the paper passes through the registration gate, the CIS emits light and reads the amount of light reflected, to detect the leading edge.

The sensor reading is 0V when there is no reflection (no paper detected) whereas a certain voltage is detected when there is reflection.

Voltage is high voltage with high reflection from white paper whereas the voltage is low with low reflection from dark/black paper.

Accordingly, the values of the CIS lighting mode and CIS light intensity are set in advance according to the color of the media (white, color, black).

However, low voltage from low reflection may occasionally be falsely detected as jams. In such case, increase the light intensity.



Related Advanced Settings

page 46 "Paper edge detection"

Double-feed detection mechanism

The double-feed detection [4] is purposed to prevent blank sheets from mixing with the prints, reducing inspection time and increasing productivity.

Double-feed is detected by reading the amount of light permeating the sheet.

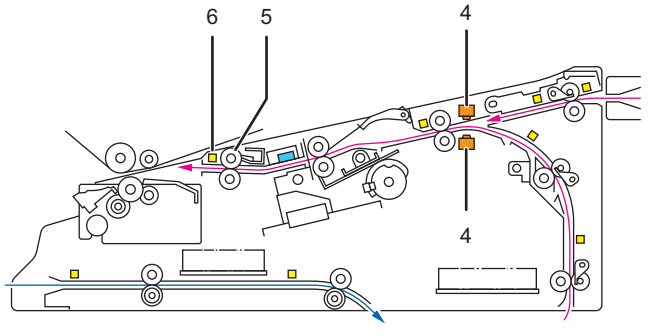
When detected, the machine alerts jam code J099.

Sub scan registration mechanism

After the main scan registration is corrected, the sheet passes through the transfer timing roller [5] and then the transfer timing sensor [6] detects the leading edge.

Rotation speed of the transfer timing roller [5] is adjusted according to the timing the leading edge is detected, to deliver the paper for the belt-to-paper transfer process at the perfect timing.

If the leading edge is detected at a timing that exceeds the adjustment range (+/-3.0mm), the system alerts J080 and stops.



DZH017

Related Advanced Settings

page 45 "Double feed detection"/ page 44 "J080 detection"

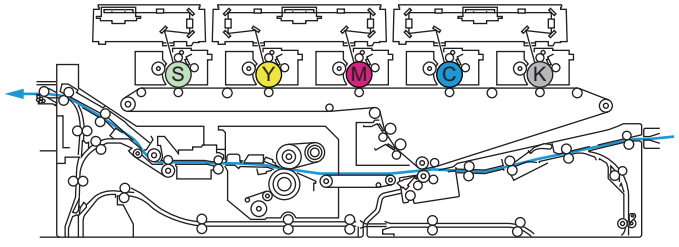
Roller speed adjustment

Every paper transport roller installed in the machine is controlled of the rotation speed according to the basis weight (thickness) of the paper, to support wide variety of media and prevent image quality problems.

While the transport speed at the surface of the paper can roughly be determined by the rotation speed of the roller and the radius of the roller added with thickness of the paper, the speed at the paper surface becomes much faster with bulky stocks, and causes deviation in the image magnification ratio.

Also, the media will slacken/stretch, if the rollers expand/contract due to the change in environmental conditions, resulting in image quality issues such as banding and color inconsistency.

Printed images may also get scratched by the guide plates in the paper path.



DZH018

Related Advanced Settings

page 46 "Transfer timing roller feed speed" / page 47 "Fusing belt feed speed" / page 48 "Cooling roller after fusing/Paper output: diversion roller/Paper output roller/Switchback: entrance roller/Switchback: exit roller" / page 44 "Decurler feed speed"

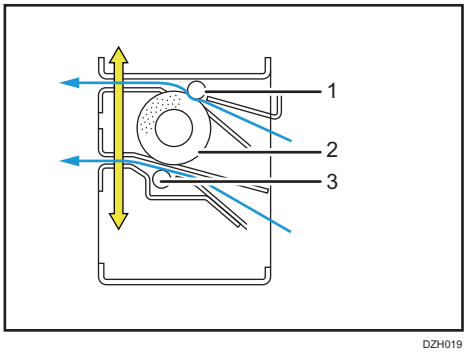
Decurl Unit

De-curling mechanism

Paper curls can be corrected by installing the optional decurl unit.

The decurl unit consists of one sponge roller, two metal rollers and two paper paths.

Depending on the decurl strength and curl direction (face or back) specified in Advanced Settings, the upper or lower metal roller presses the sheet and delivers the sheets to either the upper or lower paper path.



DZH019

1. **Upper pressure roller**
2. **Decurl roller**
3. **Lower pressure roller**

The speed in which the paper passes through the decurl unit can be adjusted. If the speed is set too fast, toner may adhere to the edge

of the paper, and if set too slow, wrinkles/creases may occur. Set to an optimum speed according to the stock.

Related Advanced Settings

page 44 "Decurler feed speed"

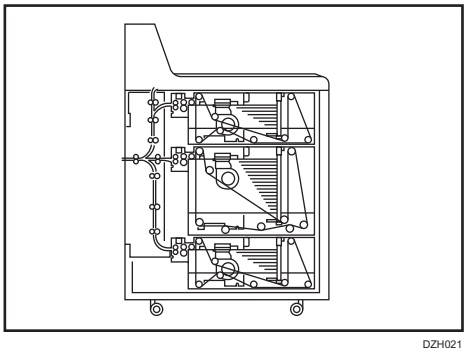
3-Tray LCIT

FRR (feed and reverse roller paper feed system) is used to feed paper from the large capacity trays.

Every tray is installed with a blower fan to fan and separate the sheets before they are fed out with the FRR system, which is especially effective for heavy stocks and sticky stocks. In addition, the pickup assist function automatically turns on if [Coated] is selected from the paper settings.

If the pickup assist function is taking too much effect, double-feeds and other feed problems may occur.

To resolve such problems, adjust the fan power and/or turn ON or OFF the blower fan and/or the pickup assist function.



DZH021

Related Advanced Settings

page 43 "3-Tray LCIT"

2-Tray LCIT

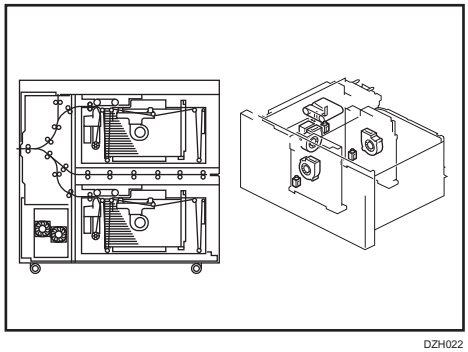
The LCIT employs the air-assist pickup, similarly to the paper feed units of offset printers.

In addition to the air blown from the right/left sides, sucking air to pick up the top most sheet of the stack enables smooth feeding without double-feeds and non-feeds even with coated stocks and super smooth surfaced stocks that tend to stick together, providing good feed performance.

Functions of each of the fans are as follows:

- Updraft fan: Blows air to the leading edge to float up the sheet.

- Separation fan: Blows air in between the top most and second sheet for separation.
- Side fan: Blows air from the right/left sides to fan the paper.
- Suction fan: Sucks air to adhere the sheet to the suction belt for feeding.

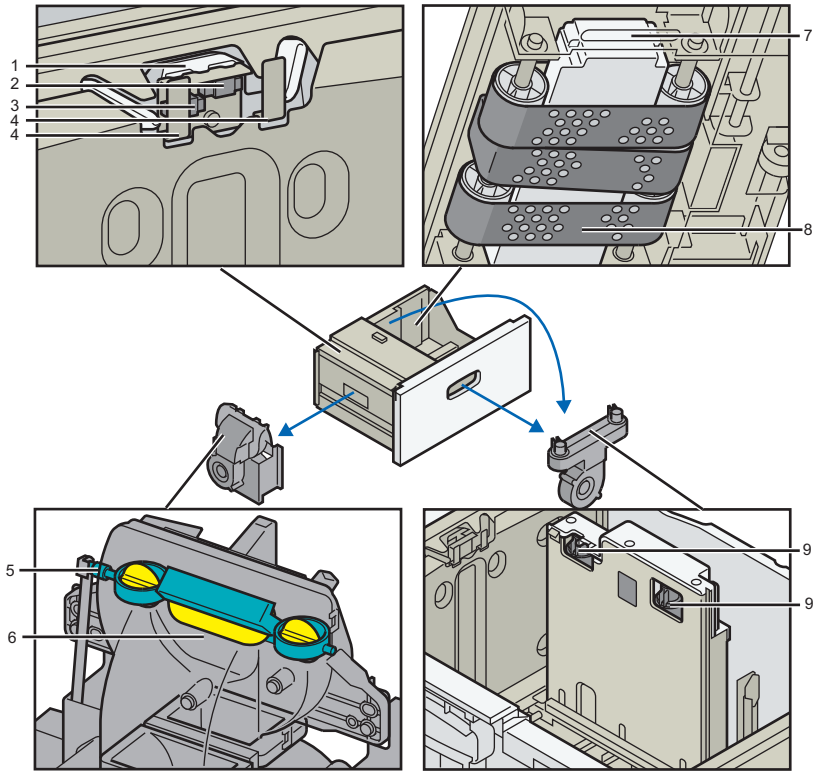


DZH022

Each fan level is made adjustable to prevent non-feeds and double-feeds in 1301: [2-Tray LCIT: Paper Feed Mode].

Related Advanced Settings

page 39 "2-Tray LCIT"



DZH025

1. **Blower fan**
2. **Stack upper limit: High**
3. **Stack upper limit: Low**
4. **Updraft fan**
5. **Updraft fan shutter**
6. **Blower fan shutter**
7. **Vacuum fan**
8. **Feed belt**
9. **Side fan**

3. Details of Advanced Settings

This chapter explains the functions of the Advanced Settings and the related image quality problems that can be prevented/improved by adjusting these settings. For detailed procedure, see the Troubleshooting manual.

Overview

Print Mode

Image quality is adjusted in balance with productivity according to the print mode (BW/FC/FCS/S), which differ in the maximum toner amount, i.e. bias needed for transfer and heat needed for fusing.

It is important not to mix up the adjustments, especially the items that have similar names like 1232: [Fusing Temperature].

The following table describes the relation between the pint mode and the image data sent from the color controller.

Print data	Print mode	Max toner amount
K only	BW	100%
CMYK*1	FC	260%
CMYK+S*2	FCS*3	360%
S only	S	100%

*1 Job is run in FC mode, if the print data contains C, M, or Y.

*2 Job is run in FCS mode, if print data contains C, M, or Y and S.

*3 If the color controller E-45A is connected and Clear toner is installed in the special color station, check box [High image quality] appears in the [Special Color] tab in Job Properties of Command WorkStation. If the check is removed, priority is given to Productivity over Image Quality, as the maximum toner amount will be limited to 260% (identical to FC mode).

Registration

Image Position/Magnification

1101 [Image Position]

1102 [Auto Adjust Image Position]

1103 [Image Position Feedback Correction]

1104 [Image Position Feedback Correction: Gap]

Function

Adjusts the position and magnification of the image to be printed on the paper.

When to use

To align the images printed on the front and back sides of the paper.

Insufficient margin at the leading edge may cause wrap around jams in the fusing unit or affect the images at the leading edge. Increasing the margin is effective in such cases.

Related Troubleshooting

- Patch Unprinted Image Leading Edge
- Unprinted: Transparent Film
- Adjusting the Image Position on Side1
- Adjusting the Image Position on Side2
- Aligning Image Position of Side2 to Side1

For detailed procedure, see the Troubleshooting manual.

Image Quality

Maximum Image Density

1201 [Max Image Density]

Function

Adjusts the amount of toner developed on the drum.

When to use

To adjust the maximum toner density for the media in use.

Note the possible side effects, such as worm track and toner scattering, if set too high.

Related Troubleshooting

- Whiter at the Trailing Edge
- Worm Holes: Text or Edge of an Image
- Worm Holes: When Using the Clear Toner
- Toner Scattering: Lines

For detailed procedure, see the Troubleshooting manual.

Image Transfer Current

1212 [Image Transfer Output]

Function

Adjusts the amount of bias applied for the drum-to-belt transfer process.

Effective for:

- Mottling effect that may occur when continuously printing low image coverage pages
- Negative residual image that may appear when running jobs in low room temperature
- Toner scattering that may appear when printed on coated or smooth surfaced media

Related Troubleshooting

- Mottling
- Blurred Around a Clear Image
- Toner Scattering: Lines
- Toner Scattering: Trailing Edge

For detailed procedure, see the Troubleshooting manual.

Paper Transfer

Paper transfer current

1214 [Paper Transfer Output]

Function

Adjusts the amount of bias applied for the belt-to-paper transfer process.

Effective for:

- White spots/Toner blasting that may occur in low humidity/temp environment
- Mottling effect

Related Troubleshooting

- Banding
- White Spots/Toner Blasting
- Mottling

For detailed procedure, see the Troubleshooting manual.

Paper transfer current: TE

1216 [Paper Transfer Output Correction: Paper Edge]

Function

Adjusts the amount and area (width) to apply the bias applied at the leading/trailing edges for the belt-to-paper transfer process.

When to use

- Image is affected/abnormal at the trailing edge.

Related Troubleshooting

- Fainter Trailing Edge
- Toner Scattering: Trailing Edge

For detailed procedure, see the Troubleshooting manual.

Textured paper mode

1218 [Paper Transfer Output: Textured Paper Mode]

Function

To improve toner transferability on textured paper, specify whether or not to enable the textured paper mode and paper transfer AC bias control.

When to use

If poor transfer occurs when using textured paper or plain paper whose surface is not smooth, the problem may be solved by setting this to [On] and adjusting the bias control.

Related Troubleshooting

- Uneven Density (Textured Paper)
- Mottling

For detailed procedure, see the Troubleshooting manual.

Paper transfer separate voltage

1221 [Paper Transfer Separate Voltage]

Function

Adjust the paper transfer separate voltage.

When to use

If "Black" or "Metallic/Pearl" is selected as the paper type in [Advanced Settings] for the custom paper, the paper transfer separation voltage is automatically to set to zero. Accordingly, this setting does not need to be adjusted if the paper type setting is specified properly.

It is also necessary to adjust this setting if 1218: [Paper Transfer Output: Textured Paper Mode] is toggled On to solve mottling.

Related Troubleshooting

- None

Paper transfer gap

1222 [Paper Transfer Nip Operation Mode]

1223 [Paper Transfer Nip]

Function

Adjusts the gap between the PTR and ITB and the timing when to contact/separate the PTR and ITB.

Default setting of 1222: [Paper Transfer Nip Operation Mode] by type/thickness:

1. OFF: Thick 1 - 2, envelope, transparency, plastic folder, magnet sheet
2. Small gap: Thick 3 - 5 (excluding envelope, transparency), Thick 6 - 8 (including coated, metallic/pearl)
3. Large gap: (Not used)
4. Small/Large gap: Thick 6 - 8 (excluding coated, metallic/pearl)

When to use

Image is affected/abnormal at the trailing edge

Related Troubleshooting

- Horizontal Black Streaks Image Edge
- Patch Unprinted Image
- Fainter Leading Edge
- Fainter Trailing Edge

For detailed procedure, see the Troubleshooting manual.

Fusing

Print speed

1231 [Print Speed]

Function

Set the print speed.

When to use

If a fusing-related problem occurs, it may be solved by decreasing the line speed (if it can be decreased from [High] or [Middle]).

It is necessary to set the print speed to low if 1218: [Paper Transfer Output: Textured Paper Mode] is toggled ON to solve mottling.

Related Troubleshooting

- Uneven Gloss
- Residual Gloss (Gloss Ghost): Multiple
- Vertical Glossy Line: Uneven Glossiness due to Wax Stain
- Black (color) Spots (2)
- Uneven Gloss: Side 2
- Uneven luster
- Wrinkles, Worm Track

For detailed procedure, see the Troubleshooting manual.

Fusing temperature

1232 [Fusing Temperature] → color → [Heat Roller Temp]

Function

Adjusts the temperature of the fusing belt.

When to use

- Image quality problems caused by insufficient fusing
- Abnormal images, for example, glossy residual image, gloss streaks, uneven gloss, fusing jam (J033)

Related Troubleshooting

- Vertical White Streaks (2)
- Vertical Glossy Line: Uneven Glossiness due to Wax Stain
- Black (color) Spots (2)
- Blister-like White Spots
- Worm Track
- Glossy Residual Image (Uneven Gloss)
- Uneven Gloss: Wavy
- Uneven Gloss: Side2
- Uneven Gloss: Thick Paper
- Insufficient Gloss: Clear Image
- Milky Transparency
- J033/J034/J083
- Curling

For detailed procedure, see the Troubleshooting manual.

Fusing temperature correction

1232 [Fusing Temperature] → color → [Initial Print Interval]

Function

Adjusts the amount of temperature added to the target before the job starts, to compensate for the heat absorbed by the media.

When to use

Effective for abnormal image quality problems such as glossy residual image and uneven gloss.

Related Troubleshooting

- Vertical Gloss Streaks
- Worm Track
- Glossy Residual Image
- Uneven Gloss: Side2
- Uneven Gloss: Thick Paper

- Milky Transparency
- J033/J034/J083

For detailed procedure, see the Troubleshooting manual.

Fusing pressure temperature

1233 [Fusing Pressure Temperature]

Function

Adjust pressure roller temperature.

When to use

If an uneven luster appears, adjust the fusing pressure temperature.

Related Troubleshooting

- Uneven Gloss: Thick Paper

For detailed procedure, see the Troubleshooting manual.

Print mode when switching paper type

1234 [Print Mode When Switching Paper Type]

Function

Adjust the waiting time when switching the paper in a job with mixed paper.

When to use

Adjusting [Print Mode When Switching Paper Type] may reduce the waiting time when printing jobs having a variety of paper types, paper widths, and paper sizes.

Related Troubleshooting

- None

For detailed procedure, see the Troubleshooting manual.

Fusing temperature range

1235 [Fusing Temperature Range]

Function

Under conditions below, set range of fusing start temperature.

When to use

If a fusing-related problem at the start of paper transfer occurs, it may be solved by decreasing the fusing temperature range.

If the waiting time at the start of paper transfer is long, it may be solved by increasing the fusing temperature range.

Related Troubleshooting

- None

For detailed procedure, see the Troubleshooting manual.

Fusing pressure roller cooling

1236 [Fusing Pressure Roller Cooling]

Function

Under the following conditions, set the cooling fan level of pressure roller.

When to use

Adjust this setting to decrease the pressure roller temperature to solve problems such as uneven glossiness on thick paper.

Related Troubleshooting

- Uneven Gloss: Thick Paper

For detailed procedure, see the Troubleshooting manual.

Print speed (Sheet interval adj)

1237 [Print Speed (Sheet Interval Adj)]

Function

Adjust the print speed by widening sheet interval.

When to use

Adjusts the interval between sheets.

Related Troubleshooting

- Residual Gloss (Gloss Ghost): Multiple

For detailed procedure, see the Troubleshooting manual.

Fusing cleaning

1238 [Fusing Cleaning]

Function

Specifies the interval between each activation of the cleaning web.

When to use

Setting to a shorter interval is effective for black (color) spots that appear on prints, which is caused by toner particles slipping through the web.

Related Troubleshooting

- Black (color) Spots (2)

For detailed procedure, see the Troubleshooting manual.

Erase margin: leading/trailing edge

1239 [Erase Margin]

Function

Adjusts the width of the margins at the leading and trailing edges.

When to use

To adjust the margin width of the leading/trailing edges.

Insufficient margin at the leading edge may cause wraparound jams in the fusing unit or affect the images at the leading edge. Increasing the margin is effective in such cases.

Related Troubleshooting

- Patch Unprinted Image Leading Edge
- Uneven gloss: Wavy
- Shortening the L/T Edge Margins

For detailed procedure, see the Troubleshooting manual.

Fusing nip width

1240 [Fusing Nip Width: Paper Type] → 01:[Other than Envelope]

1241 [Fusing Nip Width Adjustment] → 01:[Other than Envelope]

Function

Adjusts the nip width for plain paper.

When to use

If paper edge traces occur on plain paper, or wrinkles occur on thin paper, adjusting this setting may solve the problem.

Related Troubleshooting

- Wrinkles, Worm Track
- Glossy Lines at the Edge of the Paper

For detailed procedure, see the Troubleshooting manual.

Fusing nip width adjustment: envelope

1240 [Fusing Nip Width: Paper Type] → 02: [Envelope]

1241 [Fusing Nip Width Adjustment] → 02: [Envelope]

Function

Specifies the fusing nip width specifically for envelope printing.

When to use

Effective for wrinkles, worm track that occur with envelope.

Related Troubleshooting

- Creases, Wavy Streaks, or Fusing Error

For detailed procedure, see the Troubleshooting manual.

Initial fusing temperature for envelope

1242 [Initial Fusing Temperature for Envelope]

Function

Before the envelope is printed, stabilize the nip width to reduce the wrinkles of the paper.

When to use

Reduces wrinkles. However, this will increase the waiting time.

Related Troubleshooting

- None

For detailed procedure, see the Troubleshooting manual.

Smoothing roller rotation interval

1243 [Fusing Belt Smoothing]

Function

Specifies the fusing belt smoothing roller operation interval.

When to use

Setting a shorter interval between each belt smoothing operation is effective for residual gloss images (as shown to right), which occurs as a result of continuous printing of high image coverage pages (due to the margins at the trailing and leading edges).

This is also effective in preventing or ameliorating wrinkling at the edges.

Related Troubleshooting

Residual Gloss (Gloss Ghost): Multiple

For detailed procedure, see the Troubleshooting manual.

Fusing pressure roller on before fusing

1244 [Fusing Pressure Roller On Before Fusing]

Function

Turn on or off pressurization when the feed speed of the fusing belt is adjusted before paper is fed.

When to use

Use this if the fusing nip width is set to "1" and paper other than envelopes is selected.

Related Troubleshooting

- Wrinkles, Worm Track
- Glossy Lines at the Edge of the Paper

For detailed procedure, see the Troubleshooting manual.

Paper Feed/Delivery from Mainframe Trays

2-Tray LCIT

2-Tray LCIT: paper feed mode

1301 [2-Tray LCIT: Paper Feed Mode]

Function

Adjusts the behavior of the fan.

Setting option	Behavior
[Prevent Double Feed (Weakest Blow)]	Amount of air blown from the float fan and side fans is reduced 20% against the standard value.
[Prevent Double Feed (Weaker Blow)]	Amount of air blown from the float fan and side fans is reduced 10% against the standard value.
[Standard (Default)]	Standard value
[Prevent Non Feed (Stronger Blow)]	Amount of air blown from the float fan and side fans is increased 10% against the standard value.
[Prevent Non Feed (Strongest Blow)]	Amount of air blown from the float fan and side fans is increased 20% against the standard value.

When to use

When non-feeds/double-feeds frequently occur and do not improve.

Related Troubleshooting

- J430/J431/J445/J446/J460/J461
- Double Feeding

For detailed procedure, see the Troubleshooting manual.

2-Tray LCIT: updraft fan level

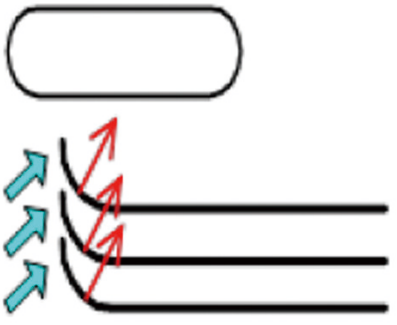
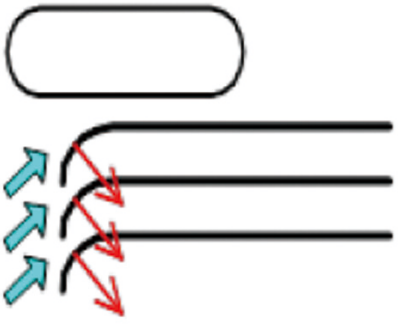
1302 [2-Tray LCIT: Fan/Shutter] → [Updraft Fan Level]

Function

Adjusts the amount of air blown to the leading edge to float up the paper.

When to use

If double-feeds do not improve by setting 1301: [2-Tray LCIT: Paper Feed Mode] to [Prevent Double Feed (Weakest Blow)], decrease the airflow in [Side Fan Level] in steps of 10%.

Face curl	Back curl
	
Sheets float up and tend to result in double-feeds.	Sheets get pressed down and tend to result in nonfeeds.

Related Troubleshooting

- None

2-Tray LCIT: blower fan level

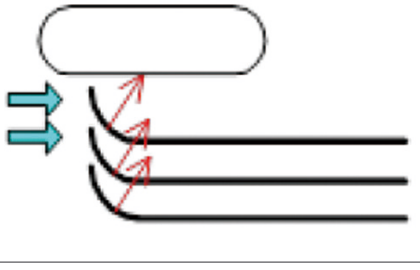
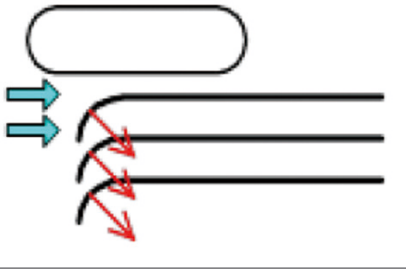
1302 [2-Tray LCIT: Fan/Shutter] → [Blower Fan Level]

Function

Adjusts the amount of air blown between the top most sheet and the second sheet for separation.

When to use

If double-feeds do not improve by setting 1301: [2-Tray LCIT: Paper Feed Mode] to [Prevent Double Feed (Weakest Blow)], decrease the airflow in [Side Fan Level] in steps of 10%.

Face curl	Back curl
	

Face curl	Back curl
Sheets float up and tend to result in double-feeds.	Sheets get pressed down and tend to result in non-feeds.

Related Troubleshooting

- Double Feeding

For detailed procedure, see the Troubleshooting manual.

2-Tray LCIT: side fan level

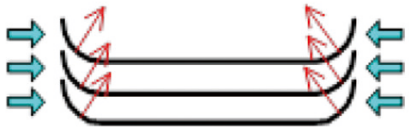
1302 [2-Tray LCIT: Fan/Shutter] → [Side Fan Level]

Function

Adjusts the amount of air blown from the side fans to separate the sheets.

When to use

If double-feeds do not improve by setting 1301: [2-Tray LCIT: Paper Feed Mode] to [Prevent Double Feed (Weakest Blow)], decrease the airflow in [Updraft Fan Level] in steps of 10%.

Face curl	Back curl
	
Sheets do not separate well because air does not flow in between the sheets. Also, the sheets tend to float up and result in double-feeds.	Sheets do not separate well because air does not flow in between the sheets. Also, the sheets tend to get pressed down and result in non-feeds.

Related Troubleshooting

- Banding: 63mm (2.4inches) Intervals
- Worm Holes: Text or Edge of an Image
- Worm Holes: When Using the Clear Toner

For detailed procedure, see the Troubleshooting manual.

2-Tray LCIT: vacuum fan level

1302 [2-Tray LCIT: Fan/Shutter] → [Vacuum fan Level]

Function

Adjusts the amount of air sucked against the paper feed belt.

* If non-feeds occur due to low air suction power, increase the power.

When to use

If double-feeds do not improve by setting 1301: [2-Tray LCIT: Paper Feed Mode] to [Prevent Double Feed (Weakest Blow)], increase the airflow in steps of 10%.

If double-feeds occur when printing on non-woven-fabric paper or other high-porosity paper, the problem may be solved by decreasing the air flow in steps of 10%.

Related Troubleshooting

- None

2-Tray LCIT: Return Fan Level

1302 [2-Tray LCIT: Fan/Shutter] → [Return Fan Level]

Function

When printing on thin paper or paper with a convex curl, the paper is suctioned from beneath to stop the paper bulging and thus prevent double-feeds.

When to use

If double-feeds cannot be eliminated by adjusting 1301: [2-Tray LCIT: Paper Feed Mode], the problem may be solved by increasing the air flow in steps of 10%.

Related Troubleshooting

- None

2-Tray LCIT: Updraft fan shutter

1302 [2-Tray LCIT: Fan/Shutter] → 31: [Updraft Fan Shutter]

Function

Specifies the behavior of the updraft fan shutter.

When to use

To improve paper separation.

Related Troubleshooting

- None

2-Tray LCIT: return fan shutter

1302 [2-Tray LCIT: Fan/Shutter] → 33: [Return Fan Shutter]

Function

Turn on or off the return fan shutter in 2-Tray LCIT.

When to use

Do not use this.

Related Troubleshooting

- None

2-Tray LCIT: vacuum fan shutter

1302 [2-Tray LCIT: Fan/Shutter] → 34: [Vacuum Fan Shutter]

Function

Turn on or off the vacuum fan shutter in 2-Tray LCIT.

When to use

Do not use this.

Related Troubleshooting

- None

2-Tray LCIT: other settings

1303 [2-Tray LCIT: Other Settings]

Function

Adjusts the timing to monitor bulging of the paper when it is being fed.

When to use

If paper misfeeds occur immediately after the paper is fed, the problem may be solved by decreasing the value of this setting.

If paper double-feeds occur immediately after the paper is fed, the problem may be solved by increasing the value of this setting.

Related Troubleshooting

- None

3-Tray LCIT

1311 [3-Tray LCIT]

1312 [Main/3-Tray LCIT/Bypass]

Function

- 1311-01: Sets the fans in the 3-tray LCIT On or OFF.
- 1311-02: Adjusts the amount of air blown from the fans, if 1311-01 is set to On.
- 1312: Sets pickup assist On or Off.

When to use

Effective for jams, double-feeds and non-feeds.

Pickup assist is effective for non-feeds that occur with thick media that have low friction. Note that double-feeds may occur with coated stocks, if the effect of the pickup assist is too strong.

Related Troubleshooting

- Frequent Paper Misfeeds
- Double Feeding
- Paper Misfeeding

For detailed procedure, see the Troubleshooting manual.

Decurler Unit

Decurler feed speed

1321: [Correct Paper Curl]

Function

Adjusts the line speed of the decurler unit.

When to use

If the line speed of the decurler unit is set too fast, stains could appear on the edge of the sheets, which become noticeable when the prints are stacked. If set too low, creases, wrinkles streaks and stains can appear especially with thin paper. Set an optimum speed.

Related Troubleshooting

- Stained Paper Edges (3)
- Decurling Results in Scratches, Streaks, or Creases

For detailed procedure, see the Troubleshooting manual.

Mainframe Trays

J080 detection

1331 [Jam Detection] → 01: [Detect JAM080]

Function

Specifies whether or not to stop printing, if registration in sub scan direction (along feed direction) exceeds the adjustable range (+/- 3mm).

When to use

Set to Off, if jam J080 occurs frequently.

If set to Off, printing will continue with the registration in feed direction corrected up to 3mm, but no more than 3mm.

Related Troubleshooting

- J080

For detailed procedure, see the Troubleshooting manual.

Skew detection

1331 [Jam Detection] → 02: [JAM097/098 Detect Threshold]

1331 [Jam Detection] → 04: [JAM097]

1331 [Jam Detection] → 05: [JAM098]

Function

Specifies whether or not to automatically detect paper skew.

When to use

Deactivate this setting, if J098 occurs frequently. However, do so only after confirming that adjusting 1331-06: [Setting] does not resolve the jam.

Related Troubleshooting

- J097
- J098
- Wrong Detection of Skew

For detailed procedure, see the Troubleshooting manual.

Double feed detection

1331 [Jam Detection] → 03: [Detect JAM099]

Function

Sets double-feed detection to On or Off.

When to use

Set to Off, if double-feed is falsely detected frequently. Note that double-feeds will not be detected, if set to OFF.

Related Troubleshooting

- Wrong Detection of Double Feeding
- Creases, Wavy Streaks, or Fusing Error

For detailed procedure, see the Troubleshooting manual.

Paper edge detection

1331 [Jam Detection] → 06: [Setting]

Function

Sets the duration the light is emitted from the CIS (contact image sensor) to detect the paper edge for color media.

When to use

Increasing the duration/light intensity of the CIS is effective for frequent occurrences of J098 (over shift) and false detection of jams (J098) that may occur with color media that reflect small amount of light.

Related Troubleshooting

- J098

For detailed procedure, see the Troubleshooting manual.

Registration gate home position

1331 [Jam Detection] → 07: [Setting]

Function

Adjust optimum value to increase the accuracy of skew correction depending on paper weight.

When to use

To correct skews, move the cursor to [+] for thin paper and to [-] for thick paper.

Related Troubleshooting

- J080
- J097
- J098

For detailed procedure, see the Troubleshooting manual.

Transfer timing roller feed speed

1341 [Motor Speed] → [Speed Adjustment] → 01: [Transfer Timing Roller]

Function

Adjusts the transfer timing roller speed.

When to use

To troubleshoot problems caused by difference in the rotation speed against the PTR.

Related Troubleshooting

- Wrong Detection of Skew Horizontal Black Streaks (Image Edge)
- Uneven Density within 90mm of TE
- Stretched Image

For detailed procedure, see the Troubleshooting manual.

Paper transfer roller feed speed

1341 [Motor Speed] → [Speed Adjustment] → 02: [Paper Transfer Roller]

Function

Adjusts the paper transfer roller speed.

When to use

Image quality problems, for example, banding, spots, etc. which are caused by the difference in the rotation speed against the transfer timing roller.

Related Troubleshooting

- Banding: 63mm (2.4inches) Intervals
- Worm Holes: Text or Edge of an Image
- Worm Holes: When Using the Clear Toner

For detailed procedure, see the Troubleshooting manual.

Fusing belt feed speed

1341 [Motor Speed] → [Speed Adjustment] → 03: [Trans-Fusing Transfer Belt]

1341 [Motor Speed] → [Speed Adjustment] → 04: [Fusing Belt]

Function

Adjusts the rotation speed of the fusing belt.

When to use

Slow fusing line speed causes the sheets to slacken before the fusing nip and result in toner scattering. Increase the belt rotation speed in such case.

Especially when loading banner sheets to IMSS, decrease this setting value by 0.5%.

Related Troubleshooting

- Vertical Black Steaks

For detailed procedure, see the Troubleshooting manual.

Cooling roller after fusing/Paper output: diversion roller/Paper output roller/ Switchback: entrance roller/Switchback: exit roller

1341 [Motor Speed] → [Speed Adjustment] → 05: [Cooling Roller After Fusing]

1341 [Motor Speed] → [Speed Adjustment] → 06: [Paper Output: Diversion Roller]

1341 [Motor Speed] → [Speed Adjustment] → 07: [Paper Output Roller]

1341 [Motor Speed] → [Speed Adjustment] → 08: [Switchback: Entrance Roller]

1341 [Motor Speed] → [Speed Adjustment] → 09: [Switchback: Exit Roller]

Function

Adjusts the motor rotation speed.

When to use

Effective for scratches, streaks, wrinkles/creases in sub scan direction (across feed direction).

Related Troubleshooting

- Scratches, Streaks, or Vertical Streaks Appear on the Image

For detailed procedure, see the Troubleshooting manual.

