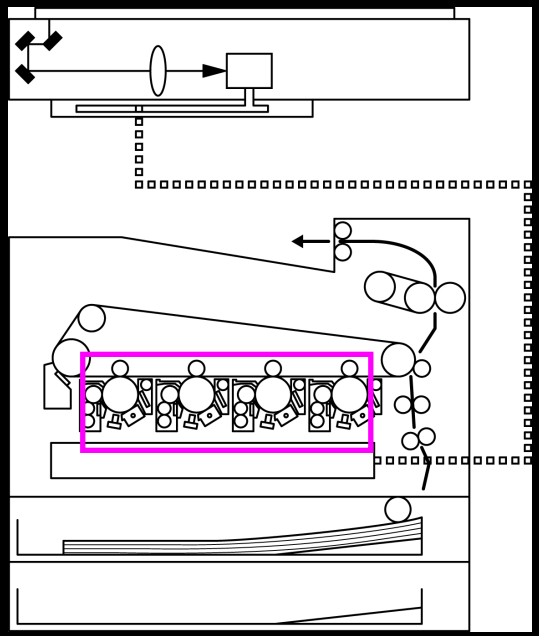
6. Hopper Section



1. Improvements from 7920

2. Toner Replenishment

3. Toner Empty Detection

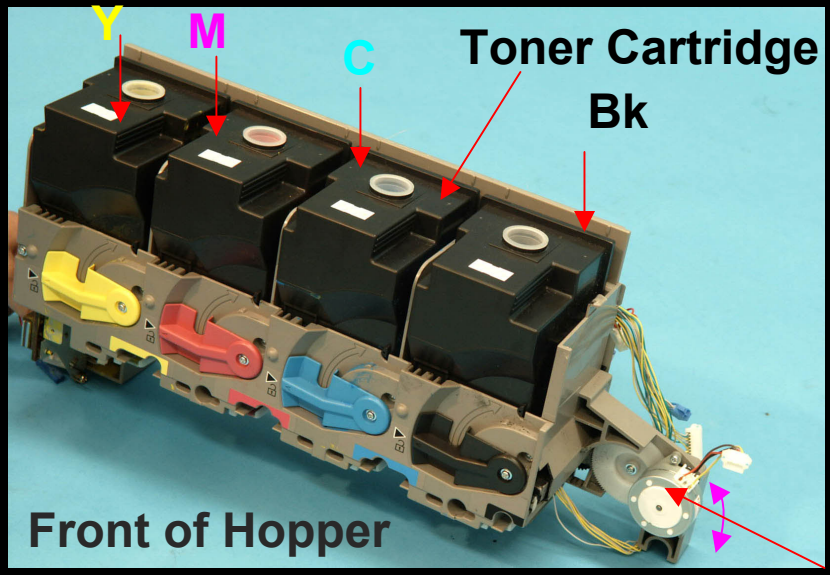
4. Toner Cartridge Set Detection

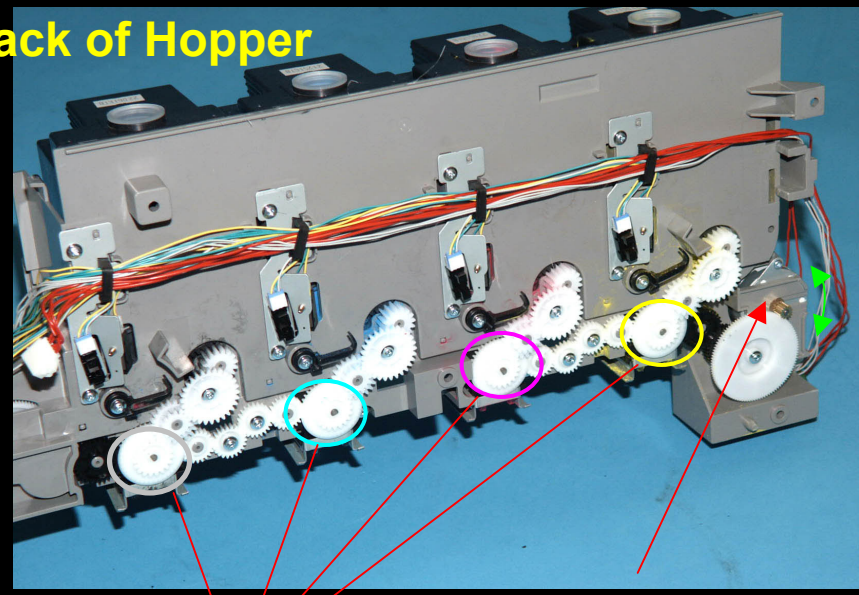
5. Special Features of Polymerized Toner

6.1 Improvements

Toner (Color/Bk)	Polymerized Toner Toner Particle Size: 6.4 µm
Toner Replenishment	Cartridge (TC, 230g) (Operator Needs: Ease of Toner Replenishment)
TC Life	10K Equivalent
Remaining Toner Detection	Detection with Optical System (in accordance with adoption of the Cartridge System)
Detection of TC Installation	Yes: TC Installation Sensor (Added in accordance with adoption of the Cartridge system)
Deodorant Filter	Yes

6.2 Toner Replenishment



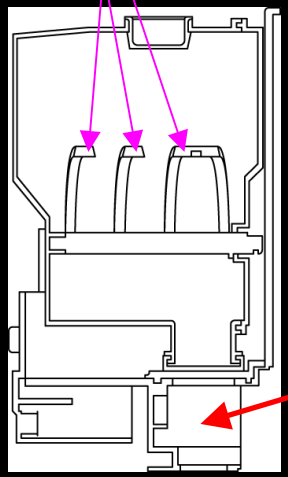


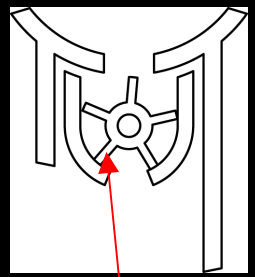
Toner Replenishing Motor C/Bk

Drive Gears (employing one-way clutches)

Toner Replenishing Motor Y/M

Agitating Coils





Metering Roller

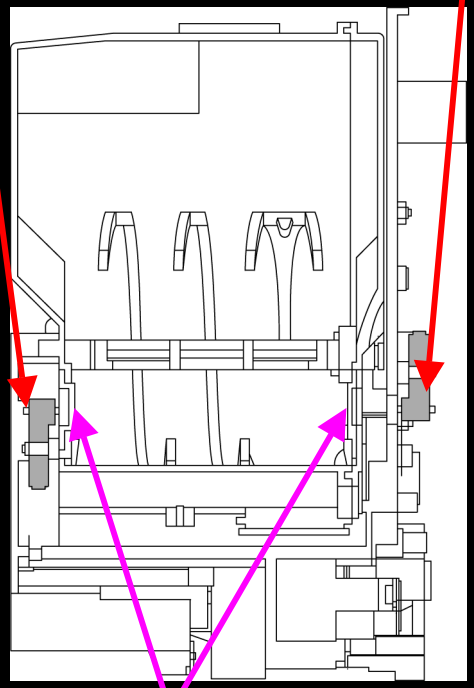
Toner Replenishing Motor C/Bk	Bk	C
Forward Rotation	Rotated	Stop
Backward Rotation	Stop	Rotated

Toner Replenishing Motor Y/M	Y	M
Forward Rotation	Rotated	Stop
Backward Rotation	Stop	Rotated

6.3 Toner Empty Detection

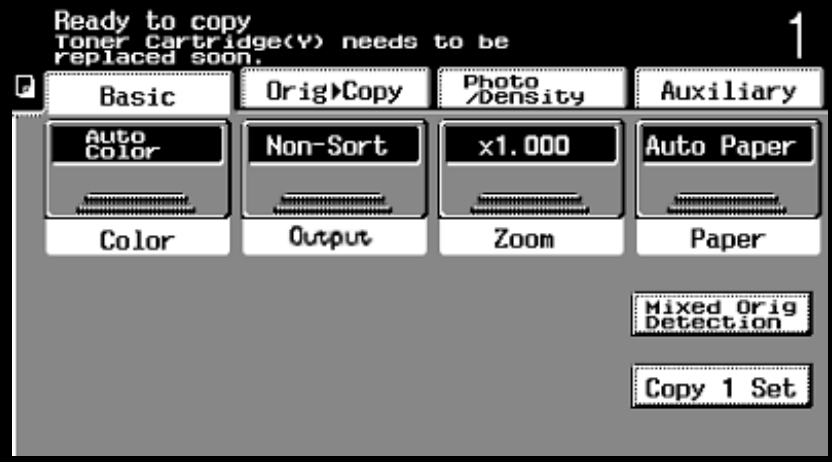
Toner Near-Empty Detection Sensor

Toner Near-Empty Light Emitting Sensor

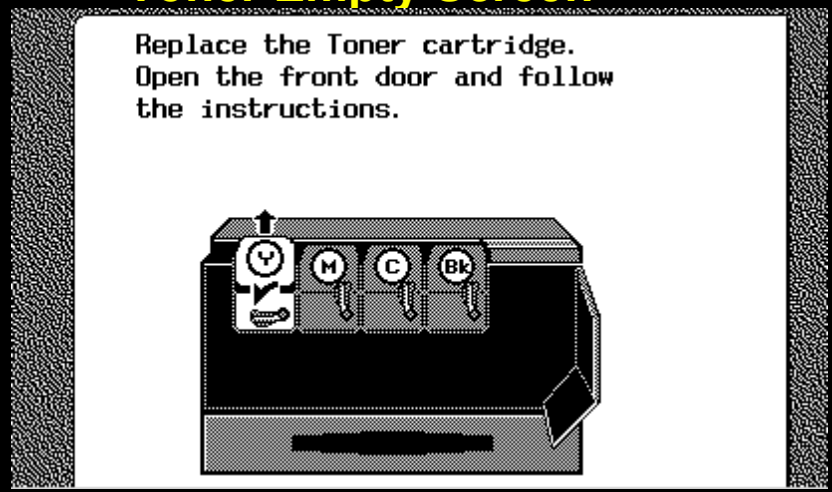


Transparent Window

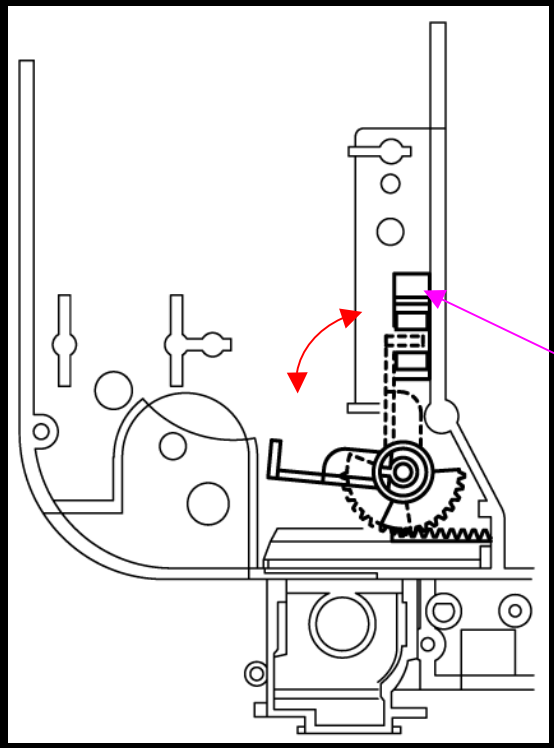
Toner Near-Empty Screen



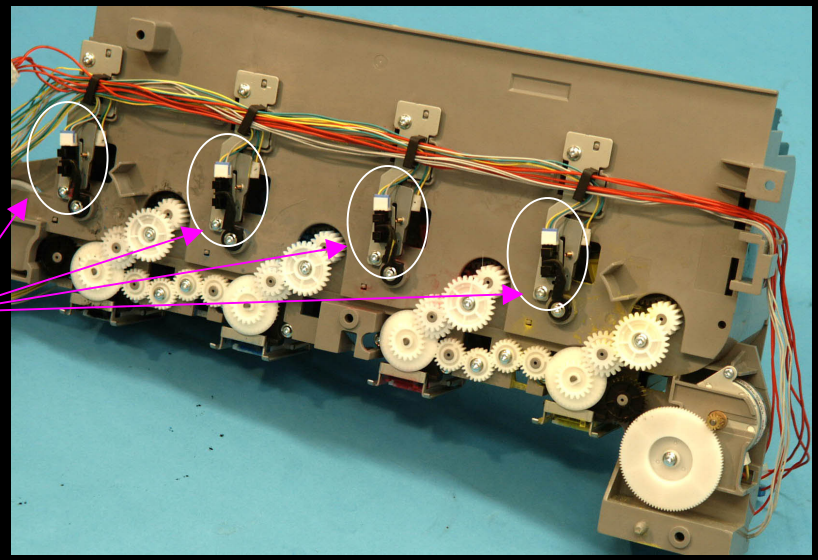
Toner Empty Screen



6.4 Toner Cartridge Set Detection



TC Set Sensor



6.5 Special Features of Polymerized Toner

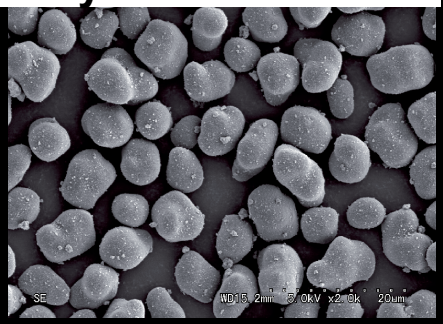
No Fuser Oil Required

Small Particle Size
(6.4 μ m)

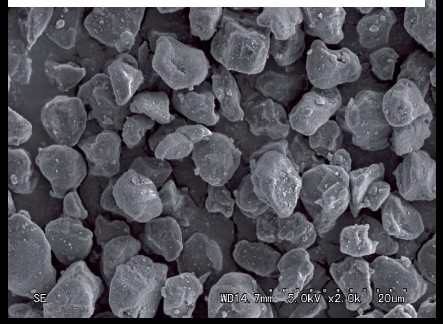
Uniform Particle Size Distribution

High Image Quality

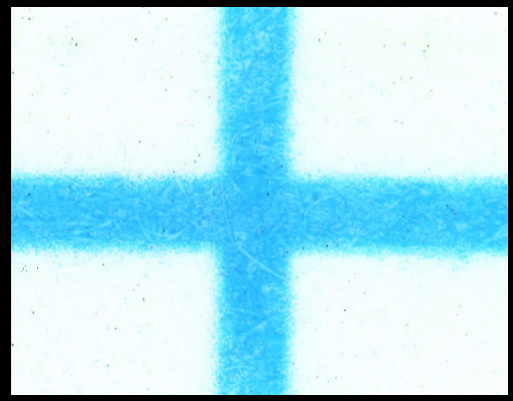
Polymerized Toner

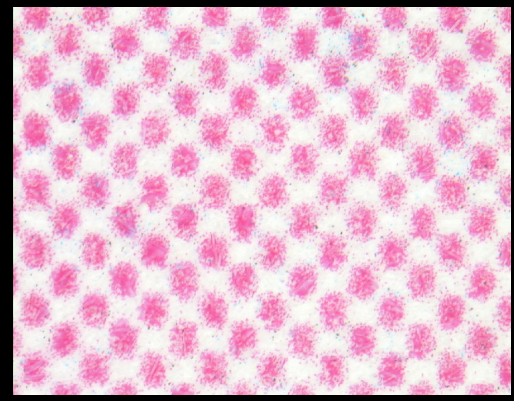


Pulverized Toner

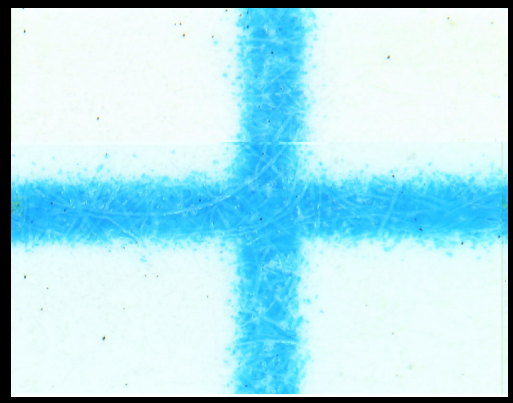


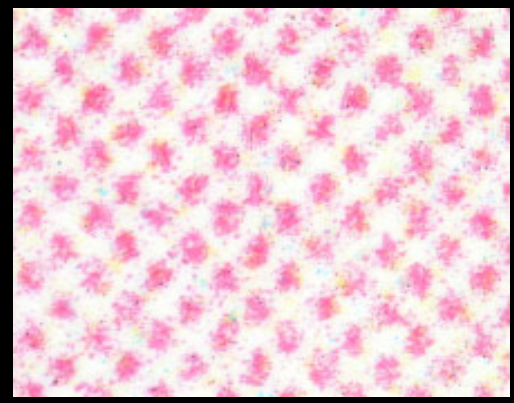
New System + Polymerized Toner



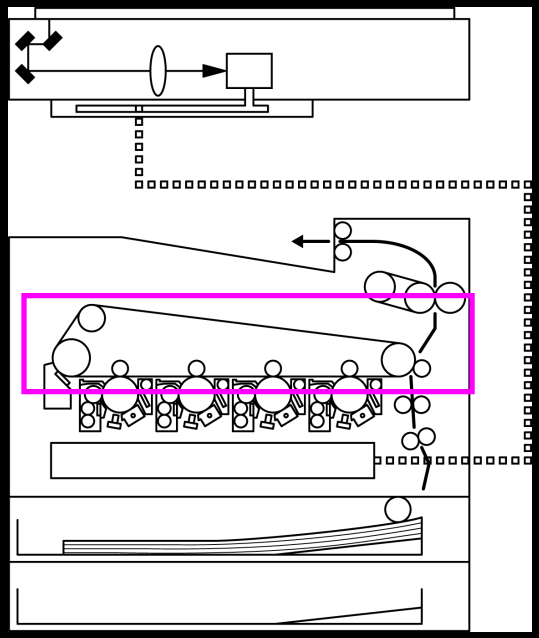


Conventional System + Pulverized Toner





7. Transfer Section



1. Improvements
2. Component Identification
3. 1st Image Transfer Mechanism
4. 2nd Image Transfer Pressure/Retraction
5. Image Transfer ATVC Control
6. Transfer Cleaning
7. Waste Toner Collection
8. Sensor Shutter Mechanism
9. Operation for New Transfer Belt Unit
10. ACS Control
11. Cooling Mechanism in the Transfer Cleaning Section

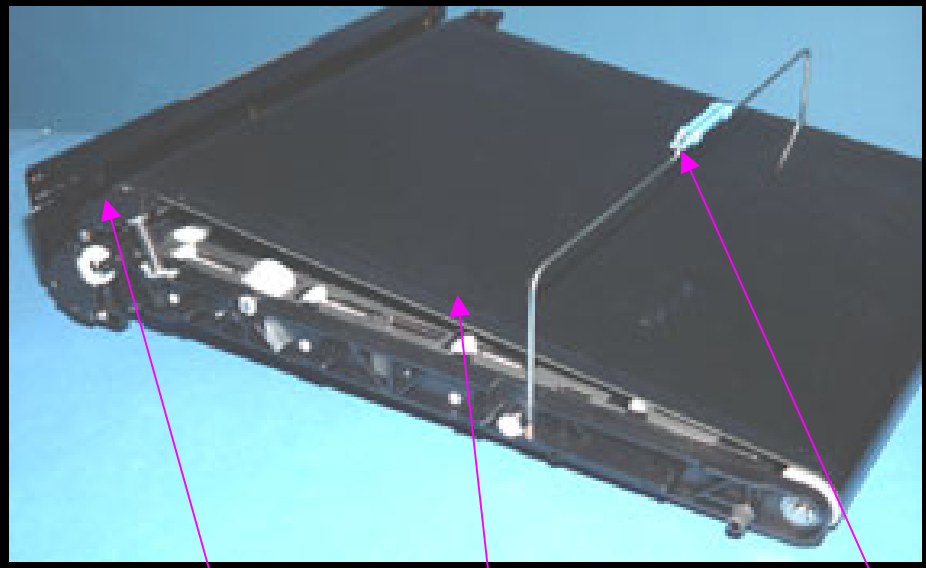
7.1 Improvements

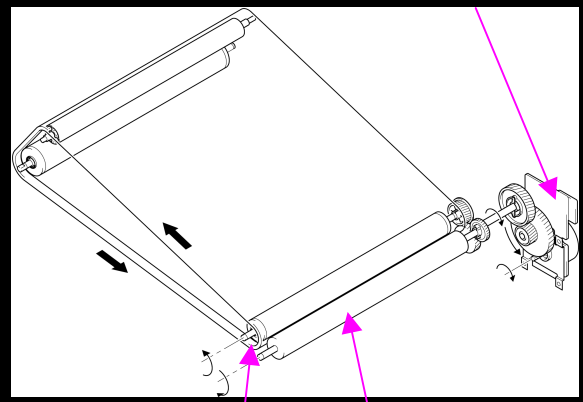
Material of Image Transfer Belt	**Semi-conductive Polyimide Belt (Thickness: 100 microns)** Higher Image Quality (Better for toner scattering & for image voids in the center of the solid area), Longer Life	**Polycarbonate (Thickness: 150 microns)**
1st Image Transfer Roller	**Ion Conductive Type** Molecules in the Roller material themselves are conductive. Less uneven image transfer is ensured with high uniformity of the resistance value.	**Electronic Conductive Type** Electronic conductive carbon (particles) is mixed to make the Roller conductive.
2nd Image Transfer Roller	**Ion Conductive Type**	**Electronic Conductive Type**

Improvements

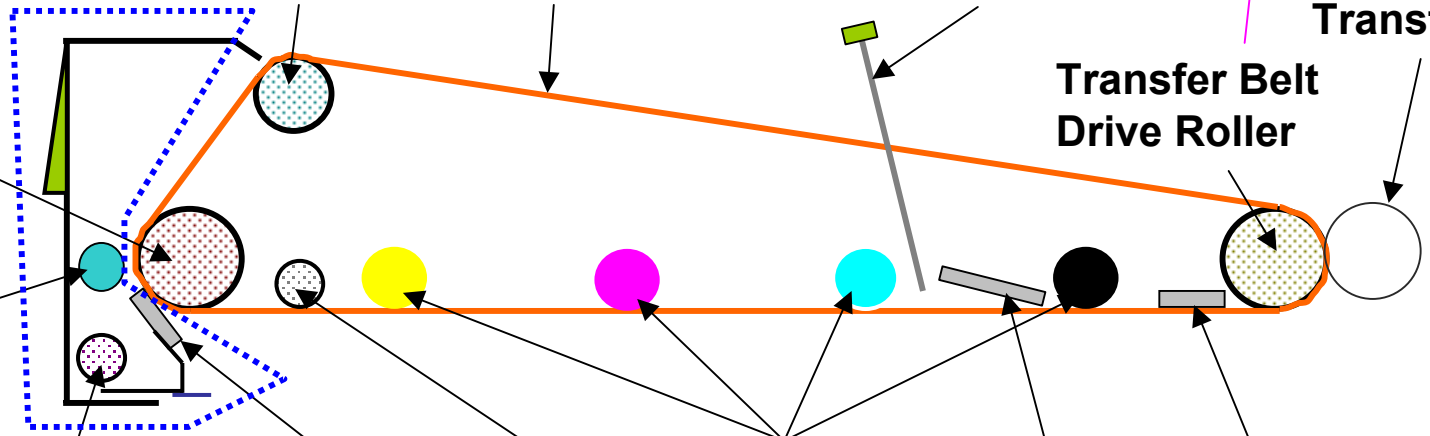
Life of the Transfer Belt / Cleaner Unit	160K (Near End of Life:150K, Stop:160K)
2nd Image Transfer Roller Life	152K (Near End of Life: 150K) Copying is NOT stopped after end of life.
Transfer Belt Reference Position Sensor	Installed Note: Refer to “Correction of the Transfer Belt Rotation Speed”
Transfer Cleaner Unit	Toner Apply Roller Added (For prevention of the Cleaning Blade damage)
Pressure/Retraction of the 2nd Transfer Roller	Motor used (Independent from the drive of the Paper Transport system to increase copying productivity)
Control for prevention of the Cleaning Blade damage	Installed (For prevention of the Cleaning Blade damage)

7.2 Component Identification



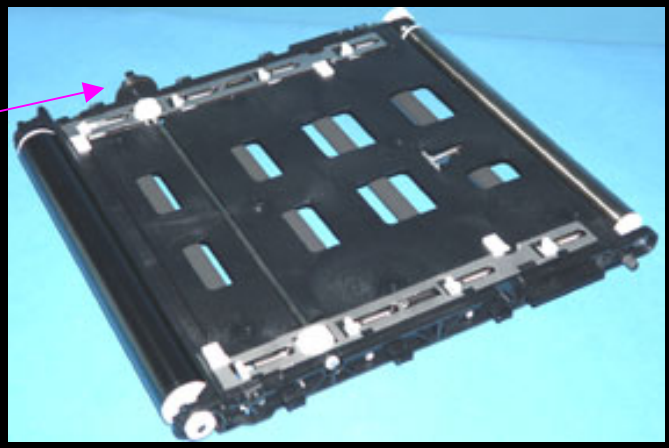


Transfer Cleaner Section



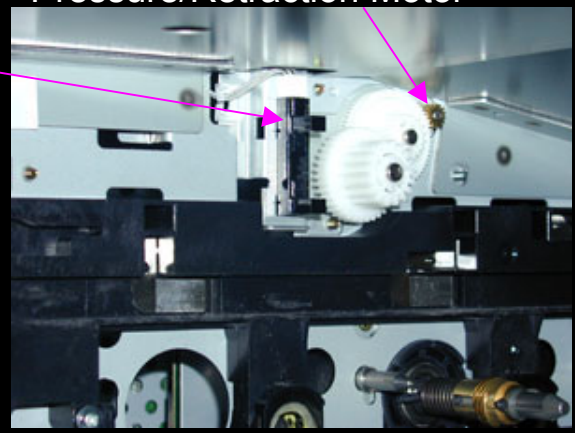
7.3 1st Image Transfer Mechanism (1)

1st Image Transfer Roller Pressure/Retraction Mechanism

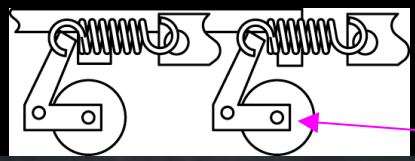


1st Image Transfer Retraction Position Sensor

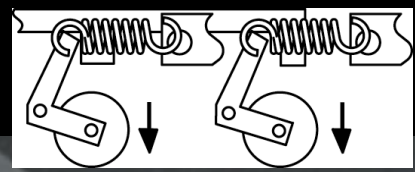
1st Image Transfer Pressure/Retraction Motor

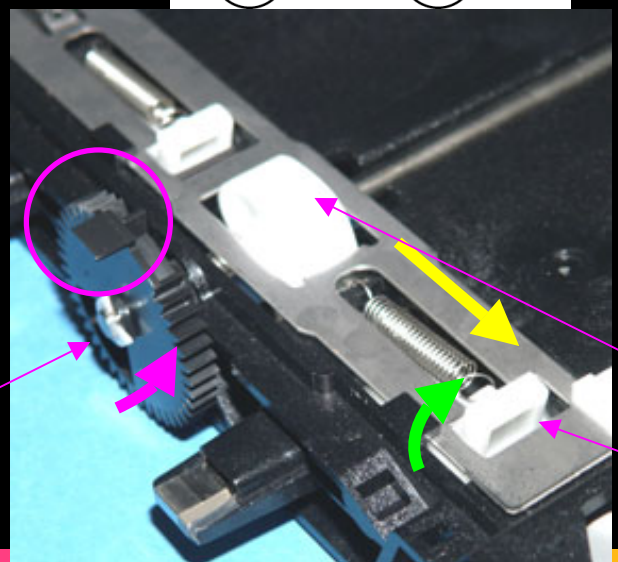


When Retracted



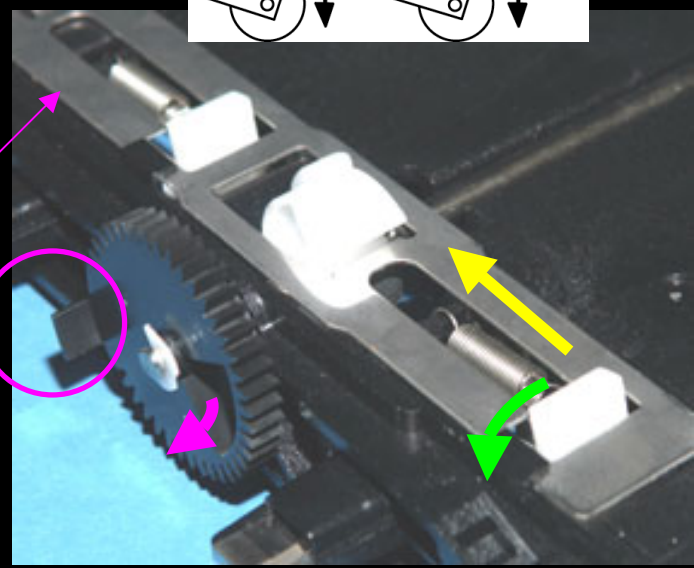
When Pressed





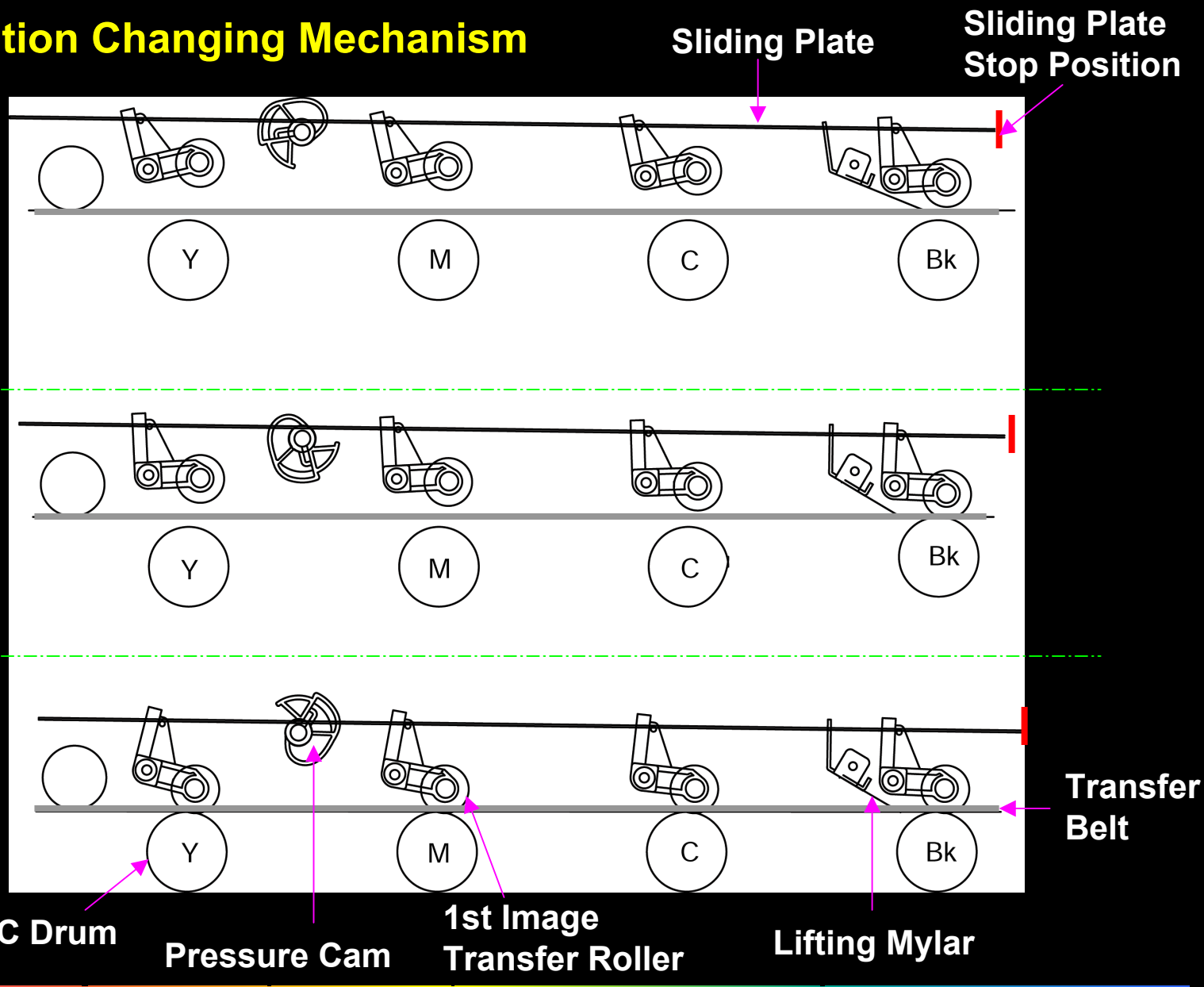
Sliding Plate

Sensor Light Blocking Part



1st Image Transfer Mechanism (2)

Pressure Position Changing Mechanism



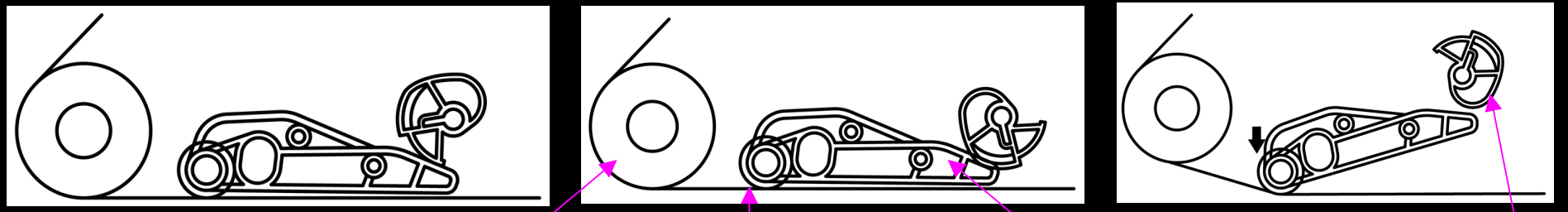
1st Image Transfer Mechanism (3)

Retraction Mechanism

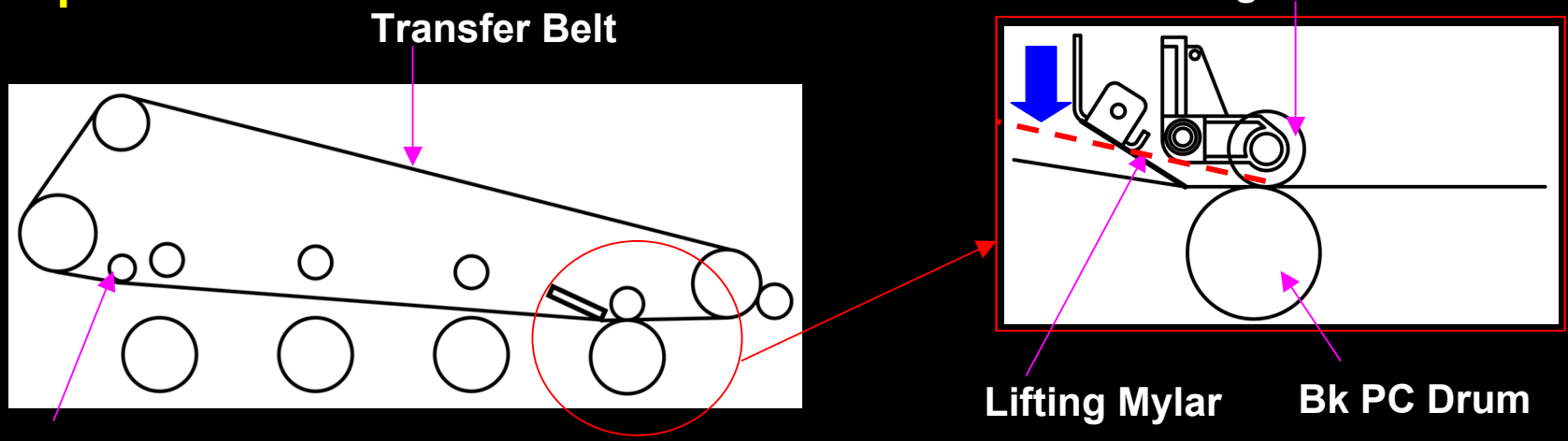
Retracted Position

Monochrome Mode Position

Color Mode Position



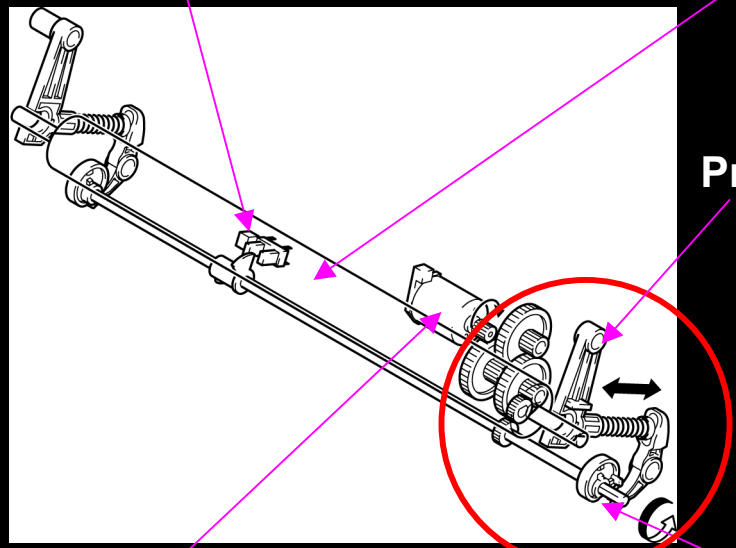
Backup Mechanism



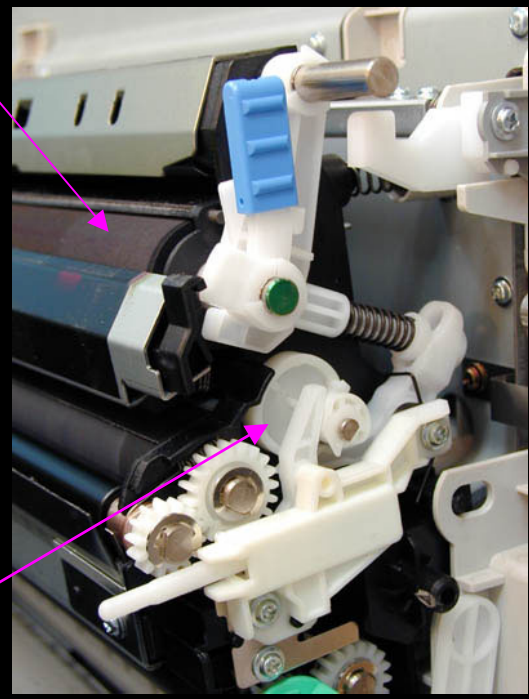
7.4 2nd Image Transfer Pressure/Retraction

2nd Image Transfer
Pressure Position Sensor

2nd Image Transfer Roller



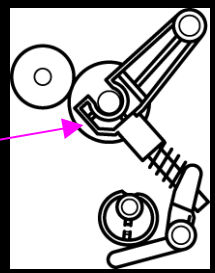
Pressure Lever



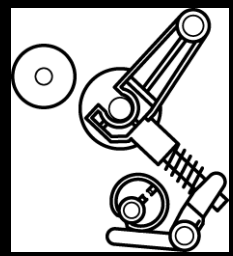
2nd Image Transfer
Pressure/Retraction Motor

Pressure Cam

Pressure Position



Retraction Position



2nd Image
Transfer Roller

7.5 Image Transfer ATVC Control (1)

ATVC Control (Auto Transfer Voltage Control)

Output Image Transfer Current to the 1st or 2nd Image Transfer Roller.

Measure the resistance of the 1st or 2nd Image Transfer Roller.

Set the 1st or 2nd Image Transfer Output Voltage.

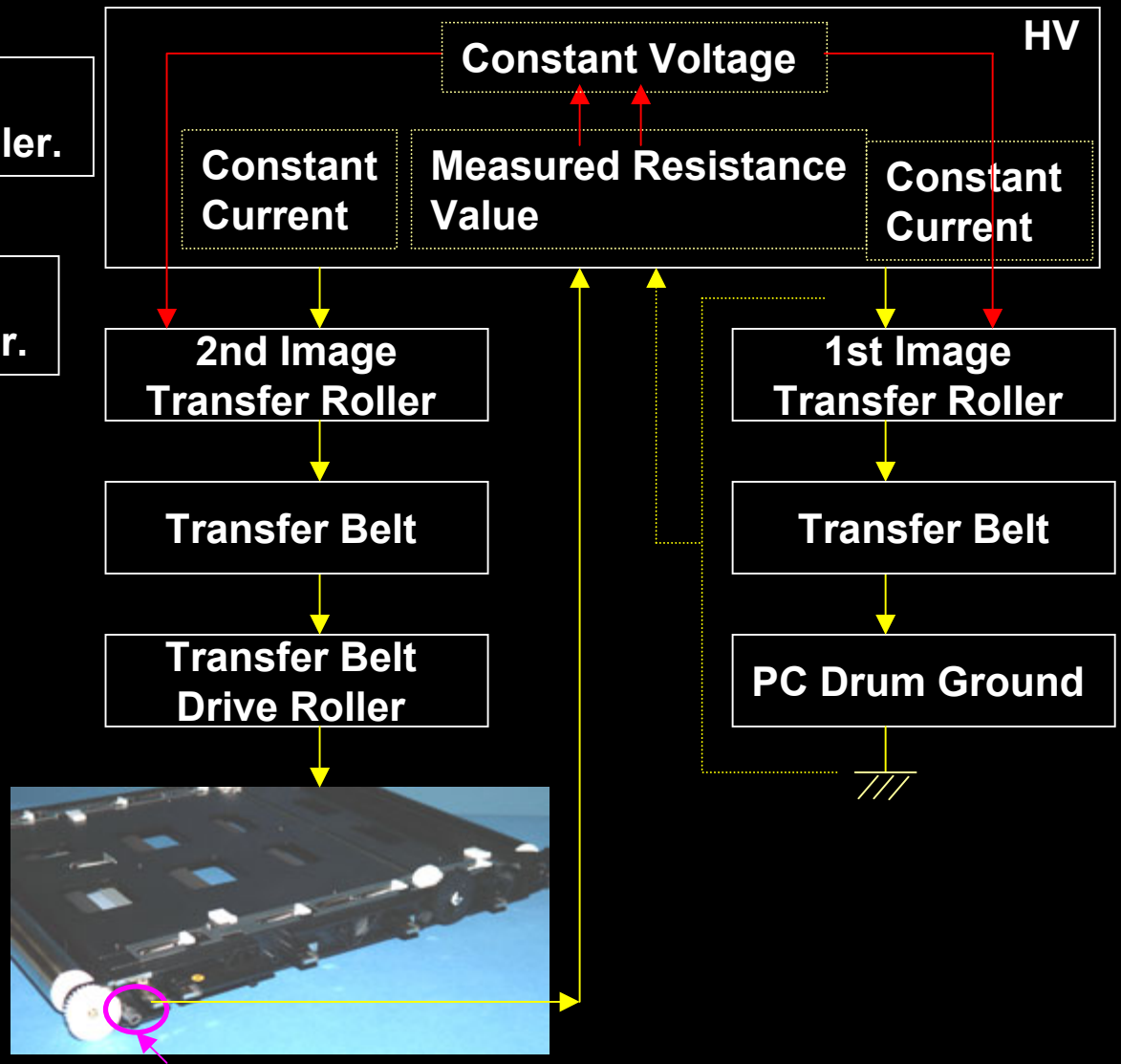
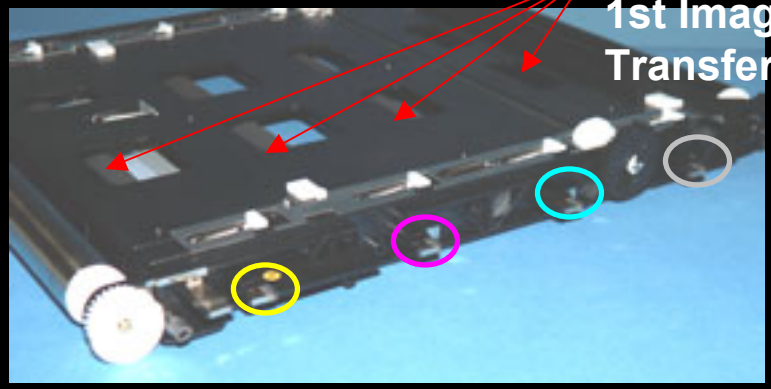
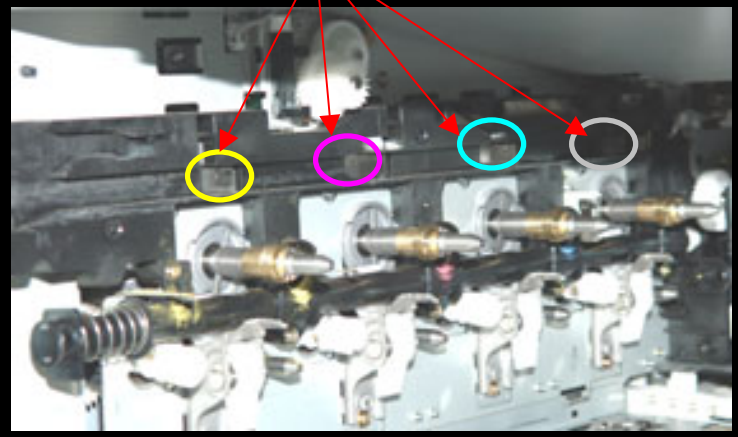


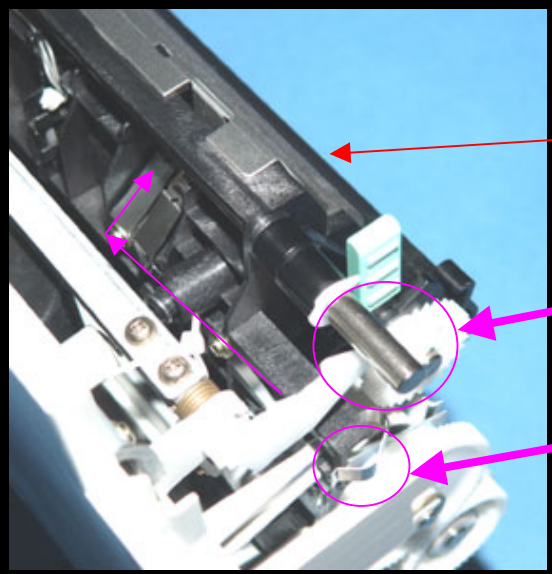
Image Transfer ATVC Control (2)

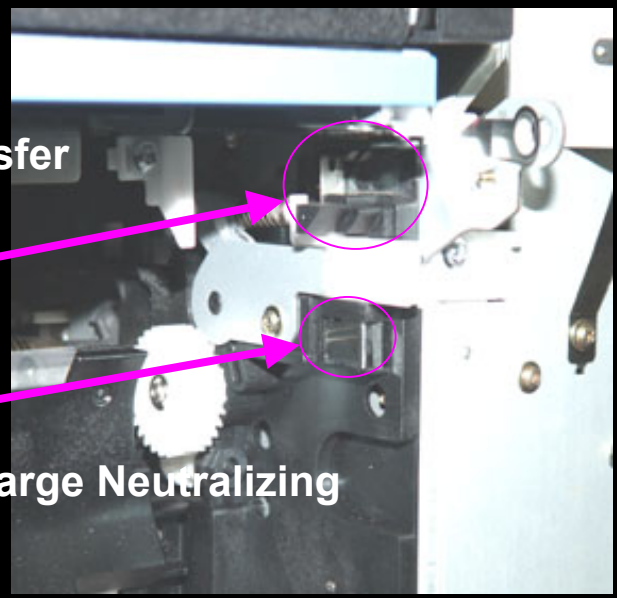
Output to the 1st Image Transfer Roller





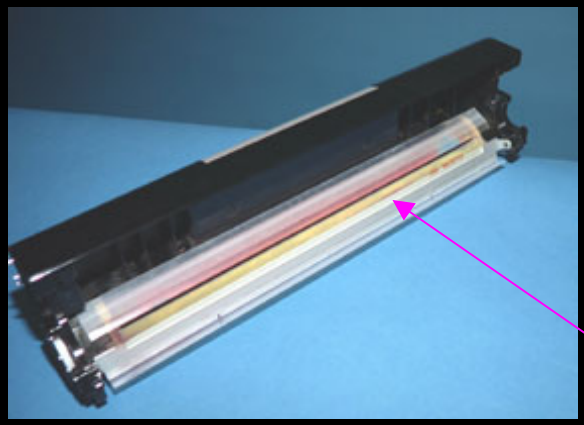
Output to the 1st Image Transfer Roller

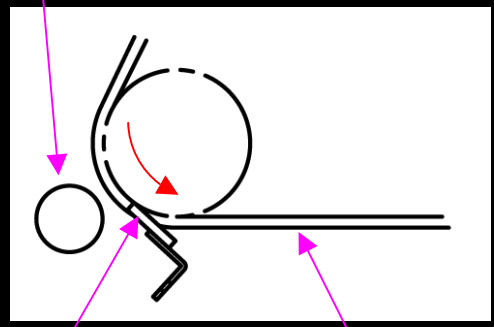




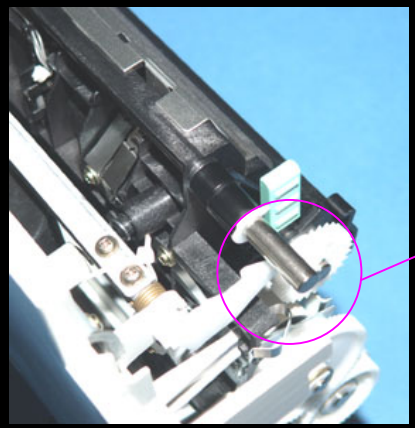
7.6 Transfer Cleaning (1)

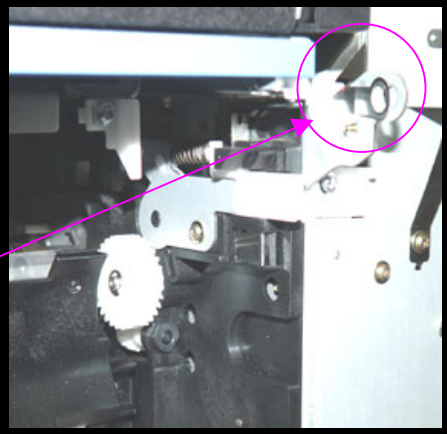
1. Transfer Belt Cleaning





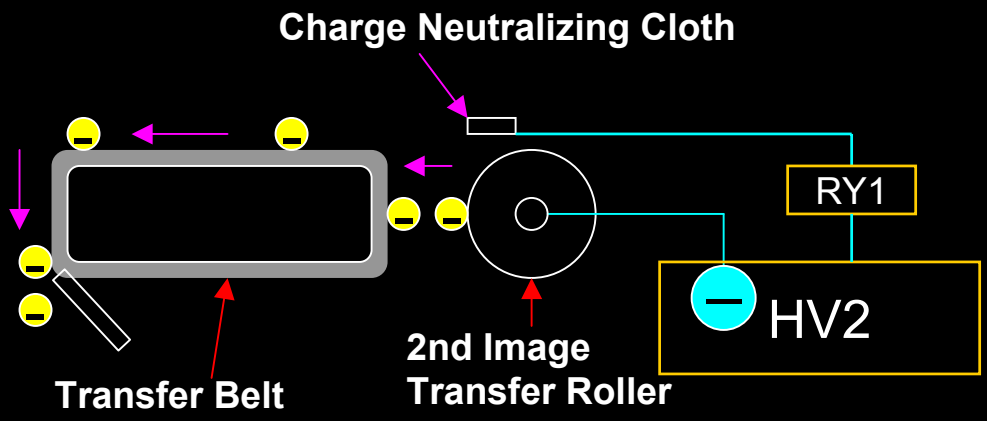
2. 2nd Image Transfer Roller Cleaning





Reverse Bias Timing

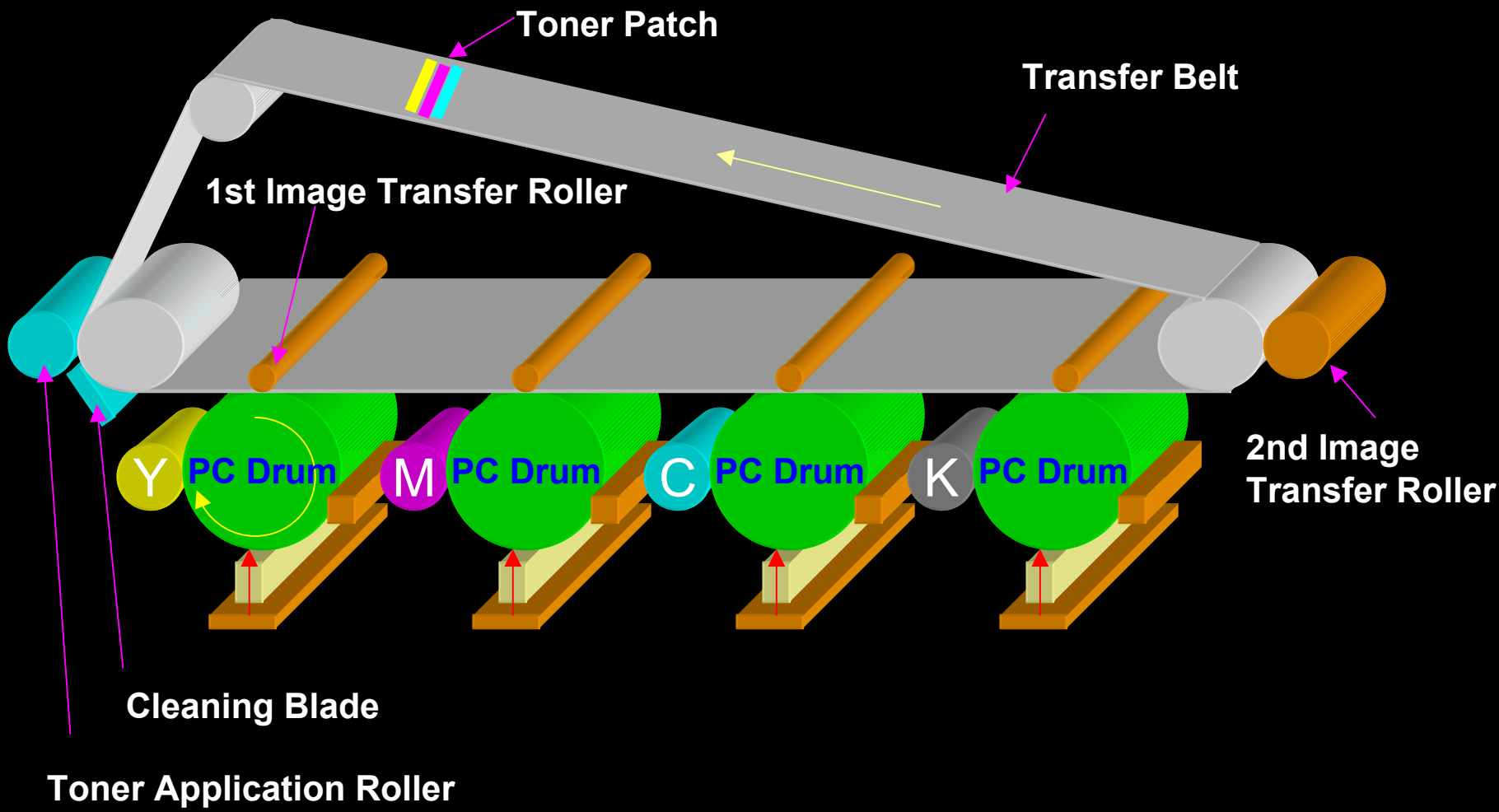
- -When the Power Switch is turned ON
- -When a Door is opened and closed
- -After 100 printed pages have been produced



Transfer Cleaning (2)

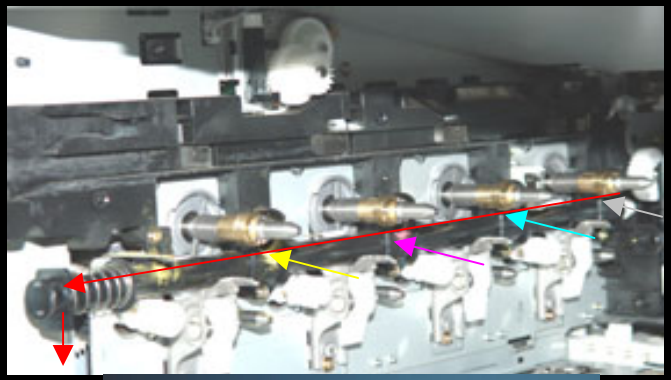
3. Control for prevention of the Cleaning Blade damage

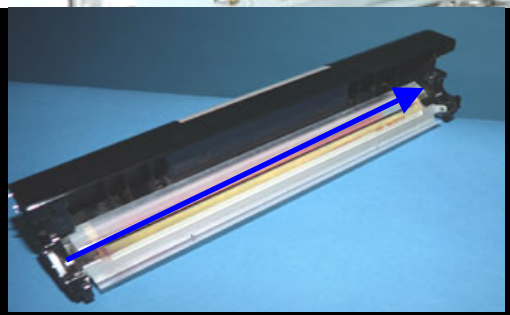
Toner Patch is formed on the Image Transfer Belt.

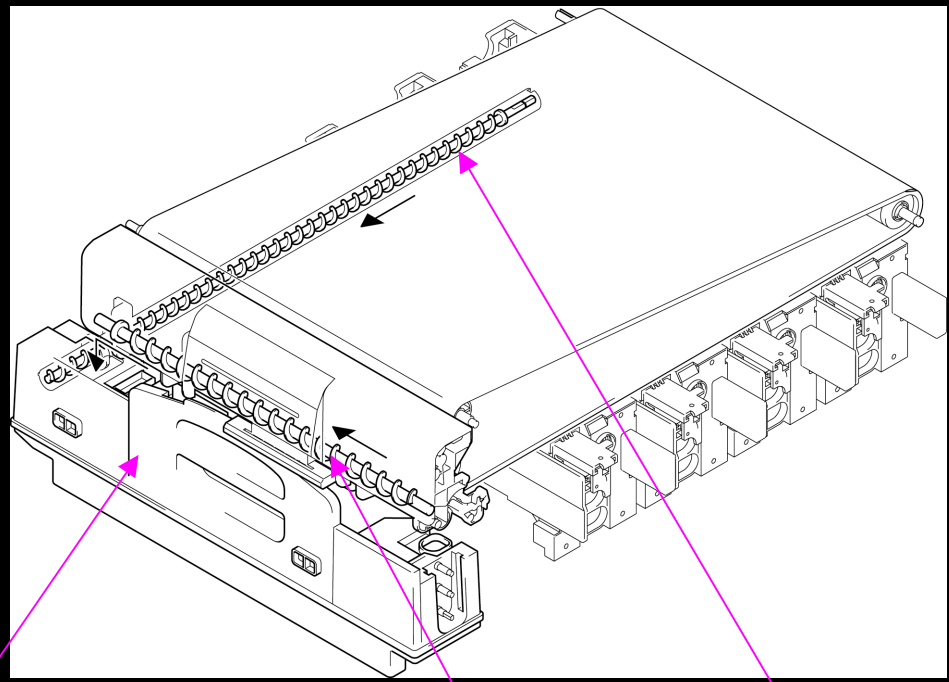


7.7 Waste Toner Collection (1)

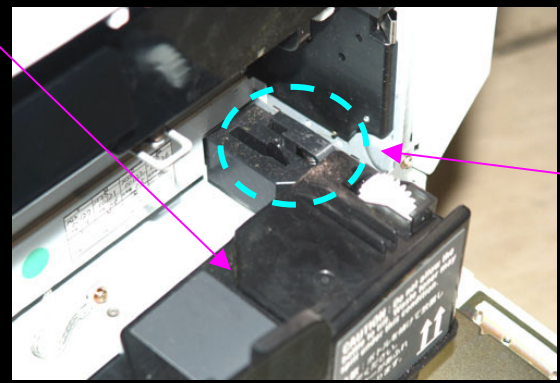
1. Toner Collecting Mechanism





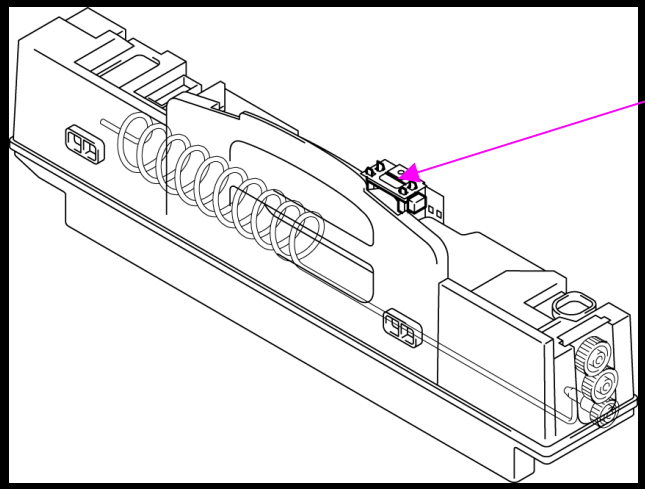


2. Toner Collecting Bottle-in-Position Detection



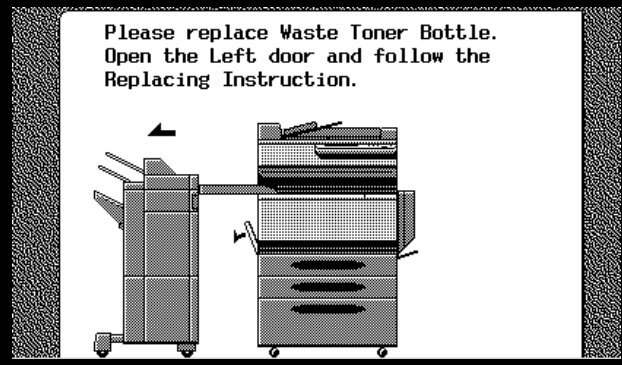
Waste Toner Collection (2)

Waste Toner Detection



Waste Toner Near-Full Detection Sensor

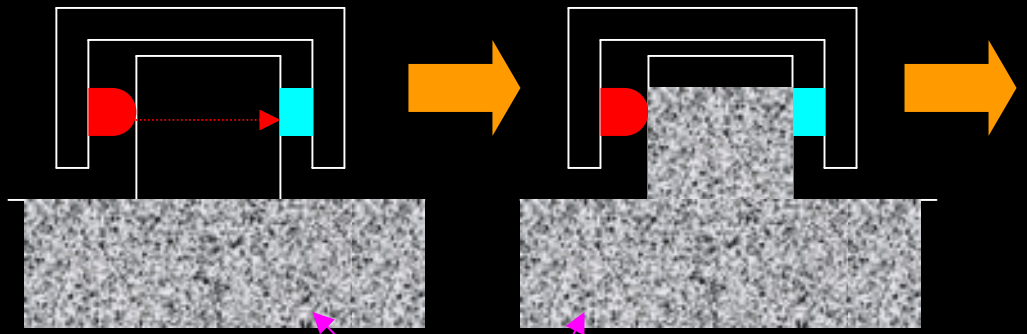
Full Detection Screen



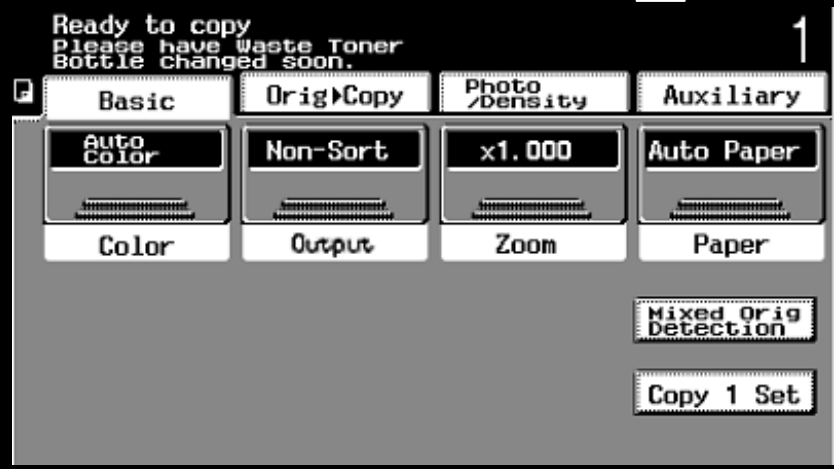
Stopped After 3.5 K Copies

Before Near-Full Detection

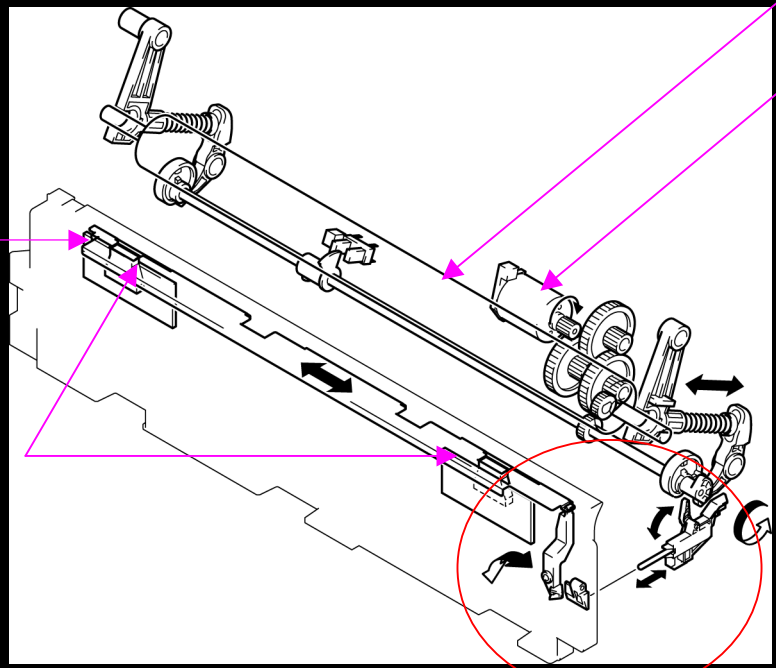
Near-Full Detection



Near-Full Detection Screen



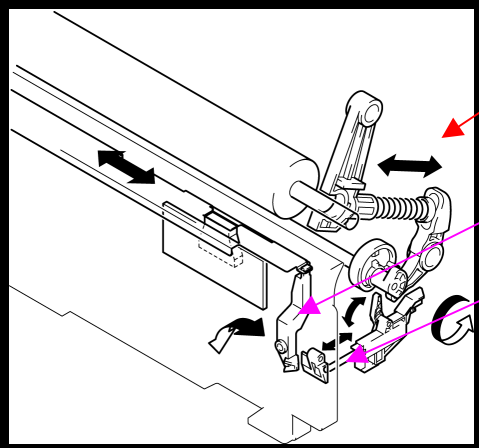
7.8 Sensor Shutter Mechanism



Shutter Closed

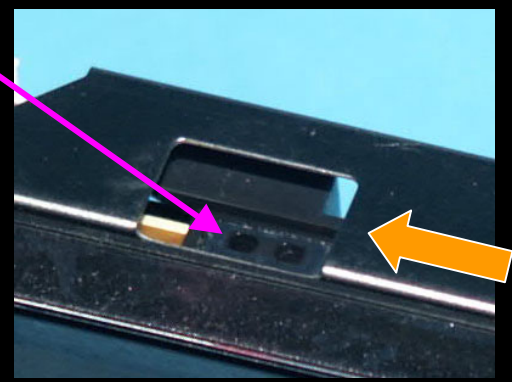
Shutter





Shutter Opened

AIDC Sensor



7.9 Operation for New Transfer Belt Unit

New Unit Detection Timing/Operation

After Power Switch has been turned ON, Front Door opened and closed, or Left Door opened and closed

↓

Checks whether the Transfer Belt Unit is mounted or not.

↓

Determines whether a new unit is installed or not.

↓

Lets the Transfer Belt perform initial operation.

↓

Makes image transfer ATVC adjustment.

↓

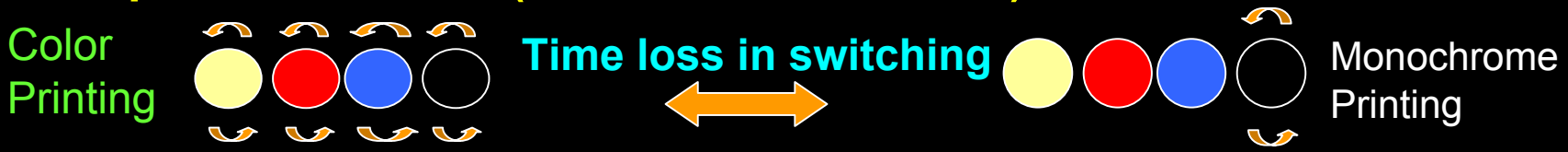
Runs image stabilization sequence.

↓

New Unit is release (Life counter clear)

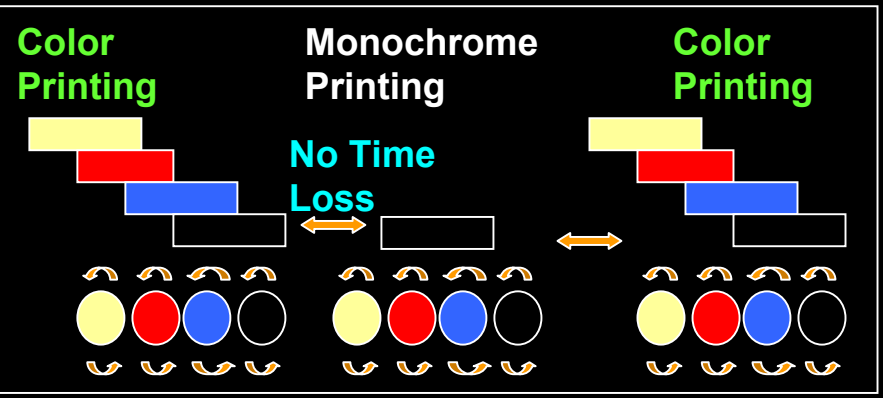
7.10 ACS Control

PC Drum operation in ACS (Auto Color Selection) mode

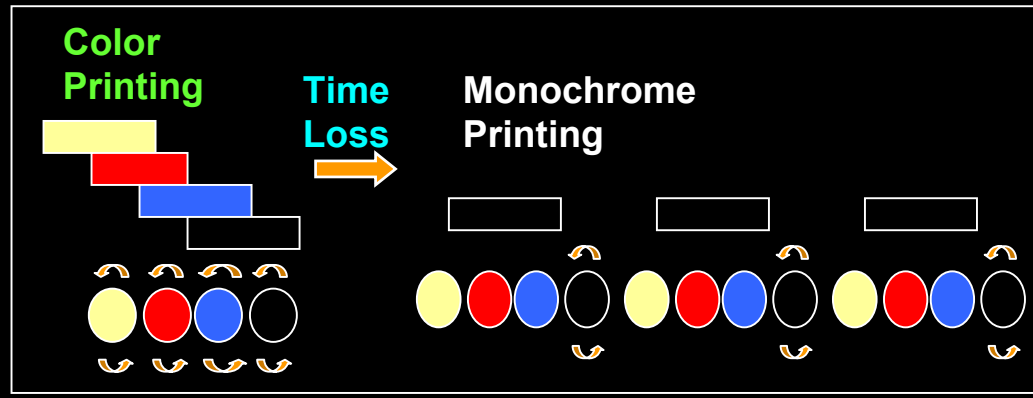


Paper Size	The number of the continuous monochrome originals when monochrome printing is made with the color printing conditions
A4C/ Letter C	3 or less
A4L/ Letter L	2 or less
B4L /11X14	2 or less
A3L / 11X17	1

Bk Printing with 4 PC Drum running



Bk Printing with only BK PC Drum running



7.11 Cooling Mechanism in the Transfer Cleaning Section

When the temperature around the Cleaning Blade has exceeded 35 deg. C during printing, Cooling Fan Motors 4 and 5 are rotated to cool down the temperature around the Cleaning Blade.

