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Canon® LBP-WX(5Si)
Remanufacturing Instructions

The cartridge above has been painted gray for better visibility.

About the 5Si Cartridge

The Hewlett-Packard® LaserJet® 5Si (HP or 5Si respectively) will be the most mission-critical printer you will ever support. Therefore, success with the 5Si (WX engine) system requires a proactive approach to both remanufacturing and servicing. Large numbers of users and entire business units will depend on the reliability of your remanufactured cartridge. In order to avoid costly problems and lost business, it is important to understand both the cartridge and printer systems, as well as the products and service that will keep the systems working at optimum performance. SCC Imaging Division (SCC) has developed over 100 products just for the 5Si cartridge, in addition to invaluable technical information that will help to ensure reliable cartridge and printer performance.

The 5Si printer features a massive, tabloid-size cartridge with a total weight of nearly seven pounds. The cartridge holds 840 grams of toner and yields 15,000 pages at 5% page coverage. Although the cartridge is somewhat pricey at $219 (list), the cost per page is the lowest of any of the LaserJet series, about 1.5 cents per page (based on list price).

The 5Si cartridge is very similar in design to that of the EX. Two **cartridge clips** hold the waste bin and toner hopper sections together. Once the clips are removed, the cartridge is easily separated. Unlike the EX clips, the WX cartridge clips are secured to the cartridge with locking prongs instead of removable screws found in the EX. Through testing, we found that the clips are extremely susceptible to damage whenever they are removed from the cartridge. SCC offers a durable replacement clip and spring that meets OEM specifications and is reusable for multiple cycles.

In the **waste bin section**, the drum, wiper blade, recovery blade and PCR are configured almost identically to that of the EX, only larger. One notable difference between the two cartridges is the **drum axle**. Instead of two short axles installed on each end of the drum, the 5Si uses an axle the full length of the drum to hold it in place in the waste bin. The axle also serves as the electrical contact to the printer. For this reason, it is important to use the right tools to remove the axle. An ordinary punch and hammer can deform the axle and chip off metal plating, which can lead to problems with electrical contact with the

continued on the next page

** When used with the SCC imaging system and remanufacturing procedures.*

Remanufacturing Information

Estimated Remanufacturing Time	15-30 mins.
Toner Weight	840 grams
Toner Class	Magnetic, monocomponent
Recommended Test Printer	HP LaserJet® 5Si

Table of Contents

World Wide Web

www.scc-inc.com

If you need additional information or technical assistance, please contact the Technical Support Group.

1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)
email: techservices@scc-inc.com

About the WX Cartridge and Printer System

printer. SCC's Drum Axle Tool Kit contains the essential tools for removing and installing the axle.

A small **retaining ring** that prevents the axle from shifting is damaged each time the axle is removed. The ring must be replaced whenever the drum axle is removed in order to install the axle securely in the waste bin.

Due to the high page yield of this cartridge, we recommend replacing the drum each remanufacturing cycle with an SCC system-qualified drum. Your SCC Sales Team can help you select the best 5Si drum for your application.

SCC offers several system-qualified toner formulations to help meet the requirements of your 5Si application. Contact your SCC Sales Team for information regarding print characteristics and imaging systems.

The **Primary Charge Roller (PCR)** has the same performance problems in low humidity conditions that are evident in other PCR-based Canon® cartridges. We recommend recoating the PCR after the OEM cycle to ensure reliability. The SCC 5/15-Cycle Remanufactured PCR is guaranteed for 5 cycles and is recoatable two additional times for a total of 15 cycles. A One-Cycle Remanufactured PCR, also available, can be recoated multiple cycles provided the PCR is not damaged. *Contact your SCC Sales Team for program details.*

The **toner hopper section** houses the mag roller, doctor blade, drive gears and a combination of felts, foams and sealing blade used to seal the hopper section. Again, the configuration is very similar to that of the EX hopper section. The WX uses an intricate combination of bushings, bearings and stabilizers that are installed on each end of the mag roller. During cartridge assembly, particular attention is needed in this area to ensure that each part is installed in the correct order and orientation.

Our testing has shown that about 3-6 grams of toner can accumulate under the **doctor blade** during normal operation of this cartridge. We recommend removing the doctor blade and thoroughly cleaning the area under the stamping each time you remanufacture the cartridge. Otherwise, the accumulated toner could be a source of toner leakage.

The WX uses a black, coated **magnetic developer roller**. The wear factor of the black coating is one of the biggest issues with this component. As the coating wears and smooths, it loses the ability to uniformly charge or properly deliver toner to the OPC. The result is lighter and lighter print over the life of the mag roller.

SCC offers two mag roller replacement alternatives for the 5Si application: a recoating program for both OEM and aftermarket mag rollers, as well as new mag rollers. Contact your SCC Sales Team for complete program details and ordering information.

The **mag roller drive gear** is particularly susceptible to damage if removed; therefore, we recommend leaving it secured in place on the mag roller, unless you disassemble the mag roller for recoating or replacing. A replacement gear is available from SCC if the original gear is damaged.

The WX presents several unique **sealing** problems. The OEM seal features a permanent white sealing gasket and a filament-type seal pull member similar to the NX and late-model EX cartridges. Insertable seals of any type are effectively not usable.

Unique to the WX is that the seal channel is recessed—even if an insertable seal could be installed, there is no structure present to bear down on it to effect any sealing action; the seal member would flop up and down, allowing toner leakage. Attempting to install an insertable seal damages the seal channel foams, causing toner leakage. Additional factors prohibiting insertable seal usage include: seal guides posts similar to the EX and NX, residual seal filament material, and the length of the hopper. Effectively resealing the WX hopper requires splitting the hopper, removing the residual filament material, installing a gasket-type seal, and rejoining the hopper and mag roller sections. Hand splitting with a screwdriver or utility knife will not work with the WX hopper. Attempting to do so will most probably destroy the hopper.

SCC's 5Si RapidSplitter™ **power splitting system** has been engineered for ease of use, economy and low maintenance. The RapidSplitter separates the hopper in less than 10 seconds with twin rotary blades driven by a 1 hp electric motor. Setup and training take only a few minutes; the unit can be located anywhere in your facility.

The split hopper is resealed using SCC's RapidSeal™ **split hopper seal** with peel-to-expose adhesive backing and rejoined to the mag roller section with SCC's blackened stainless steel, reusable locking rail system. Installation kits are available–contact your SCC Sales Team for details.

Servicing Opportunities for LaserJet 5Si Printers

If you do service work in addition to remanufacturing cartridges, the LJ5Si printers can be a source of additional service revenues for your business. According to the HP User's Manuals for the 5Si family of printers (including the Mopier), these printers require end user maintenance every 350,000 pages to maintain optimum print performance. The servicing simply involves changing the fuser assembly and transfer rollers, which can take about 10-15 minutes to complete.

Fuser life tests conducted in our development labs revealed that fuser failure can result in fuser offsetting in various degrees of severity. To help avoid fuser failure or resulting defects, we recommend tracking your customer's page count to determine when servicing is required, or talk to your customer about the signs of possible fuser failure so that they may contact you for servicing.

Failure to replace the fuser assembly at 350,000 page interval may void the printer warranty. *For more information about the fuser assembly maintenance schedule as well as fuser assembly ordering information, refer to SSS 53-E, Problem Solving. For more information about HP's maintenance recommendation, refer to SSS 53-C, Cartridge and Printer Specifications.*

Recommended Reference Information

SSS 100, Cleaning Tools, Tips & Techniques

This four-page technical bulletin provides important guidelines for using compressed air, isopropyl alcohol, conductive cartridge lubricant and other cleaning products. This guide also tells you where you can find 91-99% isopropyl alcohol. **We recommend reading this guide thoroughly before remanufacturing the cartridge.**

SSS 53-D, Troubleshooting

Contains important repetitive defect measurements, test print series and special instructions on how to setup the printer for post-testing sealed cartridges.

SSS 53-E, Problem Solving for the WX Cartridge

Provides solutions to unique problems along with a guide of products and procedures that will make remanufacturing easier.

SSS 53-F, Changes to WX Cartridge

Chronicles several changes made to the cartridge since its introduction, many of which can affect your remanufacturing procedures.

Special Considerations

EnduraMag™ Mag Roller

SCC offers two mag roller replacement alternatives for the 5Si application: a recoated OEM or aftermarket mag roller and a factory-new mag roller.

Through SCC's EnduraMag recoating program, qualified OEM and aftermarket mag roller sleeves are recoated with a revolutionary thin film metal coating that restores print performance and offers unparalleled durability and reliability. The WX recoated EnduraMag is rated at 60,000 pages when used in combination with SCC system qualified components. The sleeve can be recoated again and again after each 60,000 page interval, provided the sleeve is not damaged. Cleanup between remanufacturing cycles requires only dry, filtered compressed air. *Contact your SCC Sales Team for program details and important packaging information.*

WX Remanufactured Mag Roller (WXRMFMDR)
(Mag Roller Sleeve with Only Long Axle Installed; on exchange basis)

WX Remanufactured Mag Roller (WXRMFMDR-M)
(Mag Roller Assembly with both Axles and Magnet Installed; on exchange basis)

SCC also offers factory-new EnduraMag mag rollers, complete with installed axles. SCC's imaging labs tested the new EnduraMag with three of the most popular recoated mag rollers on the market. Test results showed that SCC's EnduraMag offered markedly better performance in low relative humidity conditions of the other three mag rollers.

The factory-new EnduraMag is available without having to send in cores for recoating, therefore you can decrease the number of empty cartridges you need to support an exchange recoating process. Contact your SCC Sales Team for more information.

New EnduraMag Mag Roller (WXMDR)

WX Primary Charge Roller Recoating Program

Like most of the Canon-based Primary Charge Rollers (PCRs), the WX PCR is also recoatable through SCC's recoating program. For the most reliable performance with your WX PCRs, we recommend recoating them after the OEM cycle. *Contact your SCC Sales Team for important program details and packaging information.*

5/15-Cycle Remanufactured PCR

With the 15-Cycle Program, the initial recoating is guaranteed five remanufacturing cycles*, then the PCR can be recoated an additional two times. Each recoating is good for up to five cartridge cycles, for a total of 15 cartridge cycles.

WX 5/15-Cycle Remanufactured PCR (WXRMPCR)
(on exchange basis)

One-Cycle Remanufactured PCR

SCC also offers a One-Cycle multi-recoating program which involves recoating the PCR for one remanufacturing cycle*, then recoating it again for another single remanufacturing cycle. As long as the PCR remains undamaged, this process can be repeated indefinitely.

WX One-Cycle Remanufactured PCR (1CWXRMPCR)
(on exchange basis)

** when used with SCC system-qualified components*

Use of Compressed Air

As of April 28, 1971, the Occupational Safety & Health Administration (OSHA) Standard, 29 CFR 1910.242 paragraphs a & b for general industry requires effective chip guarding and personal protective equipment (PPE) when using compressed air. When cleaning residual toner particles from cartridges using a compressed air system, you must use air nozzles meeting OSHA requirements. Air nozzles that regulate air pressure to a maximum of 30 psi comply with this standard. Refer to the OSHA publication for any updates or changes that have occurred since the date noted above.

Use of Isopropyl Alcohol

For best results, we recommend using ONLY 91-99% for cleaning as directed in these instructions. 91% isopropyl alcohol is available at most major drug stores; 99% isopropyl alcohol is available through distributors of chemical products. Follow the alcohol manufacturer's safety instructions.

Tools and Supplies You Will Need

For basic remanufacturing:

- Phillips Screwdriver
- Standard Flat-Blade Screwdriver
- Extended-Length Needle Nose Pliers
- Funnel for Toner Bottle
- Compressed Air for Cleaning . . . . . *(See left.)*
- 91-99% Isopropyl Alcohol . . . . . *(See left)*
- Lint-Free Foam Tip Swab . . . . . .LFSWAB
- Cotton Swab . . . . . .QTIP
- Conductive Cartridge Lubricant . . . . . .CONCLUBE
- Kynar® Lubricating Powder . . . . . .KPOW
- Shallow Trough for Dipping the Wiper Blade
- 5Si Drum Axle Tool Kit . . . . . .WXAXLEKIT
- 5Si Retaining Ring . . . . . .WXDRAXRING
  Installation tool included in the 5Si Drum Axle Tool Kit
- Cartridge Clips (2) . . . . . .WXCCLIP
- OPC Drum . . . . . .(UltraPrint™) UPWXDRGR
  . . . . . .(DIC) WXDRGR
- Wiper Blade . . . . . .WXBLADE
- 5Si MicroGraphics™ 1 Toner WX840B
  or 5Si mPRINT™ Toner WXMPT840B

Item Codes for additional replacement items are included in the body of the instructions.

For seal installation use the following items in addition to the items listed above:

- WX/5Si RapidSplitter™ Power Splitting System . . . .WXRSCSS
  Contents: WX/5Si power splitter, utility knife with blade (CSS-44), adjustable spanner wrench (CSS-67A), U-spanner wrench (CSS-86), alignment pin tool-2 (CSS-38), 9/64" T-handled allen wrench (CS5-71), guard jig (CS5-65), safety glasses (CSS-42)

- WX/5Si RapidSeal™ Installation Kit . . . . . .WXRSIKIT
  Contents: plexiglass hopper fixture (CSR-44-SR), foam removal tool assembly (CSS-40), T-handle tool (CSS-39), gasket seating tool (WXGSTOOL)

WX/5Si Cartridge Splitter Starter Kit CS5-400
Contents: 5Si plexiglass hopper fixture (CS5-44-SR), 5Si sealing channel rail foams (WXSCRFOAM), 5Si reusable locking rails (CS5-500), foam removal tool assembly (CSS-40), T-handle tool (for 5Si rail removal) (CSS-39), gasket seating tool (WXGSTOOL)

Separating the Cartridge

The cartridge shown in these instructions has been painted gray for better visibility. The actual color of the cartridge is black.

1. **Locate the two cartridge clips that hold the hopper and waste bin sections together (FIG 1).**
   The cartridge clips are held in place by small locking prongs that may break during removal. If the prongs or any part of the clip breaks, use a replacement Cartridge Clip (WXCCLIP) for reassembly. Replace the Cartridge Clip Spring (WXCCS) if it is lost or damaged. *See SSS 53-E, Problem Solving, for more details regarding the cartridge clips.*

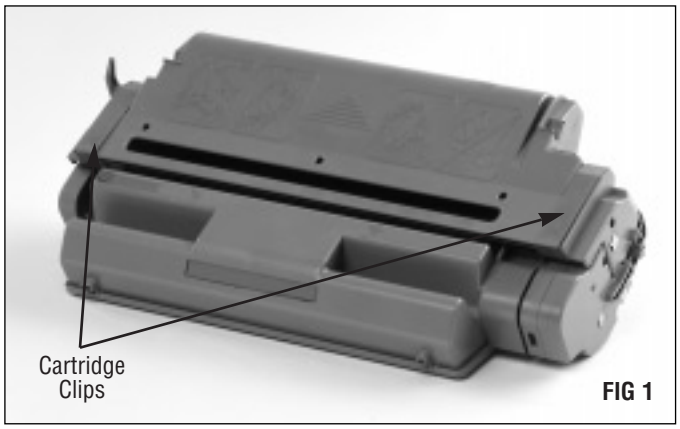


FIG 1

2. **Remove the cartridge clips.**
   To remove the cartridge clip, insert a flat-blade screwdriver under the front of the clip and pry upward as shown in FIG 2.


FIG 2

Keep the front part of the clip raised and pry up the back of the clip as shown in FIG 3.


FIG 3

Repeat steps 2 and 3 until the cartridge clip is detached (FIG 4). Be sure to remove both cartridge clips.

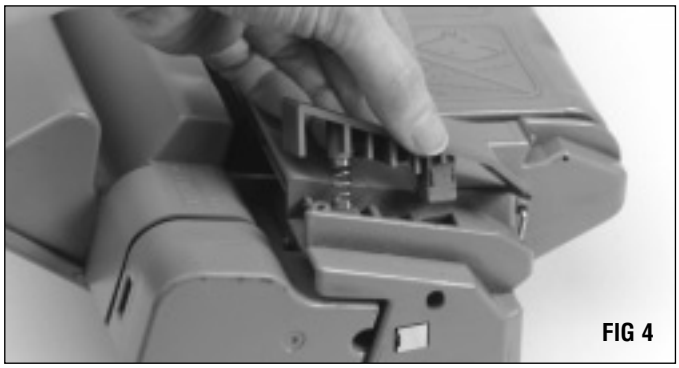


FIG 4

3. **Separate the waste bin and toner hopper sections as shown in FIG 5.**

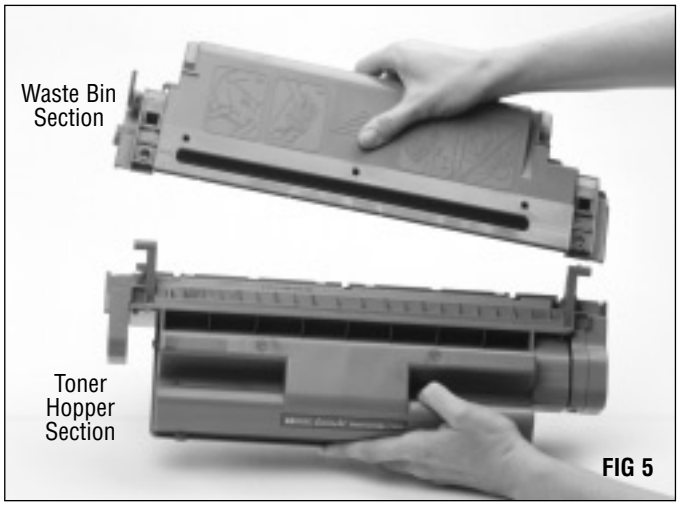


FIG 5

Disassembling the Waste Bin Section

In order to remove the drum axle without damage to the axle or the cartridge, we recommend using the tools provided with the 5Si Drum Axle Tool Kit (FIG 6). *For more details about the features of the tools, refer to SSS 53-E, Problem Solving.*

The 5Si Drum Axle Tools may be purchased as a kit (WXAXLEKIT) Or, individually:
5Si Brass Punch (WXPUNCH)
5Si Aluminum Hammer (WXHAMMER)
5Si Waste Bin Fixture (WXWBINJIG)
5Si Drum Axle Retaining Ring Installation Tool (WXDRAXRITOOL)
Contact your SCC Sales Team for ordering information.

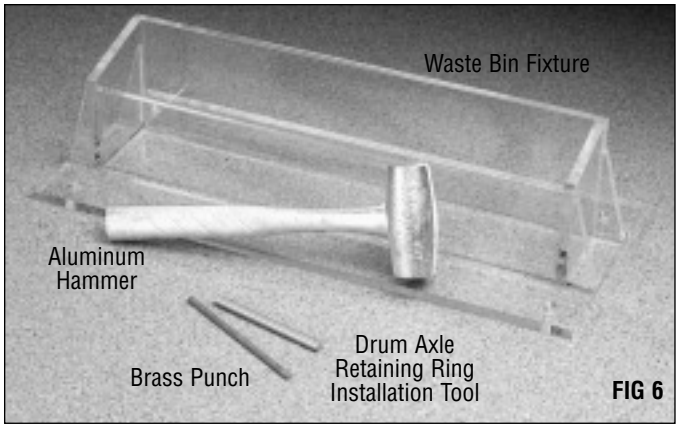


FIG 6

1. **Place the waste bin section in the waste bin fixture.**
   Hold the drum shutter back (in an "open" position) as shown in FIG 7, then carefully place the waste bin section in the fixture. The shutter will retain this open position while in the fixture.

   In the following instructions, the waste bin fixture is used while removing and installing the drum axle. To prevent the fixture from shifting, secure the fixture to your work surface with bolts or C-clamps.

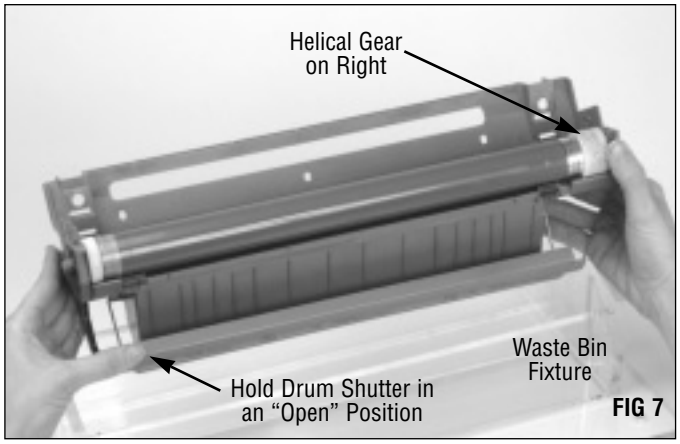


FIG 7

2. **Remove the drum axle.**
   To remove the drum axle, center the brass punch over the axle at the **helical gear end** of the waste bin. Using the small hammer, tap out about one inch of the drum axle. Be careful not to damage the cartridge housing as you tap out the axle. The axle will exit from the spur gear end as shown in FIG 8.

! DO NOT use a steel punch to tap out the axle, as it could disfigure the axle or chip the plating covering the axle.

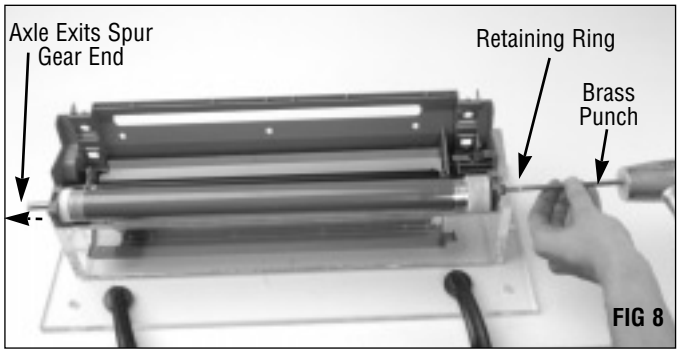


FIG 8

   Note that a small retaining ring will fall out when the axle is disengaged (FIG 8). The ring is normally damaged when the drum axle is removed. Discard the ring and use a new Drum Axle Retaining Ring (WXDRAXRING) when you reassemble the waste bin section. *For more information regarding damage to the retaining ring, refer to SSS 53-E, Problem Solving.*

Hold the helical gear of the drum to keep the drum from falling, and completely remove the axle as shown in FIG 9.

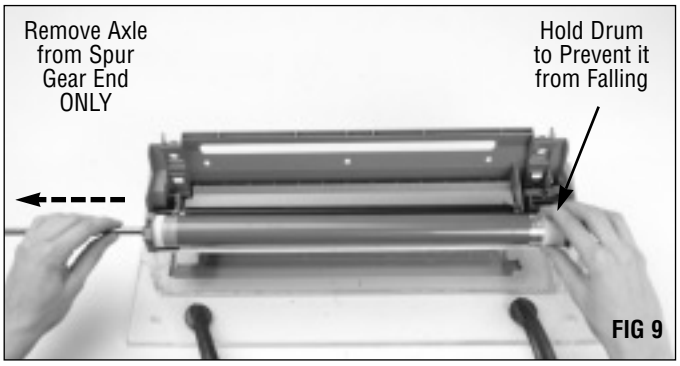


FIG 9

3. **Remove the drum.**
Grasp the drum by the helical gear to remove it (FIG 10). If you plan to reuse the drum, store it so that it is protected from light and impact damage.

For best results, we recommend replacing the OEM drum with an SCC system-qualified drum after the OEM cycle, then after every remanufacturing cycle, thereafter. *(Do not remove the drum from its packaging until you are ready to install it.)*
UltraPrint 5Si OPC drum (UPWXDRGR-C)
DIC OPC drum (DICWXDRGR)

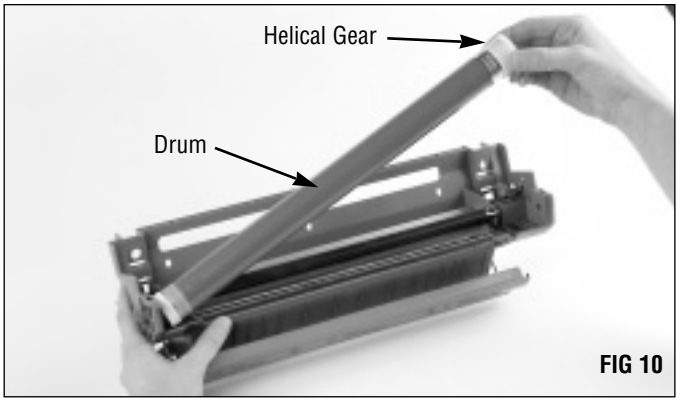


FIG 10

4. **Remove the Primary Charge Roller (PCR) (FIG 11).**
Handle the PCR by the axle or use clean latex gloves. If you plan to reuse the PCR, store it on a flat uniform surface.

IMPORTANT Do not stack PCRs, lay anything on top of them, wrap them with rubber bands or touch the surface of the PCR with your bare fingers.

We recommend recoating the OEM PCR through SCC's PCR recoating program. 5/15-Cycle (WXRMPCR) and One-Cycle (1CWXRMPCR) programs are available. *Refer to page 4 of this manual or contact your SCC Sales Team for program details. PCRs accepted on exchange basis.*

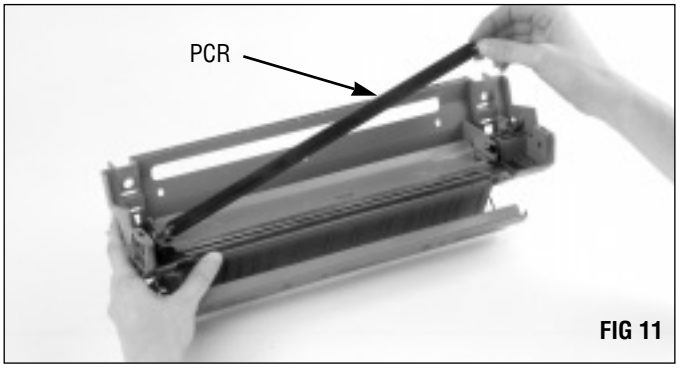


FIG 11

5. **Remove the wiper blade.**
First, remove the two Phillips screws that secure the waste bin as shown in FIG 12.

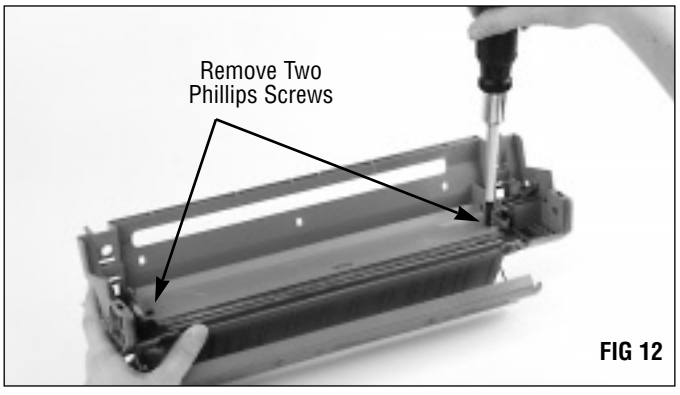


FIG 12

Disassembling the Waste Bin Section

Carefully pry up the ends of the wiper blade stamping to unseat it from the locating bosses (FIG 13).

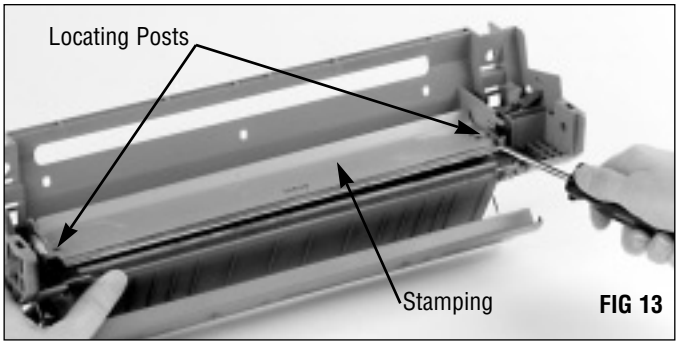


FIG 13

Then, remove the wiper blade (FIG 14).


FIG 14

6. **Clean the waste bin using dry, filtered compressed air (FIG 15).**
Be careful not to damage the recovery blade.

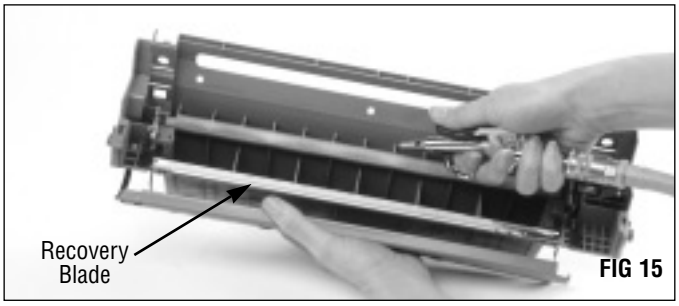


FIG 15

Direct compressed air on and around the felt and foam sealing components to remove as much toner and debris as possible (FIG 16).

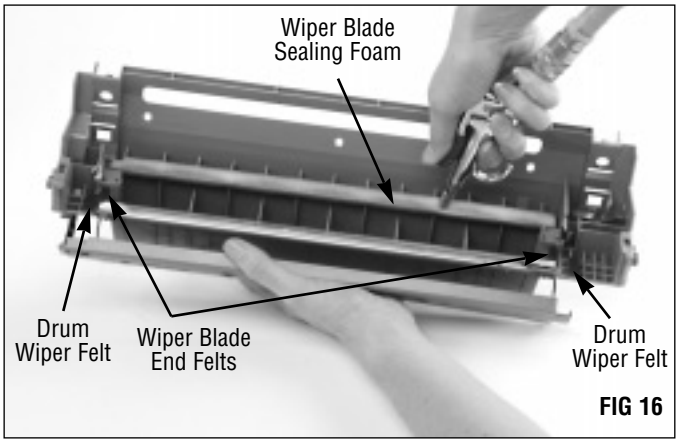


FIG 16

7. **Inspect the wiper blade sealing foam, recovery blade, wiper blade end foams and drum wiper felts (FIG 17).**

   Foam components, such as the Wiper Blade Sealing Foam (WXWBSFOAM) and Wiper Blade End Foam (WXWBEFOAM), should display a smooth surface without pits or tears in the material. Replace the foam if damaged or missing. Tears in the material can allow toner leakage.

   Felt components, such as the Drum Wiper Felts (WXDRFELT) and Wiper Blade End Felts (WXWBEFELT), should appear clean, intact and secured to the cartridge. Replace the felts that are compacted with toner or display a shiny surface. Make sure the felt is securely attached to the cartridge.

   The **recovery blade** should display a smooth, flat surface without kinks or waviness along the edge. Replace the Recovery Blade (PRECB-WX) if it is damaged, dislodged or missing. Recovery Blade Installation Tool (RBITOOL-PBT) recommended for installation.

   Complete instructions detailing the installation of the components mentioned above are included in the packaging of the individual products.

8. **Install Drum Shutter Felt (**WXDSFELT**).**
   Installing a drum shutter felt can minimize damage to the drum caused by the shutter. Remove the adhesive backing from the shutter felt and center the felt on the inside of the shutter as shown in FIG 18 and 19. *For more information regarding the drum shutter felt, refer to SSS 53-E, Problem Solving.*

   For best installation results, we recommend removing the drum shutter from the waste bin. Removal instructions are included with the drum shutter felt product instructions.

9. **Clean and inspect the PCR saddles and electrical contact pad (FIG 20).**
   Clean any toner residue from the saddles and electrical contact pad using a lint-free swab dampened with 91-99% isopropyl alcohol.

DO NOT apply conductive lubricant to the PCR saddle.

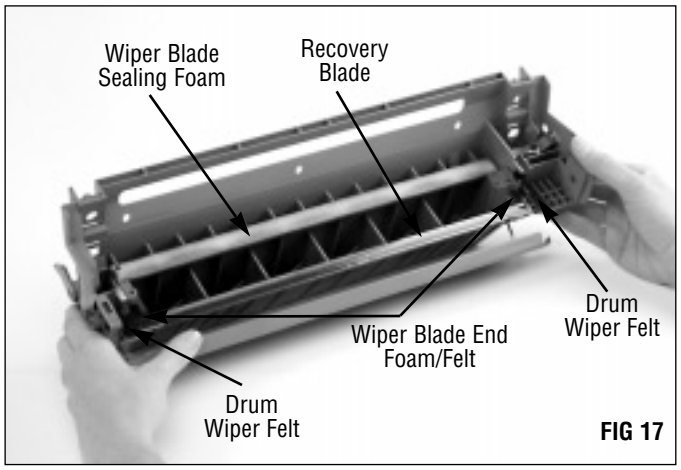


FIG 17


FIG 18

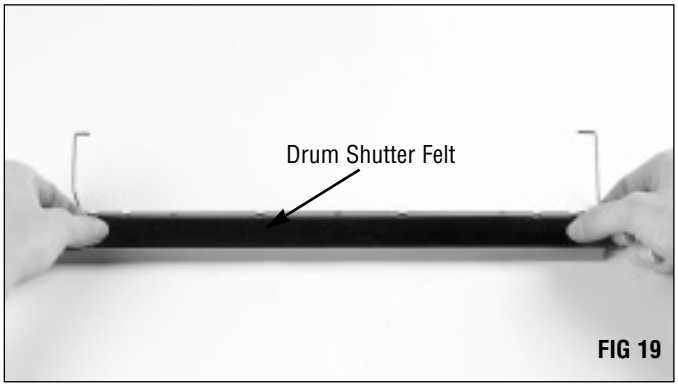


FIG 19

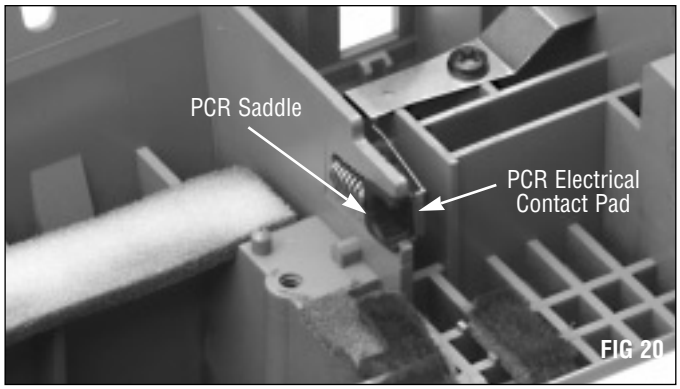


FIG 20

Assembling the Waste Bin Section

1. **Clean the wiper blade with dry, filtered compressed air.**

DO NOT use alcohol or any alcohol-based solvent to clean the polyurethane blade.

If you plan to reuse the wiper blade, clean the blade with compressed air only (FIG 21).

For best results replace the Wiper Blade (WXBLADE) each time you replace the drum.

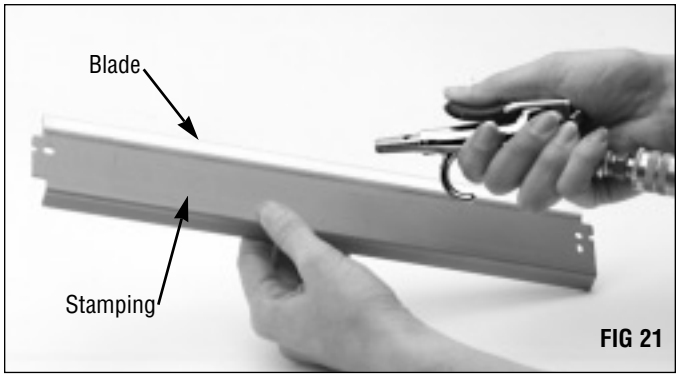


FIG 21

2. **Dip the edge of the blade in Kynar.**
Kynar Lubricating Powder (KPOW) applied to the working edge of the blade will help prevent blade "flip overs" during the first drum rotations of the remanufactured cartridge. Pad the wiper blade regardless of whether you are using a new replacement blade or reusing the old blade.

Dip the edge of the blade in a long, shallow container of Kynar lubricating powder as shown in FIG 22. Examine the blade to ensure even coverage. Repeat.

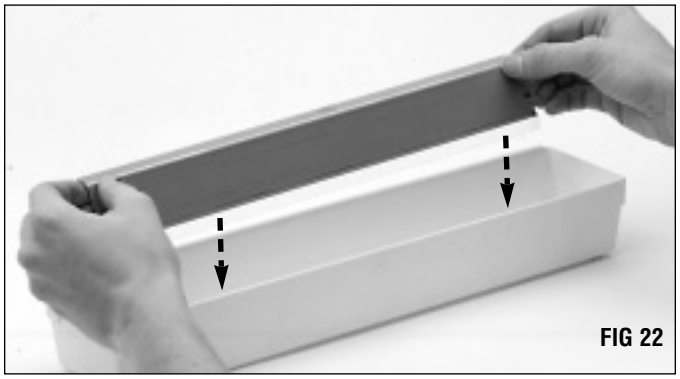


FIG 22

3. **Install the wiper blade.**
Position the stamping over the locating posts in the waste bin, and secure the blade with two Phillips screws (FIG 23).

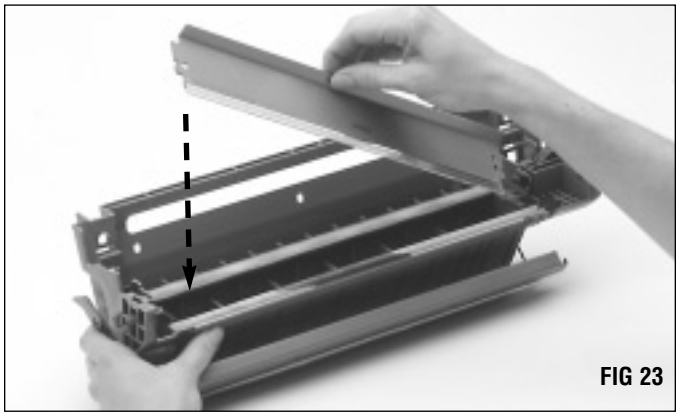


FIG 23

4. **Clean and inspect the PCR.**
If you are reusing an OEM PCR or SCC's 5/15-Cycle Remanufactured PCR, clean the rollers as directed:

SCC 5/15-Cycle PCR: Use a soft, lint-free cloth dampened with 91-99% isopropyl alcohol.

OEM PCR: Use a soft, lint-free cloth dampened with water.

Gently wipe the PCR in one direction. Be careful not to pinch or dent the surface of the PCR, as the material has poor memory (FIG 24).

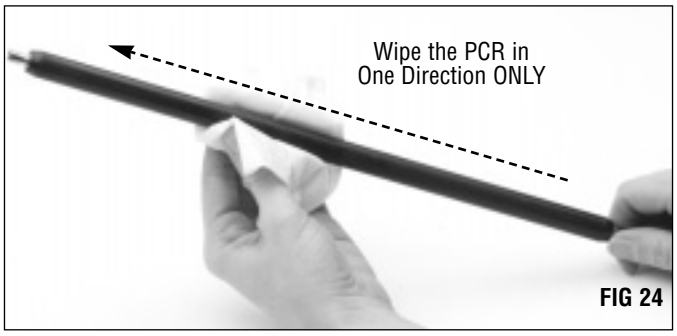


FIG 24

IMPORTANT Do not lubricate the PCR conductive saddle.

5. **Install the PCR.**
Apply a thin layer of Conductive Cartridge Lubricant (CONCLUBE) to the contact end of the PCR shaft that touches the conductive pad. Conductive grease is present in the OEM cartridge only on the PCR shaft that touches the conductive pad. *For more information regarding the use of conductive lubricant, see SSS 100, Cleaning Tools, Tips and Techniques.*

Position the right end of the axle first. Make sure the axle is seated against the conductive pad as shown in FIG 25.

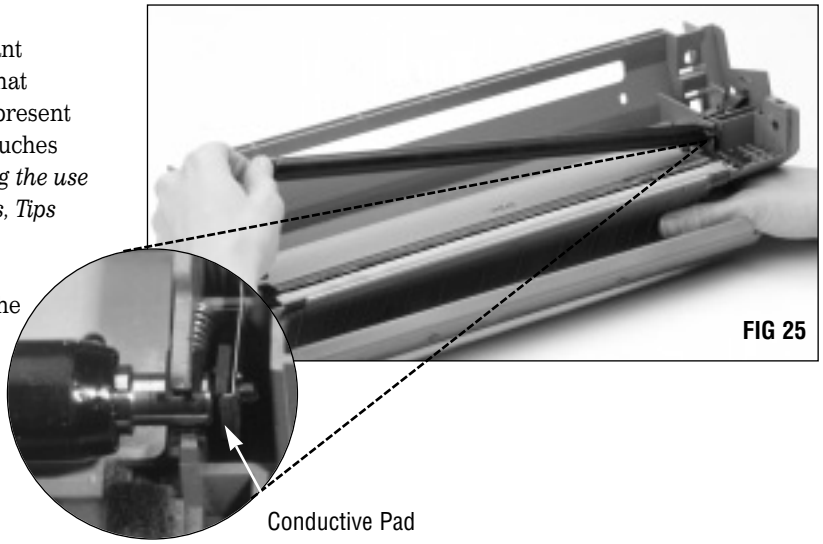


FIG 25

6. **Clean and inspect the drum.**
If you plan to reuse the drum, clean it with compressed air or a soft, lint-free cloth (FIG 26).

Inspect the drum for deep concentric wear lines or cracks in the coating and replace the drum with an SCC system qualified drum as required; UltraPrint drum (UPWXDRGR-C); DIC drum (DICWXDRGR).


FIG 26

IMPORTANT Do not use cleaning agents or coatings on the drum. Be careful not to nick the surface of the drum with the air nozzle.

Assembling the Waste Bin Section

7. **Pad the coated area of the drum with Kynar Lubricating Powder (KPOW).**
   Be careful to avoid Kynar on the gears (FIG 27).

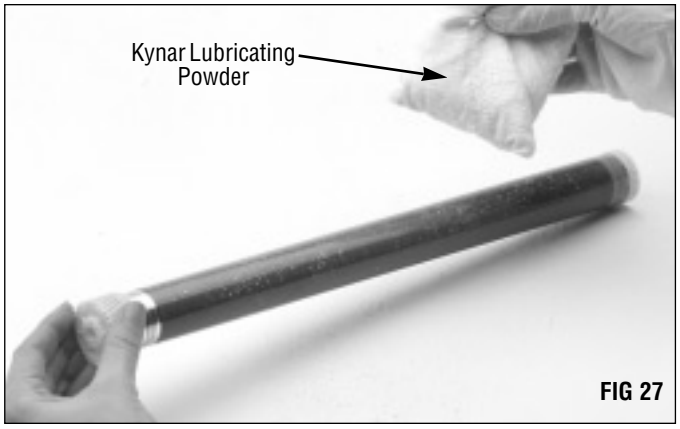


FIG 27

8. **Install the drum.**
   Position the drum in the waste bin with the helical gear on the right as shown in FIG 28.

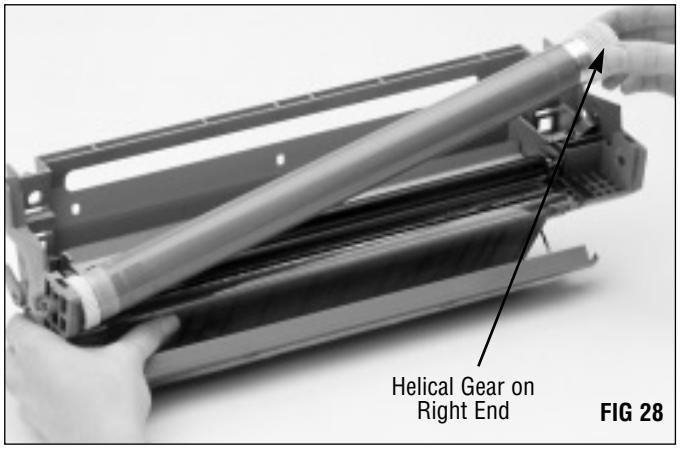


FIG 28

9. **Install the drum axle.**
   Install the drum axle at the left end of the waste bin. Make sure the splined end of the axle is on the left as shown in FIG 29. You may have to press down slightly on the helical gear in order to guide the axle through the casing at the right end.

   Push the axle into the waste bin until it is seated in the casing at the right end of the waste bin section, then push the axle as far as it will go. In the next step, you will use the aluminum hammer to seat the axle in the waste bin.

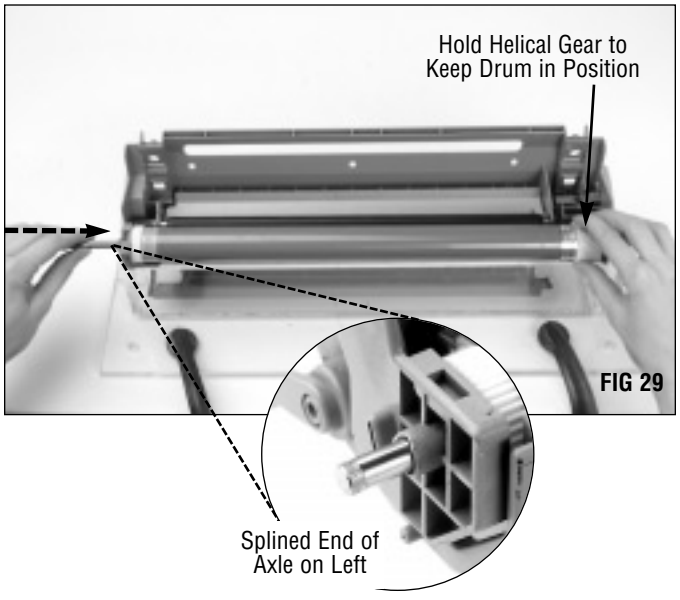


FIG 29

10. **Seat the axle in the waste bin section.**
Use the aluminum hammer to gently tap the axle into position (FIG 30). The axle should protrude slightly from the collar housing as shown in FIG 31.

IMPORTANT Do not use a steel hammer to tap the axle, as that type of hammer will damage or disfigure the axle and plating. For more information refer to SSS 53-E, Problem Solving.

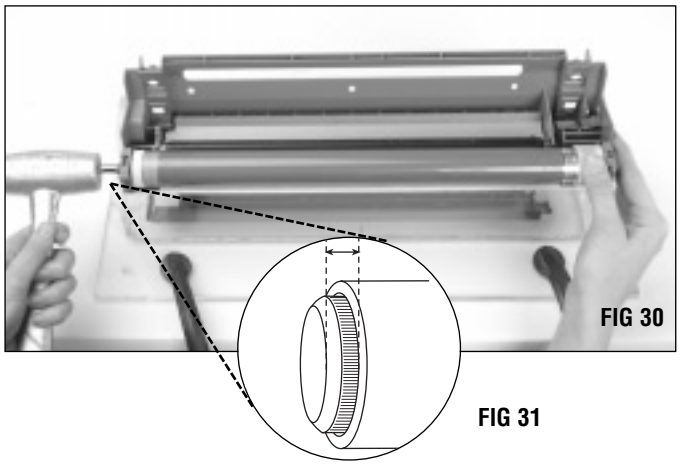


FIG 30

FIG 31

11. **Rotate the drum.**
Rotate the drum in its normal rotational direction, as indicated by the arrow in FIG 32, at least six full drum rotations. Rotating the drum will help lubricate the wiper blade and prevent the potential of blade "flip overs". The Kynar wiped from the drum by the wiper blade will deposit in the waste bin.

After you have rotated the drum to remove the powder, rotate the drum again in small increments in order to clean the Kynar from the PCR. As you rotate the drum in its normal rotational direction, wipe the Kynar from the PCR with a lint-free cloth as shown in FIG 32 .

You can also use dry, filtered compressed air instead of the lint-free cloth to remove the Kynar from the PCR.

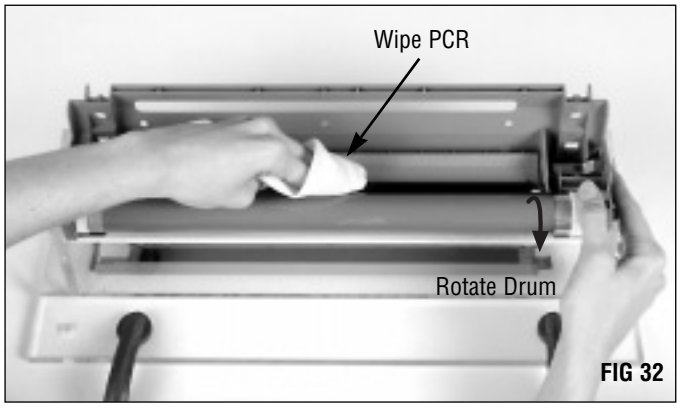


FIG 32

IMPORTANT Make sure there is no Kynar present on the PCR, otherwise repeating voids in solid print areas at the PCR interval may result.

12. **Install a replacement retaining ring (FIG 33).**
The ring is normally damaged by the cutting action of the groove on the axle when the axle is removed. A replacement Drum Axle Retaining Ring (WXDRAXRING) must be installed each time the axle is removed. *For more information, refer to SSS 53-E, Problem Solving.*

Use the Retaining Ring Installation Tool (WXDRAXRITOOL) to properly seat the ring in the casing as shown in FIGs 34 and 35 on the next page.

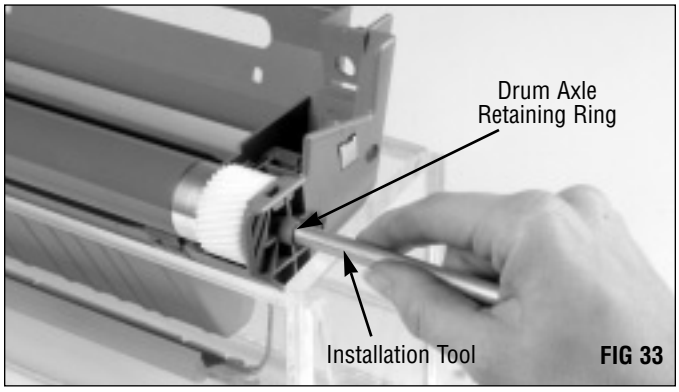


FIG 33

Assembling the Waste Bin Section

Place the retaining ring at the opening of the casing; then, place the installation tool over the ring (FIG 34).

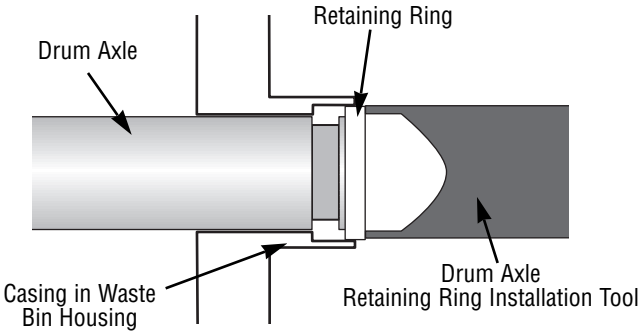


FIG 34

Use the tool to push the ring over the end of the axle onto the groove (FIG 35).

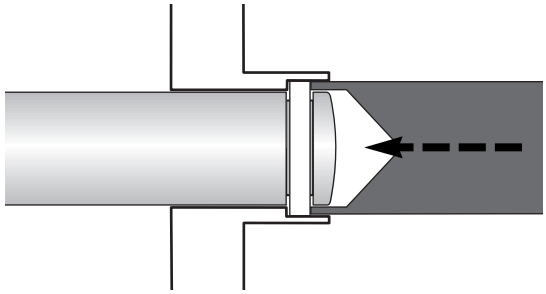


FIG 35

13. **Place the assembled waste bin section in a light-protected area until final reassembly.**

Disassembling the Toner Hopper Section

A Plexiglass Hopper Fixture (WXWBINJIG) is available to facilitate assembly and disassembly of the hopper section. To prevent the fixture from shifting, secure it to your work surface with bolts or C-clamps.

1. **Place the hopper section in the hopper fixture as shown in.** Position the hopper section so that the contact side is on the right as shown in FIG 36.

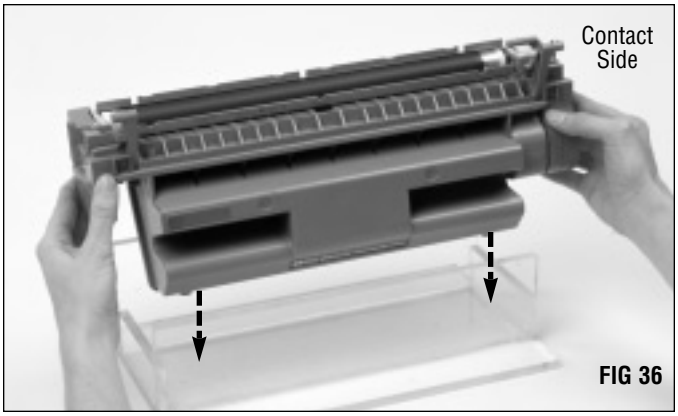


FIG 36

2. **Remove the gear housing end plate at the right end of the hopper section.**
Remove two Phillips screws as shown in FIG 37.

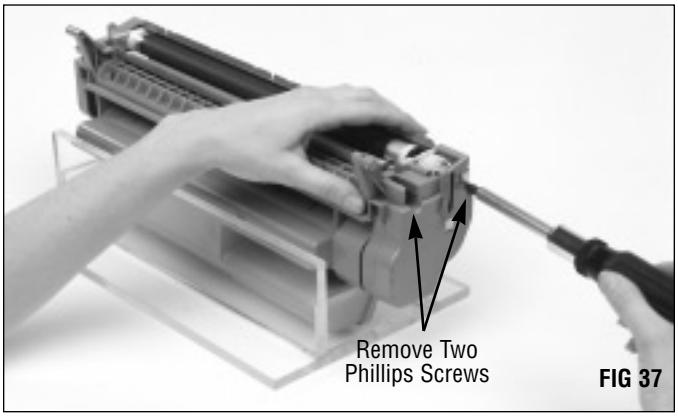


FIG 37

Before removing the end plate, release the doctor blade electrical contact. Use a flat-blade screwdriver to lift the contact from the locating post as shown in FIG 38.

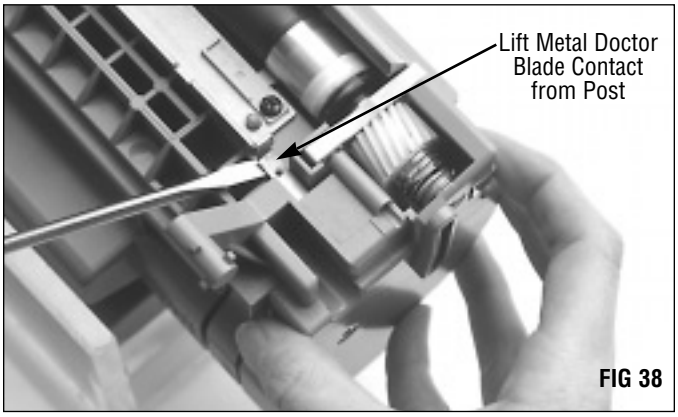


FIG 38

Disassembling the Toner Hopper Section

Then remove the gear housing end plate as shown in FIG 39. Be careful not to break the pins on the end plate.

If the pins are broken during disassembly or handling, they can be repaired using SCC's 5Si End Plate Pin Replacement Kit (WXEPREPKIT). *For more information, refer to SSS 53-E, Problem Solving.*

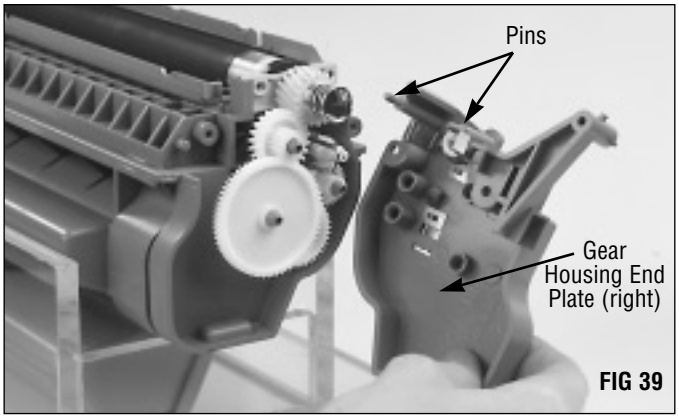


FIG 39

3. **Remove the mag roller electrical contact coil.** Carefully twist off the coil without stretching or bending it (FIG 40). Or, use a flat-blade screwdriver to pry off the contact coil at the base of the coil.

DO NOT stretch, bend or change the compression of the coil.

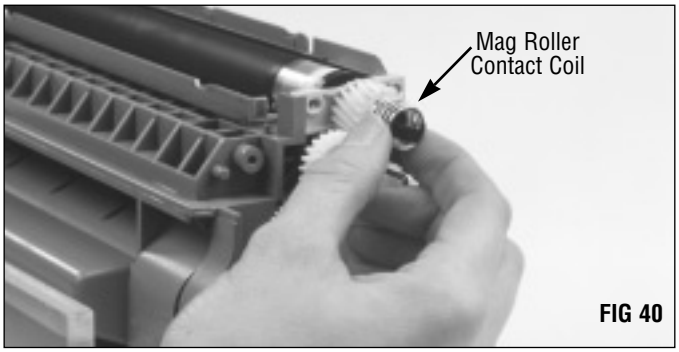


FIG 40

4. **Remove the four largest drive gears in the drive train section (FIG 41).**

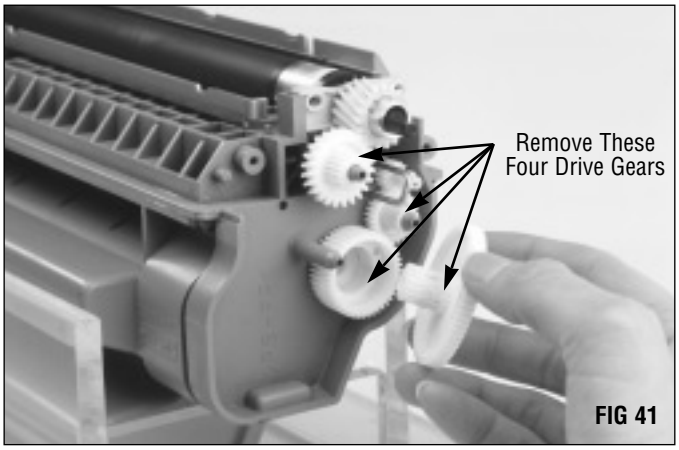


FIG 41

5. **Remove the mag roller drive gear (optional).**
   We do not recommend removing the mag roller drive gear, unless you are planning to recoat the mag roller or replace the gear. In the following instructions, the gear is left installed.

NOTE **Removing the gear damages the locking clips that secure the gear to the mag roller sleeve. If you remove the gear, check the clips for damage before reusing the gear. Replacement Mag Roller Drive Gears (WXMRGEAR) are available from SCC. Refer to SSS 53-E, Problem Solving for more information.**

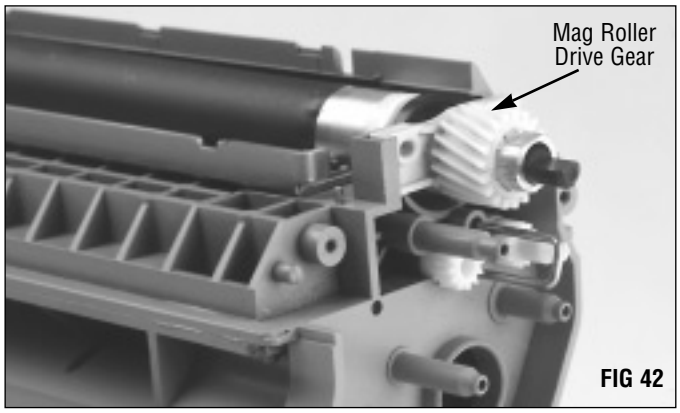


FIG 42

To remove the gear, disengage the two locking clips on the interior diameter of the gear using a very small (1/8") flat blade screwdriver. At the same time, use another flat blade screwdriver to pry the gear from the axle (FIG 43).

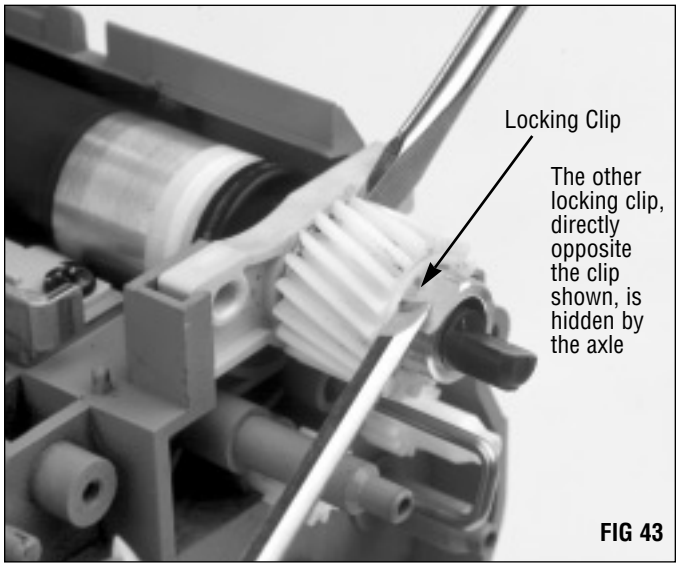


FIG 43

6. **Remove the left mag roller end plate.**
   Remove two Phillips screws as shown in FIG 44.

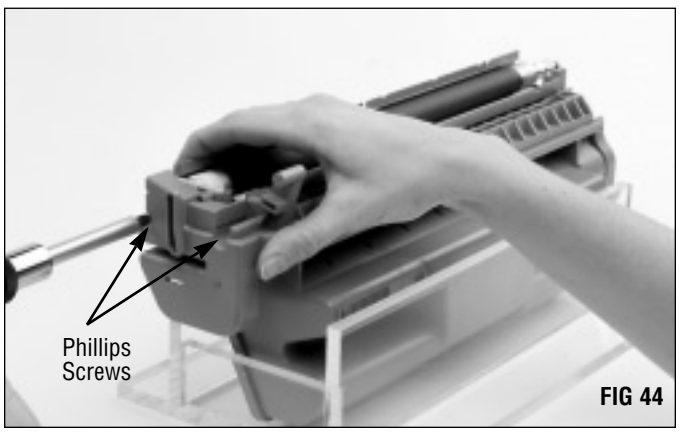


FIG 44

Disassembling the Toner Hopper Section

Then, remove the mag roller end plate at the left end of the hopper section as shown in FIG 45. Be careful not to break the pins on the end plate.

If the pins are broken during disassembly or handling, they can be repaired using SCC's 5Si End Plate Pin Replacement Kit (WXEPREPKIT). *For more information, refer to SSS 53-E, Problem Solving.*

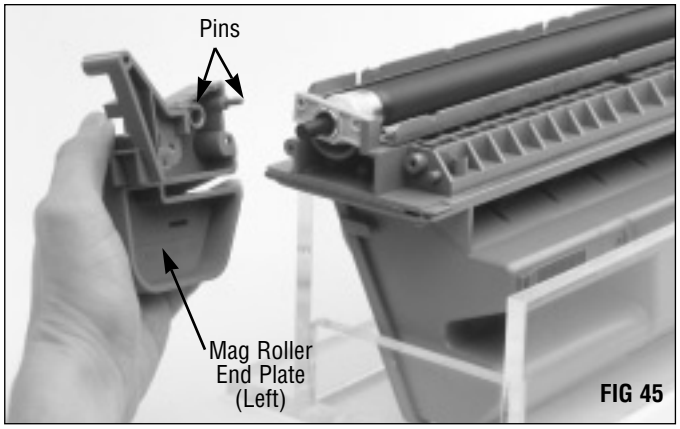


FIG 45

7. **Remove the left mag roller stabilizer, bearing and bushing as shown in FIGs 46 and 47.**
Note that the mag roller bushings are fragile and highly susceptible to breakage.

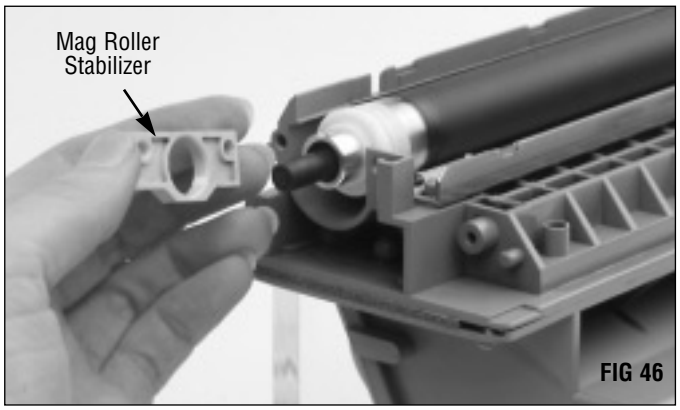


FIG 46

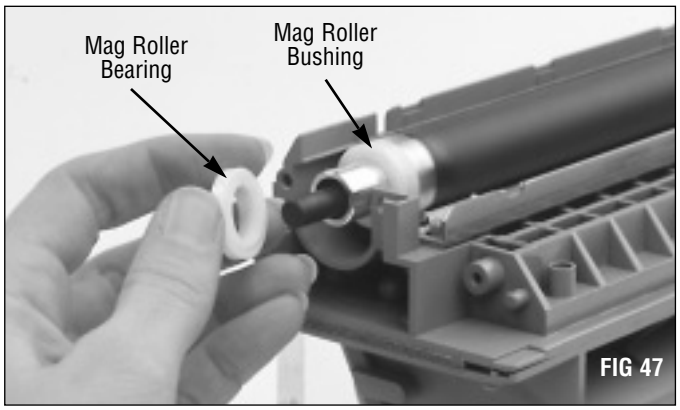


FIG 47

8. **Remove the mag roller.**
Grasp each end of the mag roller as shown in FIG 48 and lift it from the hopper. Note that the drive gear on the right end will stay secured to the mag roller.

DO NOT touch the surface of the mag roller with your fingers or scratch the surface. Store the mag roller on a soft surface, but DO NOT stack the rollers on top of each other.

If you plan to reuse the mag roller, store it on a soft surface.

If the mag roller contributes to light print, replace it with SCC's EnduraMag recoated mag roller (WXRMFMDR) which works on an exchange basis. Or, use SCC's factory-new EnduraMag (WXMDR). *For more information about the EnduraMag, see page 4 of this manual or contact your SCC Sales Team for program details.*

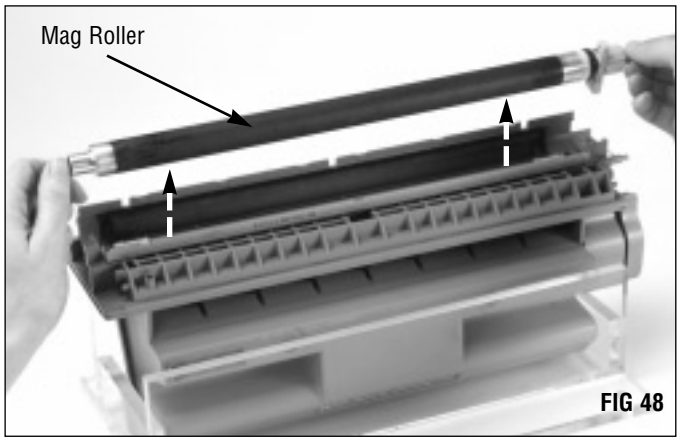


FIG 48

9. **Remove the doctor blade.**
During normal cartridge operation, about 3-6 grams of toner can accumulate under the doctor blade. We recommend removing the doctor blade and thoroughly cleaning the area under the stamping each time you remanufacture the cartridge.

Remove the two Phillips screws that secure the blade stamping (FIG 49).

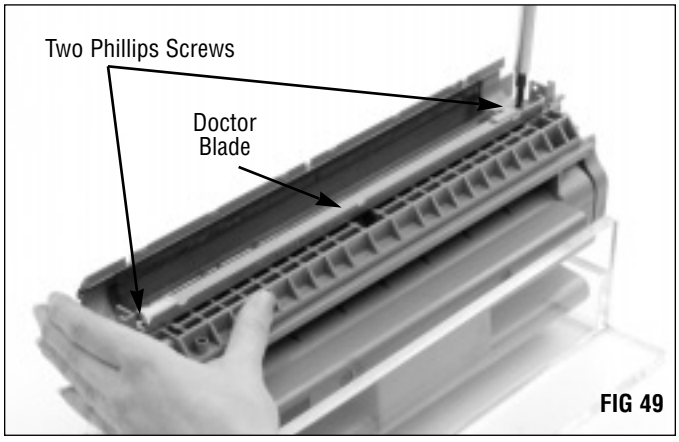


FIG 49

Then, lift the blade from the hopper as shown in FIG 50. Be careful not to lose the plastic wipers on the doctor blade. You will reuse these if you install a replacement blade.

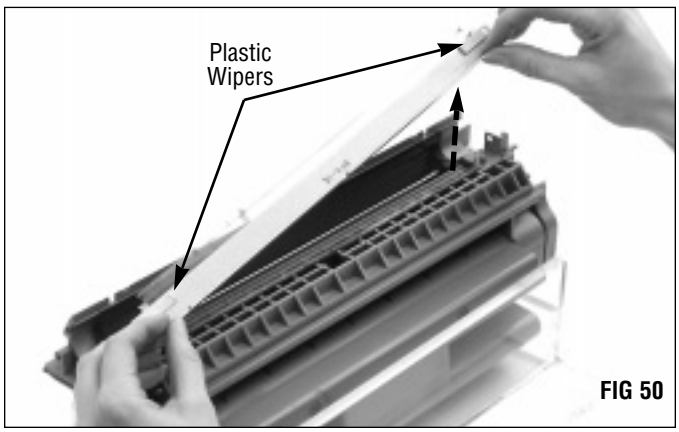


FIG 50

Disassembling the Toner Hopper Section

10. **Clean the hopper with dry, filtered compressed air.** Direct compressed air on and around foam and felt components in order to remove as much toner and debris as possible (FIG 51).

    We do not recommend using a toner vacuum to clean the hopper section due to potential damage to the agitator and toner low sensor bars.

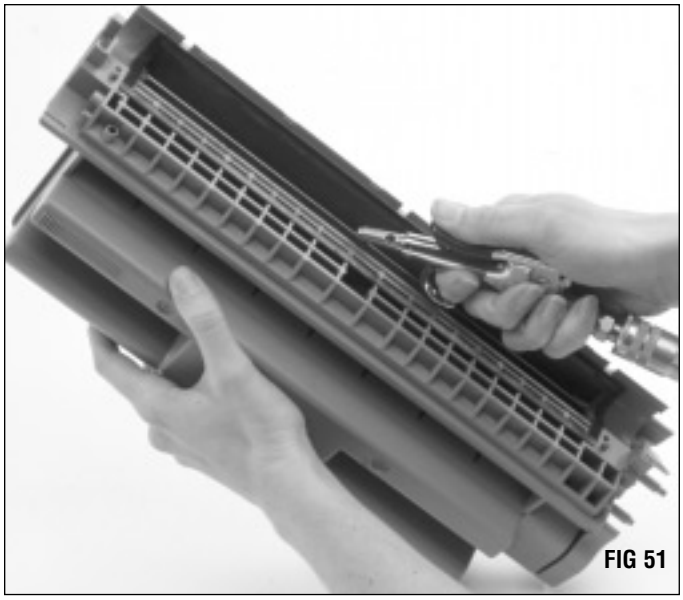


FIG 51

11. **Inspect the sealing components in the hopper section and replace as required (FIG 52).**

    Foam components such as the **Doctor Blade End Foam** (WXDBEFOAM) and **Doctor Blade Sealing Foam** (WXDBSFOAM) should display a smooth, clean surface. Make sure the foam materials are secured in the correct position. Replace the foam components that are ripped, pitted or dislodged.

    Mag Roller Felts (WXMRFELT) should display a plush surface. Make sure the felts are securely adhered to the mag roller saddles. Replace felts if the surface appears shiny and compacted with toner. Note that removal of the mag roller sealing blade is required in order to replace the mag roller felts.

    The **Mag Roller Sealing Blade** (WXMRSBLADE) should exhibit a smooth, flat surface along the entire length of the blade. Make sure the blade is fully attached to the cartridge and that the ends of the blade overlap the mag roller felts. Otherwise leakage can occur. SCC's Mag Roller Sealing Blade Installation Kit (WXMRSBLADKIT) includes an installation tool.

    Instructions detailing the installation of the components mentioned above are included in the packaging of the individual products.

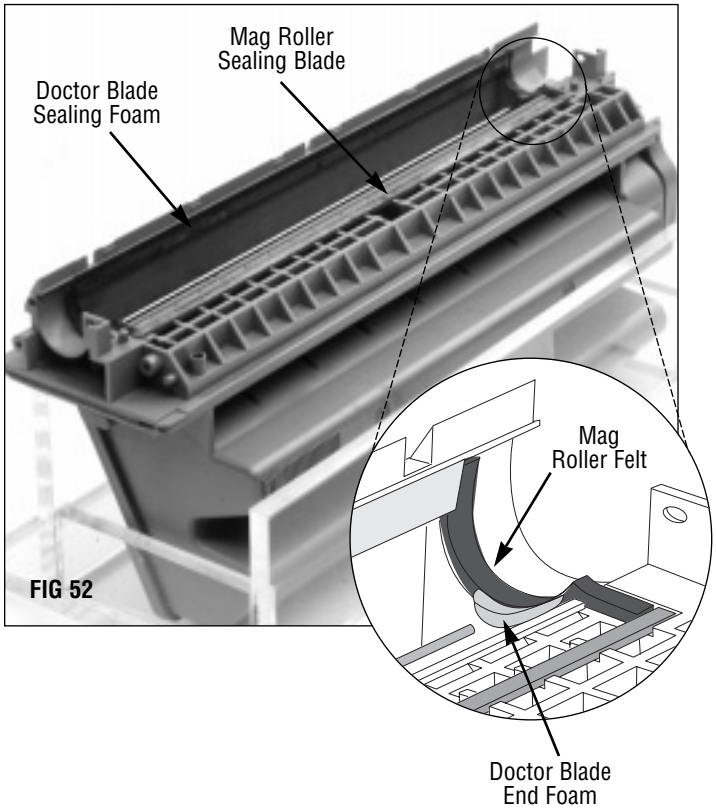


FIG 52

Before You Continue...

SEAL INSTALLATION

If you plan to the seal the cartridge, the most reliable and effective seal is obtained through splitting the hopper using the 5Si RapidSplitter™ Power Splitting System, installing a RapidSeal™ Split Hopper Seal and rejoining the split sections using a locking rail system. We have provided an overview of both the splitting and sealing systems in the following two sections (pages 24-32) to show some of the features and installation processes. **However, do not use these sections as a substitute for the complete instruction manuals. Read the dedicated instruction manuals (SSS 118, WX (5Si) RapidSplitter Cartridge Splitting System User's Manual and SSS 63, WX (5Si) RapidSeal Installation Kit) carefully before using either the splitting or sealing systems.**

The original WX Manual Splitting System is still available and is a viable lower cost alternative to the RapidSplitter Power Splitter. The manual splitter unit included with the system is the identical unit as the manual separator option with the RapidSplitter power splitting system. This gives you a natural upgrade path as your production volumes grow. For production facilities that must have guaranteed 100% uptime in their WX splitting operations, the original WX manual splitting system operates as an excellent emergency backup to the RapidSplitter power splitting system. If you are using the manual splitting system to process cartridges, please refer to (SSS 65, *WX Manual Splitting System User's Manual* for operation and processing instructions.

NO SEAL INSTALLATION

If you do not plan to seal the hopper, proceed to page 33 for hopper filling instructions.

Splitting the Hopper - OVERVIEW

Features

- Eliminates virtually all potential for hopper splitting damage
- Effective splitting rate
- Toner hopper and mag roller sections are completely interchangeable, creating high productivity
- Less than 10 seconds for total splitting process
- Affordable for both large and small cartridge remanufacturers

WX (5Si) RapidSplitter™ Power Splitting System

. . . . . .WXRSCSS

Contents: WX/5Si power splitter, utility knife with blade (CSS-44), adjustable spanner wrench (CSS-67A), U-spanner wrench (CSS-86), alignment pin tool-2 (CSS-38), 9/64" T-handled allen wrench (CS5-71), guard jig (CS5-65), safety glasses (CSS-42)

WX (5Si) RapidSplitter Power Splitting System*

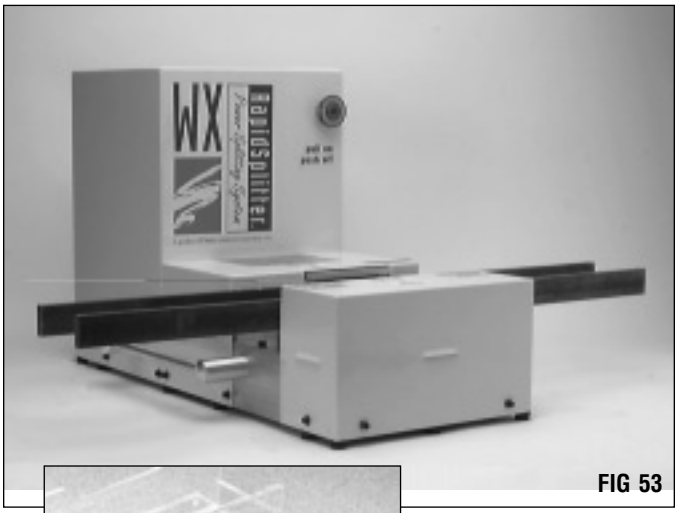


FIG 53

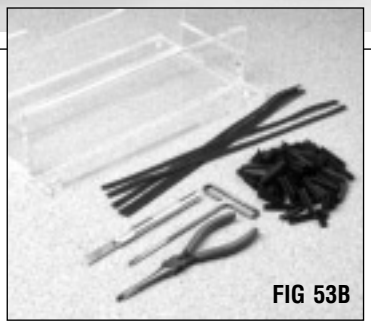


FIG 53B

WX (5Si) Power Cartridge Splitter Starter Kit

The current version of the cartridge splitter shown in FIG 53 (this page), features handles for lifting and moving the machine; the machines shown in FIGs 55 and 56 are earlier versions.

WX (5Si) RapidSplitter™ Power Splitting System Instruction Manual

System Support Series 118

When using the WX/5Si RapidSplitter Power Splitting System for the first time, we recommend that you purchase the 5Si Cartridge Splitter Starter Kit and the felt o-ring washer installation kit, listed below.

WX (5Si) Power Cartridge Splitter Starter Kit

. . . . . .CS5-400

Contents: 5Si plexiglass hopper Fixture (CS5-44-SR), 5Si sealing channel rail foams (WXSCRFOAM), 5Si reusable locking rails (CS5-500), foam removal tool assembly (CSS-40), T-handle tool (for 5Si rail removal) (CSS-39), gasket seating tool (WXGSTOOL)–not shown in FIG 53B

WX (5Si) Felt O-Ring Washer Installation Kit (Recommended)

. . . . . .WXFWASHERKIT

Contents: 96 felt O-ring washers, installation tool

WX (5Si) Manual Separator (Optional)

. . . . . .WXMCS

Contents: WX(5Si) manual separator, small blade wrench (CS5-150), T-handle blade wrench (CS5-160)

Additional Items Needed

- Flat Blade Screwdriver
- Phillips Screwdriver
- Scissors
- Compressed Air for Cleaning
  Refer to System Support Series #100, *Cleaning Tools, Tips and Techniques* for important information about compressed air
- Isopropyl Alcohol
  For best results we recommend using ONLY 91% - 99% isopropyl alcohol for cleaning as directed in these instructions. Follow the alcohol manufacturer's safety instructions. *For information about where you can find 99% isopropyl alcohol, see page 5 of this manual.*
- Safety Glasses

IMPORTANT The instructions in this section are included to provide an **OVERVIEW** of the 5Si cartridge splitting system. For complete instructions refer to SSS 118, *5Si RapidSplitter Power Splitting System User's Manual*. **DO NOT ATTEMPT TO SPLIT THE HOPPER BEFORE THOROUGHLY READING THE INSTRUCTION MANUAL.**

1. **Prepare the hopper for splitting.**
   Make sure the hopper is completely disassembled as shown in FIG 54 and clean.

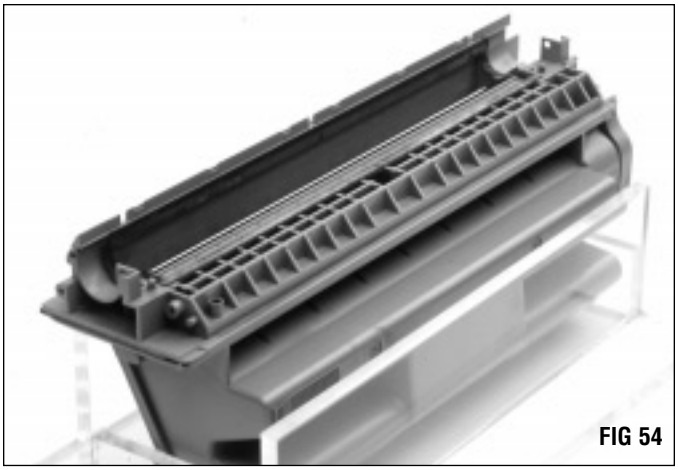


FIG 54

2. **Split the Hopper.**
   Loading and splitting the hopper is as easy as moving it along the guide rails (FIGs 55 and 56) Twin four-inch rotary blades precisely cut each side of the hopper flanges, the accuracy of the blades virtually eliminating the potential for hopper damage. The entire process takes less than 10 seconds.

   FIG 55: The cartridge is loaded on the right hand side of the machine and moved to the left along the rails.

   FIG 56: Once the cartridge has passed through the blades and has cleared the blade guard and the upper rail, it can then be lifted out of the rails.

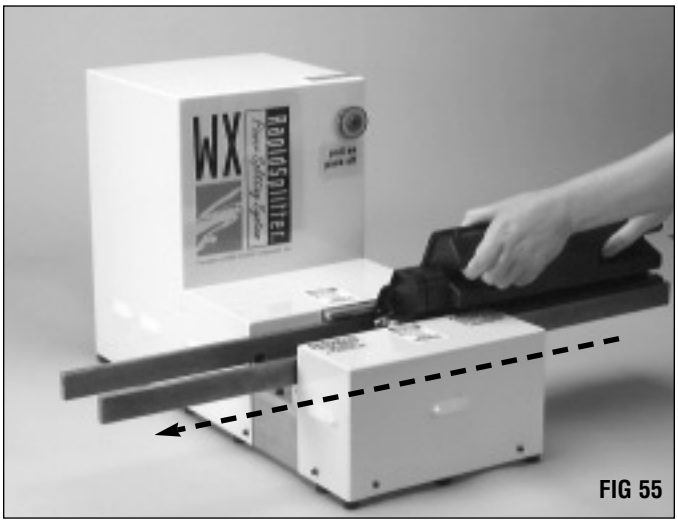


FIG 55

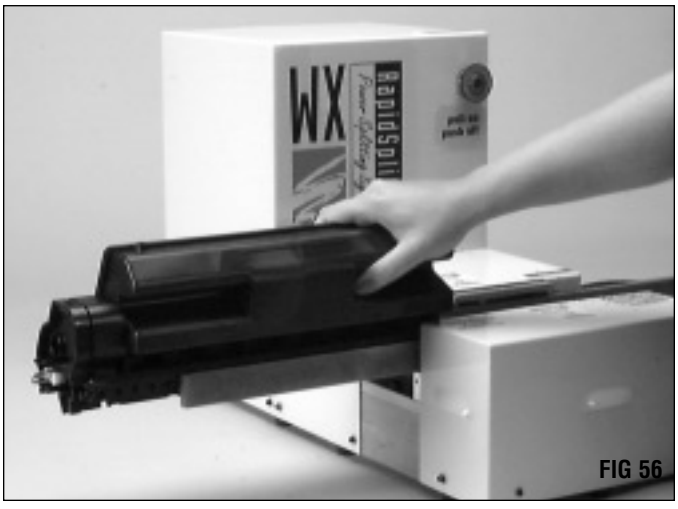


FIG 56

Splitting the Hopper - OVERVIEW

3. **Separate the hopper sections.**
With the 5Si cartridge it is not unusual to have a slight overweld that is not completely cut during the splitting operation. A utility knife and alignment pin tool #2 are used to ease separation of the hopper sections.

For larger volumes, the WX(5Si) Manual Separator (WXMCS) accessory can speed up your operations by separating the hopper sections quickly and safely in an efficient one-step operation. *For more information, see SSS 53-E, Problem Solving.*

The splitting machine is set up to avoid cutting the alignment pins at each end of the hopper so that pins can be used to accurately realign the cartridge sections during reassembly.

FIG 57: The Utility Knife (CSS-44) is used to ensure that the cartridge is completely split along the welds.

FIG 58: Alignment Pin Tool #2 (CSS-38) helps to break the welds around the alignment pins.

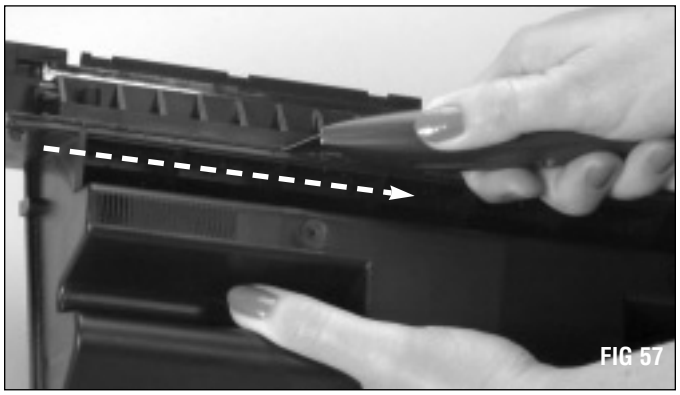


FIG 57

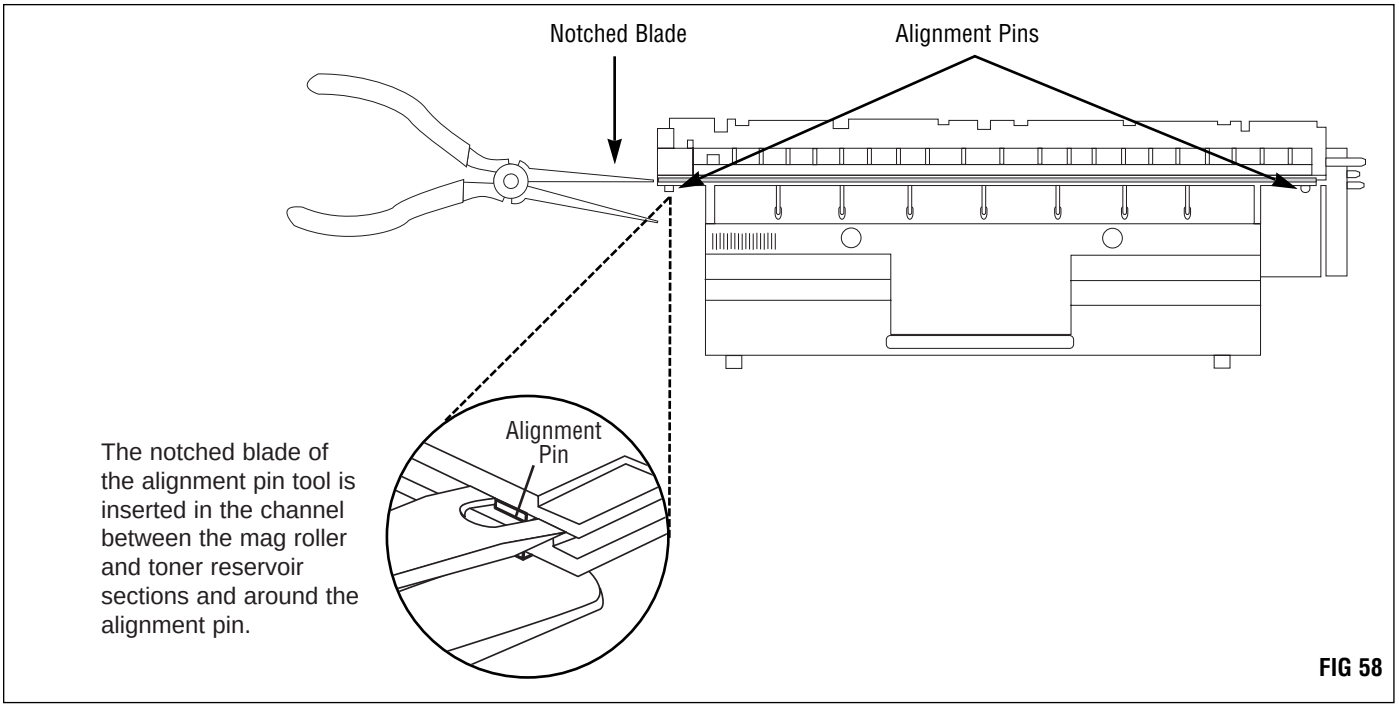


FIG 58

4. **Separate the hopper sections.**
Gently move the two halves back and forth until they are completely separated (FIG 59).

The RapidSplitter is engineered for precision cuts every time, allowing the interchange of toner hopper and mag roller sections. For your operation, this means significant production efficiency of your 5Si cartridge line.

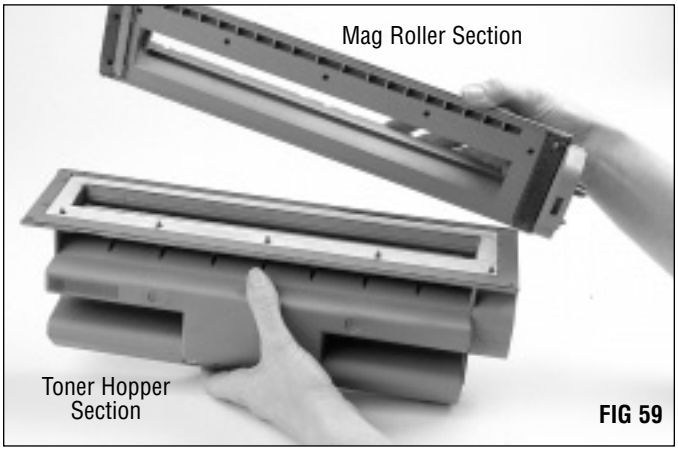


FIG 59

Installing a WX (5Si) RapidSeal™ - OVERVIEW

Features

- Fast installation and subsequent remanufacturing
- Installs in less than one minute
- OEM-style seal material, width and pull characteristics
- Economical, reusable, blackened stainless steel locking rails
- Professional finished cartridge appearance
- Secure hopper and mag roller section rejoining
- 100% leak-free performance and sealing yield rate

WX (5Si) RapidSeal™ Split Hopper Seal Installation Kit

Item Code . . . . . .WXRSIKIT
Contents: 5Si Plexiglass Hopper Fixture, Foam Removal Tool Assembly*, T-Handle Tool*, 5Si Gasket Seating Tool**

** In addition to being sold separately, these items are also included in the WX(5Si)Cartridge Splitter Starter Kit (CS5-400).*

WX (5Si) RapidSeal

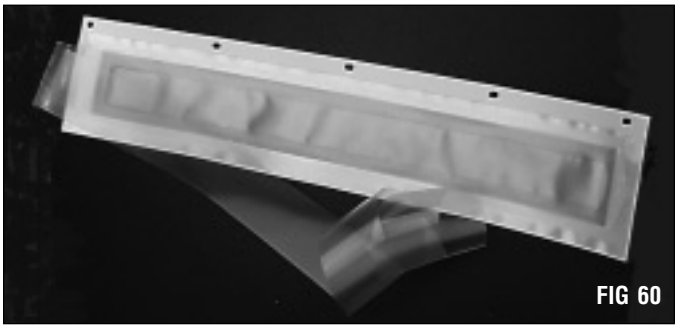


FIG 60

5Si Reusable Black, Stainless Steel Locking Rails

FIG 60A

WX (5Si) RapidSeal™ Split Hopper Seal Instruction Manual

System Support Series 63

The instructions included in SSS 63, 5Si RapidSeal Split Hopper Seal Instruction Manual are designed for use with 5Si/WX cartridges that have been previously split and sealed with SCC's 5Si/WX RapidSplitter Power Splitting System and 5Si/WX RapidSeal Split Hopper Sealing System. If your cartridge has been previously split and/or sealed with another system, please refer to SCC documentation in System Support Series 63. This document provides important information on the preparation of the sealing surface.

WX (5Si) RapidSeal™ Split Hopper Seal Pack

Item Code . . . . . .WXSHFSAPK
Contents: RapidSeal Split Hopper Seals and OEM-type Pull Tabs

WX (5Si) RapidSeal™ Resupply Items

- 5Si RapidSeal™ Split Hopper Seal with Pressure Sensitive Adhesive . . . . . .WXSHGSA-PSA
- 5Si RapidSeal™ Split Hopper Seal Pack . . . . . .WXSHGSAPK
- 5Si OEM-Type Seal Pull Tab with Adhesive . . . . . .WXOEMTAB
- 5Si Reusable Black, Stainless Steel Locking Rails CS5-500

Additional Items Needed

- 5Si OEM-Type Seal Pull Tab with Adhesive . . . . . .WXOEMTAB
- Dry, Lint-Free Cleaning Cloth . . . . . LFCCLOTH
- Isopropyl Alcohol . . . . . .(See page 5 for details)
- Scissors
- Flat Blade Screwdriver

Installing a WX (5Si) RapidSeal™ - OVERVIEW

IMPORTANT The instructions in this section are included to provide an **OVERVIEW** of the 5Si RapidSeal Split Hopper Seal installation. For complete instructions refer to the 5Si RapidSeal Installation Instructions (SSS 63). **DO NOT ATTEMPT TO SEAL THE HOPPER BEFORE THOROUGHLY READING THE INSTRUCTION MANUAL.**

1. **Prepare the sealing surface.**
   In order to achieve a secure seal, the residual OEM seal filament (or aftermarket seal) and small gasket "bumps" must be removed from the sealing surface (FIG 61). Strands of OEM seal filament as well as the bumps can cause the installed seal to separate from the sealing channel allowing leakage.

   Refer to the 5Si RapidSeal installation instructions for complete details on preparation of the sealing surface.

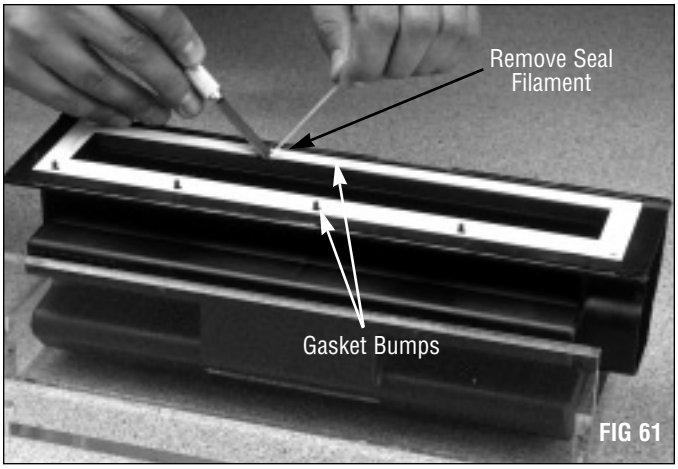


FIG 61

2. **Replace the felt washer in the agitator drive assembly.**
   When the felt washer becomes worn and compacted with toner, it loses its ability to properly seal the agitator drive assembly. The result is toner leakage through the casing of the drive assembly. For best results, replace the Felt O-Ring Washer (WXFWASHER) each time you remanufacture the cartridge.

   Use a pair of needle nose pliers to pinch together the retaining clips on the drive assembly as shown in FIG 62; then replace the felt washer as shown in FIG 63.

FIG 62

FIG 63

   The felt O-ring washer installation tool, included in the Felt O-Ring Washer Kit (WXFWASHERKIT) is required to ensure that the drive gear is securely installed (FIG 64).
   (The kit includes felt O-rings and an installation tool)

   Refer to the felt O-ring washer product instructions for complete installation instructions.

FIG 64

Installing a WX (5Si) RapidSeal™ - OVERVIEW

3. Install a 5Si RapidSeal™ Split Hopper Seal.
The RapidSeal Split Hopper Seal (WXSHGSA-PSA) features a pressure sensitive adhesive that secures to the sealing surface in only a few seconds. Remove the backing from the seal and position the seal on the sealing surface (FIG 65).

The rigid base seal requires installation of sealing channel rail foam to seal the sides of the hopper (See step 5, next page).

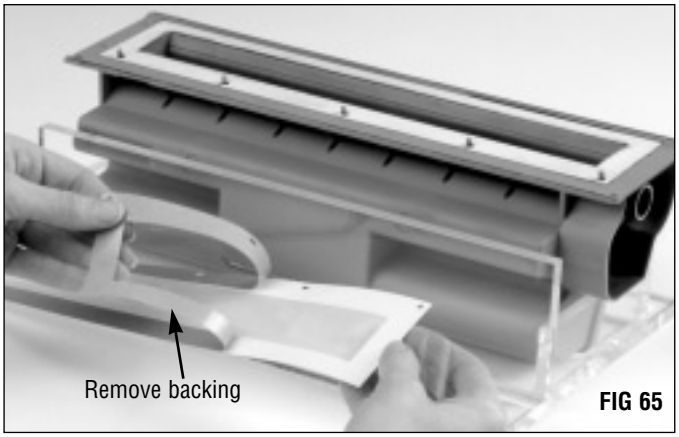


FIG 65

The RapidSeal also features four oblong holes and one round hole located along the length of the seal to fit over the guide posts in the hopper. (FIG 66).

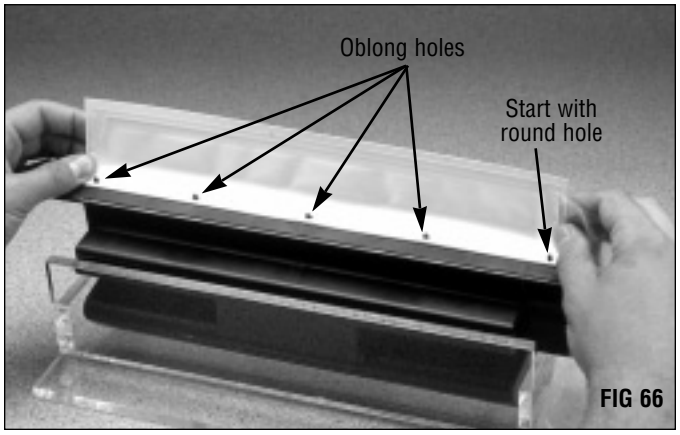


FIG 66

The guide posts in particular are a potential source of toner leakage; therefore, be sure the seal is secure around each guide post. A Gasket Seating Tool (WXGSTOOL) is provided with the seal installation kit to secure the gasket around the guide posts (FIG 67).

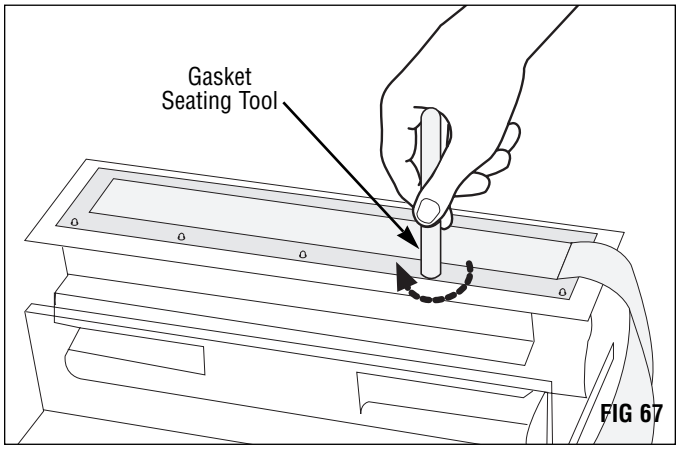


FIG 67

4. Fill the hopper with 840 grams of toner.

IMPORTANT Shake the toner bottle vigorously before pouring the toner into the hopper.

Pour the toner slowly into the hopper through the toner fill hole.
mPrint (WXMPT840B)
MicroGraphics 1 (WX840B)

Install a Universal Grip-Tab Hopper Cap (WXHCAP) securely over the fill hole.

5. **Clean and inspect the sealing channel end foam on the mag roller section (FIG 69).**
The Sealing Channel End Foam (WXSCEFOAM) seals the ends of the hopper, preventing leakage during operation of the cartridge or during handling. Rips and tears in the material can be a source of leakage. Replace as required.

For complete instructions regarding end foam installation, refer to SSS 118, 5Si RapidSpitter Power Splitting System User's Manual.

To clean the end foams, direct dry, filtered compressed air close to the surface of the foam to remove toner and debris.

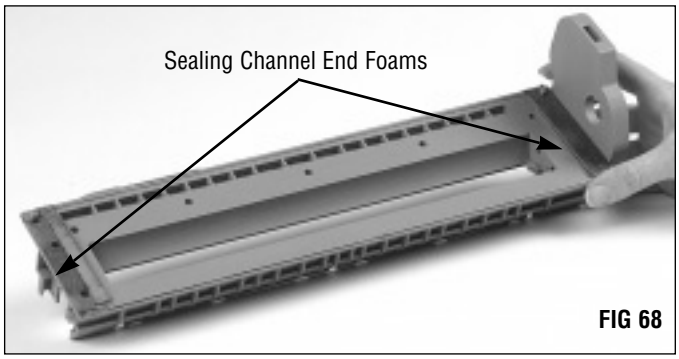


FIG 68

6. **Install sealing channel rail foam.**
If you are using the rigid base seal and locking rail system, Sealing Channel Rail Foam (WXSCRFOAM) must be installed to prevent leakage from the sides of the hopper.

The rail foam is installed along the sides of the mag roller section as shown in FIGs 69 and 70.

For complete instructions regarding rail foam installation, refer to SSS 118, 5Si RapidSpitter Power Splitting System User's Manual.

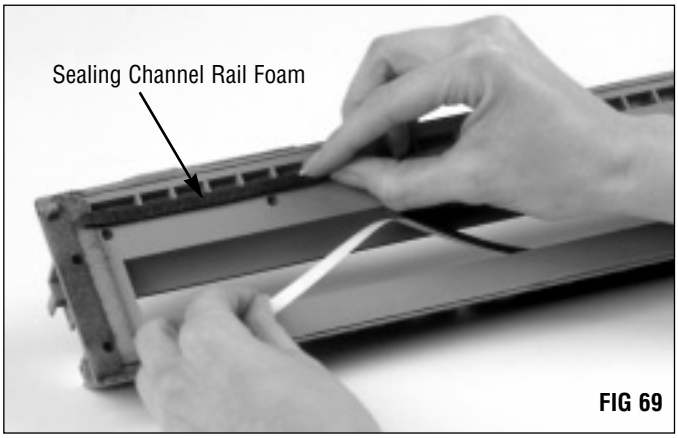


FIG 69

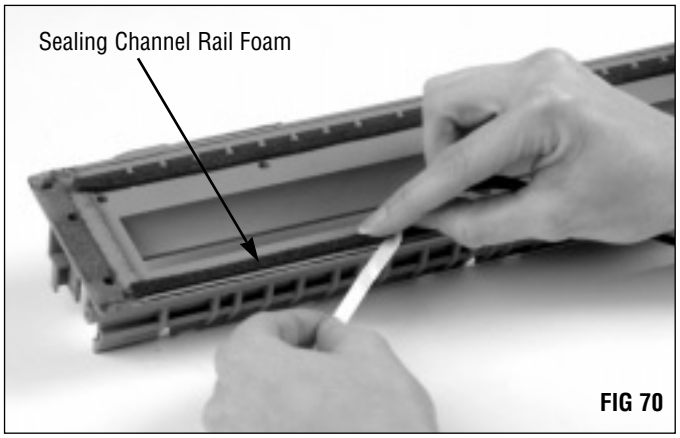


FIG 70

Installing a WX (5Si) RapidSeal™ - OVERVIEW

7. **Rejoin the toner reservoir and mag roller sections.**
Two corner alignment pins, which are preserved during the splitting process, help in properly re-aligning the two hopper sections (FIG 71).

The pull strip is positioned between the two guide posts at the left end of the hopper.

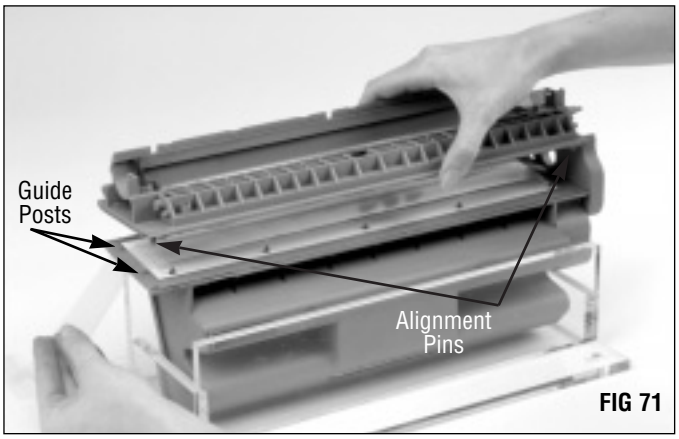


FIG 71

The hopper is secured with 8 Reusable Blackened, Stainless Steel Locking Rails (CS5-500) installed on each side of the hopper flanges (FIG 72). Each time you remanufacture the cartridge, pry off the rails with a T-Handled Rail Removal Tool (CSS-39) (included with Cartridge Splitting Starter Kit) and reuse the rails during the next remanufacturing cycle.

SCC's 5Si Plexiglass Hopper Fixture (CS5-44-SR) is specially designed to accommodate the installation of the two center rails on the back flange.

For detailed information regarding the rail orientation and correct rail installation/removal procedure, refer to SSS 118, 5Si RapidSplitter Power Splitting System User's Manual or SSS 63,RapidSeal Split Hopper Seal Installation Instructions.

Proceed to page 35 for instructions on reassembling the hopper section.

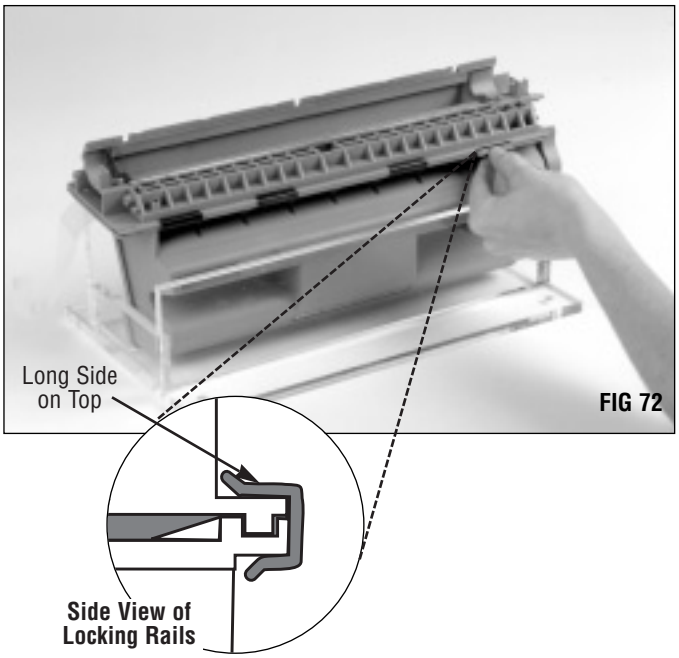


FIG 72

Filling a Hopper Without a Seal

Before You Begin this Section...

The **toner low sensor bar** and two **toner paddle bars** are installed directly behind the toner port, the opening to the toner reservoir. In order to access the felt O-ring washer, we recommend removing the toner low bar and top paddle bar. In addition, removing these bars will help prevent bending either bar when you fill the hopper through the port. Bending the the toner low bar downward through excessive force from a funnel or filling machine can increase the risk of false toner low warnings. The hopper can be filled with or without the toner low sensor bar or paddle bars installed; however take care not to bend the bars.

1. **Remove the toner low sensor bar.**
Pull the bar straight out from the right end of the hopper as shown in FIG 73. Take care not to bend the bar. A small plastic seal may come out with the bar. If the seal is not present on the bar, check the interior of the casing. If the seal is lost, a replacement seal is available from SCC (See step 5 on page 34).

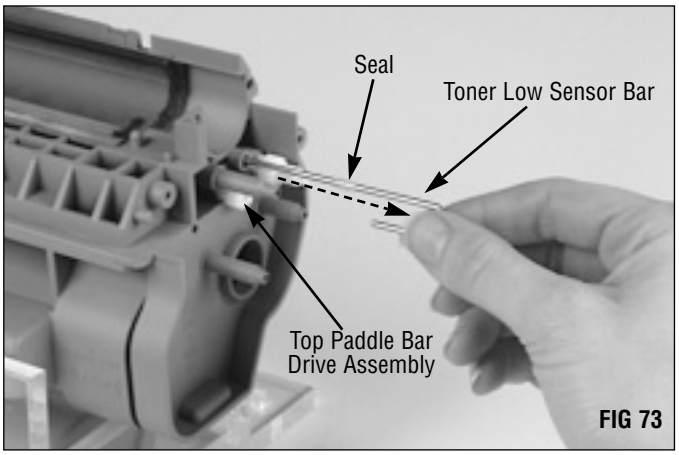


FIG 73

2. **Remove the top secondary toner agitator bar.**
Pull the agitator bar drive assembly straight out of the casing. As you pull out the drive assembly, hold the bar with a pair of needle nose pliers to keep it from falling into the hopper (FIG 74). Then remove the bar from the hopper.

   If you notice any toner leakage from the top or bottom toner agitator bar drive assemblies, replace the Felt O-Ring Washer (WXPBFWASHER); detailed replacement instructions are included with the washers.

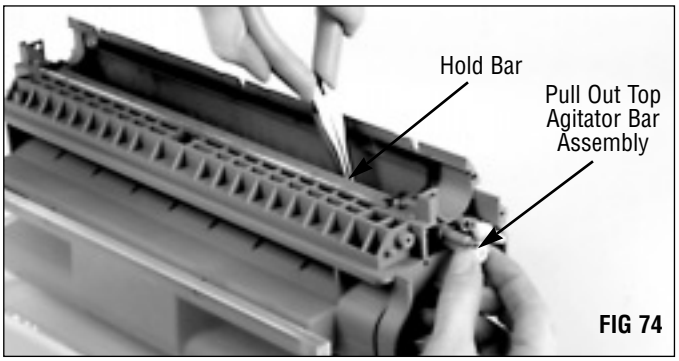


FIG 74

3. **Replace the felt O-ring washer.**
Rotate the drive assembly so that you can see the retaining clips on each side. (FIG 75)

   Use a pair of needle nose pliers to pinch together the retaining clips on the drive assembly; then push the drive assembly out of its casing. Replace the Felt O-Ring Washer (WXFWASHER) each time you remanufacture the cartridge (FIG 76).

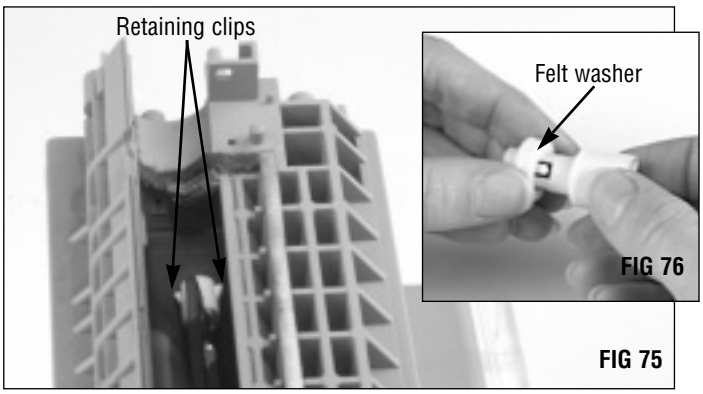


FIG 76
FIG 75

Filling the Hopper Without a Seal

The felt O-ring washer installation tool included in the Felt O-Ring Washer Installation Kit (WXFWASHERKIT) is recommended for proper installation (FIG 77).

Detailed instructions are also included in the Felt O-Ring Installation Washer Kit.

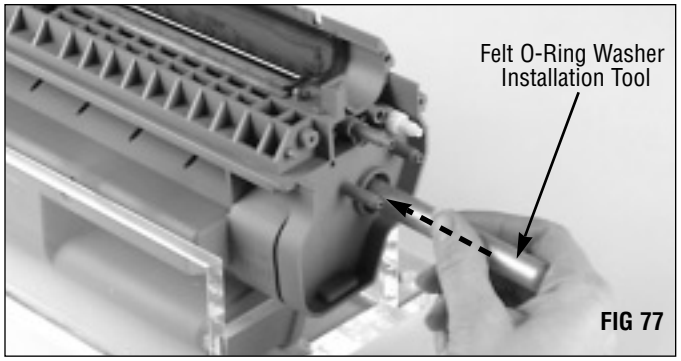


FIG 77

4. **Fill the hopper with 840 grams of toner.**

IMPORTANT Shake the toner bottle vigorously before pouring the toner into the hopper.

Pour the toner slowly into the hopper through the toner port as shown in FIG 78.
mPrint (WXMPT840B)
MicroGraphics 1 (WX840B)

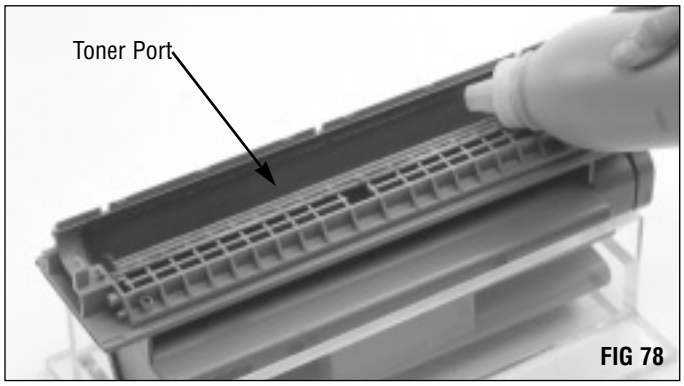


FIG 78

5. **Install the top paddle bar and the toner low sensor bar.** Before you install the bar, make sure a toner low bar seal is installed on the bar (FIG 79). If the seal is missing or damaged, install a replacement Toner Low Sensor Bar Seal (WXTLSBS); detailed installation instructions are included with the seal.

Install the bar and seal, making sure the hooked end of the toner low sensor bar is installed in the locating hole shown in FIG 80.

FIG 79

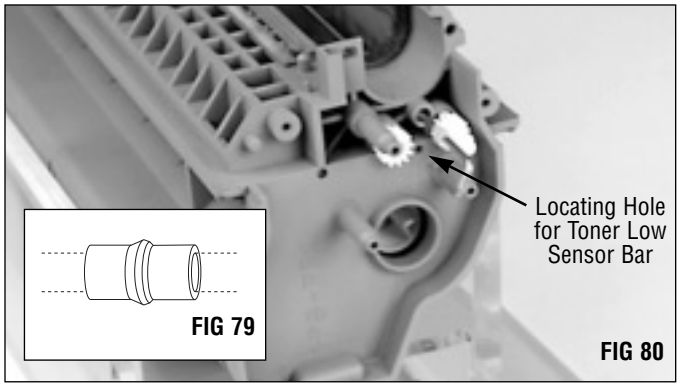


FIG 80

Seat the toner low sensor bar seal in the casing as shown in FIG 81.

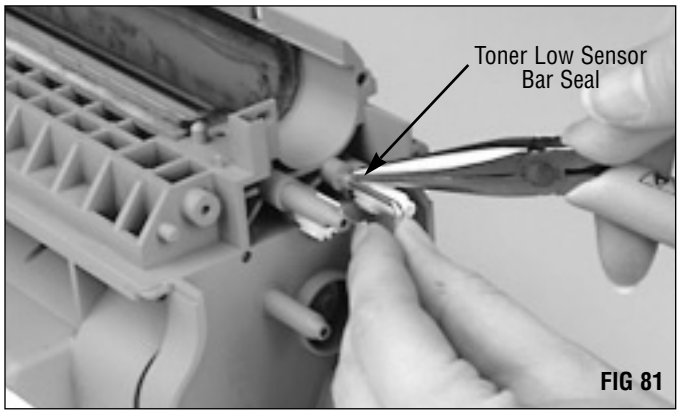


FIG 81

Assembling the Toner Hopper Section

1. **Clean the doctor blade with dry, filtered compressed air (FIG 82).**
   We recommend replacing the OEM doctor blade with SCC's replacement Doctor Blade (WXDBLADE) after the OEM cycle.

   For subsequent remanufacturing cycles, test print the cartridge and inspect prints for doctor blade-related print defects. Replace the blade as required. *See the component management chart included in SSS 53-B, Cartridge Components.*


FIG 82

   Remove the plastic wipers from the old doctor blade and install on the replacement blade as shown in FIG 83. The blue wiper is installed on the right end of the blade; the white (or black) on the left end.

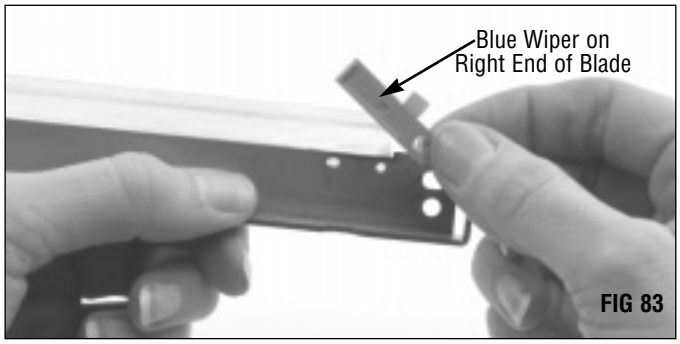


FIG 83

2. **Install the doctor blade.**
   Position the doctor blade stamping over the locating posts in the hopper section as shown in FIG 84.

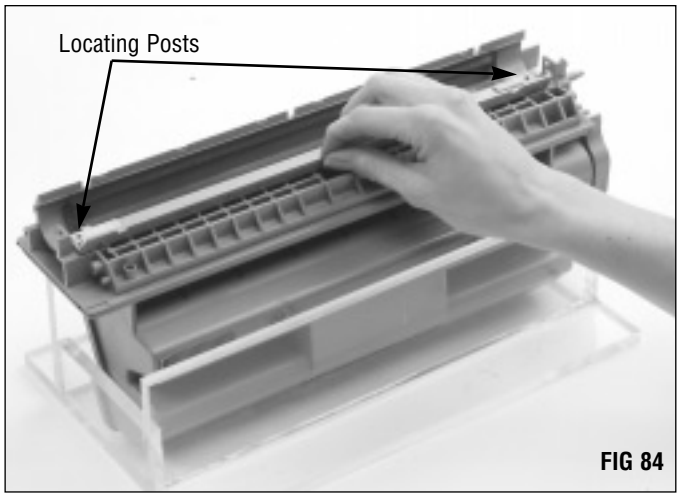


FIG 84

Assembling the Toner Hopper Section

Then, secure the blade with Phillips screws as shown in FIG 85.


FIG 85

3. **Clean the mag roller with dry, filtered compressed air.**

DO NOT scratch the coated area of the roller with the air nozzle or touch the mag roller with your fingers.

If you are reusing the OEM or EnduraMag (new or remanufactured) mag roller, thoroughly clean the mag roller sleeve and the area around the gear, bushing, bearing and stabilizer if these items are still installed on the sleeve (FIG 86).

FIG 86

4. **Install the mag roller.**
Make sure the geared end of the roller is on the right end of the cartridge as shown in FIG 87.

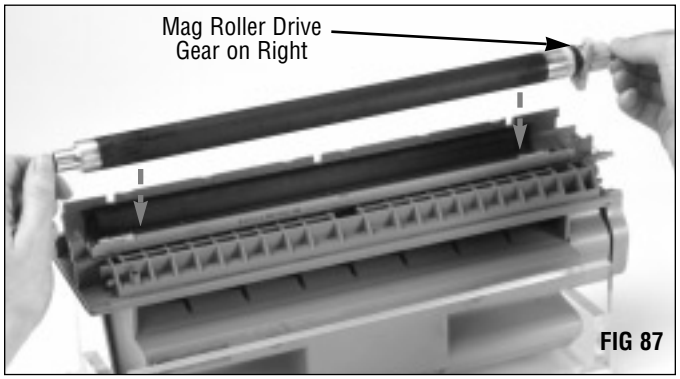


FIG 87

If the mag roller bushing, bearing, stabilizer or drive gear are already installed on the mag roller sleeve, skip steps 5 and 6 and proceed to step 7.

5. **Install the right mag roller bushing, bearing, and stabilizer in that order on the right end of the hopper as shown in FIG 88.**
Inspect the mag roller bushing (WXMRBUSH) and replace if the bushing is cracked or shows signs of excessive wear.

Make sure you install the RIGHT stabilizer. The left and right mag roller stabilizers are not interchangeable.

NOTE There are two versions of the mag roller stabilizers; the early version is cream in color, the later version is black in color. Both early and later versions are interchangeable.

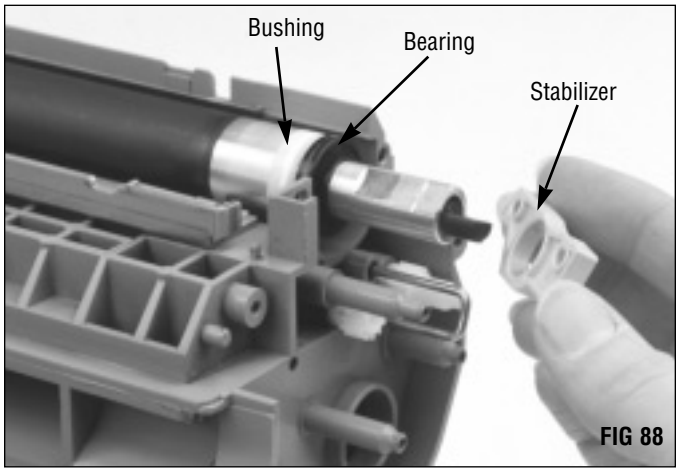


FIG 88

Note that the black bearing is installed on the right end of the mag roller and the flange faces outward as shown in FIG 89.

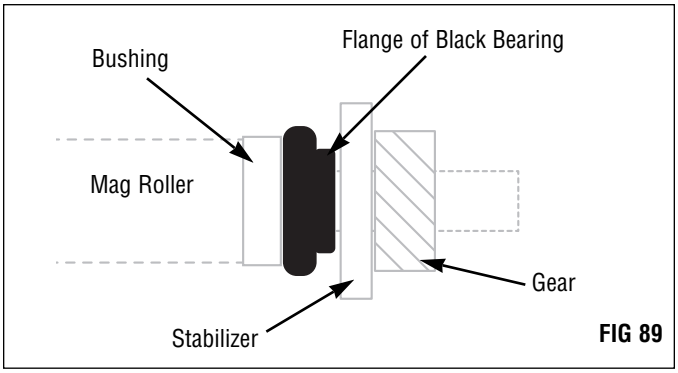


FIG 89

6. **Install the mag roller drive gear.**
Install the drive gear the on the mag roller sleeve making sure the gear locks firmly onto the sleeve (FIG 90). If the two locking clips on the interior diameter of the gear do not lock firmly on the mag roller sleeve or if the gear shifts laterally on the sleeve, replace with SCC's Mag Roller Drive Gear (WXMRGEAR).

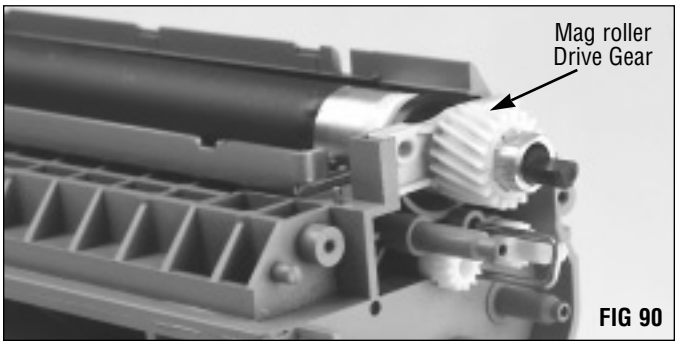


FIG 90

7. **Install the four gears in the drive train.**
FIGs 91 and 92 show the correct order and orientation of installation.

Note that the agitator drive gear (gear #3) should be rotated to fit in the agitator drive assembly (FIG 91).

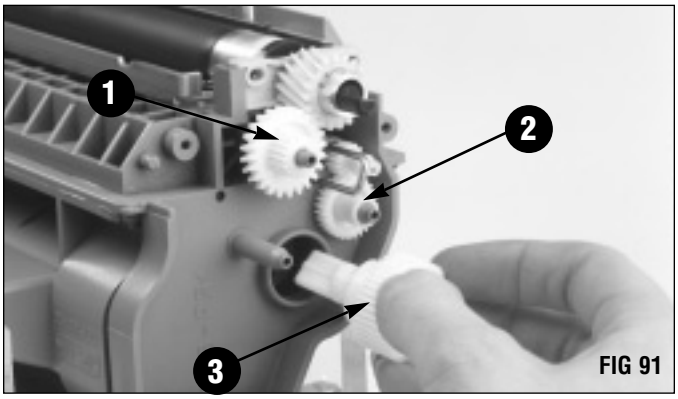


FIG 91

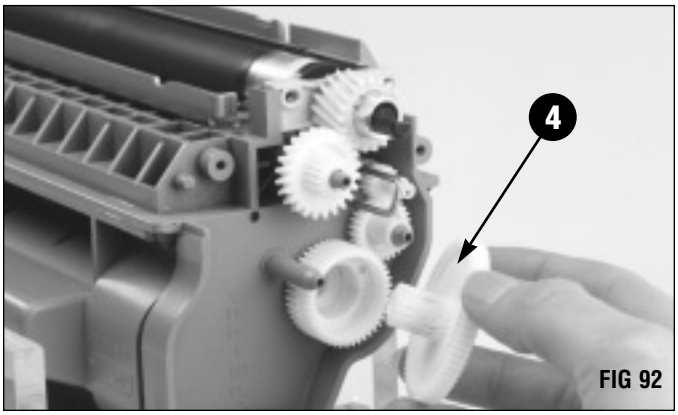


FIG 92

Assembling the Toner Hopper Section

8. **Clean the mag roller contact coil.**
   If you are reusing the contact coil, clean it with a Lint-free Swab (LFSWAB) dampened with 91-99% isopropyl alcohol (FIG 93).

   If the coil spring is damaged, stretched or missing, install a replacement Mag Roller Copper Contact (WXMRCON).

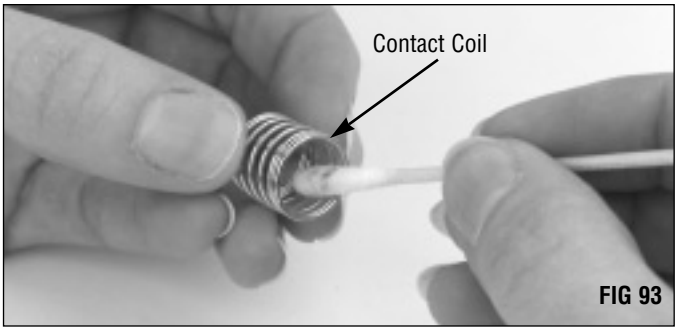


FIG 93

9. **Install the contact coil on the right end of the mag roller axle (FIG 94).**
   Make sure the base of the coil is butted against the mag roller drive gear.

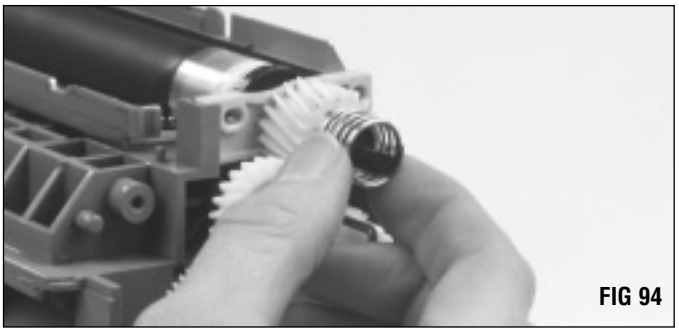


FIG 94

10. **Inspect the gear housing end plate and mag roller end plate for broken pins.**
    Make sure the pins are intact and secured on both end plates (FIG 95). Use SCC's 5Si End Plate Pin Replacement Kit (WXEPREPKIT) to replace any broken pins; detailed repair instructions are included with the kit. *For additional information about end plate pins, refer to SSS 53-E, Problem Solving.*

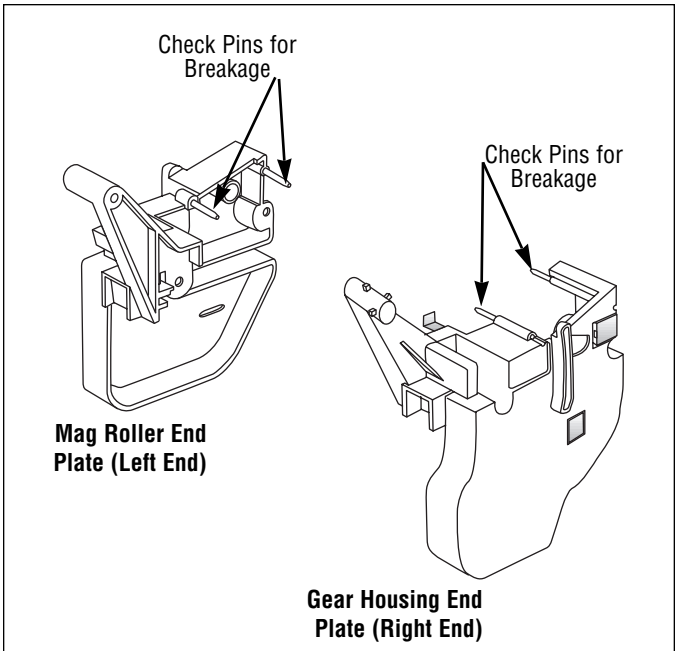


FIG 95

11. **Clean the mag roller electrical contact on the right end plate with a Lint-free Swab (LFSWAB) or dampened with 91-99% isopropyl alcohol (FIG 96).**

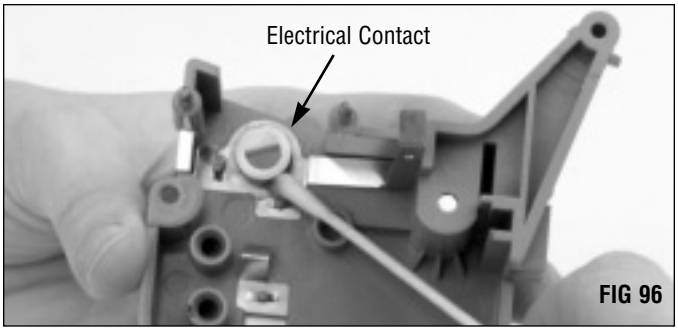


FIG 96

12. **Apply a THIN layer of conductive cartridge lubricant on the electrical contact (FIG 97).**
Use the wooden end of a swab as an applicator to apply a small amount of Conductive Cartridge Lubricant (CONCLUBE). *For more information regarding the application of cartridge lubricant, refer to SSS 100, Cleaning Tools, Tips and Techniques.*

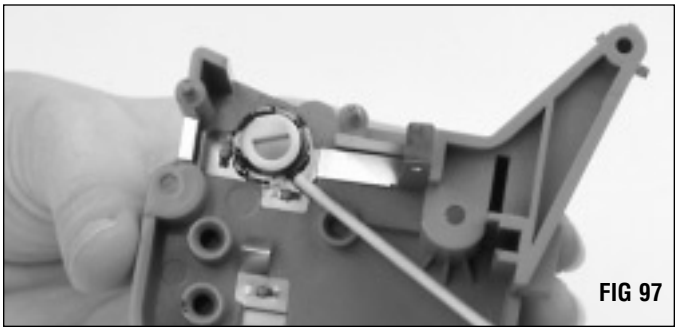


FIG 97

13. **Install the right mag roller end plate.**
Note that the end of the mag roller axle is keyed (FIG 98). Rotate the magnet until the axle is fully positioned in the magnet positioner bushing. You may have to press down on the mag roller stabilizer in order to position the axle in the magnet positioner bushing on the end plate.

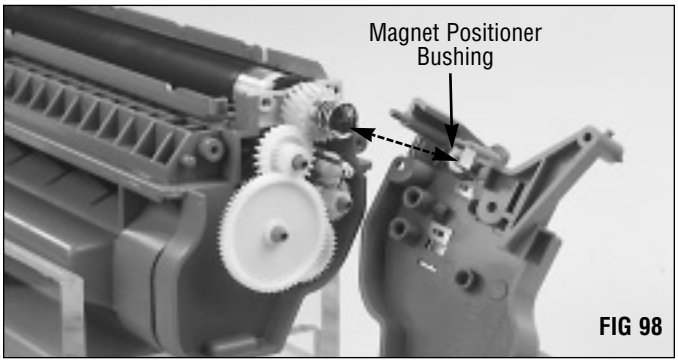


FIG 98

Seat the doctor blade contact securely on the locating post as shown in FIG 99. Make sure the metal contact is touching the doctor blade stamping. Note that there are two styles of doctor blade contacts. The original-style contact is shown in FIG 99; the new-style contact features an additional bend in the contact that seats against the doctor blade stamping. *For more information, refer to SSS 53-F, Changes to the Cartridge.*

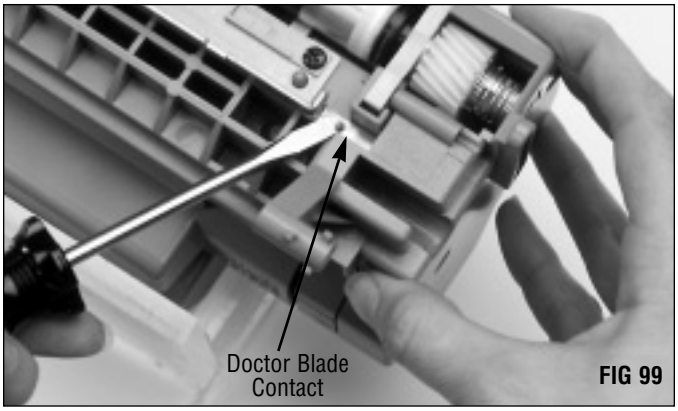


FIG 99

Assembling the Toner Hopper Section

Secure the end plate with Phillips Screws as shown in FIG 100.

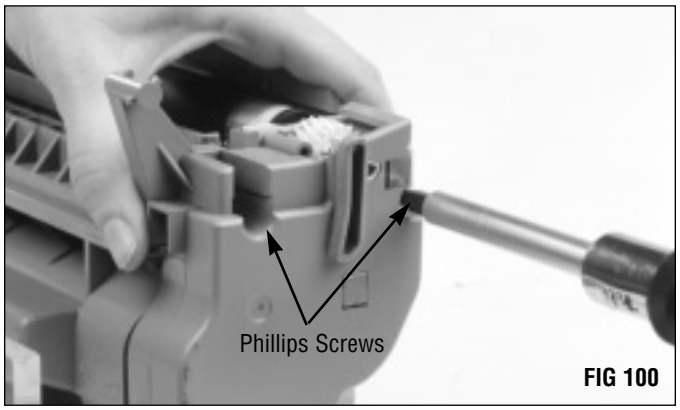


FIG 100

14. **Install the left mag roller bushing, bearing and stabilizer in that order on the left end of the hopper (FIG 101).** Inspect the Mag Roller Bushing (WXMRBUSH) and replace if the bushing is cracked or shows signs of excessive wear.

    Make sure you install the LEFT stabilizer. The left and right mag roller stabilizers are not interchangeable.

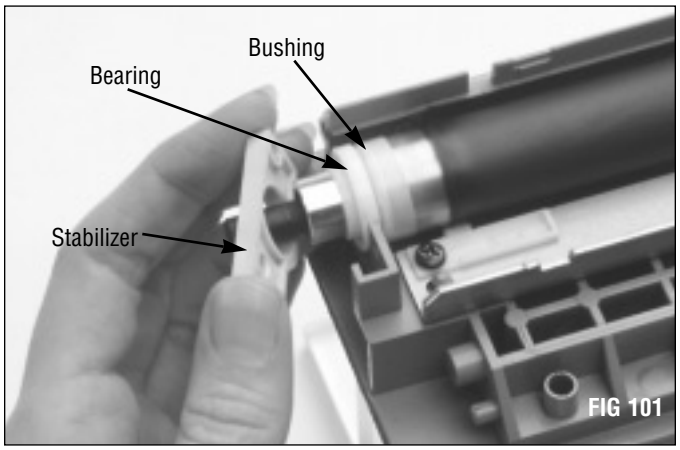


FIG 101

NOTE There are two versions of the mag roller stabilizers; the early version is cream in color, the later version is black in color. Both early and later versions are interchangeable.

Note that the white bearing is installed on the left end of the mag roller and the flange faces outward as shown in FIG 102.

IMPORTANT The white and black bearings can not be interchanged.

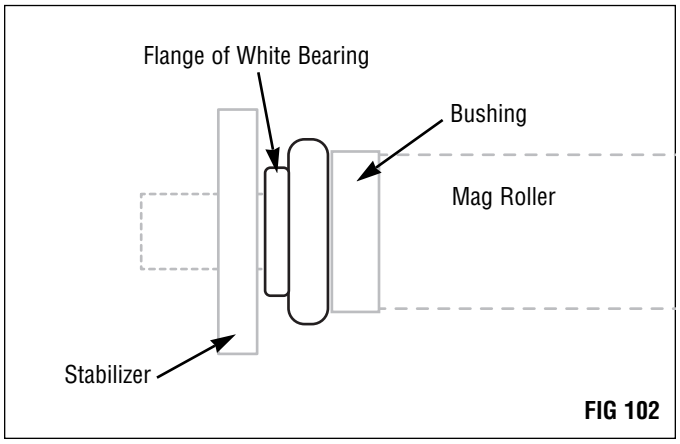


FIG 102

15. **Thread the seal pull strip through the horizontal slot in the left end cap (FIG 103).**

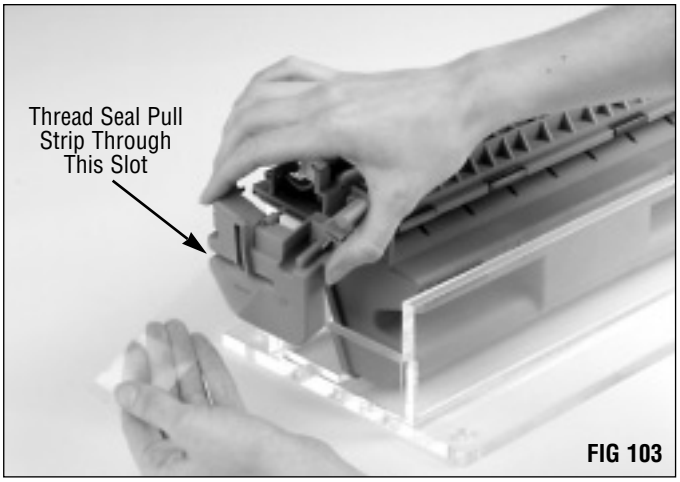


FIG 103

16. **Install the left mag roller end plate.**
You may have to press down on the stabilizer or bushing in order to guide the mag roller axle into its bushing in the end plate (FIG 104).

DO NOT touch the coated area of the mag roller with your bare fingers.

Secure with two Phillips screws.

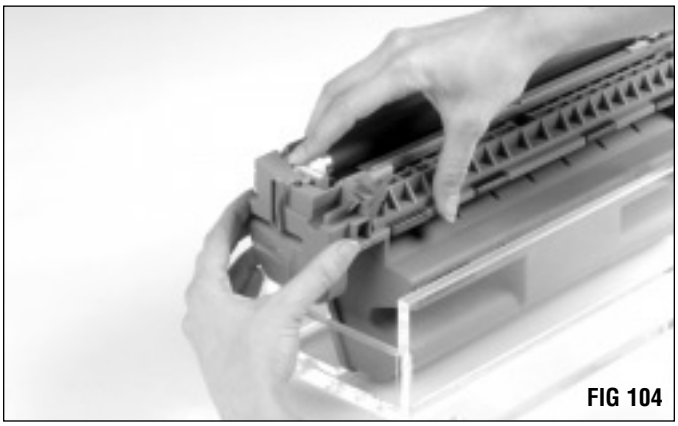


FIG 104

Assembling the Cartridge

1. **Assemble the waste bin and toner hopper sections as shown in FIG 105.**

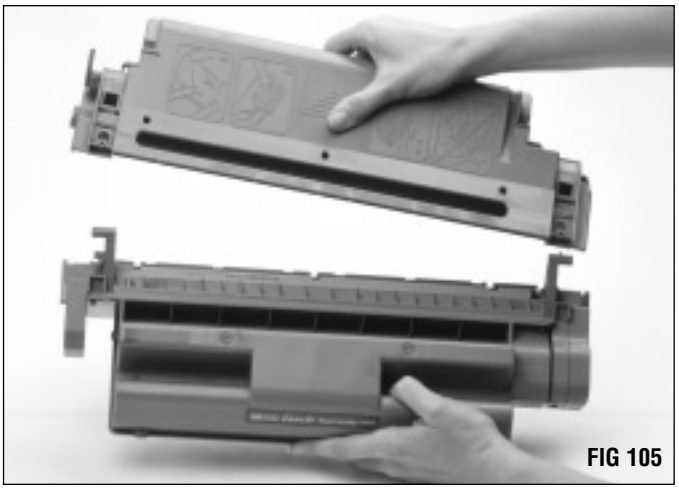


FIG 105

2. **Inspect the cartridge clip (FIG 106).**
If any of the locking prongs on the clips were broken during disassembly, use a replacement Cartridge Clip (WXCCLIP) to reassemble the cartridge. *For details regarding damage to the cartridge clip, refer to SSS 53-E, Problem Solving.*

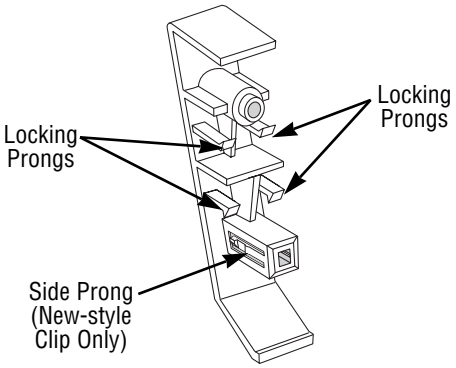


FIG 106

Reuse the spring from the broken clip as long as it is not damaged, otherwise use a replacement Cartridge Clip Spring (WXCCS).

To avoid damage to the spring, carefully twist the spring to remove it from the clip. Install the spring on the replacement clip as shown in FIG 107.

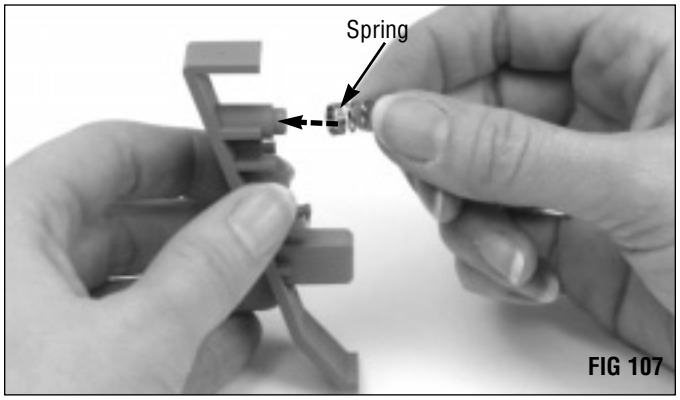


FIG 107

3. **Install the cartridge clips.**
Make sure that the square post seats in the square locating hole and the spring seats in the round locating hole (FIG 108). Press down firmly on the clip to ensure that it is fully seated in the waste bin section.

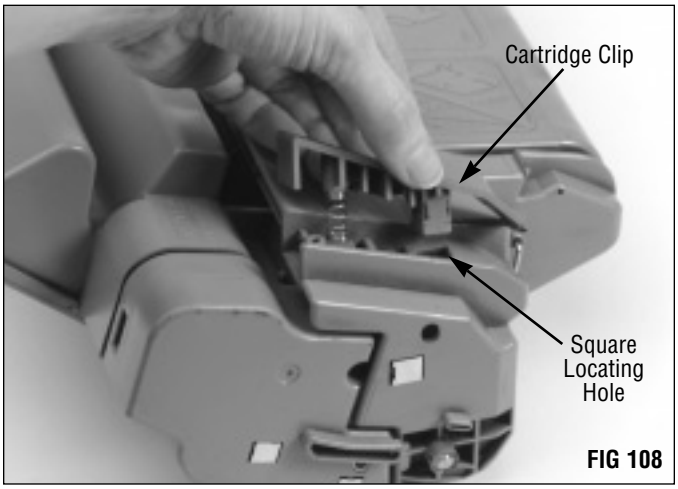


FIG 108

When installed correctly, the clip should appear flush with the surface of the waste bin section as shown in Fig 109.

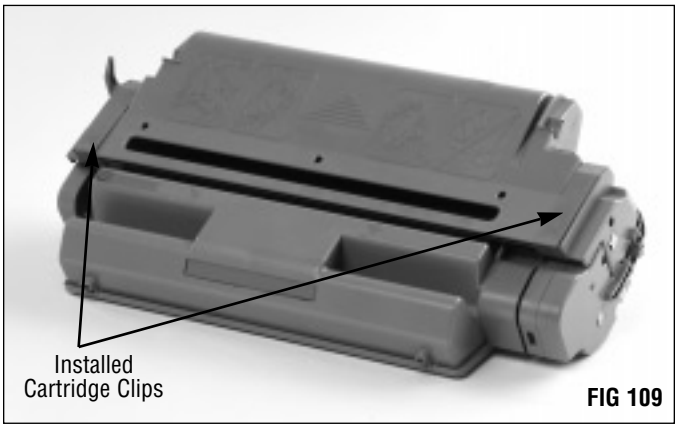
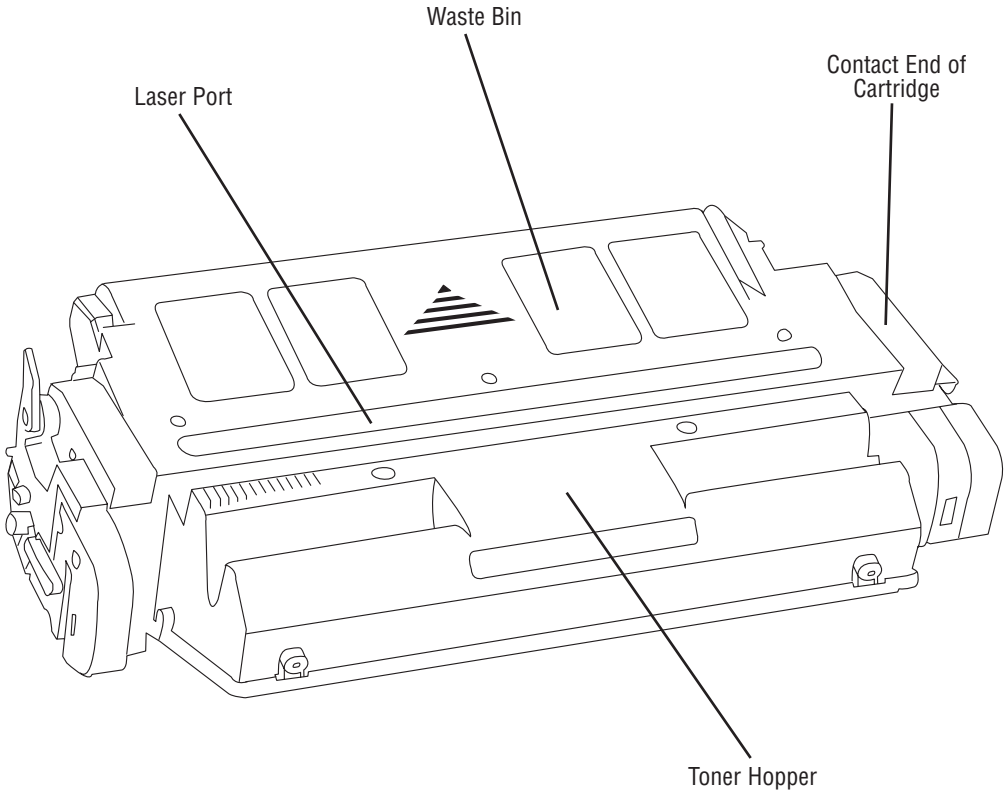


FIG 109

Canon® LBP-WX(5Si)
Cartridge Components

Top View of LaserJet® 5Si Cartridge



This fully illustrated **Cartridge Components** *guide gives you a complete breakdown of all cartridge components, along with component terms and definitions. Use the illustrations for training or referencing replacement components.*

Table of Contents

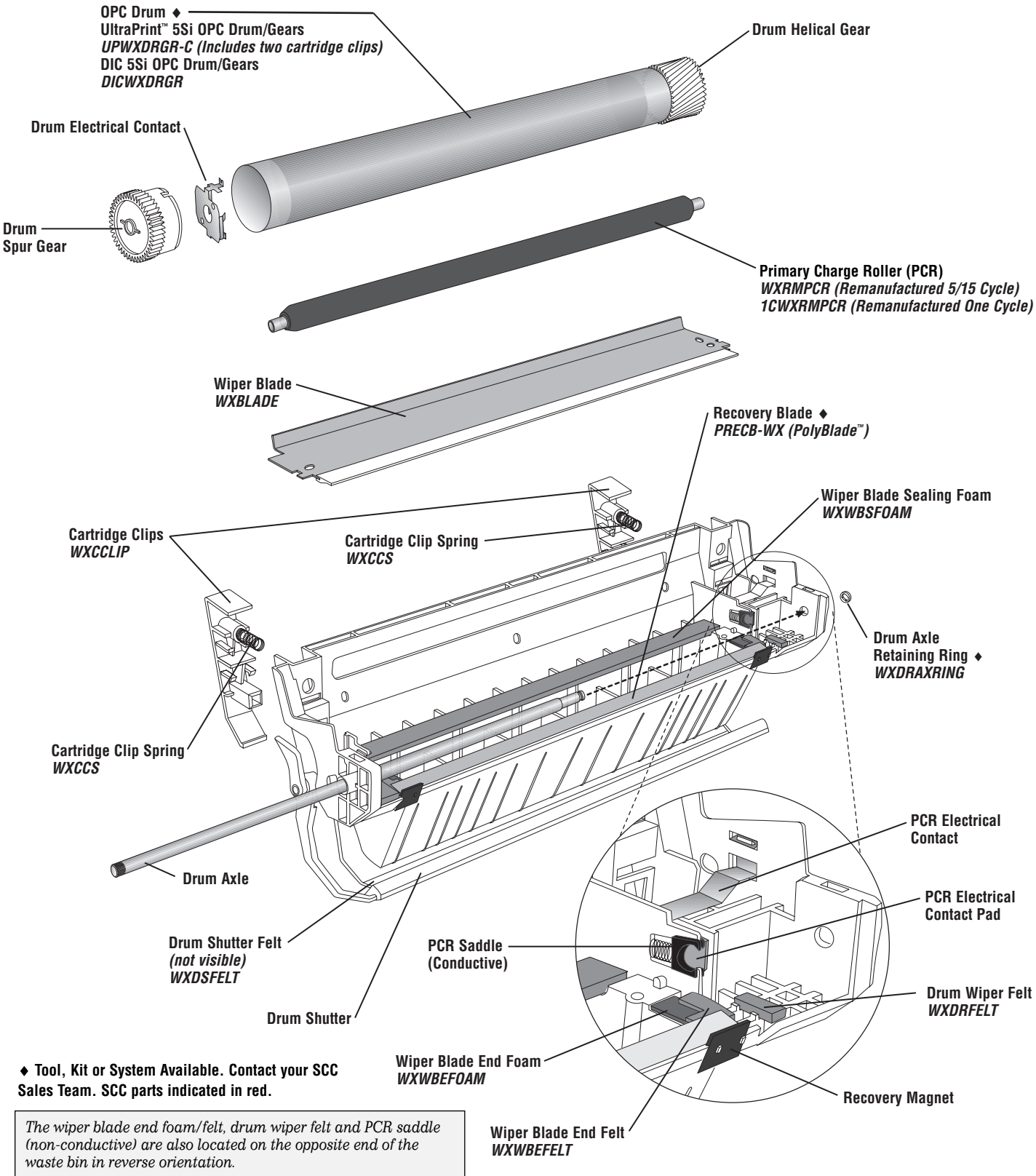
World Wide Web

www.scc-inc.com

If you need technical assistance or additional information about products listed in this document, please contact the Technical Support Group or SCC Sales Team.

1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)
email: techservices@scc-inc.com

Waste Bin Section - Terms and Definitions



♦ Tool, Kit or System Available. Contact your SCC Sales Team. SCC parts indicated in red.

The wiper blade end foam/felt, drum wiper felt and PCR saddle (non-conductive) are also located on the opposite end of the waste bin in reverse orientation.

Cartridge Clip
Two clips, located on the top side of the waste bin, secure the waste bin and hopper sections together. Springs on the clips apply pressure to the hopper section so that the mag roller is properly seated on the drum. The mag roller sleeve bearings are used to maintain the correct air gap between the drum and mag roller.

Drum Axle
A plated steel rod that holds the drum in position in the waste bin section. The axle for the 5Si is installed along the entire length of the drum. Note that the left end of the axle is splined.

Drum Axle Retaining Ring
The retaining ring is installed at the right end of the drum axle to secure the axle in its installed position and prevent the axle from shifting laterally.

Drum Electrical Contact
Provides electrical contact between the drum and printer; makes contact with the drum axle when it is installed in the drum.

Drum Gears (Helical and Spur)
The spur gear, on the left end of the waste bin section, houses the drum electrical contact. The other gear is the helical gear.

Drum Shutter
Protects the drum from light damage when the cartridge is out of the printer. When the cartridge is installed in the printer, the shutter opens so that the drum is exposed to the paper.

Drum Shutter Actuator Arm
Opens the drum shutter when the cartridge is installed in the printer.

Drum Shutter Felt
Shutter felt is an aftermarket component installed on the interior of the drum shutter felt. It protects the drum from potential damage caused by the opening and closing of the shutter.

Drum Wiper Felt
Wipes the areas on the drum where the mag roller sleeve bearings make contact with the drum; prevents buildup of toner on the drum where the bearings ride.

Organic Photo Conductor (OPC) Drum
An aluminum cylinder coated with light-sensitive organic photoconductive material used to retain an image written to it by a laser beam. (Also called OPC, drum, photoreceptor)

Primary Charge Roller
Uniformly charges the OPC drum. (Also called PCR, charge roller)

PCR Electrical Contact
Provides electrical contact between the printer and the PCR. The PCR electrical contact pad is attached to the end of this metal contact.

PCR Saddles
Two saddles support the PCR at each end of the shaft. One saddle, located at the contact (right) end of the cartridge, is made of conductive material. The other saddle is non-conductive. The springs at the base of the saddles maintain tension on the PCR so that it will make constant and uniform contact with the drum.

PCR Electrical Contact Pad
Attached to the metal electrical contact on the right side of the waste bin. The pad aids conductivity to the PCR and maintains tension on the PCR to prevent it from shifting laterally.

Recovery Blade
Acts as a dam at the base of the waste bin, keeping the toner from falling out of the waste bin onto the paper. (Also called catcher blade, scavenger blade)

Recovery Magnet
Placed on the exterior of the waste bin directly opposite each end of the wiper blade; catches toner that migrates past the wiper blade end foam/felt.

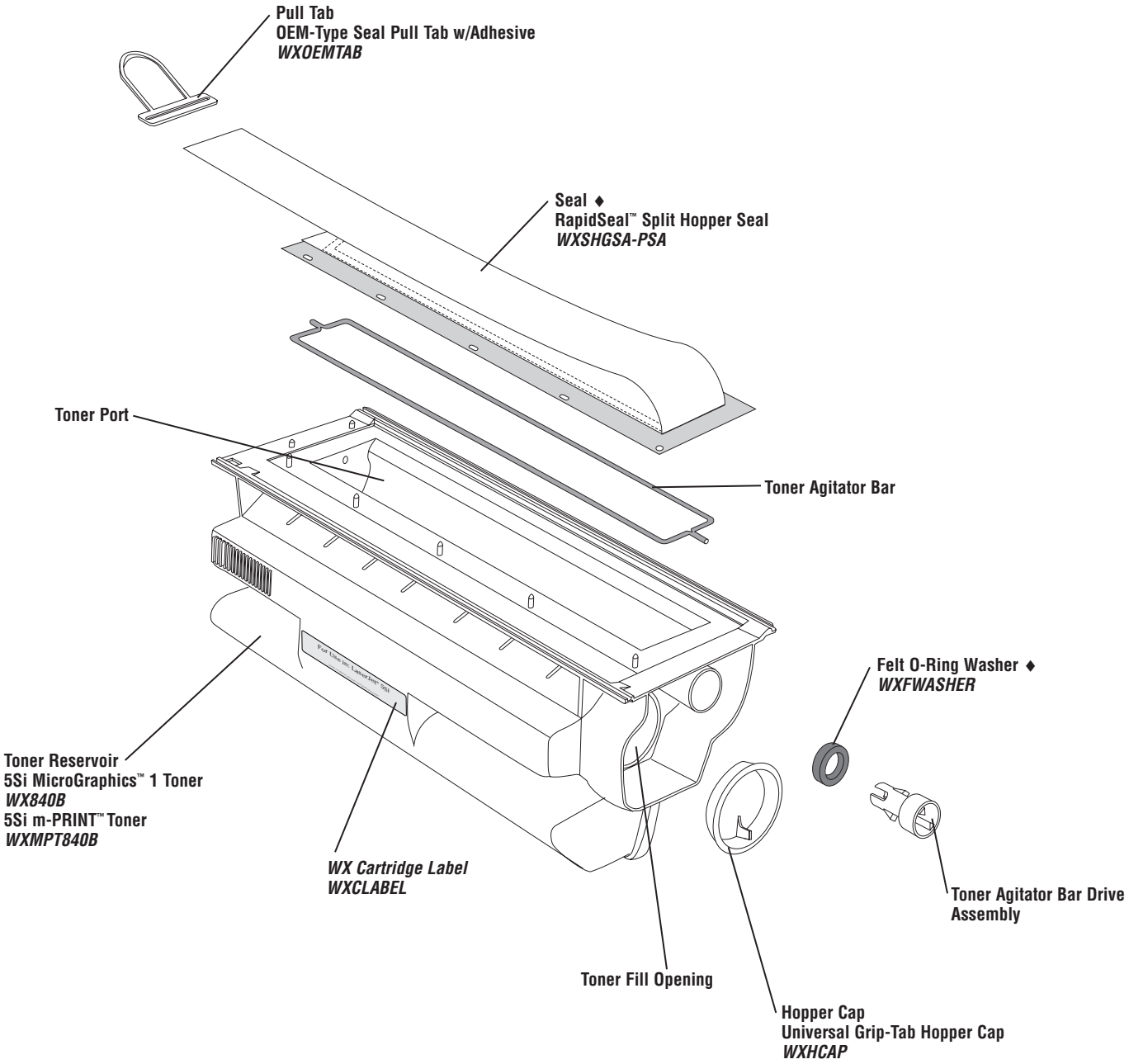
Waste Bin
A receptacle that catches toner wiped from the drum. (Also called waste hopper or dust bin)

Wiper Blade
Cleans the drum by wiping away toner not transferred to the paper. Constructed of a metal stamping (base) and polyurethane blade. (Also called cleaning blade)

Wiper Blade End Foam and Felt
Bottom layer of foam and top layer of felt seal the area at the end of the polyurethane wiper blade; prevents leakage from the waste bin.

Wiper Blade Sealing Foam
A strip of foam that seals the area between the wiper blade and waste bin; prevents leakage from the waste bin.

Toner Hopper - Terms and Definitions



♦ Tool, Kit or System Available. Contact your SCC Sales Team. SCC parts indicated in red.

Felt O-Ring Washer
Installed on the toner agitator drive assembly to seal the assembly and prevent leakage from the hopper.

Hopper Cap
Plugs the fill opening of the hopper. The hopper can only be filled through the fill opening if the hopper is split. Otherwise, the hopper is filled through the toner port.

Pull Tab
Attached to the seal pull strip to enable the end user to remove the seal pull strip and release toner into the development station.

Seal
A rigid gasket base on which a seal is adhered. The gasket base is then attached to the toner hopper sealing surface. SCC's 5Si RapidSeal™ split hopper seal is based on the OEM design; the seal uses peel-to-expose adhesive on the side that secures to the toner reservoir section.

Seal Pull Strip
Strip of seal material pulled by the end user.

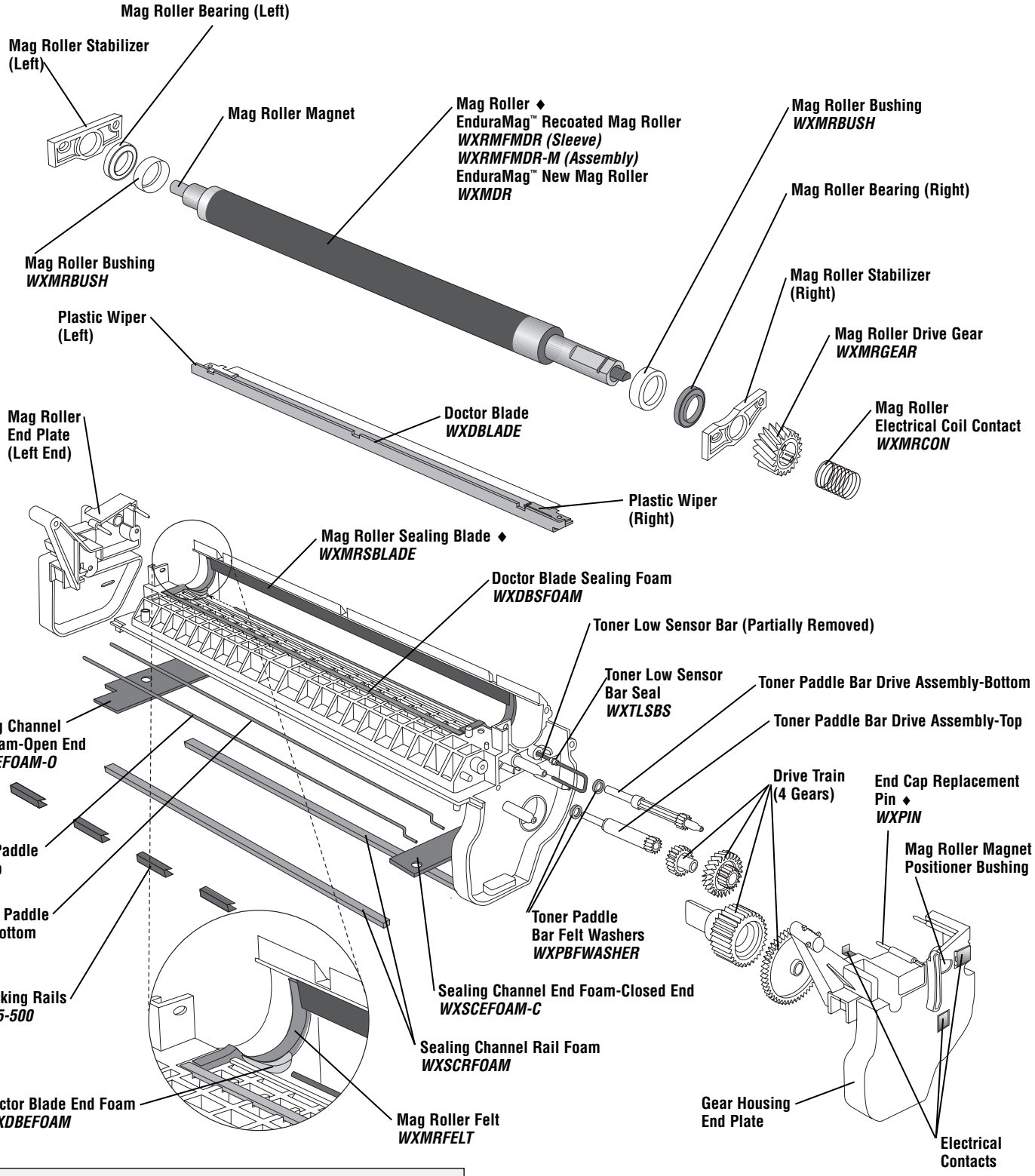
Toner Agitator Bar
A metal paddle bar that rotates inside the toner hopper to move the toner toward the development station.

Toner Agitator Drive Assembly
Rotates the toner agitator bar in the hopper; located at the drive train end of the hopper section.

Toner Port
An opening, occupied by the seal, that runs along the length of the hopper. Once the seal is removed, toner travels through this opening to the development station.

Toner Reservoir
Holds the toner load needed for imaging.

Mag Roller Housing - Terms and Definitions



The mag roller felt and doctor blade end foam are also located on the opposite end of the mag roller section in reverse orientation.

♦ Tool, Kit or System Available. Contact your SCC Sales Team. SCC parts indicated in red.

Development Station
Area of the cartridge where toner is transferred from the toner hopper to the latent image on the OPC drum using the mag roller and doctor blade. (Not shown in illustration)

Doctor Blade
Uniformly meters the amount of toner on the mag roller. The doctor blade is constructed of a metal stamping (base) and a flexible blade. (Also called metering blade)

Doctor Blade End Foam
Small half moon-shaped pieces of foam that seal the ends of the doctor blade and prevent leakage from the toner hopper.

Doctor Blade Sealing Foam
A strip of foam that seals the area between doctor blade stamping and cartridge shell; prevents leakage from the toner hopper.

Gear Housing End Plate (Right End)
A removable end plate that covers the drive train on the mag roller section of the cartridge. The right end plate also provides a positioner bushing that supports the magnet inside the mag roller sleeve and keeps the magnet stationary. The doctor blade, toner low bar and mag roller electrical contacts are also housed in this end plate.

Electrical Contacts
Metal contacts, located in the gear housing end plate, that provide electrical contact between the printer and doctor blade, toner low sensor bar and mag roller.

Locking Rails
Used to reassemble and secure the mag roller and toner sections after splitting. Available in plastic or metal.

Magnetic Developer Roller (Mag Roller)
A rotating coated aluminum sleeve around a stationary magnet. The mag roller attracts toner magnetically and applied AC/DC voltage charges the toner and transfers it to the OPC. A doctor blade meters the toner before it is delivered to the OPC. (Also called mag roller, developer roller)

Mag Roller Drive Gear
Rotates the mag roller sleeve around the permanent magnet. Locking clips located on the interior diameter of the gear secure it to the mag roller sleeve.

Mag Roller Electrical Contact Coil
Installed on the right end of the mag roller sleeve; contacts the metal contact plate in the gear housing end plate and provides electrical contact between the mag roller and printer.

Mag Roller End Plate (Left End)
Installed on the left side of the assembled hopper section to cover the end of the mag roller. The seal pull strip exits through this end plate.

Mag Roller Felt
Material that lines the saddles where the mag roller rests in the hopper; provides a seal at the ends of the mag roller.

Mag Roller Magnet Positioner Bushing
Supports the magnet inside the mag roller sleeve and keeps the magnet stationary.

Mag Roller Sealing Blade
A thin blade, similar in appearance to the recovery blade, that seals the area between the mag roller and mag roller section; prevents leakage from the development station.

Mag Roller Bearing (Right and Left)
Placed on each end of the mag roller sleeve to establish a consistent air gap between the mag roller and drum when the hopper and waste bin sections are assembled. (Right bearing is black in color and left bearing is white in color.) Right and left bearings are NOT interchangeable.

Mag Roller Bushing
Prevents direct contact between the mag roller sleeve bearing and the aluminum sleeve; protects the bearing from abrasion caused by contact with the rotating aluminum sleeve.

Mag Roller Stabilizer (Right and Left)
Prevents lateral movement of the mag roller. A stabilizer is placed on each end of the mag roller axle and secured in place by screws and locating posts in the hopper section. Right and left stabilizers are NOT interchangeable.

Plastic Wiper (Right and Left)
Removable wipers installed on each end of the doctor blade stamping; wipes toner from the ends of the mag roller that ride on the mag roller felt; prevents toner from adhering to sleeve. (Right plastic wiper is black or blue in color and left wiper is white in color.) Right and left plastic wipers are NOT interchangeable.

Sealing Channel
The area between the mag roller and hopper sections in which a seal is installed.

Continued on page 16

Component Management Reference Chart

COMPONENT	CODE	CLEAN	LUBRICATE
Cartridge Clip	WXCCLIP	Dry, filtered compressed air or lint-free cleaning cloth	NA
Cartridge Clip Spring	WXCCS	NA	NA
OPC Drum	UPWXDRGR-C (includes two cartridge clips) DICWXDRGR	Dry, filtered compressed air or lint-free cleaning cloth; clean helical gear with lint-free swab to remove toner and debris.	Pad coated area of drum with Kynar®; rotate drum against wiper blade - min. 6 rotations.
Drum Axle	WXAXLEKIT (tool kit used to remove axle)	Dry, filtered compressed air or lint-free cleaning cloth	NA
Drum Axle Retaining Ring	WXDRAXRING	NA	NA
Drum Wiper Felt	WXDRFELT	Dry, filtered compressed air	NA
Drum Shutter Felt	WXDSFELT Aftermarket Component	Dry, filtered compressed air	NA
OEM Primary Charge Roller (PCR)	NA	Soft, lint-free cloth dampened with water only.	DO NOT lubricate PCR shaft; lubricant not present in out-of-box OEM cartridge.
SCC 5/15-Cycle Remanufactured PCR	WXRMPCR	Soft, lint-free cloth dampened with isopropyl alcohol.	DO NOT lubricate PCR shaft; lubricant not present in out-of-box OEM cartridge.
SCC One-Cycle Remanufactured PCR	1CWXRMPCR	No cleaning required	DO NOT lubricate PCR shaft; lubricant not present in out-of-box OEM cartridge.
PCR Electrical Contact Pad	NA	Lint-free swab dampened with 91-99% isopropyl alcohol.	DO NOT apply conductive lubricant; not present on out-of-box OEM cartridge.
PCR Contact Saddle	NA	Lint-free swab dampened with 91-99% isopropyl alcohol.	DO NOT lubricate either PCR saddle; lubricant not present on out-of-box OEM cartridge.
Wiper Blade	WXBLADE	Dry, filtered compressed air; DO NOT clean with alcohol.	Dip edge of wiper blade in Kynar®; make sure blade edge is evenly covered.

EVALUATE	REPLACE
OEM clips highly susceptible to breakage when removed; latching prongs on the clip should be intact (no breakage); SCC clip designed for multiple use.	Replace clip if any latching prongs are broken; reuse spring on OEM clip or use SCC replacement spring (WXCCS).
A spring must be present on the cartridge clip.	Replace the OEM spring if damaged, stretched or missing.
Test print to check print density; check for deep concentric wear lines.	Replace OEM OPC drum after OEM cycle with SCC system-qualified drum; for best results replace wiper blade each time drum is replaced.
To avoid damage to drum axle, use SCC's Drum axle Tool Kit (WXAXLEKIT) which includes a hammer, punch, retaining ring insertion tool and waste bin fixture developed specifically for the WX application. For more information about the drum axle and the kit, refer to SSS 53-E, Problem Solving.	NA
The ring is damaged when the drum axle is removed; refer to SSS 53-E, Problem Solving for more information.	Replace ring each time the drum axle is removed; installation tool required (WXDRAXRITOOL).
Felts should appear clean, intact and secured to the waste bin.	Replace if material is hard, compacted with toner, shiny in appearance or dislodged from the waste bin.
Install on interior surface of drum shutter to help protect drum from damage caused by opening and closing of shutter; felt should appear clean and fully secured to the cartridge.	Replace if felt starts to peel, becomes dislodged or is missing.
OEM PCR typically wears out after the OEM cycle.	To maximize PCR performance, recoat the OEM PCR after the OEM cycle; 5/15-Cycle and One-Cycle recoating programs available.
5/15-Cycle Remanufactured PCR is rated at five remanufacturing cycles when used with system-qualified components and cleaning procedures; qualified PCRs can be recoated three times for a total of 15 remanufacturing cycles.	After initial recoating, recoat SCC 15-Cycle PCR again after 5th and 10th remanufacturing cycles provided PCR is not damaged.
One-Cycle Remanufactured PCR is guaranteed for one cycle when used with system-qualified components and maintenance procedures.	Recoat dedicated One-Cycle PCR after each remanufacturing cycle; One-Cycle PCR can be recoated indefinitely provided the PCR is not damaged.
NA	NA
NA	NA
Test print each cycle and check for vertical streaks.	Install new wiper blade each time new drum is installed; test print each cycle and replace if wiper blade-related print defects detected.

Component Management Reference Chart

COMPONENT	CODE	CLEAN	LUBRICATE
Wiper Blade Sealing Foam	WXWBSFOAM	Dry, filtered compressed air; direct air close to surface of foam.	NA
Wiper Blade End Foam	WXWBEFOAM	Dry, filtered compressed air; direct air close to surface of foam.	NA
Wiper Blade End Felt	WXWBEFELT	Dry, filtered compressed air; direct air close to surface of felt.	NA
Recovery Blade	PRECB-WX (PolyBlade™)	Dry, filtered compressed air	NA
Recovery Blade Magnet	NA	Dry, filtered compressed air	NA
OEM Magnetic Developer Roller	NA	Dry, filtered compressed air	
EnduraMag™ Remanufactured and New Magnetic Developer Rollers	WXRMFMDR (Only long axle installed) WXRMFMDR-M (Both axles and magnet installed)	Dry, filtered compressed air	NA
EnduraMag™ New Mag Roller	WXMDR (New EnduraMag™)	Dry, filtered compressed air	NA
Mag Roller Electrical Contacts	WXMRCON (Coil Contact)	Clean coil contact (on axle) and metal contact (in end plate) with lint-free swab dampened with 91-99% isopropyl alcohol.	Apply a very small amount of conductive lubricant to the metal contact in the gear housing end plate.
Mag Roller Drive Gear	WXMRGEAR	Dry, filtered compressed air	NA

EVALUATE	REPLACE
Foam should display smooth surface and be secured to the cartridge surface.	Replace if foam is pitted, torn, dislodged or missing.
Foam should display smooth surface and be secured to the cartridge surface.	Replace if foam is pitted, torn, dislodged or missing; replacement of end foam requires the removal of recovery blade and wiper blade end felt.
Felt should appear clean, intact and be secured to cartridge surface.	Replace if felt becomes excessively frayed, compacted with toner, shiny in appearance or dislodged; remove the recovery blade in order to replace the end felt.
Blade should display a smooth surface and be completely secured to mounting surface.	Replace blade if bent, kinked, damaged, dislodged or missing; use SCC replacement PolyBlade; installation tool recommended (RBITOOL-PBT); if you remove the blade to replace another component, do not reuse the old blade; install a new replacement blade.
Magnets should be firmly secured to cartridge.	NA
OEM mag rollers may show noticeable degradation after first cycle which results in lighter print that may be unfavorable in some applications; test print OEM roller against baseline to check for light print defects.	Two replacement options; 1) recoat rollers through SCC's EnduraMag recoating program, available on an exchange basis; 5Si Mag Roller Tool Kit required for mag roller disassembly/assembly; Contact your SCC Sales Team for program details; 2) replace worn roller with SCC's factory-new EnduraMag mag roller.
Rated at 60,000 pages when used in combination with SCC system-qualified components.	Recoat qualified EnduraMag every 60,000 pages; EnduraMag program offers two options for incoming rollers: send in sleeves with both axles and magnet installed (WXRFMDR-M) or send in sleeves with long axle only (WXRFMDR); 5Si Mag Roller tool kit required to disassemble and assemble mag roller sleeves; two kits are available–contact your SCC Sales Team for program and tool kit information.
Contact your SCC Sales Team for rating information for new EnduraMag mag roller.	5Si Mag Roller tool kit required to remove magnet; two tool kits are available–contact your SCC Sales Team for ordering information.
For optimum continuity make sure coil is free of toner and debris; the coil contact and end plate contact should make contact when cartridge is reassembled.	Replace coil contact if damaged or missing.
The drive gear should be secured to the mag roller sleeve by two locking clips located on the interior diameter of the gear; damaged or missing clips can cause the gear to shift laterally on the sleeve resulting in alternating light and dark print at the mag roller interval.	Replace the drive gear if the locking clips are damaged or missing, or if the drive gear shifts laterally on the mag roller sleeve.

Component Management Reference Chart

COMPONENT	CODE	CLEAN	LUBRICATE
Mag Roller Bushing	WXMRBUSH	Dry, filtered compressed air or lint-free cloth	NA
Mag Roller Felt	WXMRFELT	Dry, filtered compressed air	NA
Mag Roller Sealing Blade	WXMRSBLADE	Dry, filtered compressed air	NA
Doctor Blade	WXDBLADE	Dry, filtered compressed air; DO NOT clean with alcohol.	NA
Doctor Blade Sealing Foam	WXDBSFOAM	Dry, filtered compressed air; direct air close to surface of foam.	NA
Doctor Blade End Foam	WXDBEFOAM	Dry, filtered compressed air; direct air close to surface of foam	NA
Sealing Channel End Foam (Open/Closed)	WXSCEFOAM-O WXSCEFOAM-C	Dry, filtered compressed air; direct air close to surface of foam.	NA
Sealing Channel Rail Foam	WXSCRFOAM	Dry, filtered compressed air; direct air close to surface of foam.	NA
Reusable Locking Rails	CS5-500	Dry, filtered compressed air or lint-free cloth	NA
5Si RapidSeal™ Split Hopper Seal (Pressure Sensitive Adhesive)	WXSHGSA-PSA	NA	NA
Felt O-Ring Washer	WXFWASHER	Dry, filtered compressed air	NA

EVALUATE	REPLACE
Bushings should be intact, free of cracks and excessive wear; WX bushings are fragile and susceptible to breakage.	Replace bushing if cracked, excessively worn or missing.
Felt should appear clean, intact and secured to mag roller saddle.	Replace if felt becomes excessively frayed, compacted with toner, shiny in appearance or dislodged; the mag roller sealing blade must be removed in order to replace the felt.
Blade should display a smooth surface and be fully attached to the mounting surface.	Replace if blade is bent, cracked or dislodged; kinks in blade will cause toner leakage or print defects. The blade must be removed and replaced each time mag roller felts are installed; use installation tool provided in the kit (WXMRSBLADKIT).
Test print to check print quality, background, or side-to-side variations in print.	Replace OEM doctor blade with SCC replacement after OEM cycle; remove the plastic wipers from each end of the stamping and reinstall on the replacement blade; test print each cycle and replace as required.
Foam should display smooth surface and be secured to the cartridge surface.	Replace if foam is pitted, torn, dislodged or missing.
Foam should display smooth surface and be secured to the cartridge surface.	Replace if foam is pitted, torn, dislodged or missing; missing or dislodged foam can cause print defects.
Foam should display smooth surface, free of toner; foam should be secured to the cartridge surface.	Replace if foam is pitted, torn, dislodged, missing, or melted from heatsealing; damaged foam is a source of leakage from the toner hopper.
Seal channel rail foam installation is required if a split hopper rail system is used to rejoin a split hopper; use in combination with RapidSeal; the foam should display smooth surface, be free of toner and secured to the interior surface of the mag roller section; rail foam is reused each remanufacturing cycle provided the foam is not damaged.	Replace if foam is pitted, torn, dislodged, or missing; damaged foam is a source of leakage from the toner hopper.
Used with split hopper seals to secure the hopper sections; use four rails on each side of the hopper assembly; locking rails are reusable for multiple remanufacturing cycles.	Replace rail if bent, damaged or missing.
RapidSeal used in combination with Sealing Channel Rail Foam (WXSCRFOAM) and Locking Rails (CS5-500); remove OEM seal filament, but leave white gasket; install SCC split hopper seal (requires splitting of hopper).	Completely remove SCC RapidSeal each time the hopper is resealed; use Gasket Seating Tool (WXGSTOOL) to secure seal.
Agitator drive assembly in cartridge is prone to leakage; check for toner leakage on the drive gear end of the cartridge (right end).	Replace OEM felt washer with SCC replacement after OEM cycle; replace each cycle. Use felt the washer installation tool for ease of installation; included in the Felt Washer Installation Kit (WXFWASHERKIT).

Component Management Reference Chart

COMPONENT	CODE	CLEAN	LUBRICATE
Secondary Toner Agitator Bar Felt Washer (Top/Bottom)	WXPBFWASHER	Dry, filtered compressed air	NA
Toner	WX840B (MicroGraphics™ 1) WXMPT840B (mPRINT™)	Clean hopper with dry, filtered compressed air.	NA
Toner Low Sensor Bar Seal	WXTLSBS	NA	NA
Hopper Cap	WXHCAP	Dry, filtered compressed air or lint-free cloth	NA

EVALUATE	REPLACE
Installed on secondary toner agitator bar drive assemblies (top and bottom); compacted, damaged or missing washers can be a source of leakage from the hopper.	Replace washer if leakage from toner agitator bar drive assembly is apparent.
Your SCC Sales Team can help you select the best toner for your particular 5Si application.	NA
Seals the area between the casing and toner low sensor bar; can be a source of leakage if seal is missing.	Install replacement seal if damaged or missing.
The cap should be free of holes and any damage that can prevent a proper seal around the fill hole.	Replace OEM cap with SCC Universal Grip-Tab Hopper Cap; a tab molded into the cap facilitates removal.

Mag Roller Housing - Terms and Definitions

continued from page 7

Sealing Channel End Foam (Open and Closed)

Rectangular pieces of foam adhered to the mag roller section of the hopper. Entry foam (left end) and end foam (right end) seal the ends of the hopper where the toner reservoir and mag roller sections are not ultrasonically welded together. Right and left seal channel foams are NOT interchangeable.

Sealing Channel Rail Foam

Narrow strips of foam installed on the underside of the mag roller section. The foam is used with the RapidSeal™ split hopper sealing system to seal the long sides of a split hopper section.

Secondary Toner Agitator Bar (Top/Bottom)

Thin metal bars located near the opening to the development station; rotates inside the toner hopper to move toner toward the development station.

Secondary Toner Agitator Bar Drive Assembly (Top/Bottom)

Rotates the toner paddle bars; located at the drive train end of the mag roller section. Top and bottom drive assemblies are NOT interchangeable.

Secondary Toner Agitator Bar Felt Washer (Top/Bottom)

One felt washer installed on each drive assembly to seal the assembly and prevent leakage from the hopper.

Toner Low Sensor Bar

Acts as an antenna to detect low toner volume in the hopper. Once a signal from the antenna reaches a specified value, the printer displays a toner low warning for the printer operator.

Toner Low Sensor Bar Seal

Plastic seal installed on the toner low sensor bar used to seal the area between the bar and the casing in which the bar is installed.

STATIC CONTROL COMPONENTS, INC.

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Canon® LBP-WX(5Si)
Cartridge/Printer Specifications

About the WX Printers

LaserJet® 5Si: "Network Dream Machine"

In November 1995, Hewlett-Packard® introduced the LaserJet® 5Si, a network printer featuring 24 ppm and tabloid size paper printing capabilities. The introduction of the 5Si has created a new price and performance benchmark for office network printers in the 20-30 ppm printer segment. Multiple paper handling options, including duplexing, mailbox options, sophisticated network capabilities and expansion options make the 5Si an ideal department printer in large corporations. "HP is not far from right when it characterizes the 5Si and 5Si MX as 'Network Dream Machines'. These printers offer an unprecedented combination of speed, paper handling, and software management tools for a tremendously attractive price."[1] The 5Si and 5Si MX sell for approximately $2,900 and $3,800 respectively (both street price).

By looking at the high page yield of the cartridge (15,000 pages @ 5% coverage) and 100,000 page/month duty cycle on the printer, it is apparent that HP and Canon® are expecting heavy use from this printer. Additionally, as the information in electronic form increases, one can expect that printers will take the place of copiers in outputting document copies. With the 5Si tabloid duplexing option and print resolution of 600 dpi, printing flyers or newsletters in-house offers an attractive alternative to printing at print or copy shops.

Both the 5Si and 5Si MX machines feature EconoMode, a printing mode that decreases the amount of toner used per page by fifty percent. Both machines are also in compliance with the EPA's EnergyStar program which reduces the power to the printer when the printer is in an idle state for a designated length of time.

HP's Mopier Sets New Standard in Office Printing/Copying

Just one year after the introduction of the LaserJet 5Si, HP launched the 5Si Mopier in response to the way today's offices are working. "MOPY" stands for "multiple original prints", a trend in office printing that uses the printer to make multiple copies instead of printing an original and then walking to the copier to make copies.

The idea behind HP's 5Si Mopier is to help create a more efficient office work environment by streamlining printing and document reproduction needs into one machine. The mopier features almost everything an office copier might offer:

continued on the next page

Market Outlook

The WX engine-based printers are marketed as departmental printers for networked operations. Printers feature a print speed of 24 ppm (letter) and 13 ppm (tabloid), broad range of paper handling, and 600 dpi print resolution. The immense networking capabilities, paper handling options and the 15,000 page yield of the cartridge indicate heavy use from this printer.

1996 placement projections for the WX printer in North America were 220-250,000 units. We estimate that each printer will consume at least 2 cartridges a month for a total of approximately 500,000 cartridges a month (6,000,000 a year). By the end of 1997, the total installed printer population is projected at over 550,000 units. By the end of 1997, we project the remanufacturer's market share to exceed 28%.

Cartridge above has been painted gray for better visibility

Printer Compatibility

Canon LBP-2460
Dataproducts® DDS24
HP LaserJet® 5Si
HP LaserJet® 5Si MX
HP LaserJet® 5Si NX
HP LaserJet® 5Si Mopier
IBM® Network Printer 24
IBM® Network Printer 24-PS
IBM® 4324
Lexmark® Optra™ N 240
Lexmark® Optra™ N 245
QMS® 2425
QMS® 2425 EX
QMS® FX-1/2425 Imageserver
QMS® FX-2/2425 Ex Imageserver
Troy® 524 (MICR)

World Wide Web

www.scc-inc.com

If you need additional information or technical assistance, please contact the Technical Support Group.

1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)
email: techservices@scc-inc.com

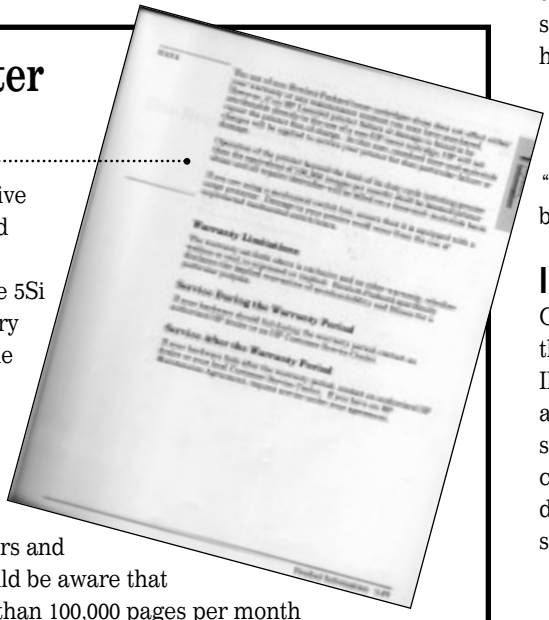
About the WX Printers, continued

duplexing, collating and stapling, mailboxes, superb paper handling, a hefty duty cycle of 100,000 pages a month. Add to that, original copies at 600 dpi and entire network mopying (printing) capabilities. The only thing you won't get with a mopier is a duplicate of a hard copy original.

Most notable of the 5Si Mopier's features is its new software. HP's "Transmit Once" capability allows more efficient printing and collating of multiple copies by sending the document only once to the 420 MB hard drive. The file is stored on the hard drive and spooled to the printer's controller for the number of copies desired. This reduces network traffic and reduces the amount of time the end user has to wait before returning to the application.

Several of the accessories that were options for the LJ5Si are now standards on the 5Si Mopier: duplex unit, mail box with stapler, and 2,000 sheet input tray. At its introduction, the mopier was listed at $9,549, about $500 less than the price of the LJ5SiMX plus the accessories. Since the mopier's November 1996 release, HP has dropped the price to $9,143.

5Si Printer Abuse!



With its extensive networking and printing capabilities, the 5Si printer may very well become the workhorse printer of a department or office. However, remanufacturers and end users should be aware that printing more than 100,000 pages per month on the 5Si printer is regarded by HP as printer abuse.

HP States in their service manual that "Operation of the printer beyond the limit of its duty cycle (printing greater than the equivalent of 100,000 single-sided pages per month) shall be deemed printer abuse and all repairs thereafter will be billed on a time and materials basis."

See page 1-27 in the HP 5Si Printer Service Manual for details.

Printer owners who wish to upgrade their existing 5Si to a "5Si" Mopier can purchase a user-installable upgrade which includes new firmware, 420 MB hard drive, paper handling formatter board, Mopier software, and documentation.

QMS® 2425 Offers Enhanced Feature Set

Just five months after the introduction of the 5Si, QMS® launched the 2425 (and 2425 EX), a network printer based on the same WX engine used in the 5Si.

The 2425 offers many of the same features as the 5Si: 600 dpi resolution, 24 ppm print speed, multiple paper handling options, internal duplexing, envelope feeders, and impressive network capabilities. Like HP, QMS also believes that laser printers will replace copiers for many copy jobs. The 2425 features electronic collation and spooling, in addition to a CrownCopy option not offered in the 5Si. CrownCopy consists of a Fujitsu scanner connected to the printer's SCSI port. The user can copy pages through a copy menu on the front panel of the printer.

The 2425, priced about $1000 more than the 5Si, faces a tough sell as it goes head-to-head against the 5Si. However, QMS offers some impressive features not offered by HP that may justify the higher price: processing speed that is almost double that of the 5Si on a variety of files, 1,200 dpi mode, a stapling option, CrownAdmin software that "supports multiple network protocols and system code downloads over the network", "printer-based document processing [that] cuts network traffic by handling many tasks at the printer rather than the host."[2]

IBM® Enters the Market with the Network Printer 24

On June 18, 1996, IBM® announced the September availability of the WX-based Network Printer 24 and 24PS postscript version. IBM will market the printer through several channels, and offer a full lineup of optional paper handling accessories. IBM initial success will probably be in their corporate mainstays using their computer hardware. Their growth outside that channel will depend on multiple factors, most importantly how their machine stacks up against the 5Si.

Lexmark® Optra™ N Goes Head-to-Head with HP 5Si in speed, resolution and price

The Lexmark® Optra™ N, introduced in May 1996, is the third printer released that is based on the WX engine. The Optra N features 24 ppm, 600 dpi resolution and some of the same paper handling features found in both the HP and QMS models: tabloid printing capabilities, duplexing unit, envelope feeder, and stapler/finisher. The Optra N goes further to offer three print modes: 300 x 300 dpi, 600 x 600 dpi, 600 x 2,400 dpi (1,200 dpi quality).

Lexmark has incorporated enhancements to its MarkVision printer management software: printer inventory, resource management, end of job notification, selective filtering of printer alerts. Lexmark also offers compatibility throughout the Optra line by designing the printers so that the end user can send print jobs to any Optra printer (excluding the Optra E). There are no modifications in the original file and no degradation in print quality.

Lexmark's strongest defense against the 5Si is print quality (capable of 1200 dpi quality), a faster microprocessor, and a competitive price.

Footnotes:
[1] *"HP Pushes the State of the Art Forward with the LaserJet 5Si", The Hard Copy Observer, Volume V, Number 11, November 1995, p. 55.*
[2] *"New 24 ppm QMS 2425 to Challenge HP's LaserJet 5Si", The Hard Copy Observer, Volume VI, Number 3, March 1996, p. 78.*

Cartridge Information

	HP LaserJet® 5Si	HP LaserJet® 5Si Mopier	QMS® 2425	Lexmark® Optra™ N
OEM Part Number	C3909A	C3909A	1710146-001	1382140
OEM Published Yield[1]	15,000 pages	15,000 pages	15,000 pages	15,000 pages
Price (Retail List - 6/97)	$219 ($146)[2]	$219 ($146)[2]	$259.00	$219
Price (Ave. Wholesale - 6/97)	$135.00	$135.00	$180.00	$168.00

[1] *Yield is based on 5% page coverage unless noted otherwise.*
[2] *Price in parenthesis is estimated street price; information obtained from May 1997 HP press release*

Printer Information

	HP LaserJet® 5Si/5Si MX	HP LaserJet® 5Si Mopier	QMS® 2425/2425 EX	Lexmark® Optra™ N 240/245
Introduction List Price	$3,499 (5Si), $4,899 (5Si MX)	$9,549	$5,499 (2425), $6,999 (2425 Ex)	$3,399 (240), $4,200 (245)
First Ship Date	November 1995	November 1996	March 1996	May 1996
Pages Per Minute (ppm)	24 ppm (let), 13 ppm (tab)	24 ppm (let), 13 ppm (tab)	24 ppm (let), 13 ppm (tab)	24 ppm (let), 13 ppm (tab)
Engine Duty Cycle	100,000 pages/month	100,000 pages/month	100,000 pages/month	100,000 pages/month
Processor	40 MHz AMD AM29040	40 MHz AMD 29040 RISC	50 MHz NEC V4300 (64 bit) Axis ETRAX I/O processor	50 MHz Intel 80960HD
Resolution (dpi)	600 x 600 dpi (native) Resolution Enhancement (REt); 120 levels of gray	600 x 600 dpi Resolution Enhancement (REt); more than 120 levels of gray	600 x 600 dpi 300 x 300 dpi, 1200 x 1200 dpi supports edge smoothing	600 x 600 dpi 300 x 300 dpi, 2400 x 600 dpi 256 levels of gray
Economode	yes		n/a	n/a
Page Size	letter, A4, legal, exec., B4, B5, 11" x 17" (tabloid), A3	letter, A4, legal, exec., B4, B5, 11" x 17" (tabloid), A3	letter, A4, legal, exec., B4, B5, 11" x 17" (tabloid), A3	letter, A4, legal, exec., B4, B5, 11" x 17" (tabloid), A3
Target Market	Departmental printing in corporations	Departmental printing	Forms and office automation, imaging	Departmental printing in corporations
Maintenance Kit	User maintenance required every 350,000 pages for optimum performance	User maintenance required every 350,000 pages for optimum performance		

Canon® LBP-WX(5Si)
Troubleshooting

Establishing Baseline Performance Benchmarks

We recommend that you perform a comprehensive series of test prints to establish the performance standards of your cartridges using SCC's WX Imaging System Components. Listed below is a series of print targets that we developed for system evaluation. This test series will establish the normal print characteristics of the WX cartridge for comparison with your subsequent remanufactured cartridges. We further recommend that you retain the baseline cartridge as your standard to simplify future performance verification.

The test series also allows you to visually inspect a printed page and diagnose many printer and cartridge problems. Listed in the chart below are some of the problems that may be diagnosed using each page in the test series.

The Series One Analyzer EPROM print series also includes four 5% coverage test targets scientifically developed and calibrated for major printer models. The 5% coverage pages along with a measuring procedure are used to determine toner usage per page and accurate page yield results. *(See next page.)*

The Series One Analyzer EPROM is used with the G80 SmartBox® and can be purchased as a kit from SCC. Contact your SCC Sales Team for more details.

SCC Series One Analyzer EPROM Print Targets

Test Print	Problems That May be Diagnosed Using the Test Print
Main Test Page	Drum Ghosting, Developer Roller Ghosting, Vertical Black Lines, Horizontal Black Lines, Toner Smear
Blank Page	Pin Hole Defects, Blasting
Black Page	Pin Hole Defects, Developer Roller Defect
BP80 Page	Improperly Formed Characters, Gear Defects, Fuser Offset, Bubble Print (or grapes)
Gray Page	Substrate Defects, Dropouts (faded areas)

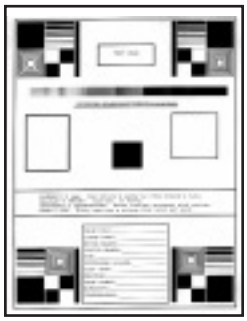
Table of Contents

World Wide Web

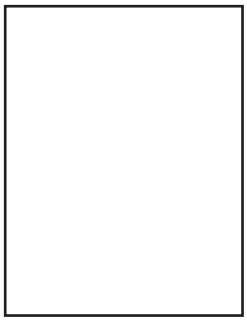
www.scc-inc.com

Need help troubleshooting print defects? Call Technical Support.

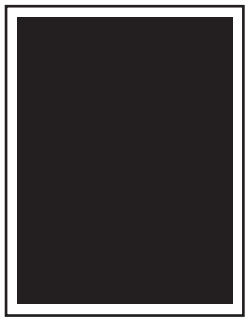
1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)
email: techservices@scc-inc.com



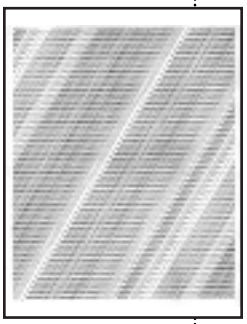
Main Test Page



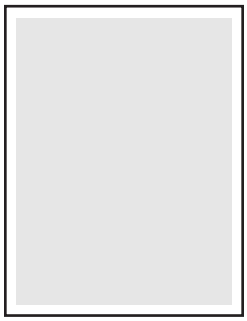
Blank Page



Black Page



BP80 Page



Gray Page

Measuring Toner Usage (Page Yield)

Toner usage (or page yield) information is often needed by a cartridge remanufacturer to determine cost per page in their remanufactured cartridges or to run page yield tests. An important aspect of determining toner usage is using the proper test target.

Our system development lab developed a set of standardized test prints using the letter E to determine toner usage for 12 of the most popular printer models. Different printers have different dot sizes determined by the manufacturer. You may have noticed that some printers appear to have darker text than others. For this reason, each printer system can require different number of E's to produce a 5% coverage page.

The necessity for engine-specific E-pages is best illustrated by comparing the difference between EX and SX 5% coverage pages arranged in business letter format as shown below. The EX machine requires a certain number of E's to reach 5% coverage. In comparison, the SX machine requires a different number of E's to reach 5% coverage. The business letter format is used for comparison only and should not be used for testing purposes. The 5% coverage page designed for yield testing features the letter E spread out over the normal printed area of 8" x 10" in order to avoid continuous printing in any one area.

SCC's Series One Analyzer EPROM, used with the G80 Anacom SmartBox®, includes four E-pages and five print performance evaluation targets. *For more information, contact your SCC Sales Team.*

The figures above illustrate how 5% coverage might look in a business letter format. The left page was printed on an EX printer and the right page printed on an SX printer

5% Coverage Test Targets available for:

- HP LaserJet® II, III, IIP, IIIP, IBM/Lexmark® 4019, 4029, 4039, Optra R, Optra L (Target #1)
- HP LaserJet 4/5, IIISi/4Si, 4L/4P, 5L, 5P/5MP (Target #2)
- **HP LaserJet 5Si**, 4V, IBM Network Printer 24 (Target #3)
- Lexmark Optra N (Target #4)

Product Information

G80 Smart Box with Analyzer™ . . . . . .(ANACOMG80-1US)
Includes: G80 Smart Box with Analyzer, Top Switch Pad, Anacom G80 Power Supply, Anacom G80 RS-232C/Cable, Anacom G80 Manual, Analyzer™ Users Guide, Test Pattern Reader 5% Reader Cards

Analyzer Chip Series 1 . . . . . .(ANLZS1)
Includes: Analyzer Yield Test-Standard, Laminate 5% Coverage Samples, Insertion Instructions, SCC Users Guide, Disposable Grounding Wrist Strap

For additional product and ordering information, call your SCC Sales Team.

To learn more about about page yield and toner usage, refer to SSS 112, Page Yield for Printer Cartridges.

How to Measure Repetitive Defects

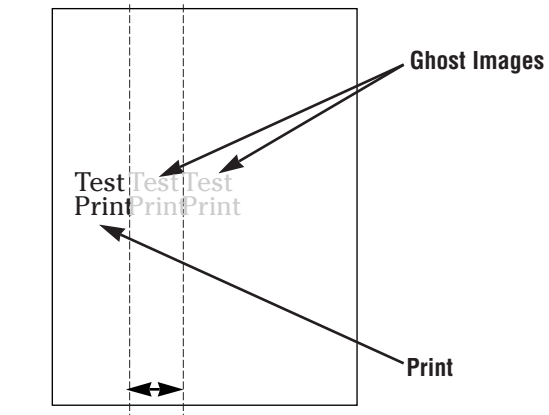
1. Find the repeating defect. Defects may appear as horizontal banding, dots, lines or hazing. Note that with WX cartridges, the repetitive defect will appear horizontally on a letter size page and vertically on legal or tabloid size pages. *See page 5 for details regarding page orientation as it exits the printer*.

2. Measure the distance between the defects. To get an accurate measurement, measure from the top or bottom of the first defect to the top or bottom of the next defect. Make sure you are measuring like defects. It is possible to have two sets of repetitive defects that overlap each other on the page.

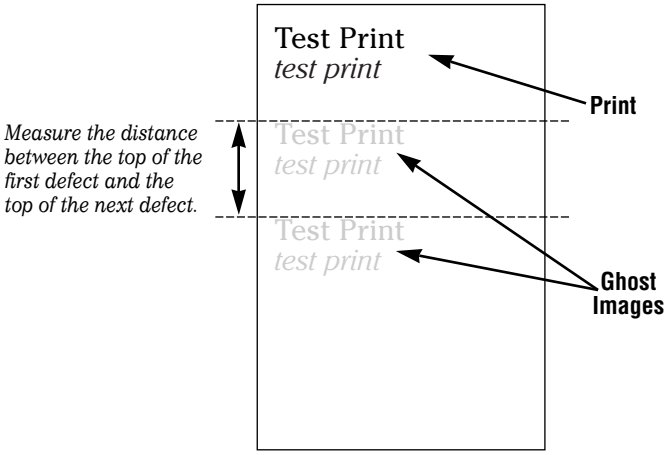
3. Find the interval number in the table below and the corresponding component. Interval measurements are provided in both inches and millimeters. Some probable causes of the defect are listed to help with troubleshooting. This is not an exclusive list. Some repetitive defects may be the result of a combination of factors. If you having trouble locating a defect, call Technical Support at the telephone numbers listed on the back of this manual.

   Repetitive Defect Rulers (RDRULER-PK) are available for 12 of the top print engines (including the 5Si/WX). Contact your SCC Sales Team to order.

Example of Repetitive Ghosting Defect on WX printer **letter size** paper; note that letter size paper exits printer in a landscape orientation



Example of Repetitive Ghosting Defect on WX printer **tabloid size paper**; note that tabloid size paper exits printer in a portrait orientation



Repetitive Defect Troubleshooting Guide

Interval	Component	Probable Cause of Defect
@ 3.71" (94 mm) Intervals	OPC Drum	OPC wear, OPC damage, OPC contact, elliptical drum rotation, OPC light exposure degradation, PCR defect
@ 1.75" (44.4 mm) Intervals	Primary Charge Roller	PCR wear, PCR contamination, toner properties, poor electrical contact, low RH% conditions, dry paper
@ 2.11" (53.5 mm)* Intervals	Mag Roller	Mag roller wear, mag roller electrical contact, mag roller cleaning damage, mag roller bushing wear, doctor blade failure, toner properties, mag roller contamination, broken pins on mag roller or gear housing end plate
@ 4.92" (125 mm) Intervals	Upper Fuser Roller	Toner offsetting, fuser roller/pressure roller incompatibility, upper fuser roller/lower pressure roller wear/contamination
@ 3.71" (94 mm) Intervals	Lower Pressure Roller	Toner/pressure roller incompatibility, pressure roller wear/contamination (defect will appear on backside of page)
@ 2.30" (58.4 mm) Intervals	Transfer Roller	Repeating interval of light print

** The mag roller rotates at a different direction from that of the drum; therefore, the repetitive defect interval cannot be calculated by measuring the diameter of the roller.*

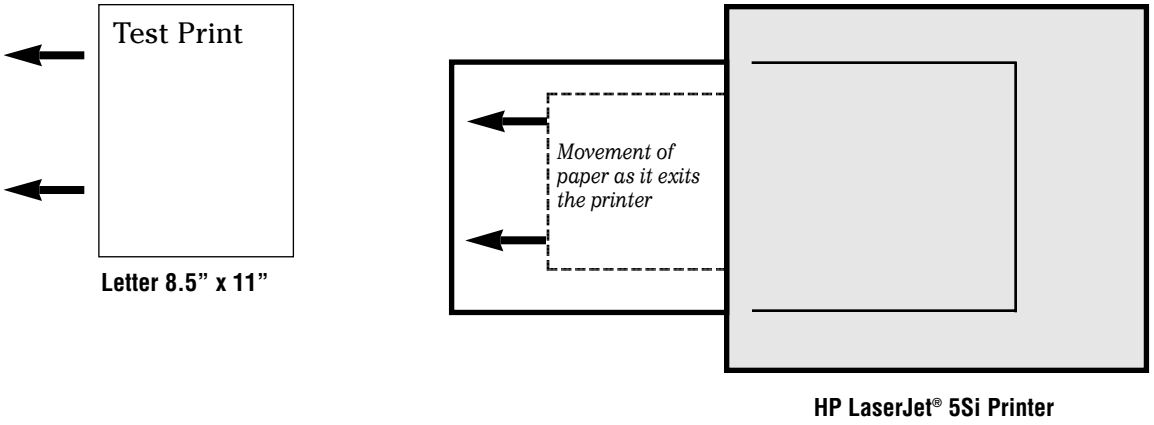
Print Defect Troubleshooting Tips

The following table is a list of common print defects you may encounter during print testing. Included in the table is a general listing of probable causes for each type of defect; this listing will help direct you to the source of the defect.

If you have questions or require further assistance, call SCC's Technical Support Staff at the telephone numbers listed on the back of this guide.

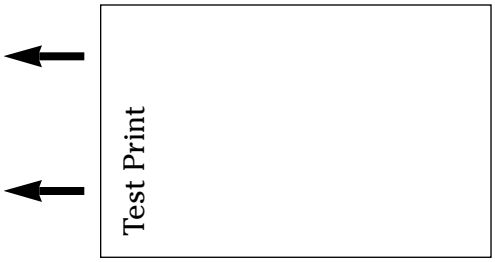
Print Defect	Probable Cause of Defect
Background	Inadequate drum charging/erasing, OPC wear, PCR wear, toner properties, low RH% conditions, dry paper
Ghosting	Inadequate drum charging/erasing, OPC wear, PCR wear, PCR contamination, low RH% conditions, toner properties, dry paper, upper fuser roller (toner offsetting)
Light Print	Magnetic roller, electrical contacts, OPC wear, PCR wear, toner properties, high RH% conditions, damp paper, doctor blade, mag roller or gear housing end plate (broken pins) loose retaining clips (right/left side light print)
Streaking/Lines	Wiper blade (sharp-edged lines), upper fuser roller, picker finger assembly PCR contamination (vertical line), missing/damaged doctor blade end foam or mag roller felts (page edge line)
Random Sprinkles	Recovery blade, magnetic roller felts, mag roller sealing blade
Smudges	OPC contamination, upper fuser roller, magnetic roller contamination
Toner Offsetting	Upper fuser roller, lower pressure roller, toner properties

Paper Orientation as it Exits the Printer

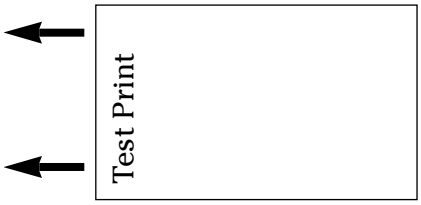


Letter 8.5” x 11”

HP LaserJet® 5Si Printer



Tabloid 11” x 17”



Legal 8.5” x 14”

Post-testing 5Si Cartridges

If you print-test your cartridges after they have been sealed, you must first set your LaserJet® 5Si printer to ignore toner low warnings. By default the 5Si disables printing if it senses toner low unless you set it up otherwise. The following is an explanation of the two options for toner low configuration:

TONER LOW=STOP *

When the Toner Low=Stop setting is selected, the printer will go off line (or stop) when toner low is detected. The TONER LOW message will appear in the display window and the printer will stop printing until a new cartridge is installed.

TONER LOW=CONTINUE *

When the Toner Low=Continue setting is selected, the printer will continue printing even if the toner level in the cartridge is low. The TONER LOW message will appear in the display window and the printer will continue to print.

How to Set the Toner Low Configuration for Post-testing

1. Press the ON LINE key to switch the printer to OFF LINE status. The following message will appear in the display window. Note that switching the printer to an OFF LINE state will stop any print jobs in process.

OFFLINE

2. Press the MENU key until the following message appears in the display window.

CONFIGURATION MENU

3. Press the ITEMS key until you get either of the following messages:

TONER LOW=STOP *

TONER LOW=CONTINUE *

   If the TONER LOW=STOP message is displayed, press the + key once to the change the message to TONER LOW=CONTINUE.

   If the TONER LOW=CONTINUE* is displayed along with the asterisk to the right, continue to step 5. If the asterisk is not present to the right of the message, continue to step 4.

4. Press the SELECT key once to select the setting. An asterisk will appear to the right of the message to show that the setting has been selected.

TONER LOW=CONTINUE *

5. Press the ON LINE key to return the printer to on line status.

Notes

Canon® LBP-WX(5Si)
Problem Solving

Clips Are Damaged Every Time You Remanufacture the Cartridge

Damage to the WX cartridge is highly probable at the very start of the remanufacturing process. The first step of the process involves removing two cartridge clips that hold the massive 5Si cartridge together. While the procedure is simple and straightforward, an extremely high percentage of the clips will be damaged during removal, regardless of how careful you are.

The 5Si cartridge clips are similar in design and function to the EX clips. They hold the waste bin and toner hopper together and a spring on the clip applies pressure to the hopper section so that the mag roller is properly seated on the drum. Unlike the EX clips that attach with removable screws, the 5Si clips snap into place with small latching prongs (FIG 1). These prongs are not accessible to release, therefore they are more easily damaged when the clip is removed (FIG 1).

The clips are made of a fragile material and it is nearly impossible to pry a clip from the waste bin without breaking at least one of the four prongs. Without all four prongs intact, the clip is less secure in the cartridge and can become dislodged easily, causing the cartridge sections to separate. Any separation of the cartridge during operation results in print defects.

Cartridge Clip

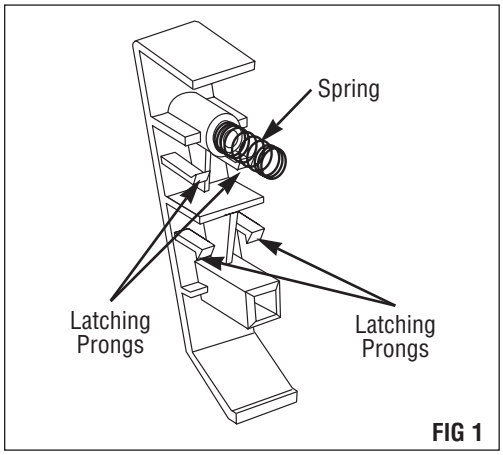


FIG 1

In early March 1996, our development engineers identified two additional locking prongs on the clip. *Refer to SSS 53-F, Changes to the Cartridge, for more details.*

Replacement Clip and Spring Engineered for Multi-Cycle Use

Remanufacturing the 5Si requires the use of cartridge clips with all four latching prongs intact. Since a clip with even one broken prong can increase the potential for field failure, replacement is mandatory.

Testing from the standpoint of both production and engineering confirms that replacing broken clips with new clips is the most effective method of securing the cartridge sections. SCC Imaging Division (SCC) offers a replacement clip that is equal to the OEM clip in functionality, but with improvements in durability. The clips snap into position in a matter of seconds and secure the cartridge sections together until the clips are removed during the next remanufacturing cycle. The SCC replacement clip has been engineered for durability and in R&D testing the replacement clip was reusable for multiple cycles.

Repair alternatives, which are not recommended, require fitting the clip and waste bin with a screw hole and a specially designed long screw. Major drawbacks of this method are the installation time, the precision needed to drill the screw boss and the poor appearance of the installed screw. The screw boss is molded into the clip at an angle which makes drilling at the correct angle imperative. Since the screw boss is positioned at an angle, an installed screw is also positioned at an angle. One side of the screw head will protrude from the clip instead of seating flush against the clip. External screws, particularly those seated at an angle, can give the cartridge the appearance of diminished quality.

Table of Contents

World Wide Web

www.scc-inc.com

For updates on WX (5Si) critical issues, call SCC Technical Support Group.

1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)
email: techservices@scc-inc.com

PRODUCT INFORMATION

5Si Cartridge Clip . . . . . .
WXCCLIP

5Si Cartridge Clip Spring .
WXCCS

Drum Axle Retaining Ring

Retaining Ring Damaged When Drum Axle is Removed

Every time you remove the drum axle, the tiny white retaining ring on the contact end of the waste bin is damaged. Although difficult to see, small locking ribs are molded into the interior diameter of the retaining ring (FIG 2). These ribs allow the ring to lock into place on the grooved end of the axle and prevent the axle from shifting laterally when it is installed in the waste bin housing (FIG 3).

When the axle is forced out of the waste bin, the sharp edge of the groove on the axle shears off the ribs in the ring (See FIG 4). Without the locking capability of the ribs, the ring sits in the waste bin housing without securing to the axle.

The retaining ring is just one component that keeps the drum axle in place. The opposite end of the drum axle has a spline configuration that helps keep the axle secured in the waste bin housing. The splines allow the end of the axle to wedge tightly into the casing in the waste bin (FIG 5). With repeated removal and installation of the axle, the splines wear the interior of the casing. After remanufacturing the cartridge only a few times, the splines are no longer effective in securing the axle in the casing because the interior of the casing is worn to a larger diameter (FIG 6).

The combination of a damaged ring and an eroded casing will increase the potential of the drum axle shifting. During shipping when packaged cartridges are jarred, dropped and handled roughly, the drum axle will shift out of the waste bin more easily. Since the axle provides electrical contact between the printer and the drum, any shifting to the left* may cause problems with the electrical contact. In severe cases, the axle may shift enough to prevent the cartridge from being installed in the printer.

** Note that due to the design of the axle, it will shift only to the left, away from the contact end of the cartridge.*

Replace Retaining Ring Each Time You Remanufacture the Cartridge

Replace the retaining ring each time you remove the drum axle. Our testing has shown that a replacement retaining ring with the locking ribs intact will prevent the axle from shifting.

A specially designed installation tool is recommended for proper installation of the ring. It is imperative that the ring is installed straight in the waste bin housing and correctly locked into position. Although a small flat-blade screwdriver can be used to seat the ring in the housing, it is not effective in properly seating the ring straight in the housing. Our R&D engineers also found that in fast-paced production situations, seating the ring with the screwdriver takes time and increases the potential of damage to the waste bin housing.

PRODUCT INFORMATION

5Si Drum Axle Retaining Ring . . . . . .WXDRAXRING
5Si Drum Axle Retaining Ring Installation Tool
. . . . . .WXDRAXRITOOL

The installation tool is also included in the 5Si Drum Axle Tool Kit (WXAXLEKIT). *For more information about this kit, turn to page 4 of this manual.*

Refer to the detailed instructions included with the kit for installation and usage.

Drum Axle Retaining Ring

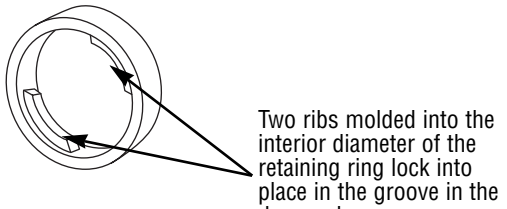


FIG 2

Installed Retaining Ring

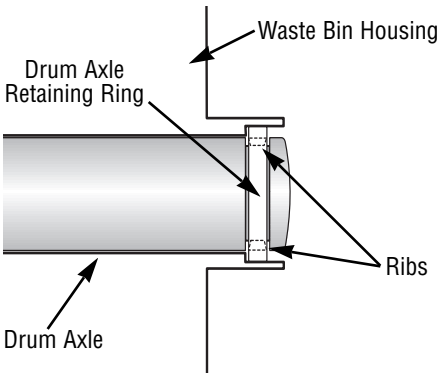


FIG 3

Removing the Drum Axle Damages Ring

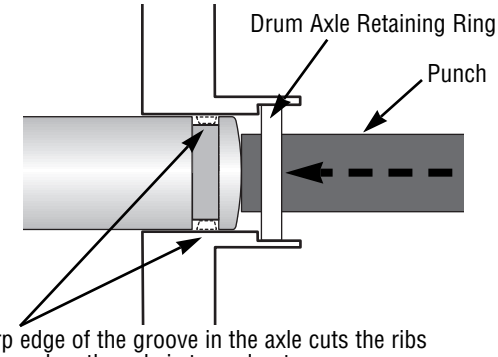


FIG 4

Splined End of Axle Correctly Seated in Waste Bin Housing

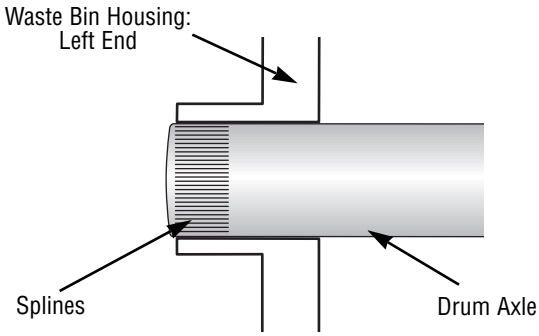


FIG 5

Splined End of Axle Wears Casing

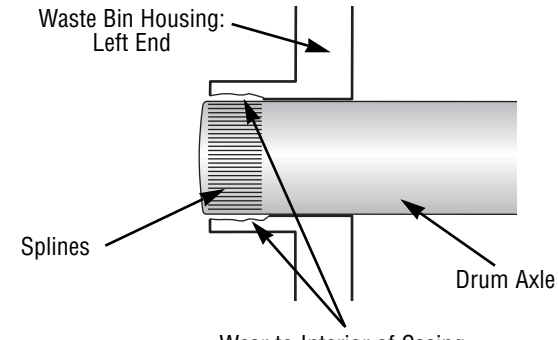


FIG 6

Drum Axle Tool Kit

Unique Drum Axle Leads to Potential for Damage

The drum axle in the 5Si is unique to Canon® cartridges in that it consists of a single rod installed along the entire length of the waste bin. Removing the axle requires gently tapping out the axle with a hammer and a punch. However, don't reach for a steel punch and an ordinary steel hammer. These tools will damage or deform the axle.

The drum axle is made of steel and overlaid with a corrosion-resistant metal plating. Using removal tools made of a metal harder than the axle material, which is typical of most punches and hammers, will deform the axle or chip the metal plating from the axle–even when minimal force is used during the process of removing the axle. During the initial remanufacturing cycles it takes substantial force to remove the axle.

Deforming either end of the axle can prevent the axle from being properly removed from or installed in the waste bin, and can also cause problems with electrical contact. Since the drum makes electrical contact with the printer through the retaining ring end of the axle (right end), deformities on the right end of the axle can interfere with this contact. Chipped or missing metal plating material can also interfere with electrical contact, as well as allow rust to develop on the exposed steel material.

Special Tooling Prevents Damage to Drum Axle

Our R&D engineers sourced an aluminum hammer and brass punch to use specifically with the 5Si application (FIG 7). The aluminum and brass materials are softer than the steel axle and will not damage the axle or plating upon impact.

A waste bin holding fixture was also designed so that both hands are free to hold the hammer and punch while removing the axle. The waste bin fixture is reinforced on both ends to absorb the impact of axle removal and installation.

Drum Axle Tool Kit

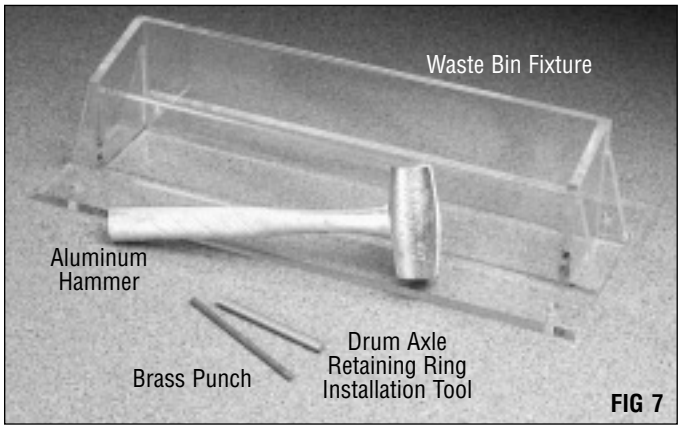


FIG 7

PRODUCT INFORMATION

5Si Drum Axle Tool Kit . . . . . .WXAXLEKIT
(Includes aluminum hammer, brass punch, waste bin fixture and drum axle retaining ring installation tool)

The items in the kit are also available separately:
5Si Aluminum Hammer . . . . . .WXHAMMER
5Si Brass Punch . . . . . .WXPUNCH
5Si Waste Bin Fixture . . . . . .WXWBINJIG
5Si Drum Axle Retaining Ring Installation Tool
. . . . . .WXDRAXRITOOL

Refer to the detailed instructions included with the kit for installation and usage.

Mag Roller Drive Gear

Easily Damaged When Removed

Two small clips molded into the interior diameter of the drive gear lock into two grooves on the mag roller sleeve. The clips and a raised edge on the sleeve keep the gear in the correct position on the sleeve during cartridge operation (FIGs 8 and 9).

To remove the gear, both clips must be unlatched with an ultra-fine flat-blade screw driver. The clips are positioned such that there is limited space to insert the screw driver without bending or gouging the clips. Our research has also shown that the clips have very poor memory. After unlatching the clips and removing the gear only once, the clips were damaged to a point that they no longer locked into the groove on the sleeve. The gear was then free to move laterally on the sleeve.

In testing the operation of a drive gear with damaged clips, the gear had shifted to the right toward the contact spring after a print run of 10 pages. about a quarter of an inch. With continued operation, print problems or component failure are a possibility.

Replacement Drive Gear Available

There are several situations that may require removing the gear, for example to recoat the sleeve or to replace a mag roller sleeve bushing. The gear can be reused provided the locking clips on the interior of the gear are not damaged; however, make sure that the gear does in fact lock firmly in place on the mag roller sleeve.

First, inspect the locking clips on the gear. If the clips are missing or damaged, discard the gear and install a new replacement gear. Next, install the gear on the mag roller sleeve and make sure the gear does not move laterally on the sleeve. If there is lateral movement or the gear does not appear firmly secured, discard the gear and install a new replacement gear.

Mag Roller Sleeve and Drive Gear

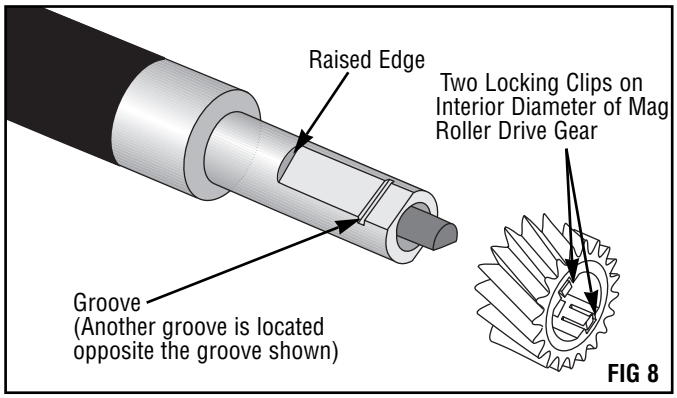


FIG 8

Locking Clips Secure the Drive Gear to the Sleeve

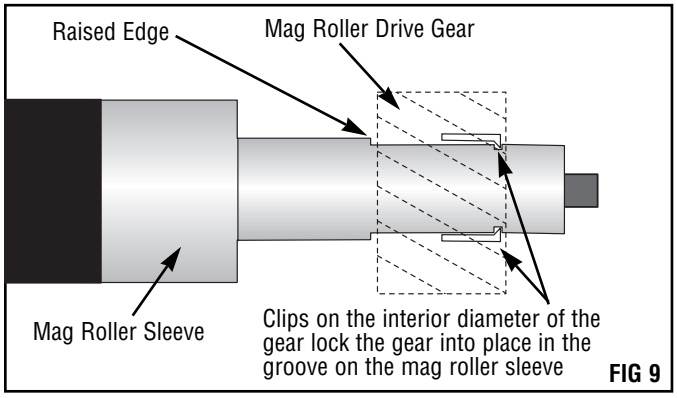


FIG 9

PRODUCT INFORMATION

Mag Roller Drive Gear . . . . . .WXMRGEAR

Additional Mag Roller Products:
Mag Roller Contact . . . . . .WXMRCON
Mag Roller Sleeve Bushing . . . . . .WXMRBUSH

Refer to the detailed instructions included with the kit for installation and usage.

Split Hopper Sealing

WX Cartridge Requires Precision Splitting System

The WX cartridge presents some of the same potential sealing problems encountered with other cartridges: seal channel foam damage from attempted insertion tool installation, seal channel blockage from residual seal material, and guide posts that block the opening to the seal channel. The size and design of the WX cartridge offers some additional challenges that prohibit the use of insertable seals or hand-splitting sealing methods.

Inside the sealing channel there are several design characteristics that prevent the use of insertable seals. The OEM seal is made of a rigid white plastic gasket and a filament-style sealing tape similar to the seals used in NX and late-model EX cartridges. The WX, however, is somewhat unique in that the seal is recessed into the sealing channel. Installing and securing an insertable seal is nearly impossible since there is no flat surface on which to press the seal, nor are you able to see that the seal is correctly positioned in the channel. In addition, two small burrs (or bumps) near the center of the channel prevent the seal from completely securing to the sealing surface and allows toner leakage (See FIG 10).

The WX cartridge is also equipped with seven guide posts that block the insertion of seals or tools; five guide posts inside the hopper are used to seat the gasket seal and two smaller guide posts at the seal exit port guide the seal pull strip out of the hopper (See FIG 11). Like the EX and NX cartridges, the WX cartridge is also prone to seal channel end foam damage. Rips or tears in either end foam allows toner leakage from the hopper.

A tongue and groove weld secures the seams along the sides of the hopper, providing an ultra-strong bond between the mag roller and toner hopper sections to support the weight of the cartridge (FIG 11). The strength of the weld also makes it virtually impossible to cleanly separate the hopper sections using hand splitting techniques.

SCC Splitting Process Facilitates Assembly of Split Hopper Sections

The WX RapidSplitter was engineered to precisely cut the hopper to create consistently uniform mag roller and hopper sections that are completely interchangeable. The splitting process retains part of the tongue and groove configuration so that the flanges of the hopper sections can be precisely realigned with the original spatial relationship between the mag roller and hopper sections. This feature ensures that the gears are properly aligned when the hopper sections are secured. Alignment pins are also preserved during the splitting process to further facilitate realigning the hopper sections and to speed up reassembly.

Toner Reservoir Section of a Split Hopper

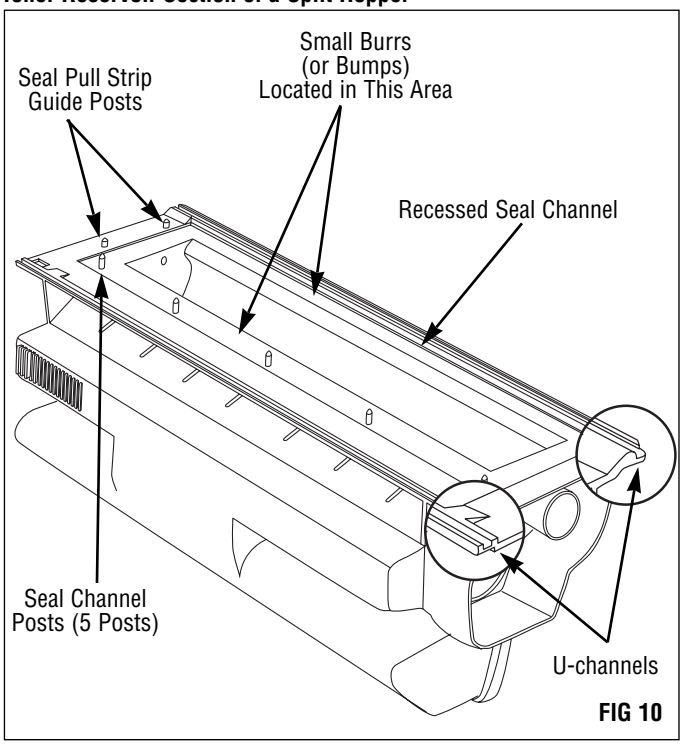


FIG 10

Cross-section of Toner Hopper

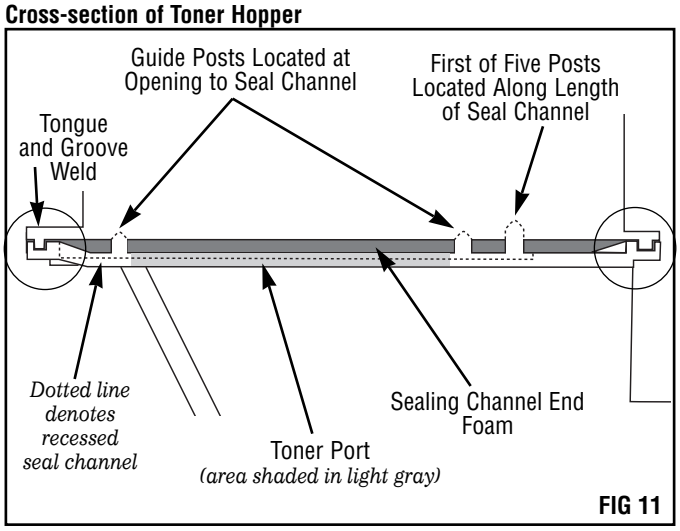


FIG 11

Ten-Second Splitting Time

The cartridge is split in a two-step operation that is completed in less than 10 seconds. Using only minimal pressure, an operator guides the cartridge along the power splitter's guide rails into rotating blades to cut the hopper. Since portions of the original weld are still present around the tongue and groove configuration preserved during splitting, a final finishing step is

required to completely separate the hopper sections. A hand-held separation tool can be used to release any uncut portions of the weld. Or, for larger volumes, the WX(5Si) Manual Separator accessory can speed up your production operation by separating the hopper sections both quickly and safely. If you own the WX Manual Splitter System, you already have the Manual Separator accessory, which is the cutting unit of the manual splitter system.

Hoppers split with the RapidSplitter are resealed with the RapidSeal Split Hopper Sealing System, which features blackened, stainless steel reusable external locking rails. The seal is constructed of a gasket seal structure with a ribbon-type pull member and features peel-to-expose pressure sensitive adhesive for quick installation.

The RapidSplitter is compact and portable giving you the flexibility to locate the machine anywhere in your facility. Only a few minutes of training is necessary to learn the operation of the machine, allowing you to start processing cartridges right away. The RapidSplitter features twin four-inch rotary blades driven by a dual synchronous timing belt and powered by a 1 hp motor. The machine is also equipped with an automatic thermal reset to prevent over-heating and a 12-amp circuit breaker to prevent overloading the machine. Maintenance of the RapidSplitter is as simple as changing the blades and belts, as well as keeping the machine clean. The machine ships fully assembled with a tool set and instructions needed for blade and belt replacement. The WX/5Si RapidSplitter is bundled with the Manual Separator or sold separately.

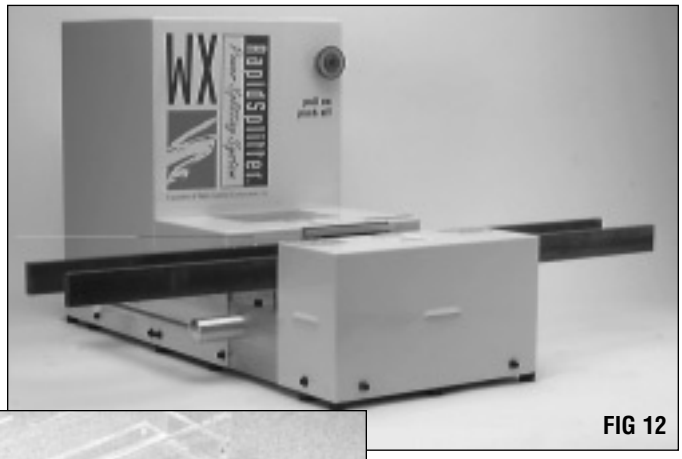


FIG 12

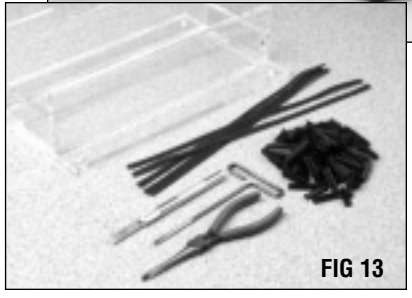


FIG 13

5Si(WX) RapidSplitter Power Splitter System (FIG 12) and 5Si Power Cartridge Splitter Starter Kit (FIG 13).

PRODUCT INFORMATION

WX/5Si RapidSplitter
Cartridge Splitting System . . . . . .WXRSCSS
Contents: WX/5Si power splitter, utility knife with blade (CSS-44), adjustable spanner wrench (CSS-67A), U-spanner wrench (CSS-86), alignment pin tool-2 (CSS-38), 9/64" T-handled allen wrench (CS5-71), guard jig (CS5-65), safety glasses (CSS-42)

WX/5Si RapidSplitter
with Manual Separator . . . . . .WXRSCSS-MS
Contents: WXRSCSS w/standard accessories, manual separator with small blade wrench (CS5-150), T-handle blade wrench (CS5-160)

WX/5Si Manual Separator
(stand alone unit) . . . . . .WXMCS
Contents: WX/5Si manual separator, small blade wrench (CS5-150), T-handle blade wrench (CS5-160)

WX/5Si Power Cartridge Splitter Starter Kit CS5-400
Contents: 5Si plexiglass hopper Fixture (CS5-44-SR), 5Si sealing channel rail foams (WXSCRFOAM), 5Si reusable locking rails (CS5-500), foam removal tool assembly (CSS-40), T-handle tool (for 5Si rail removal) (CSS-39), gasket seating tool (WXGSTOOL)

ADDITIONAL ACCESSORIES

5Si Mag Roller Section Plexiglass Fixture CS5-75
5Si Plexiglass Toner Filling Fixture CS5-45

For an overview of the splitting system refer to SSS#53-A, WX Remanufacturing Instructions.

** The original WX manual splitting system is still available and is a viable lower cost alternative. The manual splitter unit included with the system is the identical unit as the manual separator option with the Power RapidSplitter System. This gives you a natural upgrade path as your production volumes grow. For production facilities that must have guaranteed 100% uptime in the WX splitting operations, the original WX manual splitting system operates as an excellent emergency backup to the Power RapidSplitter System.*

Drum Shutter Felt and Cartridge Packaging

Long, Flexible Drum Shutter Can Cause Damage to OPC Drum

A drum shutter felt is not present on OEM 5Si cartridges, however it is an essential aftermarket component for prevention of OPC drum damage. The 5Si drum shutter, with its extra length, flexes easily in the middle of the shutter. Consequently, the shutter has a tendency to slap or rub against the drum during shipping or when the cartridge is gripped in the shutter area. Scratches and nicks on the drum surface can create print defects and shorten drum life.

Felt Protects the OPC Drum During Shipping and Handling

Install a drum shutter felt on the inside of the drum shutter. The felt is made of a soft, non-abrasive material that will not scratch or nick the drum when it makes contact with the drum surface.

Protection of the drum is especially important when the cartridge is shipped. Tumble tests conducted on packaged remanufactured cartridges showed that cartridges without shutter felts suffered significant drum damage. Cartridges with shutter felts showed almost no drum damage.

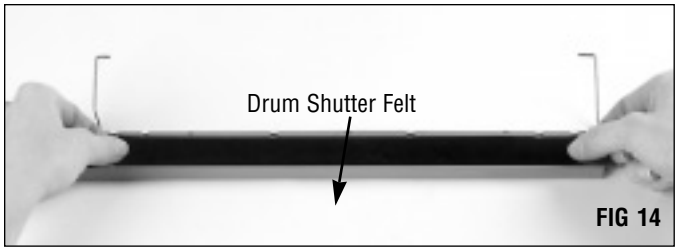


FIG 14

PRODUCT INFORMATION
5Si Drum Shutter Felt . . . . . WXDSFELT
Detailed installation instructions are included with the product.

Cartridge Size and Weight Makes it Difficult to Remove from Packaging

One of the first things that impacted our R&D staff regarding the research of the 5Si system was the cartridge packaging. Early in our research, staff from all divisions commented on the difficulty in removing the cartridge from the box.

The OEM cartridge is packaged in a box and secured with white styrofoam end pieces, just as most Canon or HP cartridges are normally packaged. You may not notice any difficulty in removing an EX cartridge from a box with such a configuration; however, the weight (6.7 lbs.) and the large tabloid size (about 15" in length) of the WX cartridge make it especially cumbersome and difficult to remove from the box.

Unique Packaging Addresses Support and Handling Difficulties

Our replacement box and insert combination addresses the support and handling difficulties of this cartridge. The insert consists of three pieces: two end pieces and a center piece that wraps around both the cartridge and end pieces (FIG 15). A special feature of the insert is a locking handle that allows the end user to securely grasp the insert and pull it out of the cartridge box using only one hand (FIG 16). Since the cartridge and insert come out of the box as one unit, the end user is less likely to drop or damage the cartridge.

SCC's 5Si Cartridge Box Insert

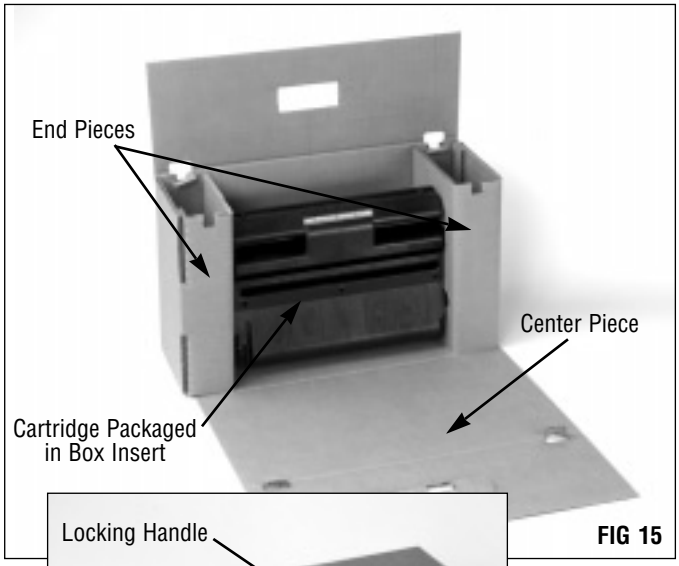


FIG 15

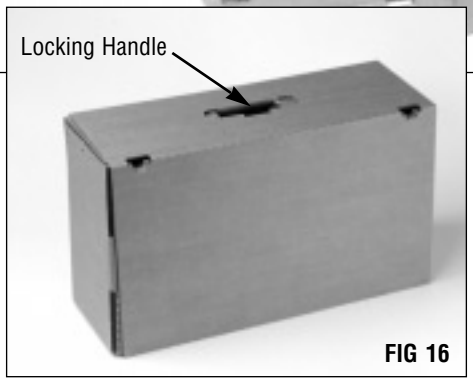


FIG 16

Folded Insert Equipped With Carry Handle

PRODUCT INFORMATION
5Si Cartridge Box . . . . . .WXBOX
5Si Cartridge Box Insert . . . . . .WXINSERT
5Si Label . . . . . .WXLABEL
Detailed folding instructions are included with the product.

End Plate Pin Repair

Broken Alignment Pins

When you remanufacture the 5Si cartridge, there is a risk that you may break one of the alignment pins on either the mag roller end plate or gear housing end plate (FIG 17). Both end plates fit on the ends of the mag roller section of the cartridge covering the ends of mag roller and also housing the gear train on the contact end of the waste bin section. When secured to the mag roller housing, the end plates help keep the mag roller in position by installing into the mag roller stabilizers located at end end of the sleeve. Additionally, positioner bushings molded into the end plates keep the magnet in a stationary position.

To ensure cartridge reliability, we recommend repairing any broken pins. The pins are not formed as part of the end plate, but rather are welded in place after the end plate is formed. Once the pin is broken it is very difficult to realign and secure the pin in the proper position.

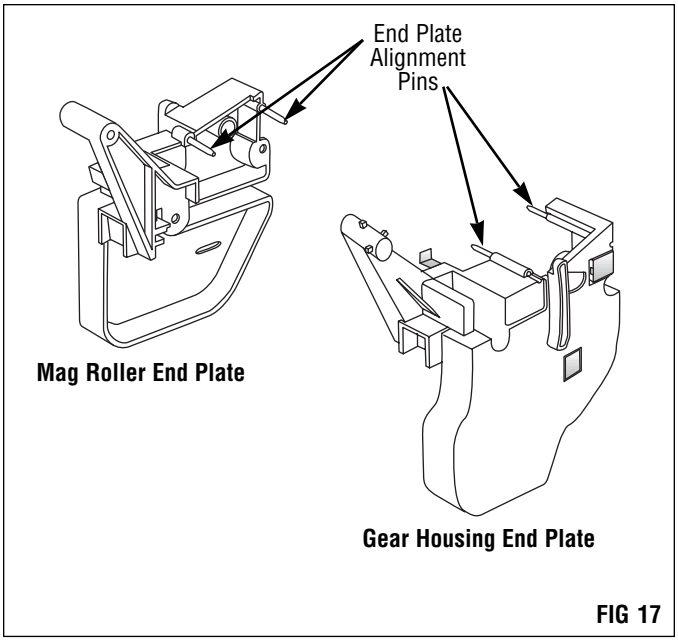


FIG 17

Template Speeds Repair Time and Ensures Exact Pin Placement

SCC's End Plate Repair Kit allows you to repair a broken alignment pin using an aluminum replacement pin.
First, the base of the broken pin is drilled to form a casing for the new pin. A finely machined template installed on the end plate guarantees exact placement of the drilled hole and eliminates risk of damaging the end plate (FIG 18). An aluminum replacement pin is installed and secured using a permanent-type glue.

PRODUCT INFORMATION

5Si End Plate Pin Replacement Kit . . . . . .WXEPREPKIT
Contents: Pin Replacement Template, End Cap Replacement Pins (20), Drill Bit #32, Loctite-401 and detailed installation instructions.

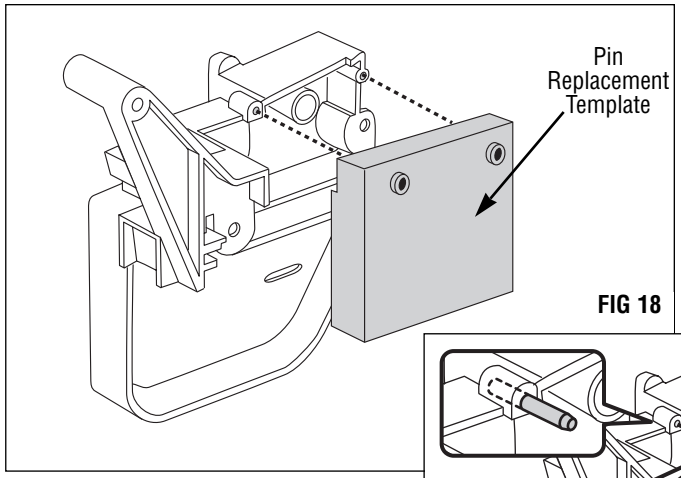


FIG 18

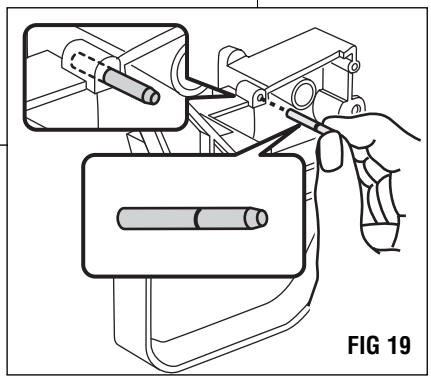


FIG 19

A precision machined template is provided for both the mag roller end plate and gear housing end plate (FIG 18). Once a casing is drilled in the base of the broken pin, a new pin is installed (FIG 19).

5Si Fuser Assembly Replacement Schedule

User Maintenance at 350,000 Pages

As part of user maintenance and for best performance with the 5Si printers and 5Si mopier, HP requires replacement of the fuser assembly every 350,000 pages. HP states in both the 5Si User and Service Manuals that the printer warranty on the printer will not apply if defects result from failure to replace the fuser at the 350,000 page interval (See FIG 20).

Once the page count on the fuser reaches approximately 350,000 pages, the message PERFORM USER MAINTENANCE will appear on the control panel of the printer. This message prompts the printer operator to replace the fuser assembly, transfer charge roller and feed/separation rollers, all of which are included in the HP Printer Maintenance Kit. In order to prevent damage to the charge roller, the kit also provides gloves to wear during installation and handling. Once the maintenance is performed, the service message must be reset.

The maintenance kit sells for $599 (as of June 1997) and includes complete installation instructions. HP also offers refurbished maintenance kits for $550; when you send in the old fuser assembly, HP will credit your account by $201, reducing the total cost of the refurbished maintenance kit to $349.

Replacement is not covered by the printer warranty, therefore replacement is at the expense of the customer. The end user of the printer can call HP for a replacement fuser assembly or call the remanufacturer for a replacement and installation. Without a doubt, a mandatory fuser replacement schedule creates great potential for remanufacturers who wish to increase service revenues.

Caution is warranted regarding aftermarket fuser assembly components: the offsetting properties of any aftermarket replacement upper fuser roller and other components should be thoroughly tested to include full life cycle test regimens.

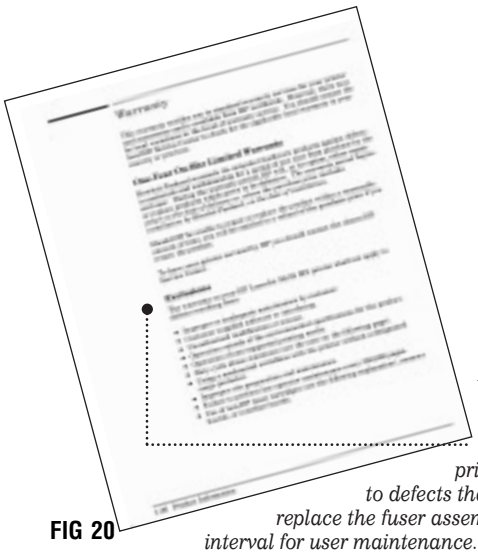


FIG 20 *Page 1-27 from the HP Service Manual (or page D-2 from the HP 5Si User's Manual) explains that the printer warranty will not apply to defects that result from failure to replace the fuser assembly at the 350,000 page interval for user maintenance.*

MAINTENANCE KIT ORDER INFORMATION*

HP Fuser Maintenance Kit . . . . . .$599 (list)
HP Part #C3971A (100V printers) (C3972A (220V printers)
Contents: fuser assembly, transfer charge roller, feed/separation rollers, gloves and instructions.

HP Refurbished Fuser Maintenance Kit . . . . . .$550 (list)
HP Part #C3971-69001
Purchase the refurbished maintenance kit for $550; HP will credit your account by $201 once you send in the old fuser assembly.
Contents: same as new maintenance kit

** Pricing information reflects retail list prices as of June 1997.*

How to Reset the Printer after User Maintenance is Performed

After the printer has printed about 350,000 pages, the message PERFORM USER MAINTENANCE will appear in the display panel in place of the normal READY message. This message prompts the user to replace the fuser assembly, transfer charge roller and feed/separation rollers which are included in a maintenance kit. Once the maintenance is performed, the machine's SERVICE MESSAGE must be reset.

1. Press the ON LINE key to change the printer to OFF LINE status.
2. Press the MENUS key until the following message appears in the display window.

   `CONFIGURATION MENU`

3. Press the ITEMS key to get the following message.

   `SERVICE MESSAGE=OFF`

4. Press the SELECT key and an asterisk (*) will appear to the right of the message.

   `SERVICE MESSAGE=OFF*`

5. Press ON LINE to return the printer to "On Line" status. The printer is now ready for normal printing operations.

5Si Printer Configuration Page

The configuration page is an internal printer document that contains information about the printer settings, page counts, memory, paper handling, etc (FIG 21). The page count information is particularly useful for remanufacturers because it can be used to track printer use and check the number of pages printed since the last fuser maintenance was performed.

To obtain page count and maintenance information, look at the Printer Information section on the Configuration Page.

Page Count: refers to the total number of pages printed.

Pages Since Last Power Cycle: refers to the number of pages printed since the last time the printer was turned on.

Pages Since Last Maintenance: refers to the number of pages printed since the last maintenance was performed. Maintenance refers to replacing the fuser, transfer charge roller and feed/separation rollers, all of which are included in the maintenance kit.

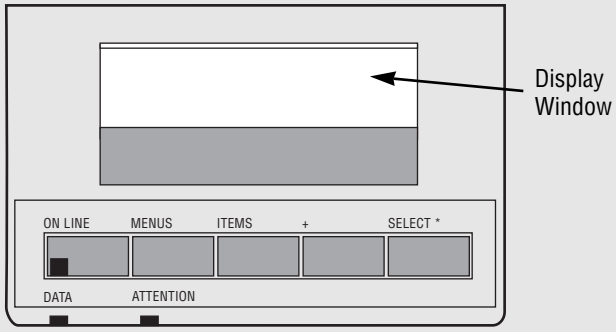
5Si Printer Configuration Page

All page count information is included in the Printer Information section of the Configuration Page

FIG 21

How to Print a Configuration Page

5Si Printer Control Panel



1. Press the ON LINE key.
   The message

OFFLINE

   will appear in the display window. Note that switching the printer to an off line state will stop any print jobs in process.

2. Press the MENUS key until

TEST MENU

   appears in the display window.

3. Press the ITEMS key.

PCL CONFIGURATION PAGE

   will appear in the display window.

4. Press the SELECT key and two configuration pages will begin printing.

   After the configuration pages have completed printing, the printer will automatically return to ON LINE status.

Using the 5Si Barber Pole Page to Assess Prints

A Barber Pole page, provided in the internal memory of the printer, is normally used to check the printer paper path. However, this page can also be used as a print test to assess prints from your customers' printers.

We recommend printing at least 10 pages or 2 sets of 10 pages in order to better assess any defects, if present. The printer only allows you to print in increments of 1, 10, 50, 100 or 500.

The procedure for printing in the Barber Pole page is referenced on the right. The actual Barber Pole page is shown in FIG 22. *For additional information refer to pages 4-11 of the HP Service Manual.*

5Si Printer Self-test Barber Pole Page

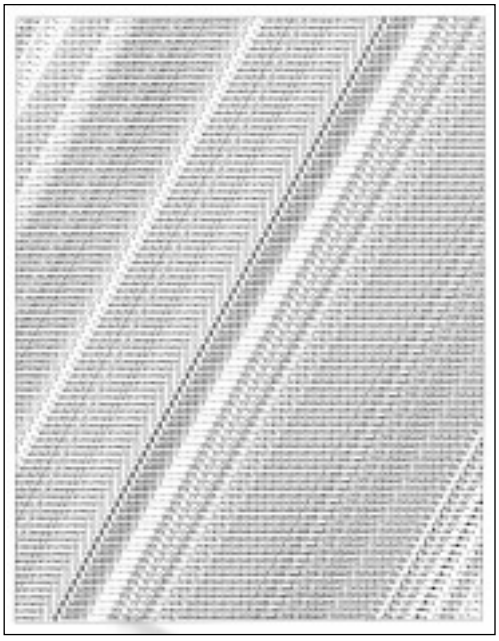


FIG 22

How to Print the 5Si Barber Pole Page

1. Press the MENU key until

   `TEST MENU`

   appears in the display window.

2. Press the ITEMS key until

   `PAPER PATH TEST`

   appears in the display window.

3. Press the SELECT key once and

   `INPUT TRAY=1`

   will appear in the display window.

4. Press the + key once and

   `INPUT TRAY=2`

   will appear in the display window.

5. Press the SELECT key and

   `NUMBER OF COPIES=1`

   will appear in the display window. Press the + key until you get the number of copies you want to print. The only choices are 1, 10, 50, 100 and 500.

6. Press the SELECT key to print. The printer will automatically go back on line once the print job is completed.

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Canon® LBP-WX(5Si)

Changes to the Cartridge

November 1995
Introduction of LaserJet® 5Si Printer

Winter 1995/96
Metal Support Clips Added to Drum Shutter

A metal support clip was added to each end of the drum shutter to enclose the actuator bar and secure the shutter to the bar (FIG 1).

The original-style shutter snapped onto the actuator bar without an enclosure. Our development lab concluded that HP added the support because they realized a potential for the shutter to become dislodged during handling or installation of the cartridge in the printer.

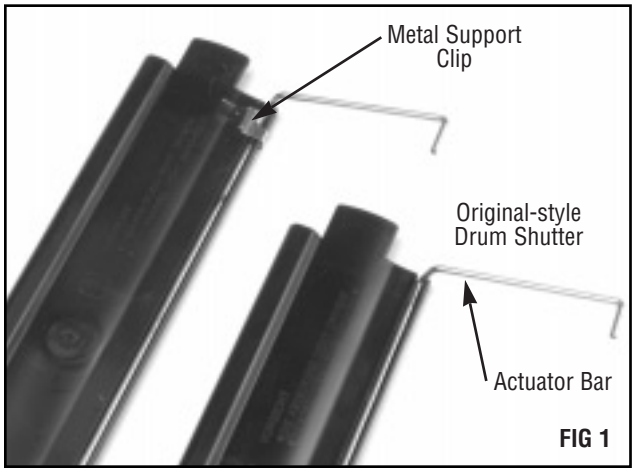

FIG 1

Winter 1995/96
Doctor Blade Contact Modified

The doctor blade contact is housed in the gear housing end plate which is installed at the right end of the hopper section. When the end plate is installed on the end of the hopper, the contact touches the end of the doctor blade stamping. Originally, the end of the contact was bent at a 90° angle, so that the end would contact flush against the stamping (FIG 2). The new configuration of the contact features an additional bend in the contact that creates greater pressure against the stamping when the end plate is installed on the end of the hopper (FIG 3).

Prior to the change in the doctor blade contact, our lab had not encountered any problems through in-house or field testing. We can only conclude that the change was made to assure more reliable contact between the metal contact and doctor blade stamping.

continued on the next page

Original-style Gear Housing End Plate

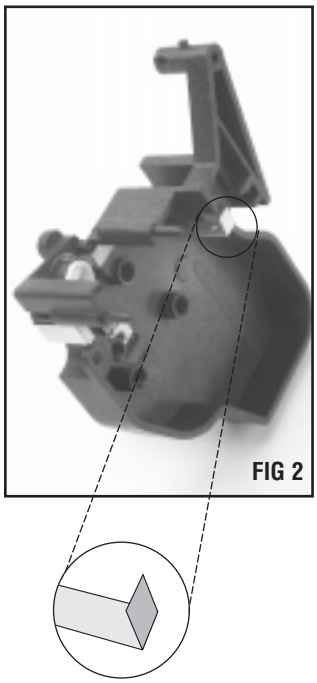
FIG 2

New-style Gear Housing End Plate

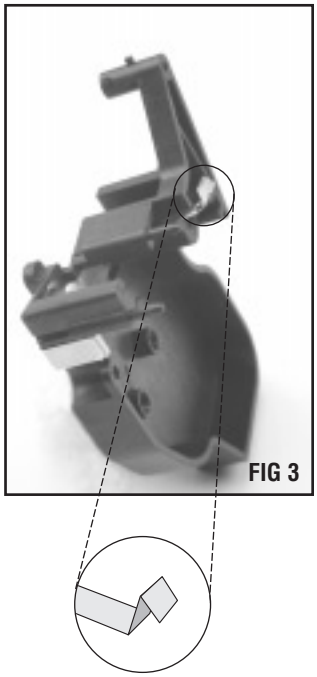
FIG 3

Changes to the Cartridge, continued

March 1996

Cartridge Clip Modified to Include Additional Locking Prongs

In early March 1996, our development lab identified the addition of two locking prongs to the cartridge clip. The original-style cartridge clip incorporated four locking prongs that locked into place on the inside of the hopper (FIG 4). The new-style clip uses the same design, but has two additional prongs on the sides of the square post for increased support (FIG 5). With a total of six prongs securing the clip, it is more difficult to remove the clip from the cartridge. The material dimensions of the new-style clip also appear to be thinner than that of the original clip. Consequently, there is a much higher probability that the clip will break upon removal. *(For more information regarding cartridge clips, refer to SSS 53-E, Problem Solving)*

Original-style Cartridge Clip

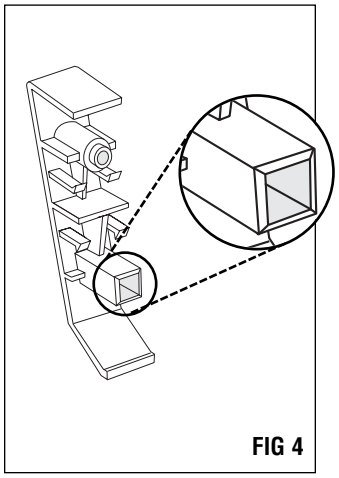

FIG 4

New-style Cartridge Clip

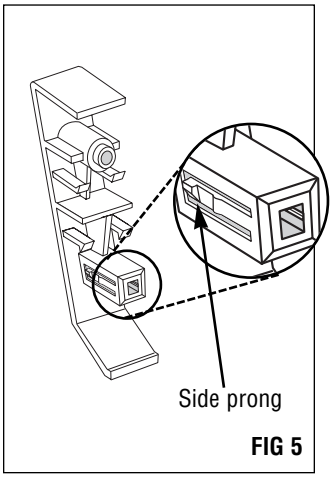

FIG 5

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