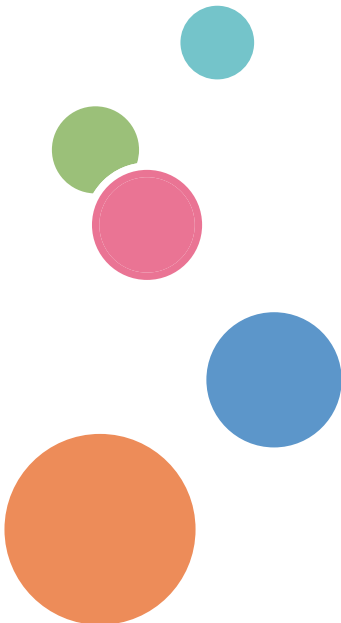


Pro C9200/C9210



Operating Instructions

Advanced Settings for Custom Paper



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

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1. Introduction

This chapter provides an overview of the Media Library.

Basic Procedure

1

ProC9200/C9210 Series 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.

In addition to these technologies, 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:

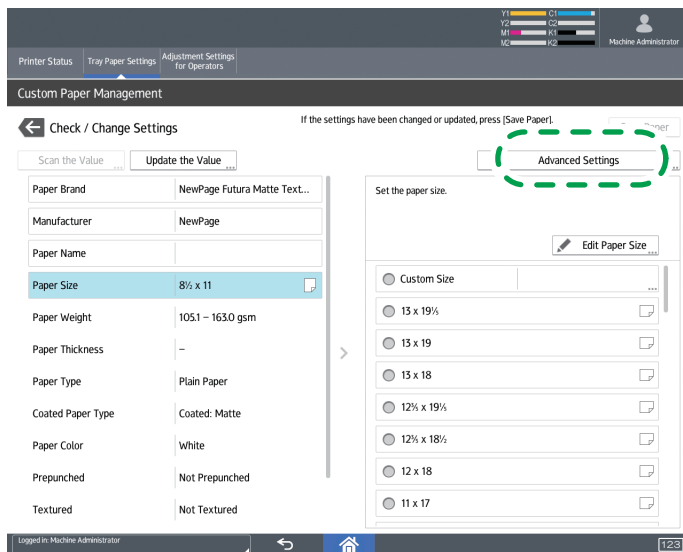
1. Select a media from the library and associate the media to a tray.
2. Set the media on the associated tray.
3. Specify the media in Job Properties of the color controller.

Advanced Settings

1

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].



DZH310

In this menu, the followings can be adjusted:

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

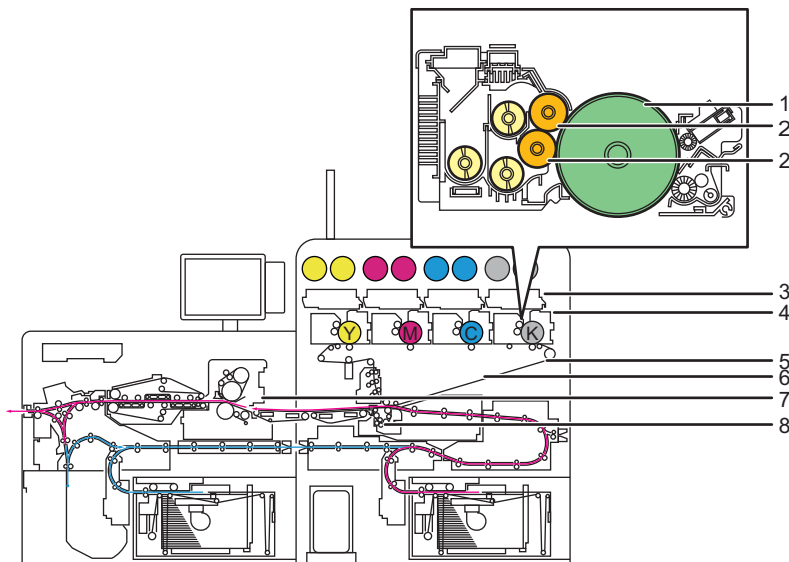
To effectively adjust the above, it is important to have a basic understanding of how the printer works.

2. Printing Process

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

Overview

2



DZH300

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

The printing process consists of the following steps:

Drum charge → Laser exposure → Development → Transfer → Fusing

- Drum charge The charge roller [4] gives an equal charge across the surface of the OPC drum [1].
- Laser exposure Laser unit [3] creates an electrostatic latent image on the OPC drum [1].

- Development The development roller [2] 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 [5].

Belt-to-paper transfer Toner image on the ITB [5] is transferred onto the paper when the paper passes through the PTR [8].

- Fusing The fusing unit [7] applies heat and pressure to fuse the toner image onto the paper.

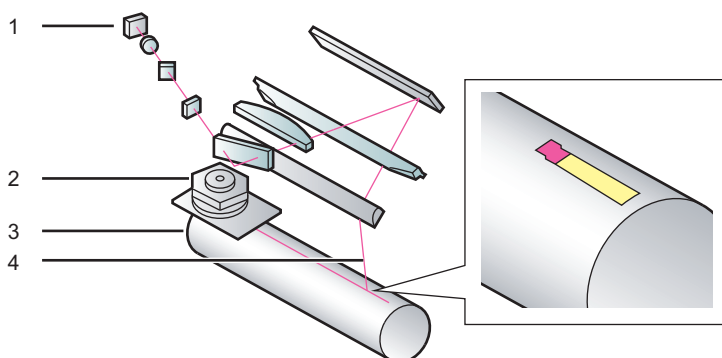
Laser Exposure

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.

Main scan direction ... Across the paper feed direction

Sub scan direction ... Along the paper feed direction

Related Advanced Settings

page 26 "Image Position/Magnification"

page 32 "Erase margin: leading/trailing edge"

Development

Development

2

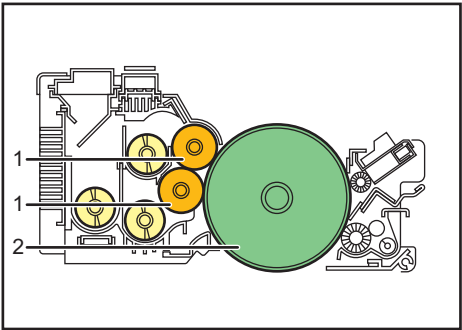
The development system employs the dual-component^{*1} development method.

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

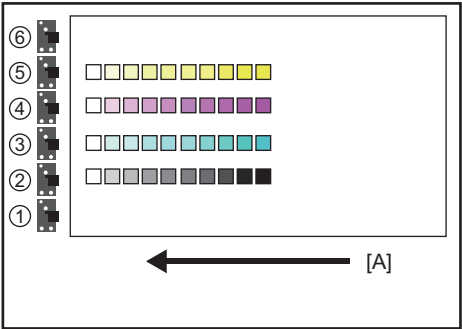
Electrostatic latent image areas of the drum attract negatively charged toner particles from the development roller [1].

To maintain consistent amount of toner attraction from the development roller [1] to the drum [2] for stable image quality(toner density), image quality adjustment process runs automatically when turning on the machine power and at optimum timings.

- *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.



During the image quality adjustment process, toner patterns in 10 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).



Related Advanced Settings

page 27 "Maximum Image Density"

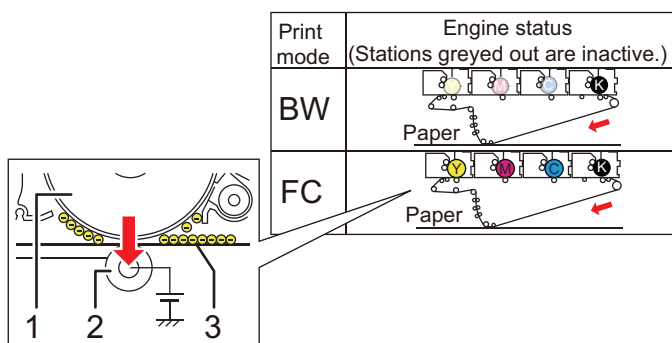
Drum-to-Belt Transfer

Drum-to-Belt Transfer

2

Among the following two print modes, the correct mode is selected automatically according to the print data sent from the printer controller.

- BW mode: Job contains only black data.
- FC mode: Job contains color data.



DZH308

1. OPC drum
2. Image transfer roller
3. 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 27 "Drum-to-belt Transfer Current"

Belt-to-Paper Transfer

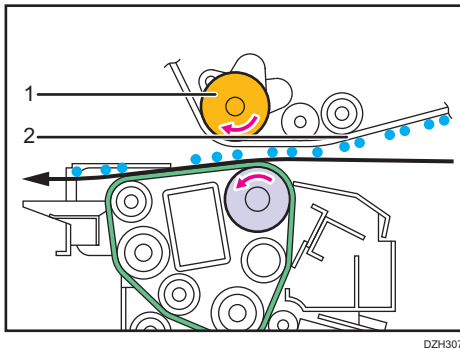
Belt-to-Paper Transfer

Applied voltage

2

The paper transfer roller features AC transfer technology.

Negatively charged toner image (-) on the ITB [2] is transferred to the paper by applying a negative bias (-) to the paper transfer bias roller [1].



DZH307

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

- DC bias: For all media types
- AC bias (Standard): For media other than metallic pearl and textured paper
- AC bias (Textured): For textured paper

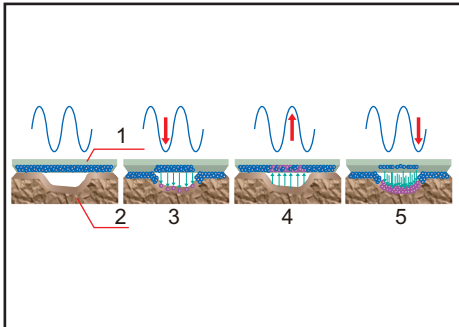
* At low temperature and humidity, only DC bias is applied.

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 due to the greater amount of transferred toner.)

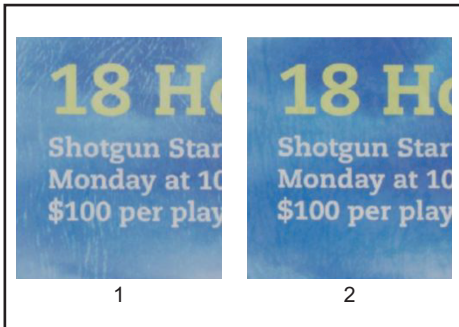
By nature of AC, in which the current flows in an alternating up-and-down movement, toner particles sync with this movement. Toner transferred to the media is pulled back to the ITB to gain further transferability, enabling toner particles to fall into the indentations on rough surfaced media.

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

Related Advanced Settings

- DC bias
page 28 "Paper transfer current"

Leading/Trailing edge correction

To prevent image quality problems owing to the instability of the leading/trailing edges of the paper when entering the nip of the PTR, the belt-to-paper transfer bias is adjusted for the leading/trailing edges.

- Belt-to-paper transfer: Leading edge correction

- Belt-to-paper transfer: Trailing edge correction
- Belt-to-paper transfer: Length of area to apply correction at leading edge of paper
- Belt-to-paper transfer: Length of area to apply correction at trailing edge of paper

↓ Note

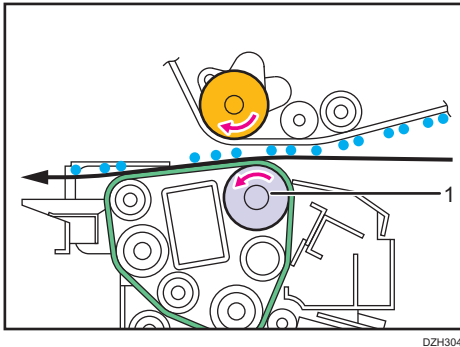
- Current vs. Voltage
 - Bias is applied using 'constant current' for drum-to-belt and belt-to-paper transfer, as this method is resilient to changes in operational environment and thickness of the media.
 - On the other hand, 'constant voltage' is used for AC bias and as this method does not require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

Related Advanced Settings

page 29 "Belt-to-paper transfer correction: LE/TE"

PTR Rotation Speed

The PTR [1] 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 than the target the image will stretch.

A problem such as side-to-side image magnification misalignment and mottling on black half-tone parts may occur in the printed image because of the speed difference relative to the image transfer belt. To solve this problem, it is necessary to adjust the PTR rotation speed.

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. To prevent this problem, you can adjust the PTR rotation speed.

Related Advanced Settings

page 42 "Paper transfer roller speed"

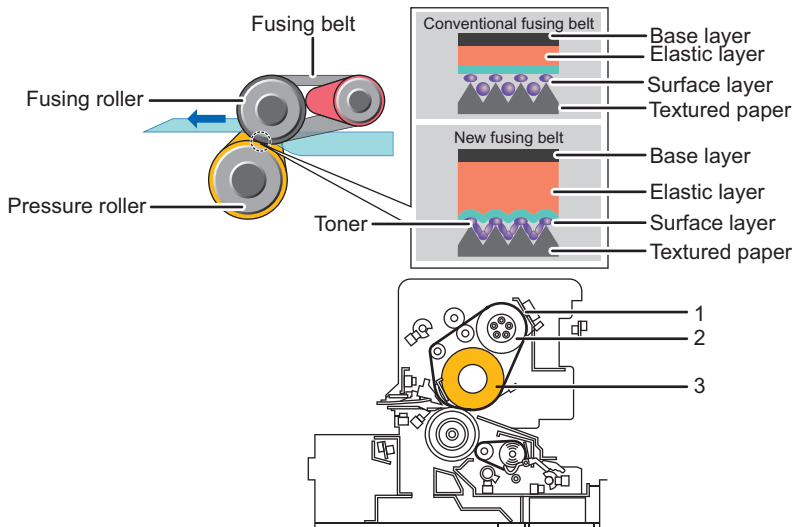
page 42 "Transfer timing roller feed speed"

Fusing

Fusing Unit

2

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.



DZH306

There are 5 heaters in the heating roller [2].

Toner is fused onto the media by applying heat to the fusing belt [1] via the heating roller [2], maintaining consistent temperature and pressure on the media.

The fusing temperature is dependent upon the amount of toner.

(The more there is toner, the more heat needed for fusing.)

The fusing temperature can be adjusted separately for both print modes; FC and BW.

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 [1] due to the heat absorption by the paper.

In addition, the target fusing temperature is momentarily increased another notch immediately before the pressure roller [3] contacts the fusing belt, to compensate for the slight temperature drop due to the contact.

Printing starts when the temperature of the fusing belt and pressure roller reaches the temperature range in which paper feeding is allowed.

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 30 "Fusing temperature"

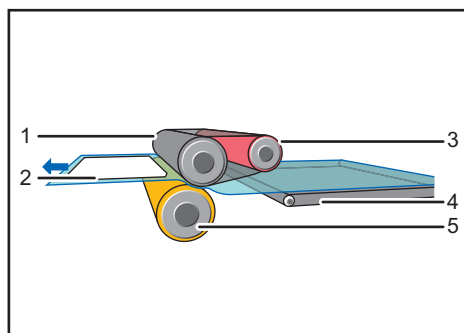
Fusing Nip Width Adjustment

2

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

The fusing nip pressure can be adjusted separately for standard media and envelopes.

You can adjust in four levels for standard media and more precisely for envelopes.



DZH013

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

Related Advanced Settings

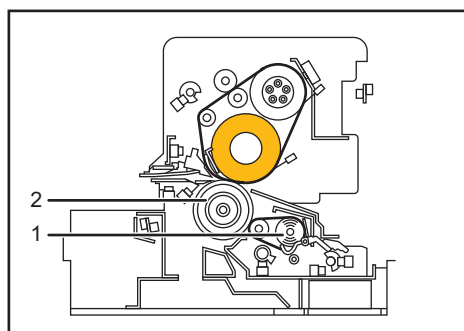
page 33 "Fusing nip width adjustment: envelope" / page 32 "Fusing nip width"

Fusing Cleaning Unit

The cleaning web [2] is pressed against the pressure roller [1], 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 in four levels.



DZH322

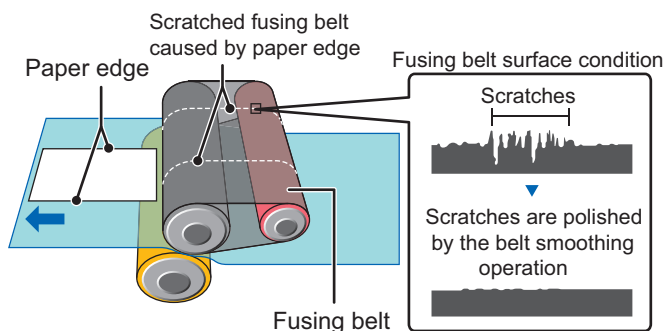
Related Advanced Settings

page 31 "Fusing cleaning web"

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.

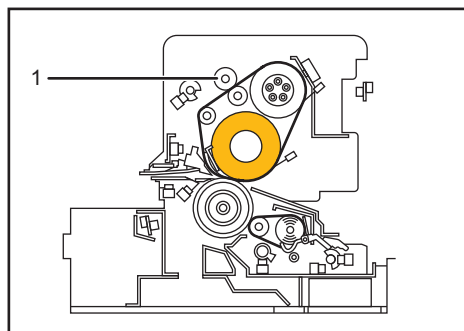
Also, continuous printing of high image coverage pages causes the wax contained in toner to gradually adhere to the fusing belt, affecting the gloss consistency of the prints.



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 [1].

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



DZH309

2

Related Advanced Settings

page 34 "Smoothing roller rotation interval"

Paper Delivery

Mainframe

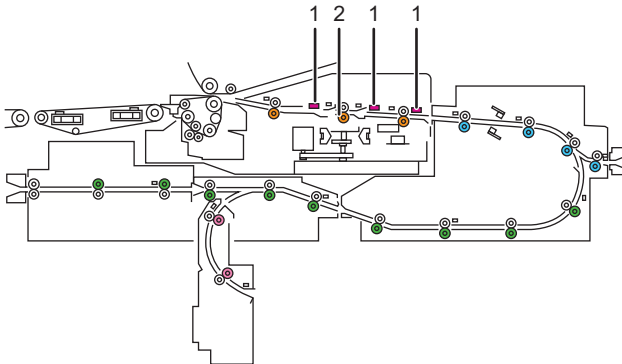
2

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. CIS* measures the amount of skew.
2. The registration roller rotates (about the fixed support axis) and then shifts sideways to adjust the skew and main scan registration.



DZH321

- 1. Contact Image Sensor (CIS)
CIS calculates the amount of correction
- 2. Registration roller
The registration roller adjusts the skew and main scan registration.

* Contact Image Sensor

Related Advanced Settings

page 41 "Skew detection"

Leading edge detection mechanism in more detail

When the paper passes through the registration roller, 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.

High voltage is detected when the reflection is high; white paper, whereas low voltage is detected when the reflection is low; dark/black paper.

The CIS mode and its light intensity are set according to the color of the media (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 41 "Paper edge detection"

Double-feed detection mechanism

Double-feed detection prevents unwanted blank sheets from mixing in the job to minimize inspection time for high productivity.

Double-feeds are detected by reading the difference in the ultrasonic wave lengths between one sheet and two or more sheets. The function also works for colored media and transparencies.

When detected, the machine alerts jam code J099.

Related Advanced Settings

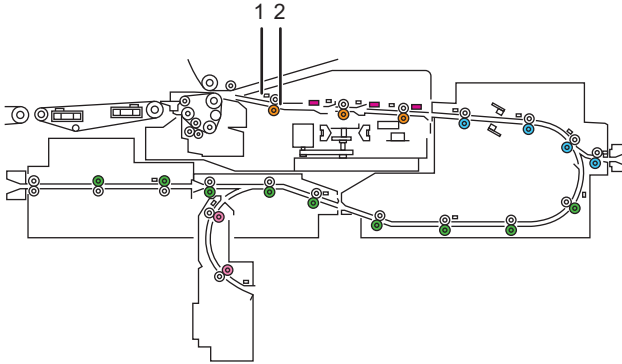
page 40 "Double feed detection"

Sub scan registration mechanism

After correcting the main scan registration, the sheet passes through the transfer timing roller [2] and the transfer timing sensor [1] detects the leading edge of the sheet.

The rotation speed of the transfer timing roller [2] 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 ($\pm 4.0\text{mm}$), the system alerts J080 and stops.



DZH312

Related Advanced Settings

page 40 "J080 detection"

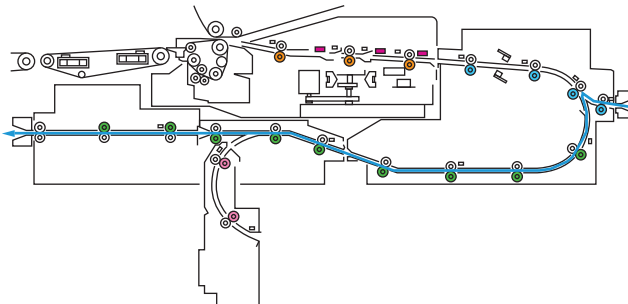
Roller speed adjustment

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.



DZH320

Related Advanced Settings

page 42 "Transfer timing roller feed speed" / page 43 "Fusing belt feed speed" / page 44 "Paper Output: Entrance/Decurler Switchback/Cooling Transport"

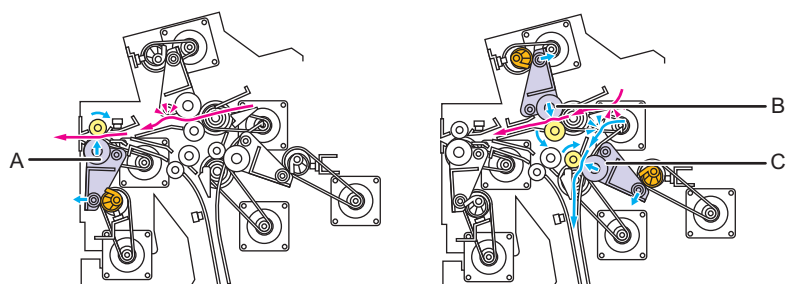
Decurl Unit

De-curling mechanism

Pro C9200/C9210 is installed with three decurler units before the paper exit.

To de-curl the sheets, the direction of the curl (face or back) observed on the sheets and the de-curl intensity need to be specified in Advanced Settings. The upper or lower metal roller presses and delivers the sheet to the upper or lower paper path according to the settings.

2



DZH318

A. Decurler pressure motor

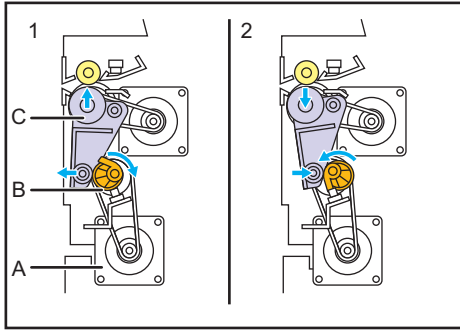
B. Decurler pressure cam

C. Decurler pressure roller

The speed in which the paper passes through the decurl unit can be adjusted.

If the speed is too fast, toner may adhere to the edges of the sheets, and if too slow, wrinkles/creases may occur. Set to an optimal speed according to the stock.

1. The de-curl pressure motor [A] rotates the de-curler pressure cam [B] and the de-curl pressure roller [C] presses the sheet.
2. After the sheet passes through, the motor rotates the cam in the opposite direction for the pressure roller to release the nip.



DZH319

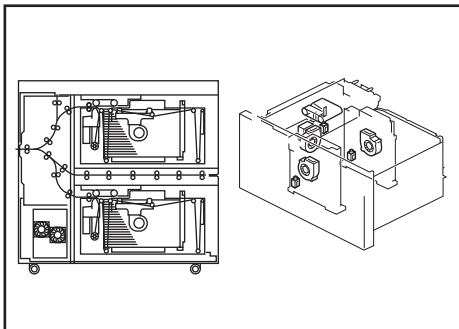
Vacuum Feed LCIT

Like the paper feed units of offset printer systems, the Vacuum Feed Large Capacity Input Tray employs the air-assist pick-up feature.

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 sheet 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.
- Return fan: Sucks air beneath the floating sheet in downward direction to prevent excessive suction by the suction fan in upward direction that may cause double-feeds.

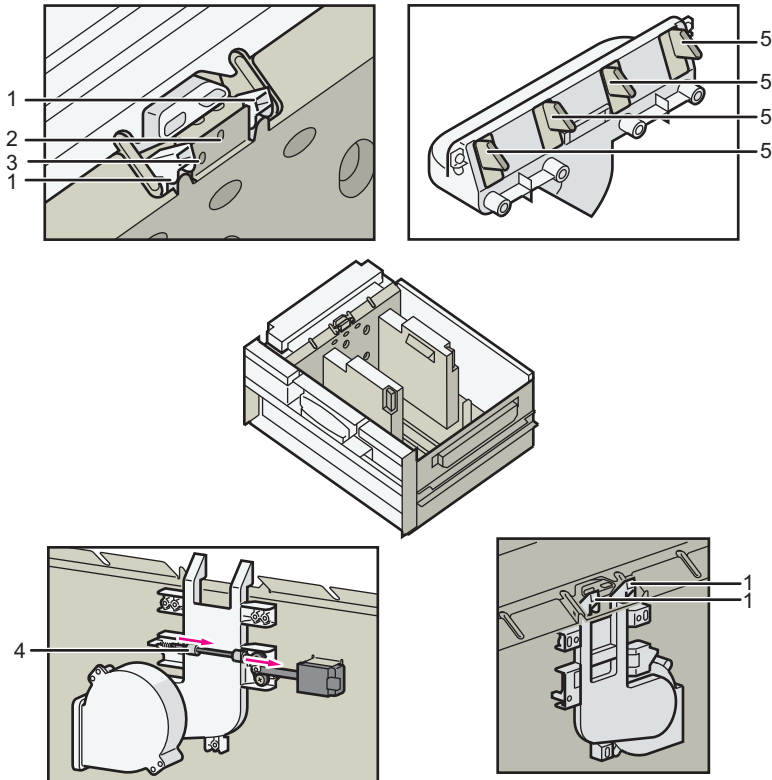


DZH022

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

Related Advanced Settings

page 35 "Main Tray/Vacuum Feed LCIT"



DZH316

1. Return nozzle
2. Stack upper limit: High
3. Stack upper limit: Low
4. Return fan shutter valve
5. Floating nozzle

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

3

Image quality is adjusted in balance with productivity according to the print mode (BW/FC), 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 1241: [Fusing Temperature].

The following table describes the relation between the print 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%

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

Registration

Image Position/Magnification

1 101 [Image Position]

1 102 [Auto Adjust Image Position]

1 103 [Image Position Feedback Correction]

1 104 [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.
- To switch the sensor to be used between plain paper printing and special paper printing, such as printing on colored paper and transparencies.

Related Troubleshooting

- Adjusting the Image Position on Side1
- Adjusting the Image Position on Side2
- Horizontal Streaks at the Area within 20 mm (0.8 inches) from the Leading Edge
- Aligning the Image Position on Side 2 to That on Side 1 (Using a Template to Align the Image Position on Side 1 and 2)
- Other Paper Delivery Problems

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

- Color Dots: Textured Paper
- Low Image Density
- White Spots on a Textured Surface

For detailed procedure, see the Troubleshooting manual.

Drum-to-belt 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

- Horizontal Streaks at the Area within 20 mm (0.8 inches) from the Leading Edge
- Low Image Density
- White Spots: Scaly
- Toner Scattering: Trailing Edge

For detailed procedure, see the Troubleshooting manual.

Drum-to-belt transfer correction

1215 [Image Transfer Output Correction]

Function

Corrects the amount of transfer current applied to the drum-to-belt transfer process.

Effective for:

If white spots appear, decrease this value.

If the leading edge shows density problems or scattered toner or streaks appearing across the feed direction, increase this value.

If toner is scattered close to the trailing edge, increase this value.

If the job is printed in FC and black appears low in density, increase this value.

Related Troubleshooting

None

Belt-to-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

- Low Image Density
- Faint Image: Oval
- White Spots/Toner Blasting
- Mottling
- Mottling: Half-Tone Parts
- Horizontal White Streaks around the Edge of the Paper
- Color Dots: Textured Paper
- White Spots on a Textured Surface
- Density Fluctuation in Black: Cork-Shaped
- Fingerprints appear

For detailed procedure, see the Troubleshooting manual.

Belt-to-paper transfer correction: LE/TE

1217 [Paper Transfer Output Correction: Paper Edge]

Function

Adjusts the amount and area (width) of 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

- Density Fluctuation at the Leading Edge (When Using Thick Paper)
- Density Fluctuation at the Trailing Edge (When Using Thick Paper)
- Faint Image around the Leading Edge
- Toner Scattering: Trailing Edge

For detailed procedure, see the Troubleshooting manual.

Paper transfer gap

1227 [Paper Transfer Nip Operation Mode]

1228 [Paper Transfer Nip]

Function

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

Default setting of 1227: [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

None

Belt-to-paper transfer nip pressure

1229 [Paper Transfer Pressure]

Function

Adjusts the nip pressure between the paper transfer roller and the bias roller in four levels (1-4).
Select a higher number as the surface of the media gets rougher.

Effective for:

- Inaccurate image magnification rate along feed direction
- Mottled effect, faint images, image degradation at the leading/trailing edges

Related Troubleshooting

- Horizontal Streaks: When Using Thick Paper (3)
- Horizontal Streaks at the Area within 20 mm (0.8 inches) from the Leading Edge
- Color Dots: Textured Paper
- Uneven Density within 127 mm (5 inches) from the Trailing Edge
- White Spots on a Textured Surface
- Mottling: Half-Tone Parts
- Misregistered image magnification

For detailed procedure, see the Troubleshooting manual.

Fusing

Fusing temperature

1241 [Fusing Temperature]

Function

Adjusts the temperature of the fusing belt.

Effective for:

Poor fusing, residual gloss image (ghosting), uneven gloss, fusing jam (J036).

Related Troubleshooting

- Improving Fusibility
- Black (color) Spots (2)
- Uneven Gloss
- Uneven Gloss: Wavy
- Uneven Gloss: Orange Peel
- Paper Edges are Stained

- Creases, Worm Track (Wavy Streaks), or Bends Appear
- If (J086) Appears
- Reducing the Waiting Time Prior to Printing
- Improving Throughput when Continuously Printing on Paper of Different Types or Thicknesses
- Excessive or Uneven Glossiness

For detailed procedure, see the Troubleshooting manual.

Fusing pressure roller contact before job

3

1242 [Fusing Pressure Roller On Before Fusing]

Function

The pressure roller comes into contact with the fusing belt before the job starts, so that the pressure roller is well heated in advance. With the pressure roller heated, toner particles that adhere to the pressure roller during the job will melt and become more easily removable by the cleaning web.

Effective for:

Small black spots, images affected by toner adhesion to the pressure roller separation plate

Related Troubleshooting

- Black (color) Spots (2)

For detailed procedure, see the Troubleshooting manual.

Fusing pressure roller contact after job

1243 [Fusing Pressure Roller On After Fusing]

Function

The pressure roller comes into contact with the fusing belt after the job completes, to heat the pressure roller. With the pressure roller heated, toner particles that adhered to the pressure roller during the job will melt and become more easily removable by the cleaning web.

When to use

This setting basically does not require any adjustments.

Related Troubleshooting

None

Fusing cleaning web

1244 [Fusing Cleaning Web]

Function

Specifies the interval of the web cleaning operation and the behavior of the pressure roller when it separates from the fusing belt.

Effective for:

Black spots

Related Troubleshooting

- Black (color) Spots (2)

For detailed procedure, see the Troubleshooting manual.

3

Erase margin: leading/trailing edge

1245 [Erase Margin]

Function

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

When to use

An insufficient margin at the leading edge may cause wraparound jams in the fusing unit or affect the images at the leading edge of uncoated paper or coated thin paper.

Related Troubleshooting

- If (J038) Appears
- Other Paper Delivery Problems
- Shortening the Leading/Trailing Edge Margins
- Aligning the Image Position on Side 2 to That on Side 1 (Using a Template to Align the Image Position on Side 1 and 2)

For detailed procedure, see the Troubleshooting manual.

Fusing nip width

1246 [Fusing Nip Width Adjustment] → 01:[Other than Envelope]

Function

Adjusts the nip width for plain paper.

When to use

If stains appear on the edges of stacked sheets when printed on plain paper, or wrinkles occur when printed thin paper, adjust this setting.

Related Troubleshooting

None

Fusing nip width adjustment: envelope

1246 [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, Worm Track (Wavy Streaks), or Bends Appear
- Wrong Detection of Skew
- Paper Misfeeding
- Jam code J122 appears when envelopes are delivered
- Aligning the Image Position on Side 2 to That on Side 1 (Using a Template to Align the Image Position on Side 1 and 2)
- Envelopes

For detailed procedure, see the Troubleshooting manual.

Fusing temperature range

1247 [Fusing Temperature Range]

Function

Specifies the fusing temperature range that permits paper feeding. Setting a large range enables quick job start, but with the risk of poor fusing.

When to use

Waiting time is too long, for example, when the job is printed on thin paper or is a mixed media job.

Related Troubleshooting

- Improving Throughput when Continuously Printing on Paper of Different Types or Thicknesses

For detailed procedure, see the Troubleshooting manual.

Fusing pressure roller cooling

1248 [Fusing Pressure Roller Cooling]

Function

Set the cooling fan level of pressure roller.

When to use

This setting basically does not require any adjustments.

Related Troubleshooting

None

Smoothing roller rotation interval

1249 [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

- Glossy Lines at the Edge of the Paper

For detailed procedure, see the Troubleshooting manual.

Print mode when switching paper type

1250 [Print Mode When Switching Paper Type]

Function

Specifies the waiting time before the feed tray switches for mixed media job. Selecting [Productivity Priority] will shorten the waiting time, but may cause poor fusing.

When to use

Use this when precise balance between productivity and image quality needs to be adjusted in mixed media jobs in which tray switching time is unavoidable.

Related Troubleshooting

None

Paper Feed/Delivery

Main Tray/Vacuum Feed LCIT

Main/2-Tray LCIT: paper feed mode

1301 [Main/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.

Main/2-Tray LCIT: updraft fan level

1302 [Main/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: [Main/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

Main/2-Tray LCIT: blower fan level

1302 [Main/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: [Main/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

None

Main/2-Tray LCIT: side fan level

3

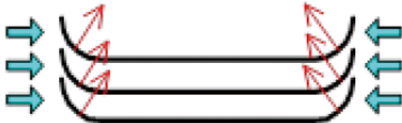
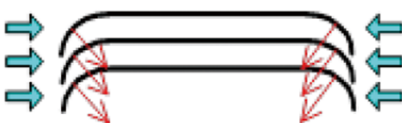
1302 [Main/2-Tray LCIT: Fan/Shutter] → [Side Fan Level]

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: [Main/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

None

Main/2-Tray LCIT: vacuum fan level

1302 [Main/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: [Main/2-Tray LCIT: Paper Feed Mode] to [Prevent Double Feed (Weakest Blow)], increase the airflow in steps of 10%.

If double-feeds occur with paper with high porosity such as air-laid non-woven paper, decrease the airflow in steps of 10%.

Related Troubleshooting

None

3

Main/2-Tray LCIT: return fan level

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

Function

Specifies the amount of air sucked beneath the floating sheet in downward direction by the return fan, to prevent double-feeds especially with thin media or paper with large face-up curls as a result of excessive suction in upward direction by the suction fan.

When to use

If double-feeds still occur after making adjustments in 1301:[Main/2-Tray LCIT: Paper Feed Mode], increase the airflow in steps of 10%.

Related Troubleshooting

None

Main/2-Tray LCIT: updraft fan shutter

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

Function

Specifies the behavior of the updraft fan shutter.

When to use

This setting basically does not require any adjustments.

Related Troubleshooting

None

Main/2-Tray LCIT: return fan shutter

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

Function

Specifies the behavior of the return fan shutter in the Vacuum Feed LCIT.

If set to On, the shutter opens and closes per sheet.

If set to Off, the shutter remains open.

When to use

This setting basically does not require any adjustments.

Related Troubleshooting

None

Main/2-Tray LCIT: vacuum fan shutter

3

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

Function

Specifies the behavior of the vacuum fan shutter.

If set to On, the shutter opens and closes per sheet.

If set to Off, the shutter remains open.

When to use

This setting basically does not require any adjustments.

Related Troubleshooting

None

Main/2-Tray LCIT: other setting

1303 [Main/2-Tray LCIT: Other Setting]

Function

Specifies the waiting time after the first sheet of the job floats up until it becomes stable and ready for feed.

When to use

If misfeeds occur at the start of the job, specify a shorter time by decreasing the value.

If double-feeds occur at the start of the job, specify a longer time by increasing the value.

Related Troubleshooting

None

Adjusting the Machine's Paper Delivery and Output

Adjust Paper Curl

1311 [Correct Paper Curl]

Function

Specifies the amount of airflow from the fans to de-curl face-up or face-down curled stocks when feeding.

When to use

Use this when the stock is observed with curls and causes jams or dog-ear folds or poor stacking. It is also effective in preventing the sheets from curling after they are printed.

Related Troubleshooting

None

Double feed detection

1321 [Jam Detection] → 01: [Detect JAM099]

Function

Specifies whether or not to detect double-feeds.

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

- Envelopes

For detailed procedure, see the Troubleshooting manual.

J080 detection

1321 [Jam Detection] → 03: [Detect JAM080]

Function

Specifies whether or not to stop printing, if registration in sub scan direction (along feed direction) exceeds the adjustable range (+/-4mm).

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 4mm, but no more than 4mm.

Related Troubleshooting

- If (J097) Appears
- If (J098) Appears
- Wrong Detection of Skew
- Preprinted Paper

For detailed procedure, see the Troubleshooting manual.

Skew detection

3

1321 [Jam Detection] → 02: [JAM097/098 Detect Threshold]

1321 [Jam Detection] → 05: [JAM097]

1321 [Jam Detection] → 04: [JAM098]

Function

Specifies whether or not to automatically detect paper skew.

When to use

Deactivate this setting, if J097/J098 occurs frequently. However, do so only after confirming that adjusting 1321-06: [Setting] does not resolve the jam.

Related Troubleshooting

- If (J097) Appears
- If (J098) Appears
- Wrong Detection of Skew
- Preprinted Paper

For detailed procedure, see the Troubleshooting manual.

Paper edge detection

1321 [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

Use this if excessive (JAM97/JAM98) skew/shifting occurs frequently. When printing on highly reflective paper such as thick color paper, a (JAM97/JAM98) paper jam may be erroneously detected. In such a situation, it is necessary to make adjustments such as increasing luminance.

Also, if CIS luminance is high, paper dust and stains may accumulate in the machine, and this may cause erroneous (JAM97/JAM98) jam detection. When printing on plain and thin color paper, it may be effective to adjust the luminance to standard value "3".

Related Troubleshooting

None

Transfer timing roller feed speed

1331 [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

- Horizontal White Streaks around the Edge of the Paper
- Uneven Density within 127 mm (5 inches) from the Trailing Edge
- Mottling: Half-Tone Parts
- Misregistered image magnification
- Values for Adjusting [Paper Transfer Roller] and [Transfer Timing Roller]

For detailed procedure, see the Troubleshooting manual.

Paper transfer roller speed

1331 [Motor Speed] → [Speed Adjustment] → 02: [Paper Transfer Roller]

Function

Adjusts the paper transfer roller speed.

When to use

If a problem such as side-to-side image magnification misalignment and mottling on black half-tone parts occurs in the printed image because of the speed difference relative to the image transfer belt, the problem may be solved by adjusting the line speed.

Related Troubleshooting

- Horizontal White Streaks around the Edge of the Paper
- Uneven Density within 127 mm (5 inches) from the Trailing Edge
- Mottling: Half-Tone Parts
- Misregistered image magnification
- Values for Adjusting [Paper Transfer Roller] and [Transfer Timing Roller]

For detailed procedure, see the Troubleshooting manual.

Fusing belt feed speed

1331 [Motor Speed] → [Speed Adjustment] → 03: [Trans-Fusing Transf Belt 1]

1331 [Motor Speed] → [Speed Adjustment] → 04: [Trans-Fusing Transf Belt 2]

1331 [Motor Speed] → [Speed Adjustment] → 05: [Fusing Belt]

Function

Adjusts the rotation speed of the fusing belt.

When to use

Slow fusing speed causes the sheets to slacken before entering the fusing nip and scatter the toner image. In such case, increase the fusing belt rotation speed.

For banner printing, decrease the belt rotation speed by 0.5%.

Related Troubleshooting

- Glossy Lines at the Edge of the Paper
- Uneven Gloss: Foggy
- Shortening the Leading/Trailing Edge Margins

For detailed procedure, see the Troubleshooting manual.

Process Speed Setting

1331 [Motor Speed] → [Speed Adjustment] → 06: [Process Speed Setting]

Function

Adjusts the speed of all the motors related to paper transport.

When to use

Insufficient fusing, wrinkles on thin paper, image quality degradation.

Related Troubleshooting

- Improving Fusibility
- Horizontal Streaks: When Using Thick Paper (1)
- Uneven Gloss
- Creases, Worm Track (Wavy Streaks), or Bends Appear
- If (J086) Appears
- Delivered Sheets Are Not Stacked Properly

For detailed procedure, see the Troubleshooting manual.

Paper Feed Interval Setting

1331 [Motor Speed] → [Speed Adjustment] → 07: [Paper Feed Interval Setting]

Function

Adjusts the speed of all the motors related to paper transport.

When to use

Clots of toner (black spots) appear on the printouts

Related Troubleshooting

- Horizontal Streaks: When Using Thick Paper (1)
- Black (color) Spots (2)

For detailed procedure, see the Troubleshooting manual.

Paper Output: Entrance/Decurler Switchback/Cooling Transport

1331 [Motor Speed] → [Speed Adjustment] → 08: [Paper Output: Entrance]

1331 [Motor Speed] → [Speed Adjustment] → 09: [Decurler Switchback]

1331 [Motor Speed] → [Speed Adjustment] → 10: [Cooling Transport]

Function

Adjusts the motor speed of the above units.

When to use

Paper transport speed is inconsistent among the roller, causing the paper to bend and the guide plate(s) to scratch the fused image.

Related Troubleshooting

- Oblique Wavy Streaks

For detailed procedure, see the Troubleshooting manual.

Adjust paper curl (Fusing)

1341 [Adjust Paper Curl (Fusing)]

Function

Reduces the difference in the temperatures between the fusing belt and the pressure roller so that both sides of the sheets are heated evenly when passing through the nip.

When to use

Printouts are curled.

Related Troubleshooting

None

