Canon® FX-V(LBP-KX)

Remanufacturing Instructions

About the Cartridge

The FX-V cartridge was first introduced to North American and European markets in Canon's® LaserClass 8000 plain paper fax machine. The cartridge, however, is not exactly new. It has been sold with numerous printers marketed in Japan and China which are based on the KX (EP-K) engine.

The FX-V cartridge is similar in design to the BX (BXII) cartridge which is also a wide format cartridge. The FX-V cartridge sections are held together by two cartridge pins and two hopper tension springs. The **cartridge pins** are installed in casings at the ends of the cartridge. Since the OEM cartridge pin is completely straight, without a raised head that can be easily grasped with pliers, the pin can be somewhat difficult to remove if the pin is pushed too far into the cartridge casing. Static Control developed a cartridge pin for ease of use and complete compatibility with the FX-V cartridge. Push the pins into the cartridge casing to install; use flush-cutting pliers to remove.

Long and short **hopper tension** springs maintain pressure between the waste bin and toner hopper sections so that the mag roller bushings stay properly seated on the drum. Our testing has shown that springs,

particularly the long spring, which are stretched, missing, or installed in the wrong position can contribute to light print problems. Both short and long replacement springs are available.

The **waste bin section** houses the drum, PCR, wiper blade and recovery blade assembly. An Odyssey™ replacement **drum** with gears installed is available for the FX-V cartridge.

To maximize **Primary Charge Roller (PCR)** performance and longevity, we recommend recoating the PCR after the OEM cycle. Static Control offers two recoating programs in which PCRs are guaranteed for either one or five remanufacturing cycles. *See page 3 for more details.*

The **wiper blade** features a layer of foam installed on the stamping. For best performance, we recommend replacing the wiper blade each time you replace the drum.

The mylar **recovery blade** is mounted to a metal stamping that is secured to the waste bin section with two screws. Damaged blades can be replaced with either mylar or PolyBlade™ replacements.

The drum shutter is a potential cause of damage to the drum. The shutter can slap or rub against the drum during shipping or when the cartridge is gripped in the shutter area. As such, a **drum shutter felt** is an essential aftermarket component in order to prevent scratches or nicks on the drum.

The **toner hopper section** houses the mag roller, doctor blade and toner. The FX-V uses a

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World Wide Web

www.scc-inc.com

Need Help?
Call Technical Support
1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)

Remanufacturing Information

Estimated Remanufacturing Time	15-30 mins.
Sug. Remanufactured Cartridge Price	$100-140
Standard Toner Weight	340 grams
Toner Class	Monocomponent, magnetic
Recommended Test Fax	Canon LaserClass 8000 Fax

About the Cartridge

black, coated **mag 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 toner and properly deliver it to the OPC. The result is lighter and lighter print over the life of the mag roller.

When the OEM mag roller begins to contribute to light print, recoat the mag roller sleeve through Static Control's **EnduraMag**™ recoating program. Recoated mag roller sleeves are rated at 35,000 when used with SCC system-qualified components. *For more details, see page 3*.

Static Control's (SCC) FX-V replacement **doctor blade** was developed in conjunction with other SCC FX-V system components. For best results, use the replacement blade in combination with SCC's FX-V Laser/Fax toner, EnduraMag mag roller, and Odyssey drum.

The doctor blade uses **plastic wipers** installed at each end of the stamping that wipe the ends of the mag roller sleeve to prevent toner from adhering to the sleeve. When replacing the doctor blade, remove the wipers and install them on the replacement blade using adhesive strips included with Static Control's replacement doctor blade. **Doctor blade sealing foam** is installed to the hopper body to prevent leakage from underneath the doctor blade stamping.

Toner for the FX-V application is available in either 340 or 400 gram weights.

The hopper is sealed using a **gasket sealing assembly** similar to the seal used in the BX (BXII) cartridge. Note that this seal is not a "lay in" type of seal. The rear edge of the gasket is anchored in a groove at the rear of the seal channel. The key to a secure seal and leakage prevention is removing the OEM seal filament material and locking the seal in the groove.

Sealing the FX-V hopper requires removal of the **seal exit port plug (left) and the seal channel plug (right), toner low sensor bar and mag roller felts**. Once a new seal is installed, aftermarket toner sensor bar brackets are installed in the sealing channel to secure the toner low bar to the hopper. All installation tools, cleaning tools and replacement items are included in the FX-V Gasket Sealing Assembly Installation Kit (FX5GSAKIT). *An overview of the sealing process is included with the remanufacturing instructions in this manual on page 18. For more information about the toner low sensor bar, refer to SSS 99-E, Problem Solving.*

Tools and Supplies You Will Need:

For basic remanufacturing:
- Phillips Screwdriver
- Standard Flat-Blade Screwdriver
- Extended-Length Needlenose Pliers
- Funnel for Toner Bottle
- Compressed Air for Cleaning . . . .*(See next page)*
- Lint-Free Foam Tip Swab . . . . .LFSWAB
- Cotton Swab . . . . .QTIP
- 91-99% Isopropyl Alcohol . . . .*(See next page)*
- Conductive Cartridge Lubricant . . . . .CONCLUBE
- Kynar® Powder . . . . .KPOW
- Long, Shallow Trough for Dipping the Wiper Blade
- Toner . . . . .FX5-340B or FX5-400B

Item Codes for individual replacement items are included in the instructions.

For seal installation use the following kit in addition to the items listed above:
- FX-V Gasket Sealing Assembly Installation Kit: FX5GSAKIT

Includes: FX-V GSA seals, pull tabs with dots, hopper fixture, curved scraper blade tool, knife blade tool, installation tool, mag roller felts, toner low sensor bar brackets, vertical flush-cutting pliers.

Recommended Reference Information

SSS 100, Cleaning Tools, Tips & Techniques

This four-page technical bulletin provides important guidelines for using compressed air, toner vacuums, isopropyl alcohol, conductive cartridge lubricant and other cleaning products. **We recommend reading this guide thoroughly before remanufacturing the cartridge.**

SSS 99-E, Problem Solving for the FX-V(KX) Cartridge

Provides solutions to unique problems, along with a guide of products and procedures that will make remanufacturing the FX-V(KX) cartridge easier.

Special Considerations

FX-V Primary Charge Roller Recoating Program

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

5/15-cycle Remanufactured PCR

With the 15-Cycle Program, the initial recoating is guaranteed for 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.

FX-V(KX) 5/15-Cycle Remanufactured PCR: FX5RMPCR (on exchange basis)

One-Cycle Remanufactured PCR

Static Control also offer 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.

FX-V(KX) One-Cycle Remanufactured PCR: 1CFX5RMPCR (on exchange basis)

For optimum performance use the 15-Cycle and One-Cycle Remanufactured PCR with Static Control's FX-V(KX) system components.

Use of Compressed Air

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.

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.

EnduraMag™ Mag Roller Recoating Program

With every page printed the OEM mag roller wears and eventually its performance no longer can meet your requirements. Through Static Control's EnduraMag recoating program, qualified OEM mag roller sleeves can be recoated with a revolutionary thin film metal coating that restores print performance and offers unparalleled durability and reliability.

The FX-V EnduraMag is rated at 35,000 pages when used in combination with Static Control's FX-V Laser/Fax toner and FX-V Odyssey™ drum. The sleeve can be recoated again and again after each 35,000 page interval, provided the sleeve is not damaged. Cleanup between remanufacturing cycles requires only dry, filtered compressed air. *Contact your Static Control Sales Team for program details and important packaging information.*

FX-V(KX) Remanufactured Mag Roller: FX5RMFMDR (EnduraMag; on exchange basis)

EnduraMag™ Assembly/Disassembly Instructions (Required)

As part of FX-V(KX) mag roller recoating, you will also need SSS 113, *EnduraMag Mag Roller Disassembly/Assembly Instructions*, which explain how to assemble and disassemble the mag roller.

FX-V(KX) EnduraMag Assembly/Disassembly Instructions: System Support Series 113
(This kit and instructions are REQUIRED in order to properly disassemble the mag roller sleeve. Read instructions carefully before disassembling the mag roller.)

Separating the Cartridge

1. **Remove the hopper tension springs.**
   Orient the cartridge so the cartridge label is face down on your work surface. Remove one spring from each end of the cartridge (FIG 1).

   If you lose, stretch or deform the OEM springs, use Static Control's replacement hopper tension springs.
   Hopper Tension Spring-Long (FX5HTS-L)
   Hopper Tension Spring-Short (FX5HTS-S)

   For more information about hopper tension springs and an example of a stretched spring, refer to SSS 99-E, Problem Solving.

Two Hopper Tension Springs
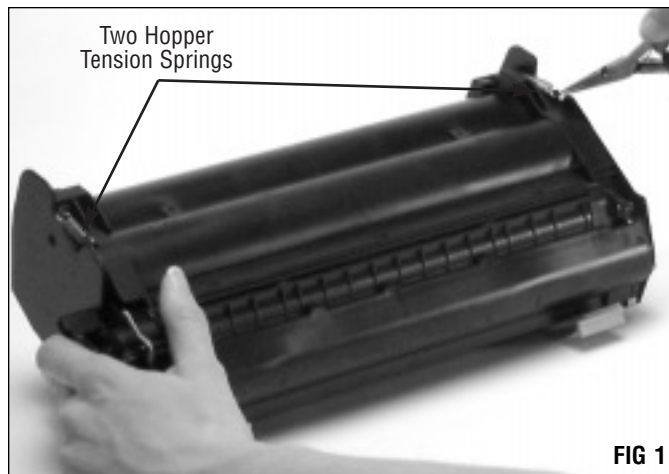
FIG 1

2. **Remove one cartridge pin from each end of the cartridge.**
   To remove OEM cartridge pins, use a pair of side cutters to grasp the end of a pin and remove it from the cartridge (FIGs 2 and 3).

   ⚠ CAUTION Do not attempt to remove the pins by tapping them through the pin casing to the interior of the cartridge. A stop incorporated into the interior of the waste bin section prevents the pins from being pushed completely through. The pin installed on the spur gear end of the cartridge can become stuck in the casing if the pin is pushed too far into the casing.

   To remove SCC cartridge pins, use a pair of flush- or semi-flush cutters to grasp the head of the pin and remove it from the cartridge.

   For best results, replace the OEM cartridge pins with SCC's Cartridge Pins (CARTPIN-S) which are designed specifically for the FX-V(KX) application.
   (FX-V cartridge pins are identified by two small dots on the head of the pin)

OEM Cartridge Pin

FIG 2

OEM Cartridge Pin
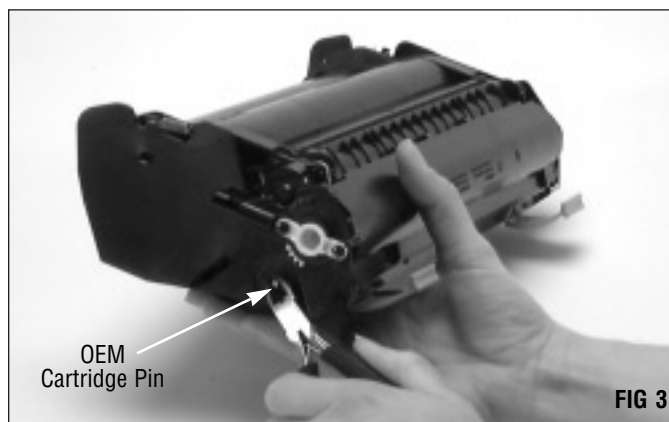
FIG 3

3. **Separate the hopper and waste bin sections.**
   As you separate the cartridge, hold the drum shutter open
   to avoid damage to the drum (FIG 4).

Hopper Section

Waste Bin Section

Hold Drum
Shutter Open

FIG 4
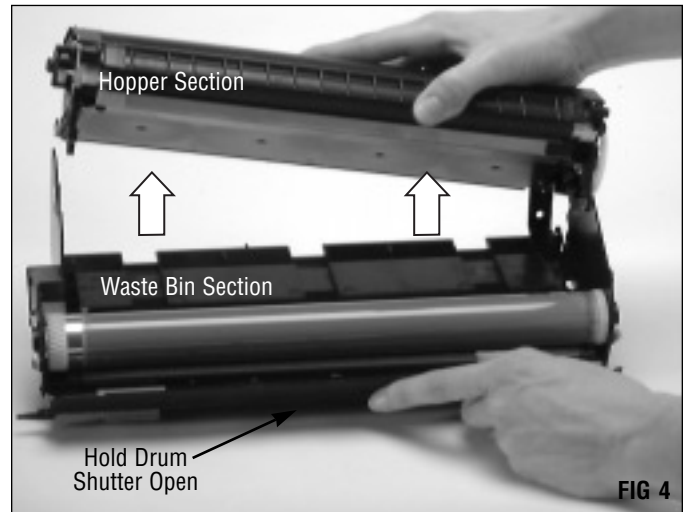
Disassembling the Waste Bin Section

1. **Remove the drum axles.**

   Remove two screws from each drum axle, then remove the drum axle (FIGs 5, 6, 7 and 8).

Drum Spur Gear Axle (Contact Side)

FIG 5

FIG 6

Drum Helical Gear Axle

FIG 7

FIG 8
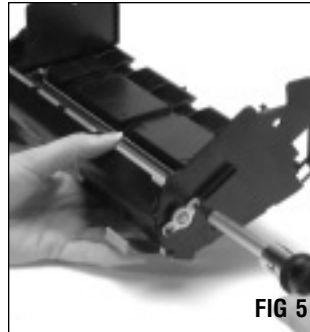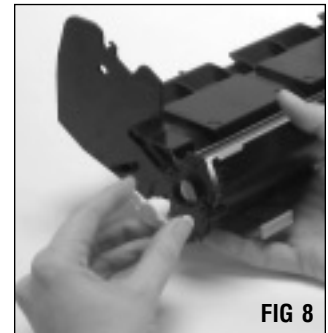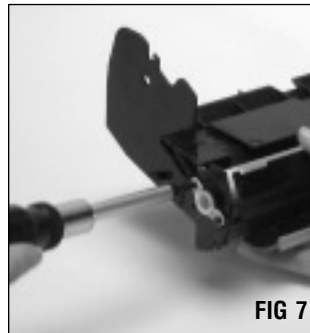
2. **Remove the OPC drum.**

   Hold the drum shutter in an "open" position for better access to the drum. Grasp the drum by the helical gear and lift the drum from the waste bin as shown in FIG 9.

   If you plan to reuse the drum, store it in an area that is protected from light and impact damage.

   If you plan to replace the drum, use an FX-V(KX) Odyssey OPC Drum (OSFX5DRUM). However, leave the drum packaged until you are ready to install it.

Helical Gear

Hold Shutter in Open Position

FIG 9
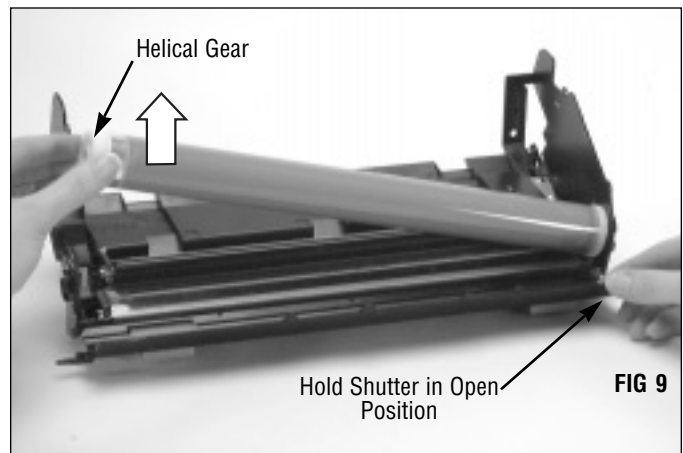
3. Remove the PCR.

Handle the PCR by the shaft ends to avoid damage to the surface of the roller (FIG 10).

If you are reusing Static Control's 5/15-Cycle PCR or OEM PCR, store it in an area that is protected from impact damage.

◪ CAUTION Dents on the surface of SCC remanufactured or OEM PCRs can prevent the PCR from being recoated.
• DO NOT stack PCRs.
• DO NOT lay anything on top of the PCRs.
• DO NOT wrap PCRs with rubber bands.
• DO NOT touch the surface of the PCR with your bare fingers.

The 5/15-Cycle Remanufactured PCR can be used up to five remanufacturing cycles before recoating is required. After the initial recoating, the PCR can be recoated two additional times for a total of 15 remanufacturing cycles.

The One-Cycle Remanufactured PCR is guaranteed for one remanufacturing cycle, after which it requires recoating. The one-cycle PCR can be recoated indefinitely provided the roller is not damaged.

If you plan to recoat an OEM PCR, SCC 5/15-cycle Remanufactured PCR, or One-Cycle Remanufactured PCR contact your Static Control Sales Team for program and packaging details.
5/15-Cycle first recoat (FX5RMPCR; on exchange basis)
5/15-Cycle second recoat (FX5RMPCR-2; on exchange basis)
5/15-Cycle third recoat (FX5RMPCR-3; on exchange basis)
One-Cycle Remanufactured PCR (1CFX5RMPCR)

4. Remove the wiper blade.

Remove two screws from the stamping; then carefully lift the blade from the waste bin (FIGs 11 and 12).
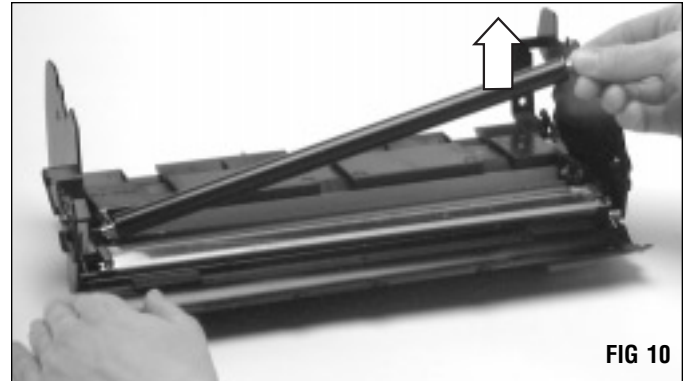

FIG 10

Remove Two Screws
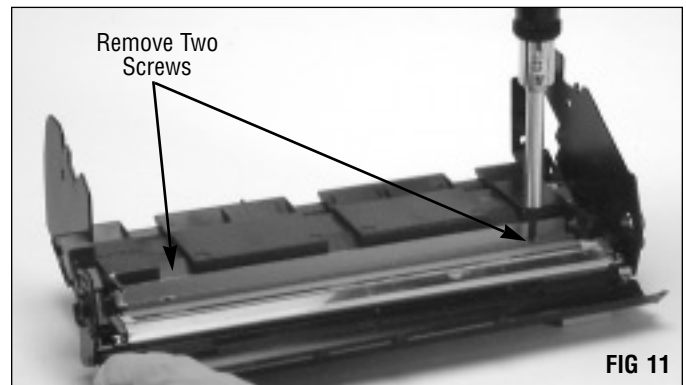
FIG 11
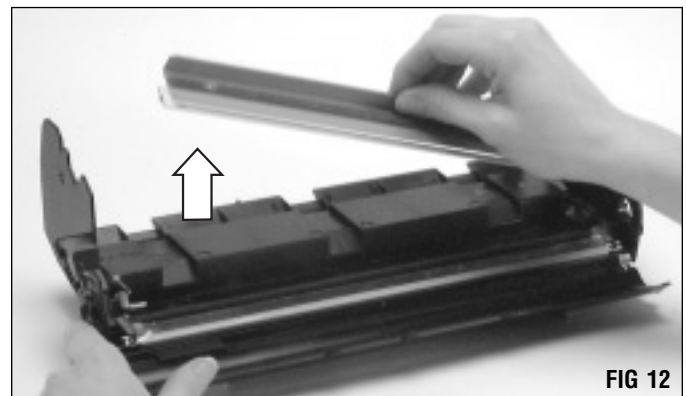
FIG 12

Disassembling the Waste Bin Section

5. Clean the waste bin section.
Empty the bulk of the waste toner and clean the waste bin with dry, filtered compressed air (FIG 13). Direct compressed air on and around the wiper blade sealing foam and end foams to remove toner and debris from the foam material. Be careful not to bend or damage the recovery blade.

Wiper Blade Sealing Foam

Wiper Blade End Foam
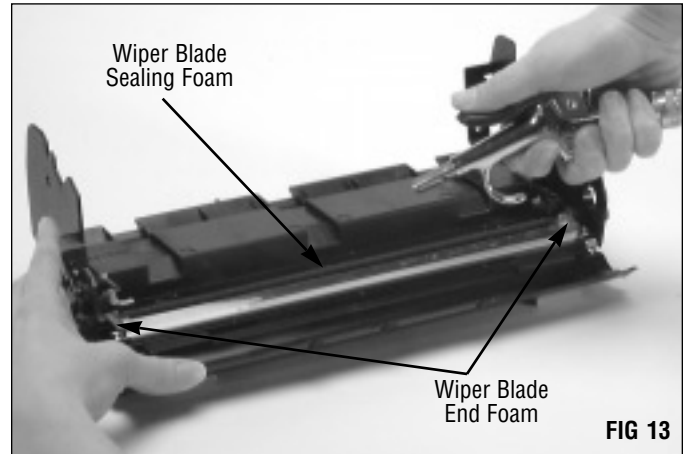
FIG 13

6. Inspect the wiper blade sealing foam, wiper blade end foams, and recovery blade (FIG 14).

Foam components, such as the Wiper Blade Sealing Foam (FX5WBSFOAM) and Wiper Blade End Foams (FX5WBEFOAM) 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. Also note that sealing foam is installed underneath the recovery blade assembly. This foam can also be a source of leakage if ripped, torn or missing.

The **recovery blade** should display a smooth, flat surface without kinks or waviness along the edge. Replace the blade if it is damaged or dislodged. Replace the blade only; a replacement assembly is not available.
Recovery Blade-Mylar (FX5RECBLADE)
  (installation tool recommended - RBITOOL)
Recovery Blade-Poly (PRECB-FX5)

Instructions detailing the installation of the components mentioned above are included with the product.

Recovery Blade

Wiper Blade Sealing Foam

Wiper Blade End Foams
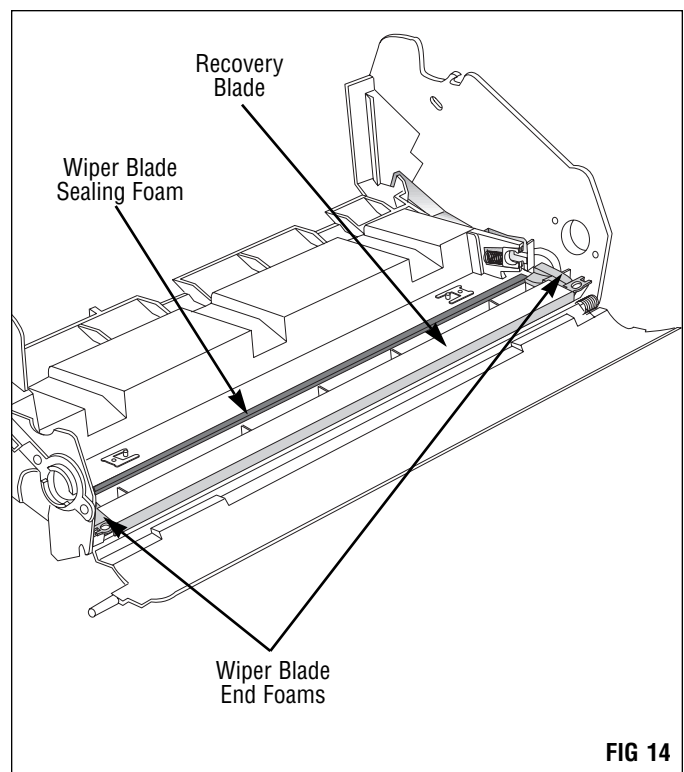
FIG 14

Assembling the Waste Bin Section

1. **Install a drum shutter felt (FIG 15).**
   The Drum Shutter Felt (FXDSFELT) is an aftermarket component used to protect the drum from impact damage caused by the drum shutter.

   Replace the drum shutter felt if it is detached or missing.

   Complete instructions regarding felt installation are included with the product.

Drum Shutter Felt
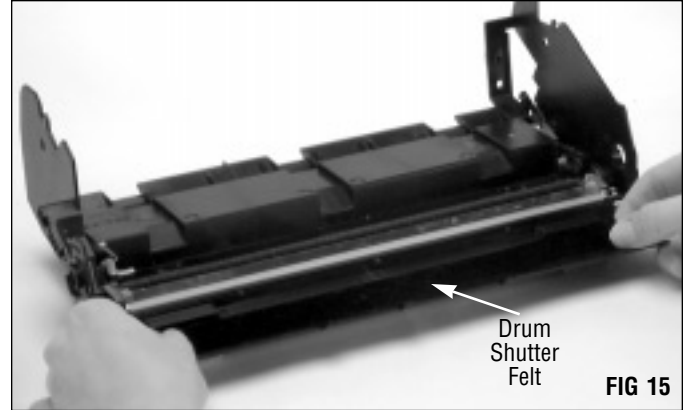
FIG 15

2. **Clean the PCR saddle.**
   Clean any toner residue from the saddles using a lint-free swab dampened with 91-99% isopropyl alcohol (FIG 16).

   CAUTION Do not lubricate the PCR shaft or saddle. Lubricant is not present in these areas on the OEM cartridge.

PCR Saddle
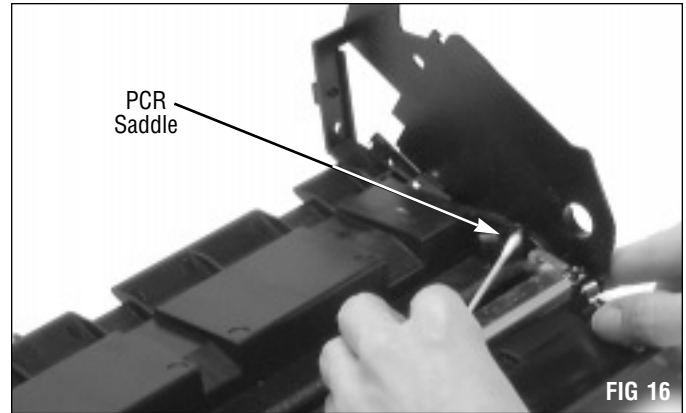
FIG 16

3. **Clean and inspect the wiper blade.**

   CAUTION Do not use alcohol or any alcohol-based solvent to clean the polyurethane blade.

   If you plan to reuse the wiper blade, clean it with dry, filtered compressed air only (FIG17). Direct air close to the foam on the stamping to remove toner and debris.

   If pre-test prints show wiper blade-related defects or if you notice nicks or other defects on the working edge of the blade, replace the wiper blade.

   For best results, replace the Wiper Blade (FX5BLADE) each time you replace the drum.

Wiper Blade Sealing Foam
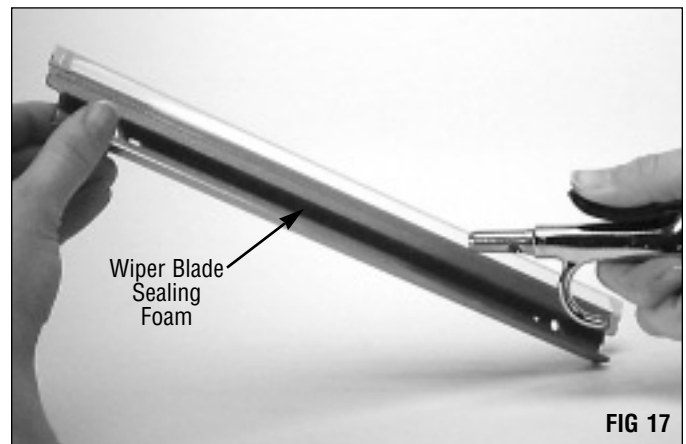
FIG 17

Assembling the Waste Bin Section

4. **Pad the wiper blade.**
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 18. Examine the blade to ensure even coverage. Repeat.
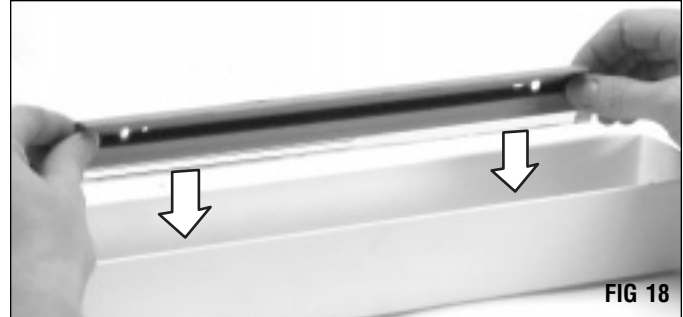
FIG 18

5. **Install the wiper blade.**
Position the stamping over the locating posts on the waste bin section and secure the blade with two Phillips screws (FIG 19).
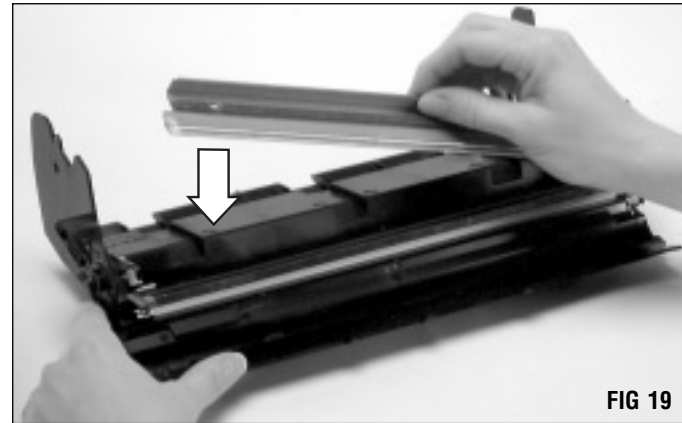
FIG 19

6. **Clean and inspect the SCC 5/15-Cycle or OEM PCR (FIG 20).**
If you are reusing the PCR, follow the guidelines below for cleaning:

SCC 5/15-Cycle PCR: Gently wipe the PCR in one direction using a lint-free cloth dampened with isopropyl alcohol.

OEM PCR: Gently wipe the PCR in one direction using a lint-free cloth dampened with WATER.

> **⚠ CAUTION** Do not pinch or dent the surface of the PCR as the material has poor memory. DO NOT lubricate the PCR shaft or PCR saddles.

If, upon inspection, you find dents or cracks in the surface of the roller, replace the PCR with a functional OEM PCR or SCC Remanufactured PCR.

Wipe PCR in One Direction Only

FIG 20

7.   Install the PCR.
Position one end of the PCR in the conductive PCR saddle at the right end of the hopper as shown in FIG 21. Then seat the other end of the PCR.

Conductive PCR Saddle

FIG 21
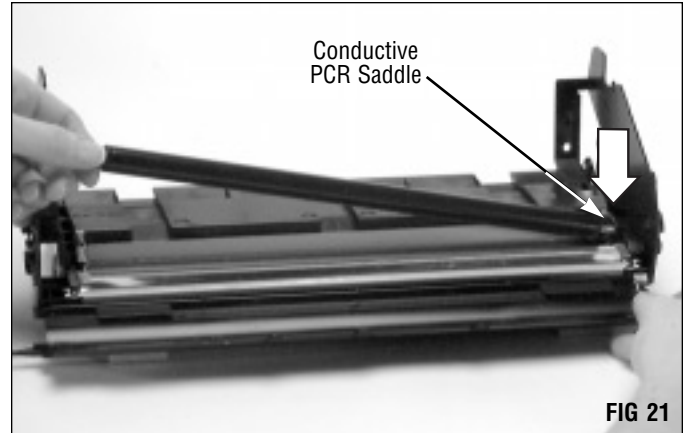
8.   Clean and inspect the drum.

⬛ **CAUTION** Do not use cleaning agents or coatings on the drum. Be careful not to touch the drum with your fingers or the compressed air nozzle

If you plan to use the drum for another remanufacturing cycle, clean the drum with dry, filtered compressed air (FIG 22).

Replace the drum with SCC's Odyssey OPC Drum (OSFX-5DRUM) if deep concentric wear lines or cracks in the coating are apparent. If you replace the drum, we also recommend replacing the wiper blade. *(Steps 4-5 on page 10)*

FIG 22

9.   Pad the drum.
Kynar Lubricating Powder (KPOW) applied to the surface of the drum will prevent wiper blade "flip overs" during the first rotations of the drum in the newly remanufactured cartridge.

Pad the coated area of the drum with Kynar being careful to avoid Kynar on the gears (FIG 23). Pad the drum regardless of whether you are reusing a new replacement drum or reusing the old drum.

FIG 23

Assembling the Waste Bin Section

10. **Install the drum.**
    Note that spur gear is installed on the contact end (right end) as shown in FIG 24.

Note Electrical Contacts This End

Spur Gear

FIG 24
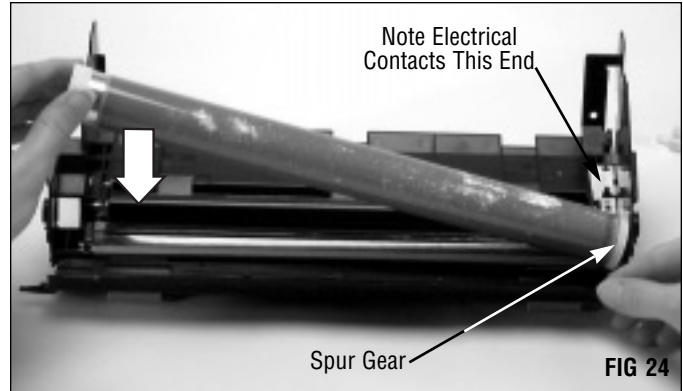
11. **Install the drum axles and secure with Phillips screws.**
    Note the placement of the drum helical gear axle at the left end of the cartridge and the drum spur gear axle at the right end of the waste bin of the cartridge (FIGs 25 and 26).

Drum Helical Gear Axle

FIG 25

Drum Spur Gear Axle

Drum Spur Gear Axle (Contains Contact)

FIG 26
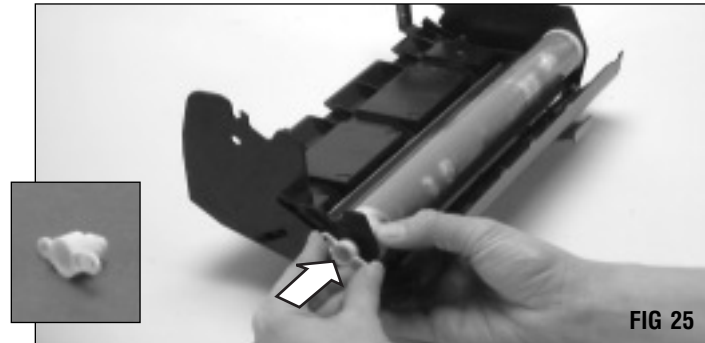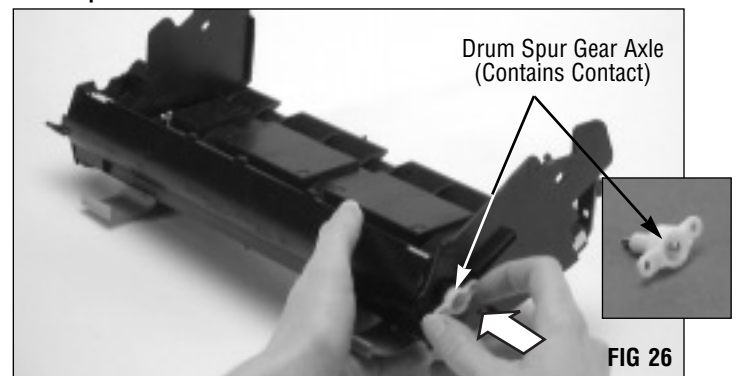
12. **Rotate the drum.**

    Rotate the drum in its normal rotational direction, as shown by the arrow in FIG 27, at least 6 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 27 .

    You can also use dry, filtered compressed air instead of the vacuum to remove the Kynar from the PCR.
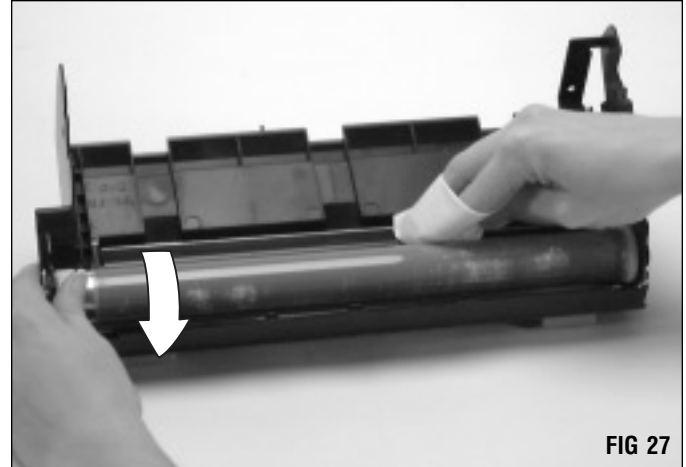
    ▌ **CAUTION** Make sure there is no Kynar present on the PCR, otherwise repeating voids in solid print areas at the PCR interval may result.

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

FIG 27

Disassembling the Toner Hopper Section

1. **Place the hopper section in the hopper fixture as shown in FIG 28.**
   A Plexiglass Hopper Fixture (FX5JIG) is available to facilitate assembly and disassembly of the the hopper section. To prevent the fixture from shifting, secure it to your surface with bolts or C-clamps.

FIG 28
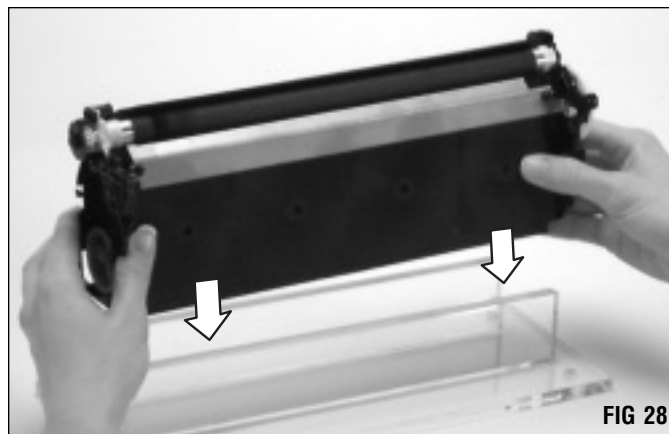
2. **Remove the mag roller end plate at the left end of the hopper section.**
   Remove two Phillips screws, then remove the end plate (FIGs 29 and 30).

FIG 29

Mag Roller
End Plate

FIG 30
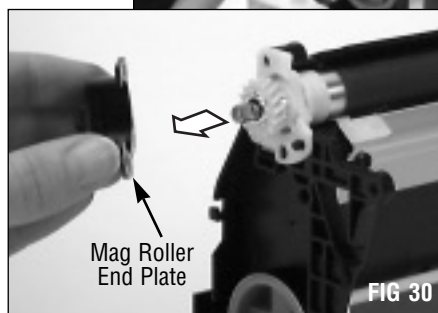
3. **Remove the mag roller drive gear (FIG 31).**

4. **Remove the mag roller stabilizer (FIG 32).**

Mag Roller
Drive Gear

FIG 31
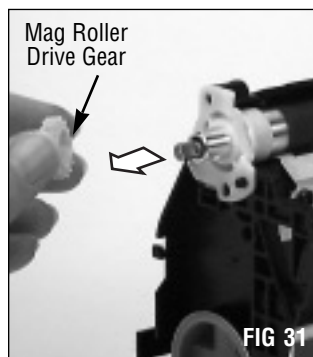
Mag Roller
Stabilizer

FIG 32

5. **Remove the gear housing end plate (right end).**
    Remove three screws from the end plate (FIG 33). Note that one of the screws is behind the toner agitator drive gear. Turn the gear until you can access the screw through one of the holes in the gear (FIG 34). Remove the end plate (FIG 35).

FIG 33

FIG 34

Gear Housing End Plate   FIG 35
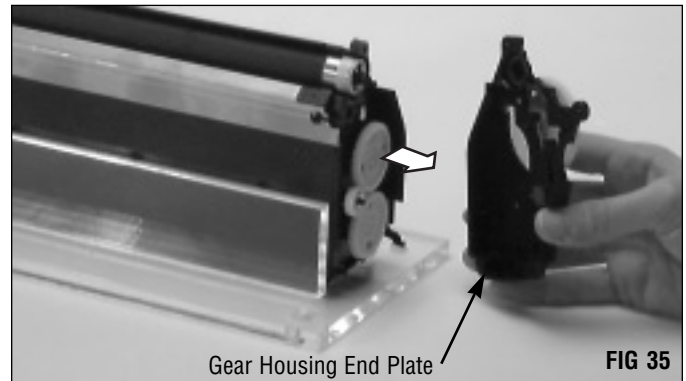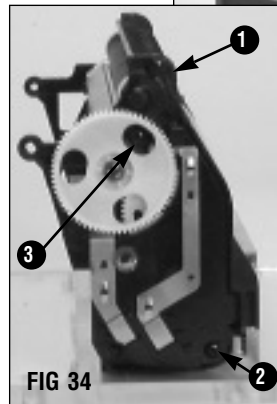
6. **Remove the mag roller.**

    ⚠ CAUTION Do not touch the surface of the mag roller with your fingers or scratch the surface of the roller. Store the mag roller on a soft surface. Do not stack.

    Grasp the axles at each end of the mag roller as shown in FIG 36 and carefully remove the roller from the hopper. Be careful not to lose the mag roller bushings.

    If you plan to reuse the mag roller, store it on a soft surface. DO NOT stack mag rollers.

    If the mag roller contributes to light print, replace it with SCC's EnduraMag Recoated Mag Roller (FX5RMFMDR) which is rated at 35,000 pages when used in combination with SCC-qualified components. The program works on an exchange basis. *For more information, see page 3 of this manual.*

Mag Roller Bushings

FIG 36
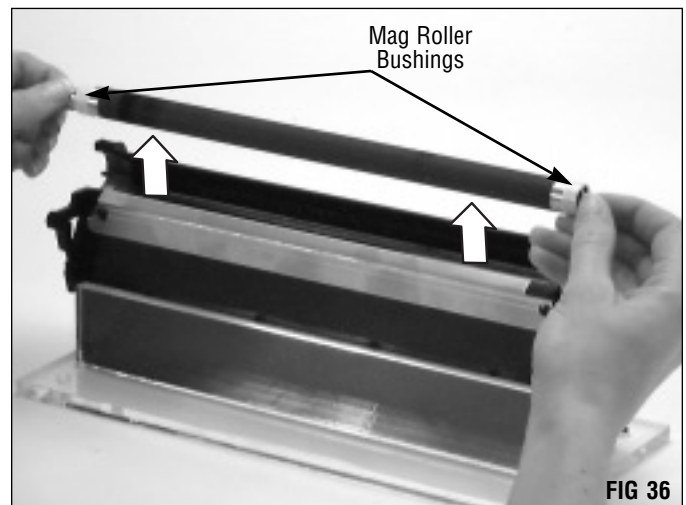
Disassembling the Toner Hopper Section

7. **Remove the doctor blade.**
   Remove two Phillips screws from the stamping, then lift the blade from the hopper (FIGs 37 and 38).

Remove Two Phillips Screws

FIG 37

FIG 38
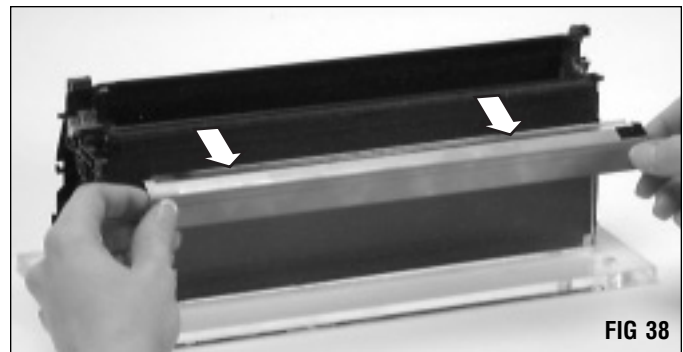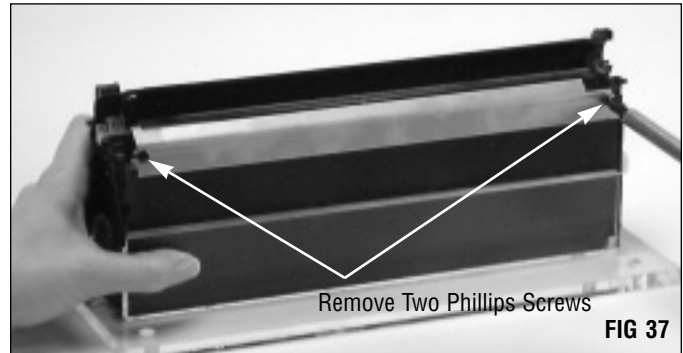
8. **Clean the hopper.**
   Dump the bulk of the toner, then use dry, filtered compressed air or a toner vacuum to thoroughly clean the hopper (FIG 39). Direct dry, filtered compressed air on and around the doctor blade sealing foam and mag roller felts to remove as much toner and debris as possible.

Mag Roller Felt
(One at Each End)

Doctor Blade
Sealing Foam

FIG 39
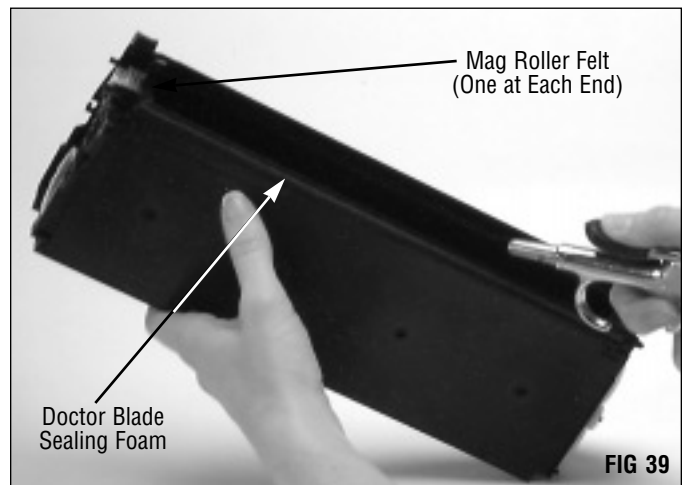
9. **Inspect the sealing components in the hopper section and replace as required (FIG 40).**

    The **Doctor Blade Sealing Foam** (FX5DBSFOAM) should display a smooth, clean surface. Make sure the foam material is secured in the correct position. Replace the foam components that are ripped, pitted or dislodged.

    Mag Roller Felts (LXMRFELT) 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 the mag roller felts must be removed in order to install a seal in the hopper.

    Instructions detailing the installation of the components mentioned above are included with the product.

Mag Roller Felts

Doctor Blade Sealing Foam
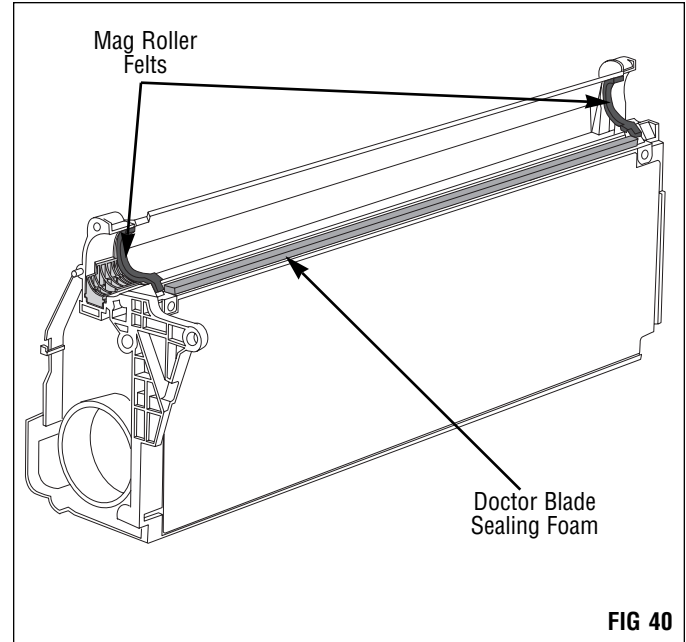
FIG 40

Before You Continue...

If you plan to **seal the hopper**, proceed to page 18 for an overview of SCC's FX-V gasket seal installation. The section is provided to show you an *overview* of the installation process; however, do not use these instructions as a substitute for the complete instructions included in the FX-V Gasket Seal Kit (FX5GSAKIT). Do not attempt to seal the hopper without thoroughly reading the instructions included with the kit.

If you plan to **fill the hopper, but not install a seal,** proceed to page 25 to reassemble the toner hopper section. Then follow the instructions on page 29 to fill the hopper.

Installing a Seal - OVERVIEW

Features
- Easy-to-install...Peel-to-expose adhesive backing
- Reliable user removal, seal pull force characteristics
- Toner port bridge and thin rigid base maintain toner port opening during installation
- 100% leak-free performance
- True OEM-style appearance and functionality
- Installation kit lets you maximize production rates with zero failures

KX Gasket Seal Installation Kit
The kit (FX5GSAKIT) includes the following items:
FX-V gasket sealing assembly seals, pull tabs with dots, hopper fixture, curved scraper blade tool, knife blade tool, installation tool, mag roller felts, toner sensor bar brackets.

Note that the toner low sensor bar must be removed before installing a new seal or removing an old seal. The bar is reinstalled in the cartridge using a set of brackets to secure the bar in its original position. *For more details, refer to SSS 99-E, FX-V Problem Solving.*

IMPORTANT This section is intended as an OVERVIEW of the FX-V gasket seal and is provided to illustrate the features of the seal and installation process. Do not attempt to use the FX-V gasket seal or the kit contents without thoroughly reading the complete instruction manual provided with the seal installation kit.

Instruction Manual
System Support Series 119
Read instructions thoroughly before installing the seal.

Other Items You Need
- Needle Nose Pliers
- 91-99% Isopropyl alcohol
- Dry, Filtered Compressed Air or a Toner Vacuum

Resupply Items
- Gasket Seal Pack (FX5GSAPK)
- Toner Low Sensor Bar Brackets (FX5TLSBRAC)
- Mag Roller Felts (LXMRFELT)
- Pull Tabs with Dots (LXOEMTAB)

1. **Remove the left and right mag roller felts.**
   In order to install a new seal or remove an old seal, the mag roller felts and seal channel plugs must be removed.

   A curved scraper blade tool is provided in the seal kit to facilitate removal of the mag roller felts (FIGs 41, 42 and 43).

FIG 41

Left Mag Roller Felt

FIG 42
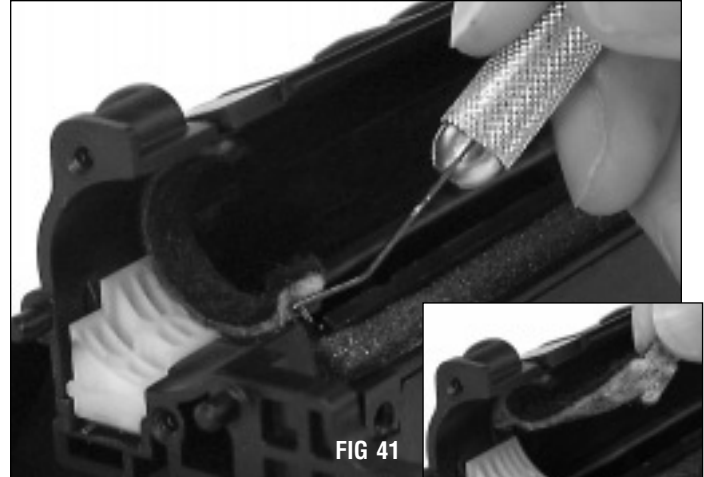
Right Mag Roller Felt

FIG 43

2. **Remove the exit port plug (left) and seal channel plug (right).**
   The plugs are easily removed by using the tip of needle nose pliers to slide the plugs out from the ends of the hopper (FIGs 44 and 45).

Seal
Exit Port
Plug (Left)

FIG 44

Seal Channel
Plug (Right)
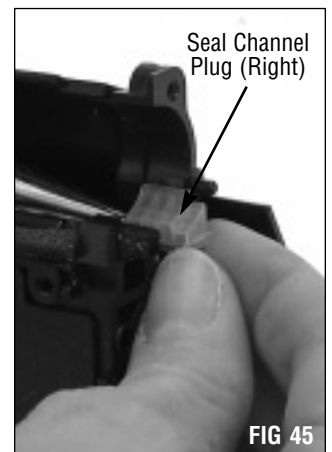
FIG 45

Installing a Seal - OVERVIEW

3. **Remove the toner low sensor bar.**
The toner low sensor bar in the FX-V cartridge is quite different from toner low bars in other Canon-based cartridges. The bar is installed over the seal material and secured to the hopper body with plastic welds. A proper seal can not be established by installing a new seal over the toner low bar, therefore the bar must be removed, then replaced over a newly installed seal.

The plastic welds are easily removed using Vertical Flush-Cutting Pliers (CSFX5-100) which are machined specifically for the FX-V application.

FIG 46 illustrates how the vertical flush-cutting pliers are used to cut the welds. The arrows show the approximate location of the welds.

FIG 47 shows the removal of the toner low sensor bar.

FIG 46

Toner Low Sensor Bar

FIG 47
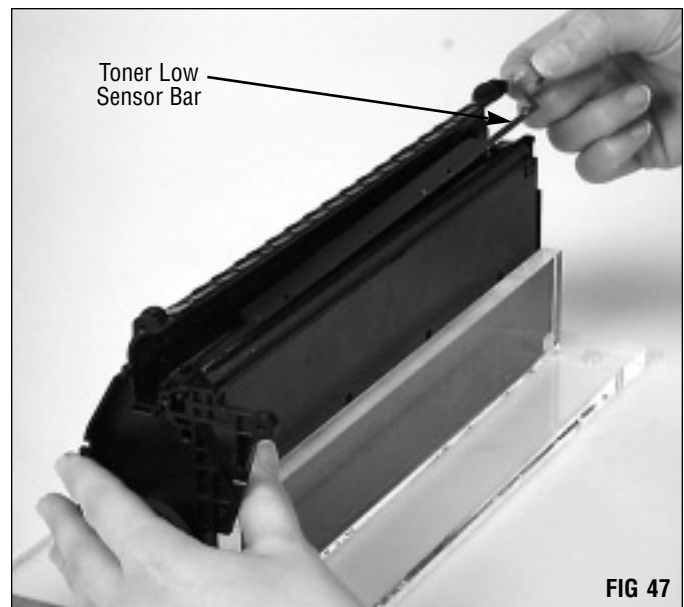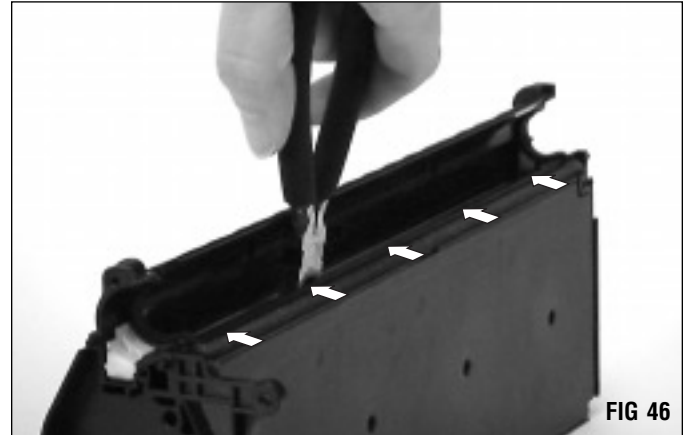
4. **Prepare the hopper.**
To ensure a secure seal with the new gasket seal, it is very important to remove the OEM seal material or a previously used aftermarket seal. Large filaments of OEM seal material trapped underneath the new seal can hinder the seal between the hopper body and adhesive backing on the seal, resulting in leakage from the hopper.

Use the Curved Scraper Blade Tool (CSBTOOL) to remove and scrape off all residual seal material (FIG 48).

Curved Scraper Blade Tool

OEM Seal

FIG 48
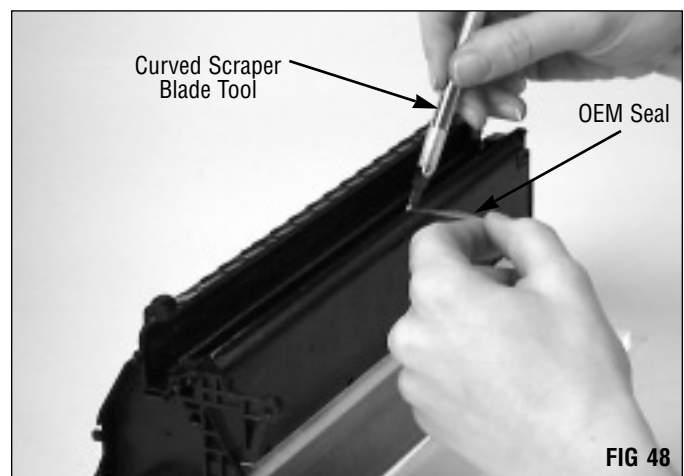
5. **Install the seal.**
    Before the seal is initially positioned in the hopper, the long
    release liner on the seal is folded so that it is accessible
    once the seal is properly positioned in the sealing channel.
    Once the seal is positioned, the backing can be removed
    without disturbing the position of the seal.

    Instead of laying flat in the sealing channel, SCC's gasket
    seal locks into a groove at the back of the hopper sealing
    channel which prevents the seal from lifting up. An
    installation tool included in the kit is used to seat the long
    edge of the seal in the groove. When the edge of the seal is
    properly seated, the entire seal will lie flat in the sealing
    channel.

    Install the seal using the installation tool (FIG 49); remove
    the release liner to secure the seal (FIG 50).

Seal Insertion Tool

Release Liner

FIG 49

Remove Release Liner
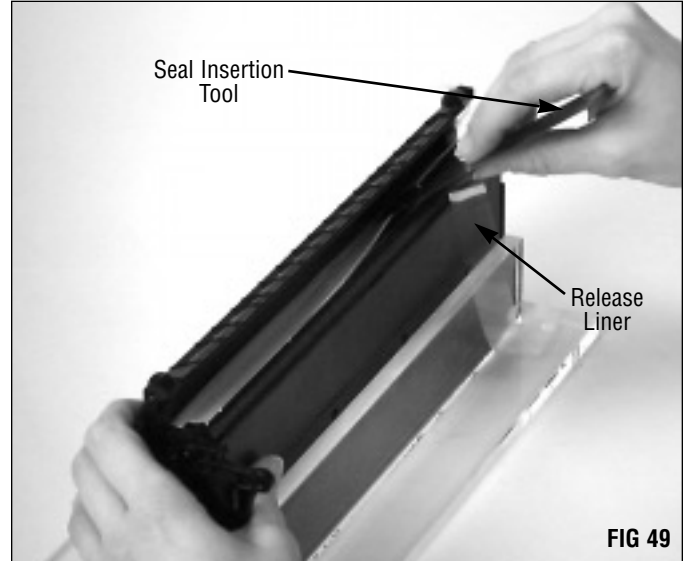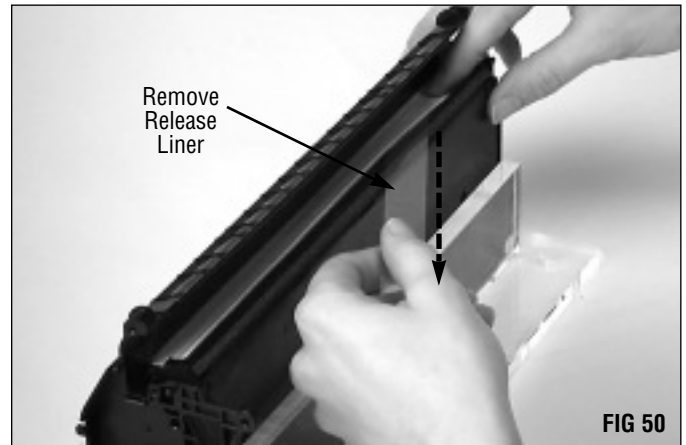
FIG 50

6. **Install the seal exit port plug (left).**
    Fold the pull strip over the gasket sealing assembly. Then,
    install the seal exit port plug (FIG 51).

Seal Exit Port Plug

Seal Pull Strip
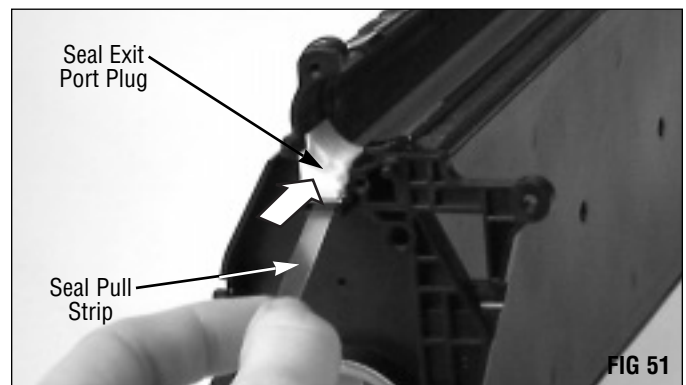
FIG 51

Installing a Seal - OVERVIEW

7. **Install the toner low sensor bar.**
   The toner low sensor bar is installed on top of the newly installed seal (FIG 52). With the plastic rivets removed, three Toner Low Sensor Bar Brackets (FX5TLSBRAC) are used to secure the toner low bar in position without disturbing the seal pull strip or the function of the toner low sensor bar.

Toner Low
Sensor Bar

FIG 52
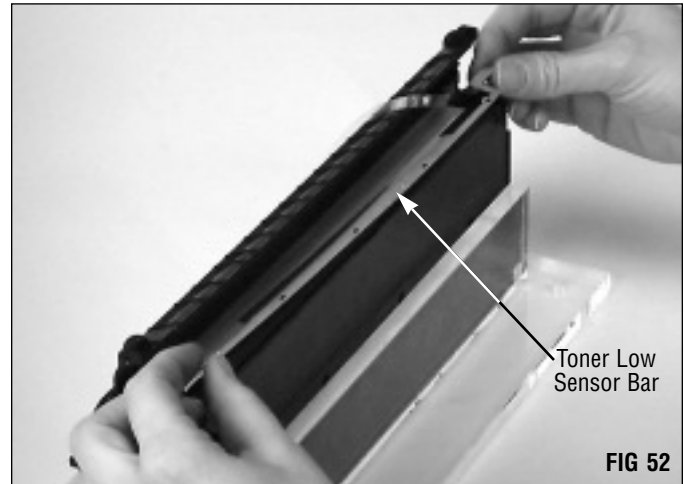
Adhesive applied to the two long sides of the bracket allows the bracket to adhere to the top of the toner low bar and the side of the seal channel (FIGs 53 and 54).

Remove
Backing

Bracket

FIG 53

Adhesive
on Two
Sides

FIG 54
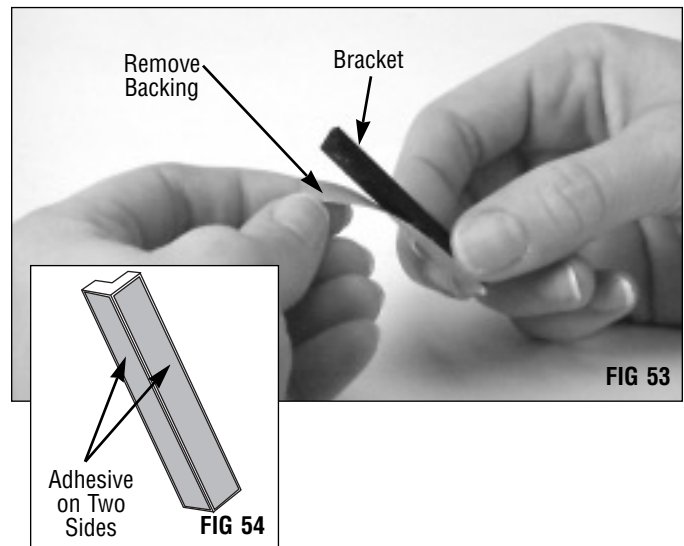
Three brackets are installed along seal channel (FIGs 55 and 56).

Toner Low
Sensor Bar
Brackets

FIG 55

Toner Low Bar Brackets

Bracket

Toner Low Sensor Bar

Seal

Sideview of Bracket Placement

FIG 56
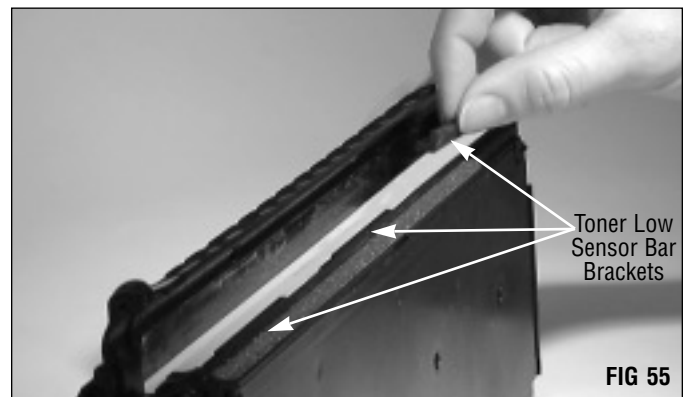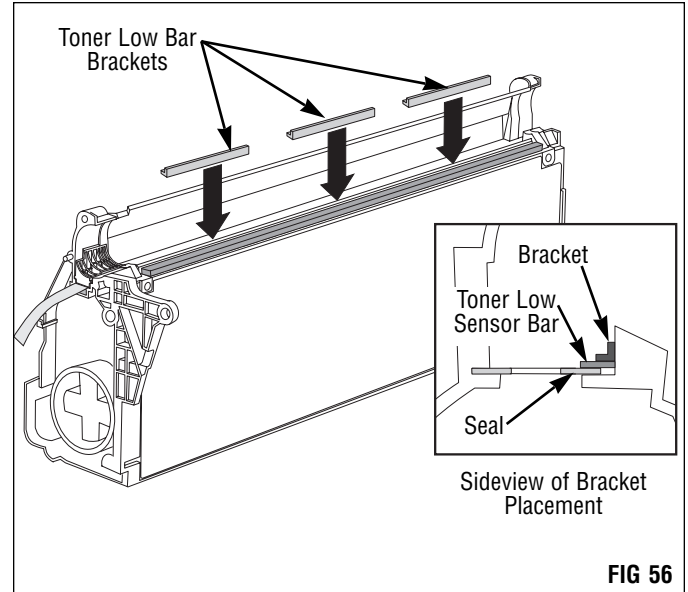
8. **Install the right seal channel plug (FIG 57).**

Right Seal Channel Plug

FIG 57
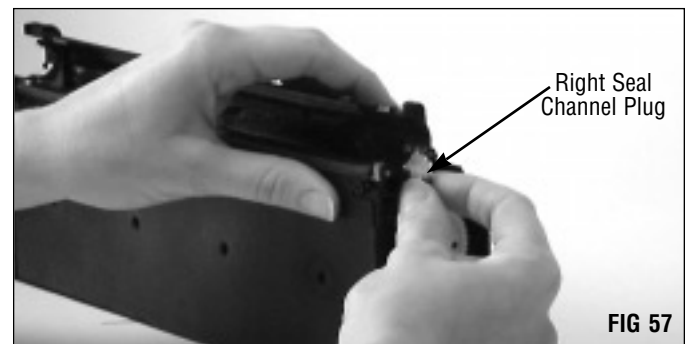
9. **Install a new pair of mag roller felts (FIG 58 and 59).**
    Note that the KX cartridge uses left and right Mag Roller Felts (LXMRFELT). A new pair of felts is included with the seal kit.

FIG 58

FIG 59
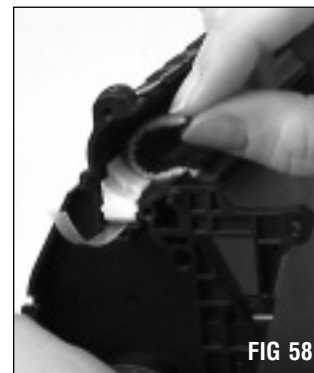
10. **Fill the hopper with toner.**
    FXV/KX Laser/Fax Toner, 340 grams (FX5340B)
    FXV/KX Laser/Fax Toner, 400 grams (FX5400B)

    For pull tab installation, follow the steps in the next section.

Installing a Pull Tab

1. **Install the pull tab in the slot shown in FIG 60.**
   Pull Tab with Adhesive Strips (LXOEMTAB)

Pull strip

Slot

Pull Tab

FIG 60
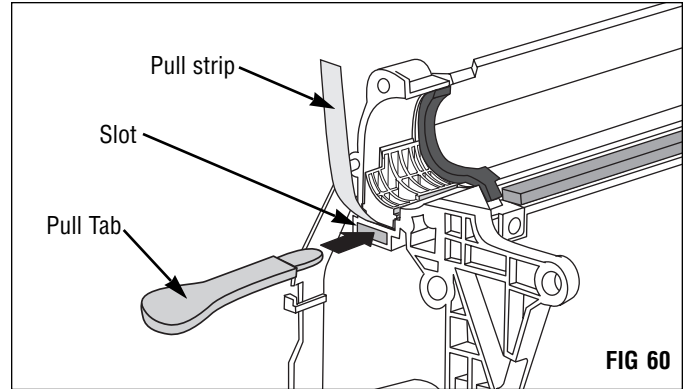
2. **Attach an adhesive strip on the pull tab (FIG 61).**
   Remove the adhesive backing.

Adhesive Strip

FIG 61
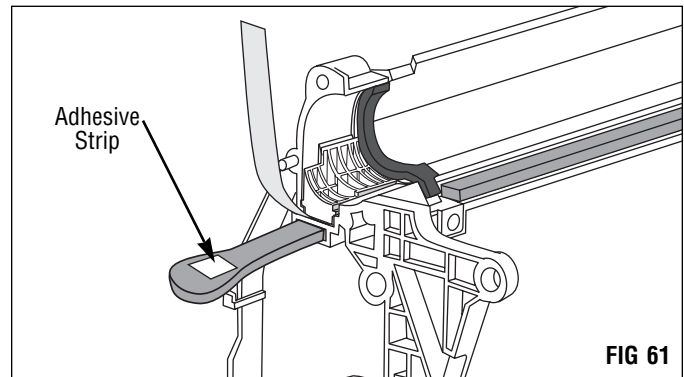
3. **Place the pull strip over the adhesive strip making sure the strip is securely attached to the pull tab (FIG 62).**

FIG 62
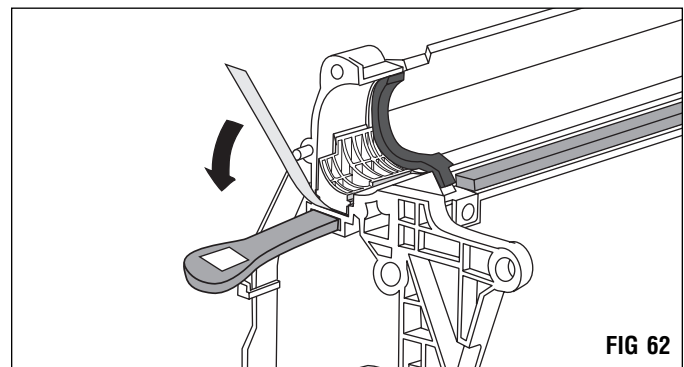
4. **Trim the excess pull strip (FIG 63).**

Trim Excess Strip

FIG 63
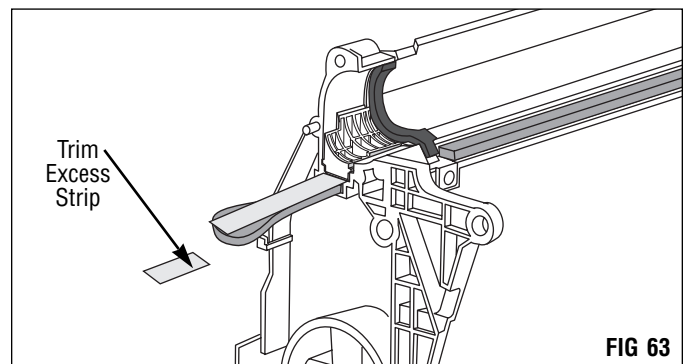
Assembling the Toner Hopper Section

1. **Clean and inspect the doctor blade.**

   CAUTION **Do not use alcohol or alcohol-based cleaners to clean the urethane blade.**

   If you plan to reuse the doctor blade, clean it with dry, filtered compressed air only (FIG 64).

   Refer to pre-test prints to check for doctor blade-related print defects and replace the blade as required.

   For best results, use the SCC FX-V Doctor Blade (FX5DBLADE) in combination with SCC system-qualified components: FX-V Laser/Fax Toner, FX-V Odyssey OPC Drum, and FX-V EnduraMag.
   (SCC's replacement doctor blade includes adhesive strips to reattach the plastic wipers.)

   If you are using a new replacement blade, first remove the plastic wipers from the OEM blade.

   Using a pair of sidecutters, cut the plastic weld from the underside of the doctor blade stamping (FIG 65).

   Clean the area on the replacement doctor blade on which the adhesive will be placed.

   Reattach the plastic wipers on the replacement doctor blade using double adhesive strips. Note the placement and orientation of the wiper (FIG 66).
   (The adhesive strips are included with SCC's doctor blade.)

2. **Install the doctor blade.**
   Position the stamping over locating posts on the side of the hopper and secure the blade with two Phillips screws (FIG 67).

FIG 64

Plastic Weld

FIG 65

OEM Plastic Wiper (right)

Adhesive Strip

Doctor Blade Stamping
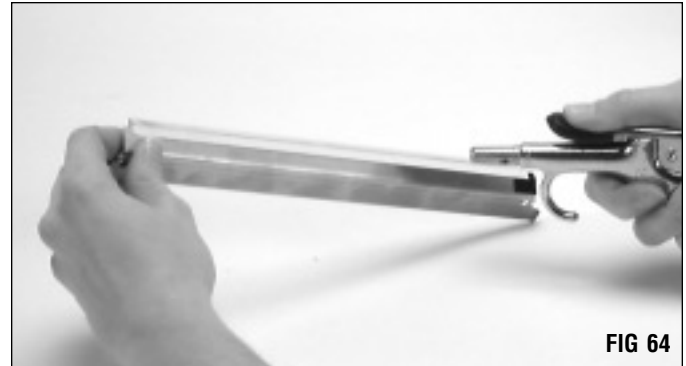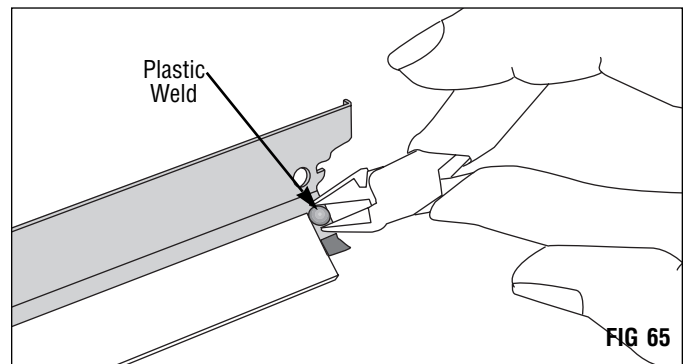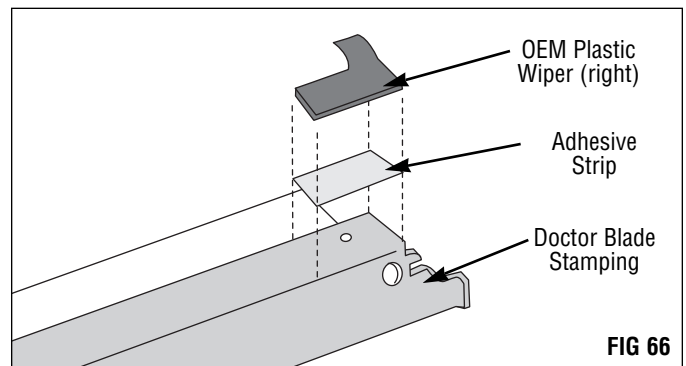
FIG 66
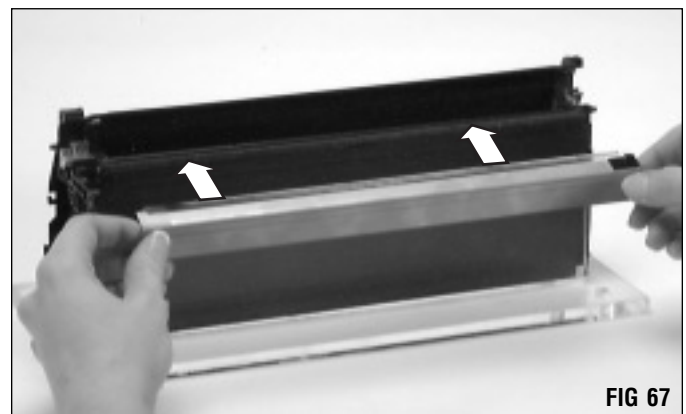
FIG 67

Assembling the Toner Hopper Section

3. **Clean the mag roller.**
   If you are reusing the mag roller, clean it with dry, filtered compressed air to remove toner and debris (FIG 68). It is not necessary to clean a newly remanufactured mag roller.

   > ⚠ **CAUTION** Do not scratch the coated area of the roller with the air nozzle or touch the mag roller with your fingers.

   If, upon inspection, the mag roller sleeve appears worn replace it with SCC's EnduraMag Recoated Mag Roller (FX5RMFMDR). The program works on an exchange basis and accepts only recoatable rollers. *Contact your Static Control Sales Team for program details.*

FIG 68
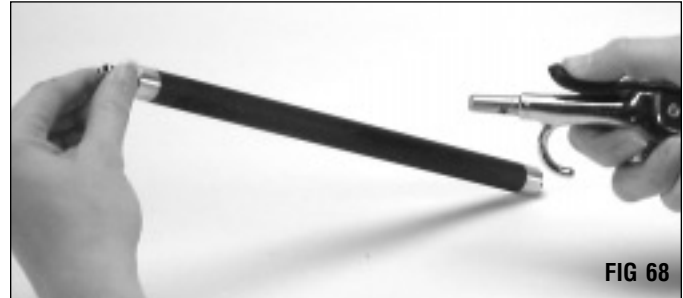
4. **Clean the mag roller contact.**
   Use a Lint-Free Swab (LFSWAB) to remove grease from the metal contacts (FIG 69).

Mag Roller
Contact

FIG 69
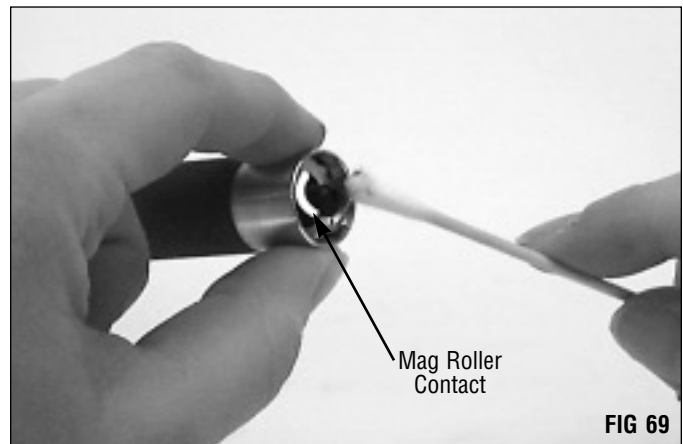
5. **Clean and inspect the mag roller bushings.**
   Use a Lint-Free Cleaning Cloth (LFCCLOTH) or Lint-Free Swab (LFSWAB) to clean toner and debris from the bushings (FIG 70).

   Replace the bushings if cracked or the outer dimension appears excessively worn.
   Mag Roller Bushings: Under development
   Contact your Static Control Sales Team for availability.

FIG 70

6. **Install the mag roller bushings.**
    One bushing at each end of the mag roller sleeve (FIG 71).

FIG 71

7. **Install the mag roller.**
    Position the roller so that the mag roller contact is at the
    right end of the hopper as shown in FIG 72.
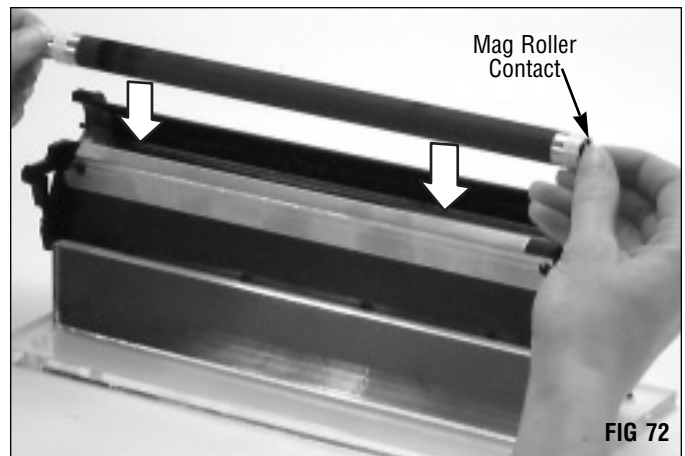
Mag Roller
Contact

FIG 72

8. **Install the mag roller stabilizer, drive gear and end plate on
    the left end of the hopper**

    The non-contact end of the mag roller axle is keyed as
    shown in FIG 73, and fits into a positioner bushing
    incorporated into the mag roller end plate (left). As you
    install the end plate, rotate the magnet at the contact end
    of the cartridge (right) until the keyed end fits securely into
    the bushing.

    Note the orientation of the components as shown in FIG 73.

Mag Roller
End Plate

Mag Roller
Drive Gear

Keyed Axle

Mag Roller
Stabilizer

Positioner
Bushing
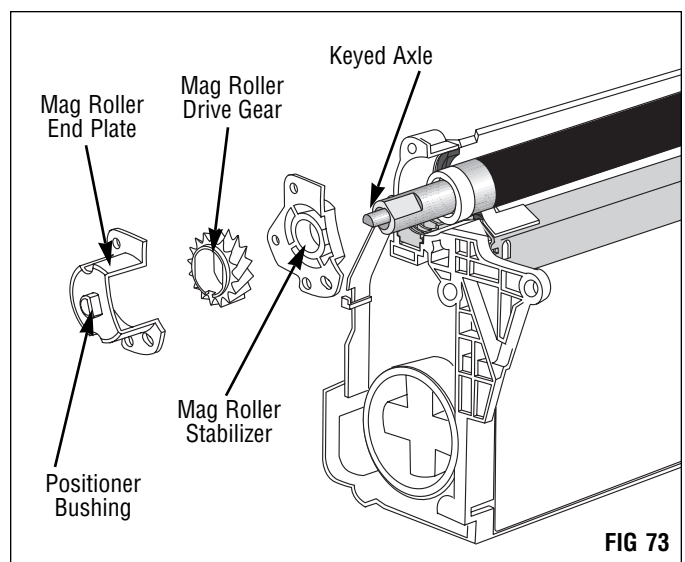
FIG 73

Assembling the Toner Hopper Section

9. **Clean the electrical contact on the right end plate.**
   Use a swab dampened with 91-99% isopropyl alcohol to
   clean the metal contact (FIG 74).
   Cotton Swab: QTIP
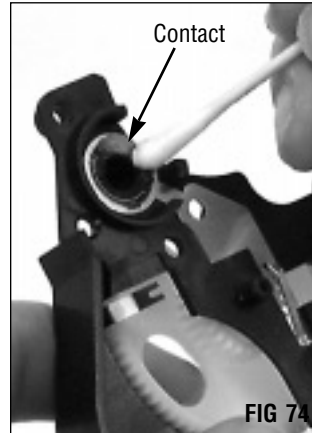
10. **Apply a THIN layer of conductive cartridge lubricant on the
    electrical contact.**
    Use the wooden end of a swab as an applicator (FIG 75).

Contact

FIG 74

FIG 75

11. **Install the right mag roller end plate.**
    Remember that three Phillips screws are installed on the
    right end plate. Note the third screw behind the gear in
    FIG 77.

FIG 76

FIG 77
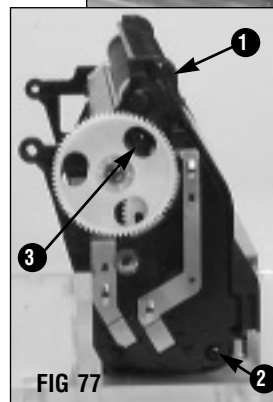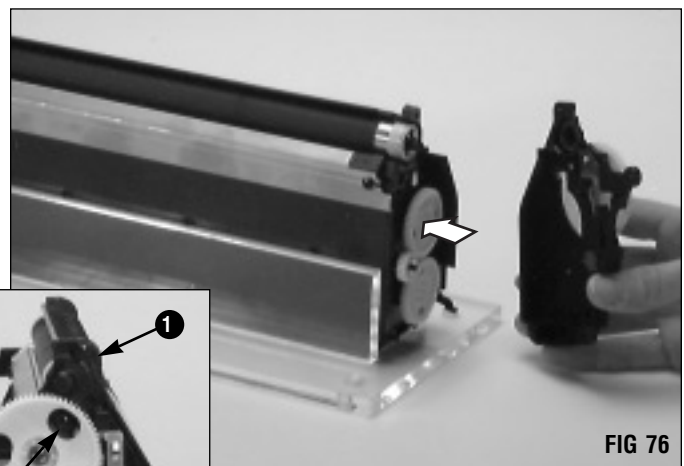
Filling the Hopper Without a Seal

Before filling the hopper, make sure the toner hopper section is completely reassembled. With the mag roller securely installed, the hopper is adequately sealed for filling from toner bottles or filling machines. However, note that filling machines may dispense toner with some force or pressure that can cause some leakage from around the mag roller..

WARNING We do not recommend shipping the cartridge without a seal. Cartridges that are not sealed are highly susceptible to leakage during shipping and handling.

1. **Remove the hopper cap (FIG 78).**

Hopper Cap Removed

FIG 78

2. **Shake the toner bottle to aerate the toner**
    FX-V/KX Laser/Fax Toner, 340 grams (FX5340B)
    FX-V/KX Laser/Fax Toner, 400 grams (FX5400B)

3. **Attach funnel to bottle and fill hopper (FIG 79).**
    Use a funnel attachment on the bottle or a funnel to pour the toner into the hopper.

CAUTION Be very careful not to touch the mag roller as you fill the hopper. Oil from your fingers or hands can cause repeating print defects.

Funnel Attachment

FIG 79

4. **Reinstall the hopper cap (FIG 80).**

Hopper Cap

FIG 80
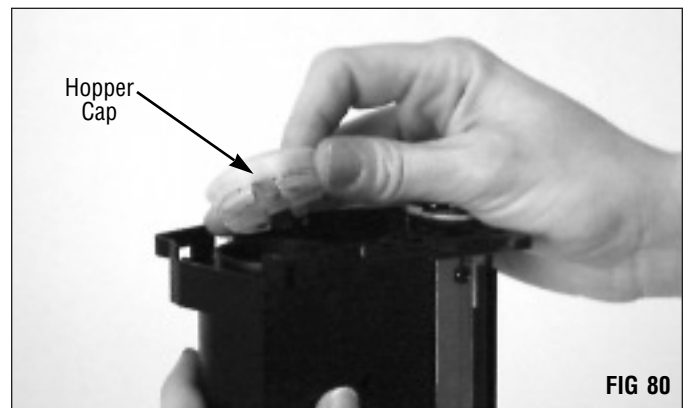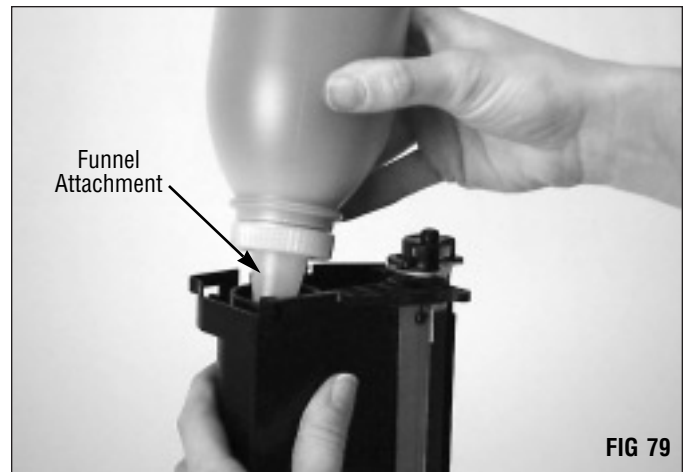
Assembling the Cartridge

1. **Assemble the waste bin and toner hopper sections.**
   As you bring the sections together, hold the drum shutter in a slightly "open" position to avoid lodging the shutter between the two sections.

Mag Roller Drive Gear

Drum Helical Gear

FIG 82
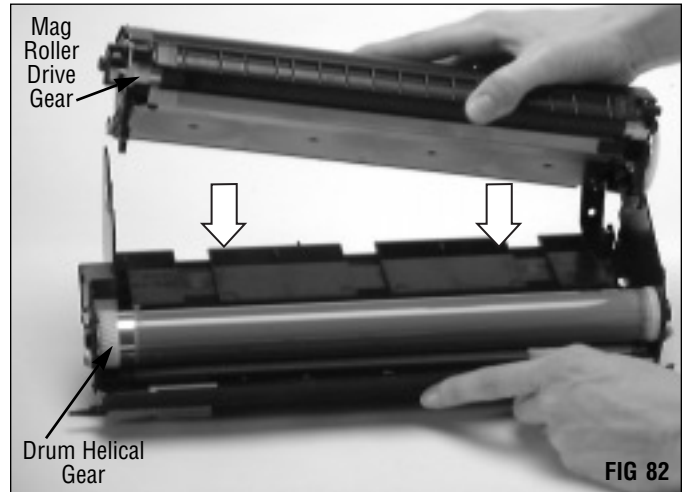
2. **Install the cartridge pins.**
   One cartridge pin at each end of the cartridge (FIGs 83-84).

   Carefully squeeze the cartridge sections together to align the pin holes in each section. If you are reusing the **OEM cartridge pin** leave enough of the pin protruding from the casing so that you can remove the pin next time you remanufacture the cartridge.

   If you are using **SCC's replacement cartridge pin**, push the pin in the casing as far as the pin will go.

   We recommend replacing the OEM cartridge pins with SCC's cartridge pins (CARTPIN-S) which are designed specifically for the FX-V(KX) application.
   (FX-V cartridge pins are identified by two small dots on the head of the pin.)

SCC Cartridge Pin

FIG 83

KX Cartridge Pins

FIG 85

SCC Cartridge Pin

FIG 84
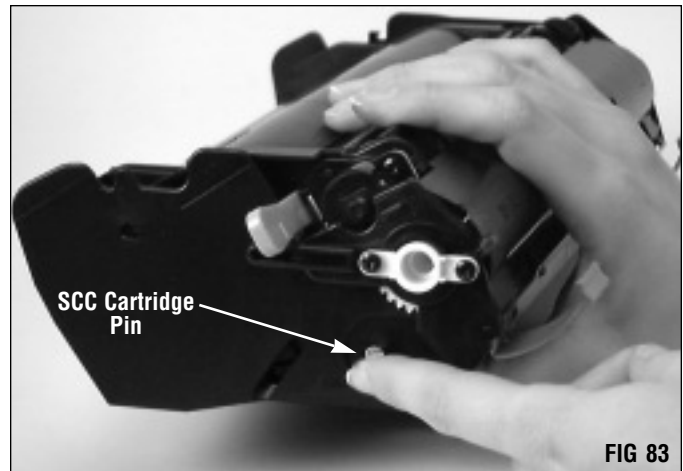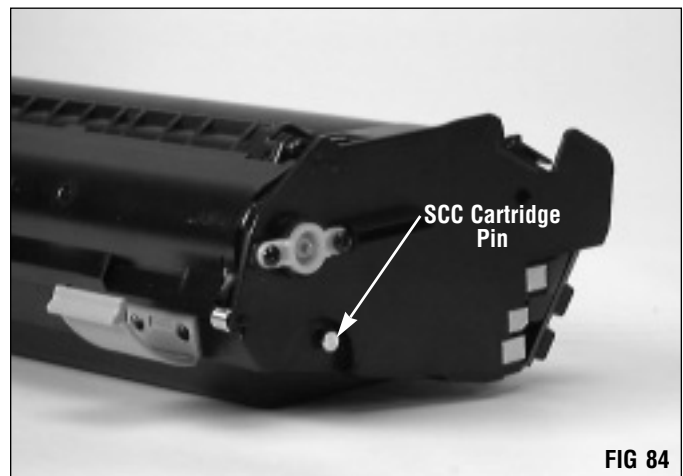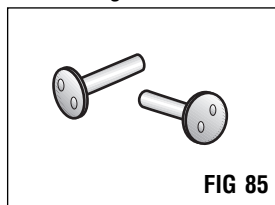
3. **Install the hopper tension springs.**
    Note the position of the long and short springs (FIG 85).

◪ CAUTION Interchanging the short and long springs can cause print problems.

If you lose either of the springs or the springs become stretched or deformed, replace with SCC's replacement FX-V hopper tension springs. Using a defective spring or a spring that is not compatible can contribute to light print or blank prints. *For more information, as well as an example of a stretched spring, refer to SSS 99-E, Problem Solving.*
Hopper Tension Spring-Long: FX5HTS-L
Hopper Tension Spring-Short: FX5HTS-S

Short Spring

Long Spring
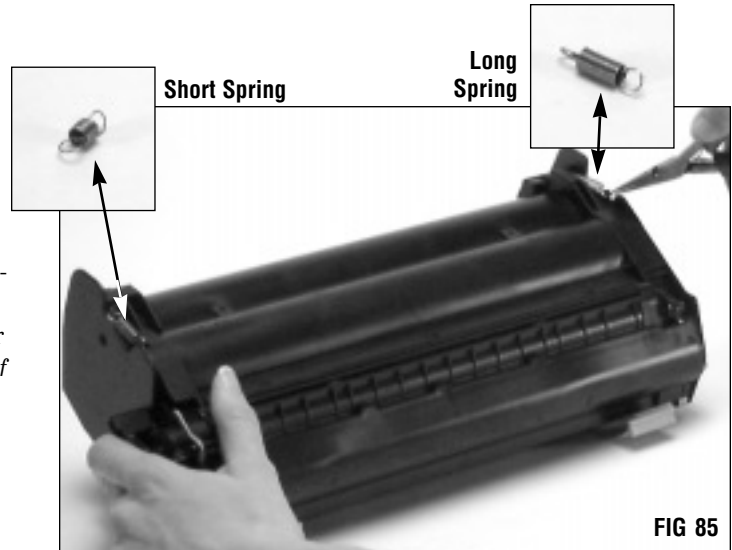
FIG 85

Canon® FX-V(LBP-KX)
Cartridge Components

Top View of FX-V Cartridge

Waste Bin

Contact End of
Cartridge

Drum Shutter

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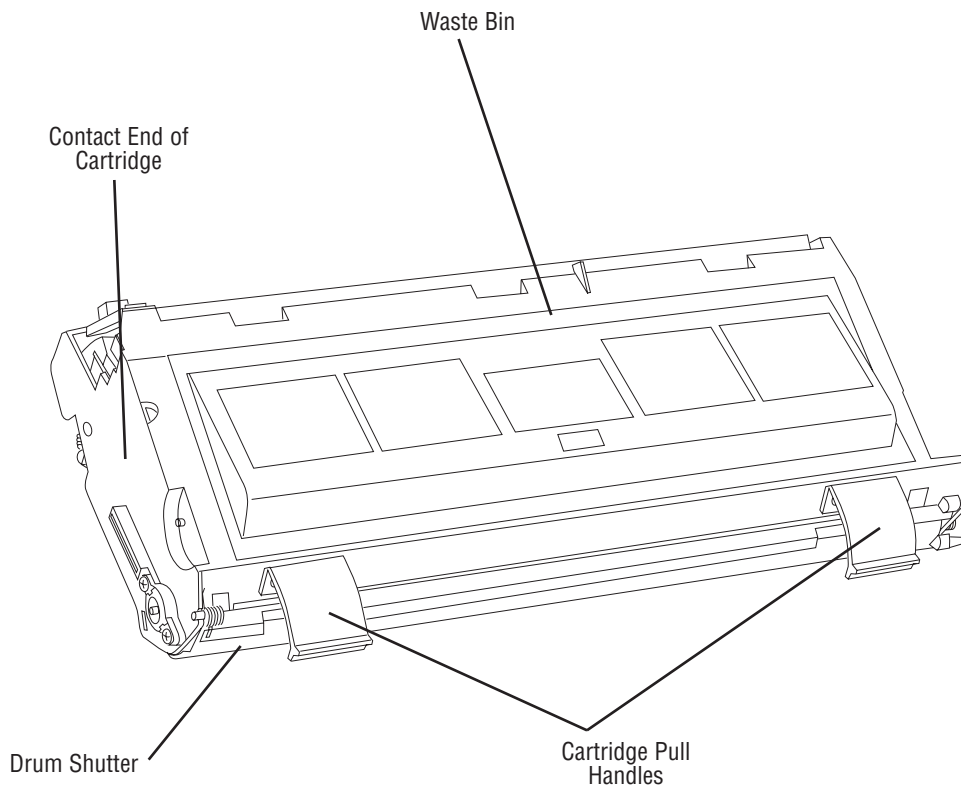
This fully illustrated **Cartridge Components** *guide gives you a complete breakdown of all cartridge components, along with terms and definitions. Use the illustrations for training or referencing replacement components.*

Table of Contents

World Wide Web
www.scc-inc.com

Waste Bin Section - Terms and Definitions

OPC Drum

Drum Spur Gear

Drum Electrical Contact

Drum Helical Gear

Primary Charge Roller (PCR)

Hopper Tension Spring (Long)

PCR Electrical Contact

SCC Cartridge Pin

Wiper Blade

Spur Gear Drum Axle (Contains Contact)

Wiper Blade Sealing Foam

Recovery Blade Assembly Sealing Foam

Recovery Blade

Recovery Blade Assembly

Hopper Tension Spring (Short)

Helical Gear Drum Axle

SCC Cartridge Pin

Drum Shutter

Drum Shutter Actuator Arm

Drum Shutter Felt

PCR Saddle (Conductive)

Wiper Blade End Foam (Large and Small)

Cartridge Pin
Two pins installed at each end of the assembled cartridge to hold the waste bin and hopper sections together.

Drum Axles (Spur Gear and Helical Gear)
Installed at each end of the waste bin section to hold the drum in place. The spur gear drum axle features a metal rod which makes contact with the drum electrical contact installed in the drum spur gear, providing electrical contact between the drum and printer.

Drum Electrical Contact
Provides electrical contact between the drum and printer. The metal contact touches the metal rod in the spur gear drum axle when the axle is installed in the drum.

Drum Gears (Helical and Spur)
The spur gear, on the right end of the waste bin section, houses the drum electrical contact. The other larger 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 surface of the drum shutter. It protects the drum from potential damage caused by the opening and closing of the shutter.

Hopper Tension Springs (Long and Short)
Installed on the exterior of the cartridge. Maintains pressure between the waste bin and hopper sections so that mag roller bushings are properly seated on the drum, providing the correct air gap between the drum and mag roller. The long spring is installed on the contact end of the waste bin; the short spring is installed on the non-contact end of the waste bin. The short and long springs are not interchangeable.

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

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
Metal contact installed in the waste bin section of the cartridge; makes contact with the shaft of the installed PCR and provides electrical contact between the printer and the PCR.

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 Blade Assembly
A removable metal stamping to which the recovery blade is attached.

Recovery Blade Assembly Sealing Foam
A strip of foam installed under the recovery blade assembly along the length of the waste bin; the foam seals the area between the recovery blade assembly and waste bin in order to prevent leakage from the waste bin.

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 that was not transferred to the paper. Constructed of a metal stamping (base) and polyurethane blade. (Also called cleaning blade)

Wiper Blade End Foam (Large and small)
Two layers of foam that 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 stamping and waste bin; prevents leakage from the waste bin.

Toner Hopper - Terms and Definitions

Mag Roller Electrical Contact

Mag Roller Bushing (Right)

Mag Roller

Mag Roller Magnet

Mag Roller Bushing (Left)

Toner Low Sensor Bar

Seal Channel Plug (Right)

Toner Low Sensor Bar Brackets

Electrical Contact

Pull Tab

Gasket Sealing Assembly

Mag Roller Felt (Right)

Seal Pull Strip

Toner Port

Mag Roller Felt (Left)

Seal Exit Port Plug (Left)

Mag Roller Stabilizer (Left)

Gear Housing End Plate

Mag Roller Drive Gear

Mag Roller End Plate

Plastic Wiper (Left)

Plastic Wiper (Right)

Doctor Blade

Hopper Cap

Doctor Blade Sealing Foam

Toner Reservoir

Development Station
Area of the cartridge where toner is transferred from the toner hopper to the latent image on the OPC drum using the magnetic developer 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), flexible blade, and plastic wipers. (Also called metering blade)

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.

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

Gasket Seal Assembly
Composed of a rigid gasket base and pull strip. The gasket base is installed in the seal channel with the rear edge of the gasket anchored in a groove at the rear of the hopper seal channel. The pull strip is removed by the end user to release toner from the hopper.

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

Hopper Cap
Plugs the fill opening of the hopper.

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.

Mag Roller Electrical Contact
Installed on the right end of the mag roller sleeve; contacts the metal contact 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 end of the assembled hopper section to cover the gear end of the mag roller. The left end plate also provides a keyed positioner bushing that supports the magnet inside the mag roller sleeve and keeps the magnet stationary.

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. The FX-V(KX) cartridge uses right and left mag roller felts.

Mag Roller Bushing
Placed on each end of the mag roller sleeve to establish a consistent air gap between the mag roller and drum when the cartridge sections are assembled.

Mag Roller Stabilizer (Left)
Prevents lateral movement of the mag roller. A stabilizer is placed at the left end of the hopper and secured in place by screws and locating posts in the hopper section and mag roller end plate.

Plastic Wiper (Right and Left)
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 and left plastic wipers are NOT interchangeable.

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

Seal Channel
The area between the mag roller and hopper sections in which a seal is installed (not shown in diagram).

Seal Channel Plug (Right)
A plastic plug installed in the seal channel to seal the end of the hopper where the end of the toner low sensor bar exits the hopper. The right end plug is smaller in size than is the left end plug.

Seal Exit Port Plug (Left)
A plastic plug installed in the seal channel to seal the end of the hopper where the seal pull strip exits the hopper.

Toner Hopper - Terms and Definitions, continued

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 Brackets
Plastic, L-shaped brackets with adhesive backing on two sides, designed to hold the toner low sensor bar in place after the bar has been removed and reinstalled in the seal channel (aftermarket component).

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.

Notes

Component Management Reference Chart

COMPONENT	CODE	CLEAN	LUBRICATE
Cartridge Pin	CARTPIN-S (two dots on head of pin)	NA	NA
OPC Drum	OSFX5DRUM Odyssey™	Dry, filtered compressed air	Pad coated area of drum with Kynar®; install drum in waste bin section; rotate drum against wiper blade - min. 6 rotations
Drum Shutter Felt	FXDSFELT	Dry, filtered compressed air	NA
OEM Primary Charge Roller (PCR)	NA	Soft, lint-free cloth dampened with water; DO NOT clean OEM PCR with alcohol	DO NOT lubricate PCR shaft; lubricant not present in out-of-box OEM cartridge
Static Control (SCC) 5/15-Cycle Remanufactured Primary Charge Roller (PCR)	FX5RMPCR (on exchange basis)	Soft, lint-free cloth dampened with 91-99% isopropyl alcohol	DO NOT lubricate PCR shaft; lubricant not present in out-of-box OEM cartridge
SCC One-Cycle Remanufactured Primary Charge Roller (PCR)	ICFX5RMPCR (on exchange basis)	Cleaning is not required; Recoat after each cycle; Do not use alcohol to clean the one-cycle PCR	DO NOT lubricate PCR shaft; lubricant not present in 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	FX5BLADE	Dry, filtered compressed air; direct air close the surface of foam installed on the stamping; DO NOT clean blade with alcohol	Dip edge of wiper blade in Kynar; make sure blade edge is evenly covered
Wiper Blade Sealing Foam	FX5WBSFOAM	Dry, filtered compressed air; direct air close to surface of foam	NA
Wiper Blade End Foam	FX5WBEFOAM (large and small)	Dry, filtered compressed air; direct air close to surface of foam	NA
Recovery Blade	PRECB-FX5 (Poly) FX5RECBLADE (Mylar)	Dry, filtered compressed air	NA
OEM Magnetic Developer Roller	NA	Dry, filtered compressed air	

EVALUATE	REPLACE
Cartridge pins should be straight, unmarred and unmodified in length; FX-V cartridge pins are identified by two small dots on the head of the pin	Replace OEM pins with SCC's FX-V cartridge pins which are designed for ease of use with the FX-V application; Replace pins if bent, cut down or lost
Test print to check print density; check for deep concentric wear lines	Replace OEM drum after OEM cycle with SCC system-qualified drum; test print each remanufacturing cycle and replace as needed.
Install on interior 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 OEM cycle	To maximize PCR performance, recoat OEM PCR after OEM cycle; 15-cycle and one-cycle recoating programs available (see below)
Remanufactured 5/15-cycle PCR is guaranteed for up to five remanufacturing cycles; qualified PCRs can be recoated three times for a total of remanufacturing 15 cycles; For optimal results use with SCC system components	After initial recoating, recoat SCC 5/15-cycle PCR again after 5th and 10th remanufacturing cycles provided PCR is not damaged
SCC One-Cycle Remanufactured PCR guaranteed 1 remanufacturing cycle; For optimal results use with SCC system components	Recoat dedicated SCC one-cycle PCR after each remanufacturing cycle; one-cycle PCR can be recoated indefinitely provided the PCR is not damaged
NA	NA
Test print each cycle and check for vertical streaks	Replace if wiper blade-related print defects detected; install new wiper blade each time a new drum is installed; 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
Blade should display a smooth surface and be completely secured to metal stamping	Replace blade if bent, kinked or damaged; replace blade only with mylar or poly type blades
Test print against baseline to check for light print defects; visually inspect for scratches, previously treated or sandblasted mag rollers	Recoat OEM mag roller sleeve if worn or contributing factor of light print; use Static Control's EnduraMag™ recoated mag roller (on exchange basis)

Component Management Reference Chart

COMPONENT	CODE	CLEAN	LUBRICATE
SCC EnduraMag™ Magnetic Developer Roller	FX5RMFMDR (on exchange basis)	Dry, filtered compressed air	NA
Mag Roller Electrical Contacts	NA	Clean contact prongs (end of mag roller sleeve) and metal contact (on right 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 end plate
Mag Roller Bushing	Under development	Lint-free cloth or swab; or dry, filtered compressed air	NA
Mag Roller Felt	LXMRFELT	Dry, filtered compressed air	NA
Doctor Blade	FX5DBLADE	Dry, filtered compressed air; DO NOT clean with alcohol	NA
Doctor Blade Sealing Foam	FX5DBSFOAM	Dry, filtered compressed air; direct air close to surface of foam	NA
Gasket Sealing Assembly	FX5GSA (seal) FX5GSAKIT (Kit)	Clean seal channel with 91-99% isopropyl alcohol; make sure seal channel is completely dry before installing a new seal	NA
Toner Low Sensor Bar	NA	Soft, lint-free cloth or swab and isopropyl alcohol	NA
Toner Low Sensor Bar Brackets	FX5TLSBRAC	NA	NA
Toner	FX5-340B FX5-400B	Clean toner hopper with dry, filtered compressed air	NA
Hopper Tension Springs (Long and Short)	FX5HTS-L (Long) (Short)	NA	NA

EVALUATE	REPLACE
Rated at 35,000 when used with recommended SCC system-qualified components: FX-V Laser/Fax toner, FX-V doctor blade, FX-V Odyssey OPC drum; note that mag rollers are recoated on exhange basis; System Support Series 113 provides instructions for assembly and disassembly	Recoat the roller every 35,000 pages
For optimum continuity make sure metal prongs are free of toner and debris; make sure prongs and end plate contacts make proper contact when the end plate is reinstalled	If the prongs do not make contact with metal contact in end plate, bend prongs to correct position
Bushings should be intact, free of cracks and excessive wear	Replace the bushings if cracked or excessive wear is appearant on the outer dimension of the bushing
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
For best results use SCC FX-V doctor blade in combination with SCC FX-V EnduraMag, FX-V Laser/Fax toner and FX-V Odyssey OPC drum; Test print to check print quality, background, or side-to-side variations in print quality	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 with adhesive strips (included with doctor 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
The toner low sensor bar must be removed each time a new seal is installed; toner sensor bar blocks are installed to resecure the bar to the sealing channel (FX5TLSBRAC); Install SCC FX-V GSA seal; required installation tools included in GSA seal kit	Replace SCC gasket seal each time the cartridge is remanufactured; remove all sealing material prior to seal installation
Remove bar in order to remove old seal or install new seal; Secure bar in the seal channel using toner low sensor bar brackets (FX5TLSBRAC); For bar removal and installation instructions, refer to SSS 119, *FX5 Gasket Sealing Assemb. Kit*	NA
Remove the brackets each time you install a new seal and discard	Install a new set of brackets (3 brackets total) each time you install a new seal
NA	NA
Tension springs can be a contributing factor of light print if the springs are stretched, deformed, missing or installed incorrectly; Make sure the long spring is installed on the drum spur gear end of the cartridge and the short spring is installed on the drum helical gear end	Replace springs if deformed, stretched or missing; Do not use tension springs from other cartridge systems; For more information and an example of a stretched spring, refer to SSS 99-E, *Problem Solving*

Canon® FX-V(LBP-KX)

Cartridge/Machine Specifications

About the Canon® LaserClass 8000 Fax

The LaserClass 8000 Fax is among Canon's® best-selling plain paper fax machines sold in America. The fax machine features oversize document capability, superior imaging, and numerous capabilities that are ideal for businesses with high-volume fax needs.

Most notable about the LaserClass 8000 is its oversize document capability. In addition to letter and legal paper sizes, this fax machine can scan documents up to 11" wide, which makes it well-suited for businesses that need to send large-size documents on a regular basis.

The LaserClass 8000 transmits documents at up to 400 x 400 resolution and uses Canon's Ultra High Quality (UHQ™) procession system delivers text and photos with clarity. "Ultra-Smoothing", another of Canon's processes, produces excellent grayscale images and helps to eliminate jagged edges commonly associated with faxed documents.

Additional features like dual access scan, auto paper selection, speed dialing, sequential broadcast, confidential mailboxes and transmissions as fast as 6 seconds make this fax machine an ideal choice for businesses with high-volume fax demands.

Printer/Fax Compatibility

Canon LaserClass 8000 Fax

There are several other printers using the KX engine that are unique to Japanese and Chinese markets. Static Control's Technical Support and International Sales Division maintain a cross-reference of the printers and facsimile machines that use the KX engine. Please contact either of these two departments for further information.

Technical Support
1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)

Market Outlook

The FX-V cartridge is based on the KX engine (EP-K cartridge) that has been used in numerous printers shipping to Japan and China. Since 1995, the cartridge has been shipped with Canon's LaserClass 8000 plain paper fax machine and is becoming more popular as a remanufactured cartridge.

The high-end LaserClass 8000 fax can be found in architectural, accounting or law firms where large-sized documents are faxed on a regular basis. If you are already servicing an account that has a LaserClass 8000 machine, it's an excellent opportunity to pick up an additional cartridge. At a list price of $199 for the OEM cartridge, which is one of the most expensive of Canon's cartridges, there is great potential for high profit margins. Remanufactured cartridge prices range from a low of $100 to a high of $140 or more.

KX engine-based printers and fax machines marketed in Japan and China use EP-K cartridges, which are the same cartridge as the FX-V. In Japanese and Chinese markets, where there are several machines based on KX engine, the printer base is quite large. The EP-K (KX) cartridge market in Japan and China is similar scope to the SX cartridge market in the US over five years ago. Purportedly, the EP-K type cartridges boast the one of the larger market shares of remanufactured cartridges.

About the Cartridge/Machine, continued

Cartridge Information

	Canon LaserClass 8000
OEM Part Number	H11-6271-210
OEM Published Yield[1]	8,000 pages
Price (Retail List/Retail St.)[2]	($199/$170-199)

[1]*Yield is based on 4% original document/5% coverage;* [2]*Price quoted March 1997*

Machine Information

	Canon LaserClass 8000
Introduction List Price	$4,495
Introduction Date	August 1995
Printing Speed	8 Pages/Minute
Transmission Speed	6 Seconds/Page (ECM-MMR mode)
Resolution (dpi)	203x96 (Standard)
Recording Page Size	Letter/Legal/A4
Energy Saving Mode	Stand-by (Min. Power Consumption Approx. 26 w)

STATIC CONTROL COMPONENTS, INC.

Canon® FX-V(LBP-KX)
Troubleshooting

Establishing Baseline Performance Benchmarks

We recommend that you perform a comprehensive series of test faxes to establish the performance standards of your cartridges using SCC's FX-V(KX) Imaging System Components. Listed below is a series of print targets that we developed for system evaluation. This test series will help establish the normal print characteristics of the FX-V(KX) 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 faxed or copied pages and diagnose many fax machine and cartridge problems.

Listed in the chart below are some of the problems that may be diagnosed using each page in the test series.

Processing Test Prints Using the LaserClass 8000 Fax Machine

• Print a series of clear, defect-free Analyzer EPROM print targets using a laser printer.

• Use the "copy" function on the LaserClass 8000 to copy the print targets. The fax machine allows up to 99 copies at a time using this function.

• For diagnosing print problems, we recommend running 2-3 copies of the test target series.

Table of Contents

World Wide Web

www.scc-inc.com

Need help troubleshooting print defects? Call Technical Support.

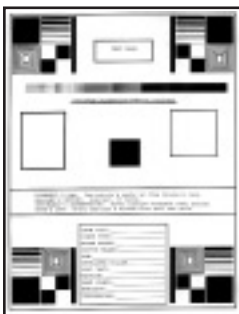**1.800.948.1072 (USA)
+44 (0) 118 935 1888 (UK)**

SCC Series One Analyzer EPROM Print Targets

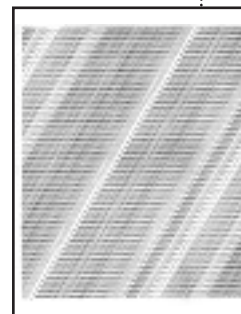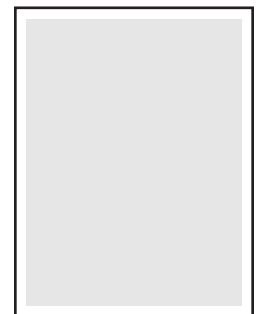| Test Print	Problems That May be Diagnosed Using the Test Print
Main Test Page	Drum Ghosting, Developer Roller Ghosting, Vertical Black Lines, Horizontal Black Lines, Toner Smear
Blank Page	Pin Hole Defects, Blasting
Black Page	Pin Hole Defects, Developer Roller Defect
BP80 Page	Improperly Formed Characters,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

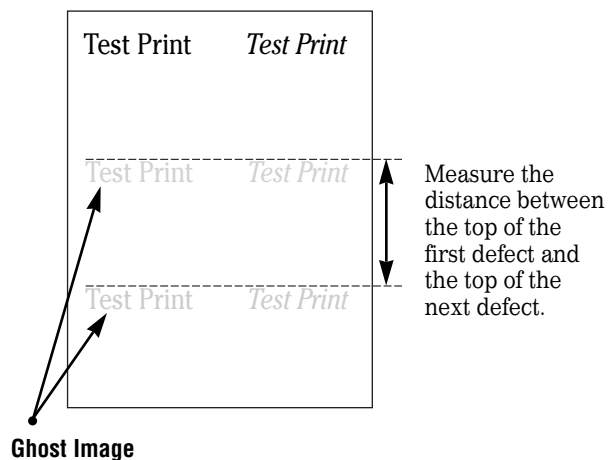*Main Test Page*   *Blank Page*   *Black Page*   *BP80 Page*   *Gray Page*
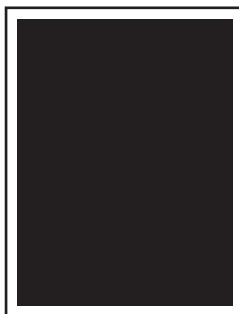
How to Measure Repetitive Defects

1. **Find the repeating defect.** Defects may appear as horizontal banding, dots, lines, or hazing. Using FX-V(KX) cartridges, the repetitive defect will appear vertically on letter and legal size pages printed in portrait orientation.

2. **Measure the distance between the defects.** Interval measurements are provided in both inches and millimeters. 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 overlapping each other on the page.

3. **Find the interval number in the table below and the corresponding component.** Some probable causes of the defect are listed to help you with troubleshooting. This is not an exclusive list. Some repetitive defects may be the result of a combination of factors. If you have trouble locating a defect, call Technical Support at the telephone numbers listed on the front and back of this manual.
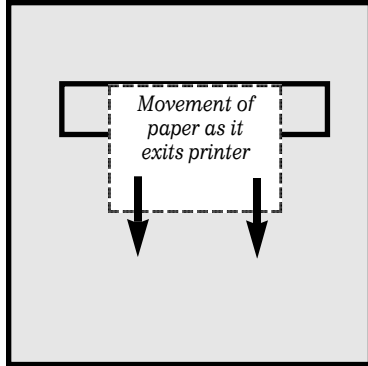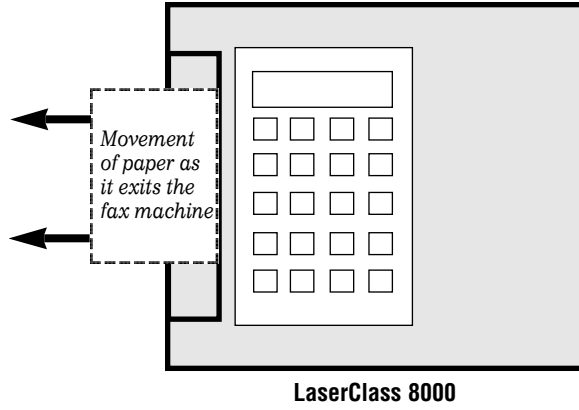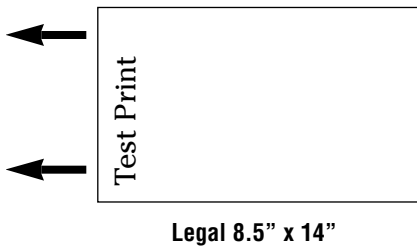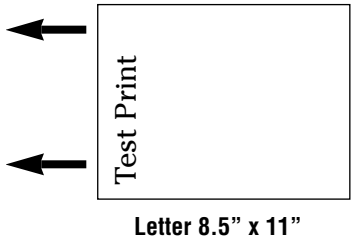
Example of Repetitive Ghosting Defect

Test Print   *Test Print*

Test Print   *Test Print*

Test Print   *Test Print*

Measure the distance between the top of the first defect and the top of the next defect.

Ghost Image

Repetitive Defect Troubleshooting Guide

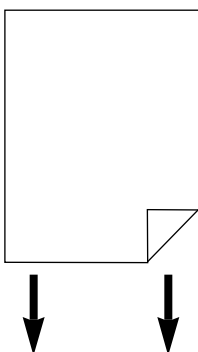| Interval	Component	Probable Cause of Defect
@ 2.1" (53.3 mm) Intervals	Mag Roller	Mag roller wear, mag roller electrical contact, mag roller cleaning damage, mag roller bushing wear, doctor blade failure, toner properties, mag roller contamination
@ 3.75" (94.3 mm) Intervals	OPC Drum	OPC wear, OPC damage, OPC contact, elliptical drum rotation, OPC light exposure degradation, PCR defect
@ 1.74" (44.3 mm) Intervals	Primary Charge Roller	PCR wear, PCR Contamination, toner properties, poor electrical contact, low RH% conditions, dry paper
@ 2.3" (57.8 mm) Intervals	Transfer Roller	Transfer Roller wear, Transfer Roller Contamination
@ 3.0" (77 mm) Intervals	Fuser Roller	Toner offsetting, fuser roller/pressure roller incompatibility, upper fuser roller/lower pressure roller wear/contamination
@ 2.6" (65.3 mm) Intervals	Pressure Roller	Toner/pressure roller incompatibility, pressure roller wear/contamination (defect will appear on backside of page)

Orientation of Paper as it Exits the Machine
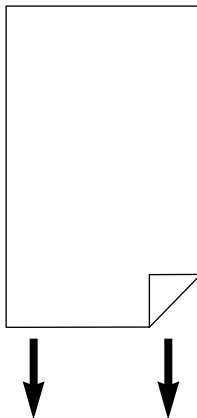
Test Print

Letter 8.5" x 11"

Test Print

Legal 8.5" x 14"

Movement of paper as it exits the fax machine

LaserClass 8000

Movement of paper as it exits printer

LaserShot B460-E

Letter 8.5" x 11"

Legal 8.5" x 14"

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 our Technical Support Staff at the telephone numbers listed below.

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	Mag roller, electrical contacts, OPC wear, PCR wear, toner properties, high RH% conditions, damp paper, doctor blade, transfer roller wear, hopper tension springs
Streaking/Lines	Wiper blade (sharp-edged lines), upper fuser roller, PCR contamination (vertical line), missing/damaged mag roller felts (page edge line), OPC concentric ring wear (from PCR damage)
Random Sprinkles	Recovery blade, mag roller felts, mag roller sealing blade
Smudges	OPC contamination, upper fuser roller, mag roller contamination
Toner Offsetting	Upper fuser roller, lower pressure roller, toner properties

STATIC CONTROL COMPONENTS, INC.

Canon® FX-V(LBP-KX)
Problem Solving

Stretched Hopper Tension Springs Can Contribute to Light Print

Short and long hopper tension springs are installed on the exterior of the FX-V(KX) cartridge to maintain pressure between the waste bin and hopper sections to enable the mag roller bushings to seat properly on the drum. The bushings create the air gap between the drum and mag roller required for proper imaging in Canon-based cartridges.

When stretched, deformed or missing, the tension springs can prevent the hopper and waste bin sections from correctly seating against each other, and in turn change the air gap between the drum and mag roller. The result is light print or blank pages.

For best results, replace the tension springs if they appear stretched or deformed. FIG 1 shows a comparison between a long spring in good condition and a spring that is stretched and should be replaced.
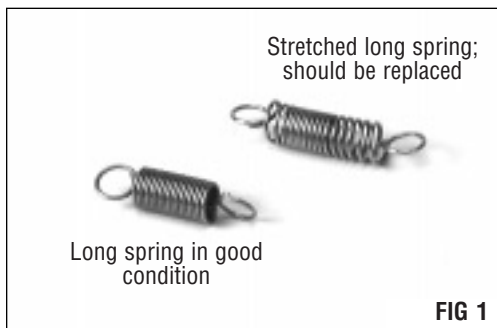

Short Spring

Long Spring

FIG 2

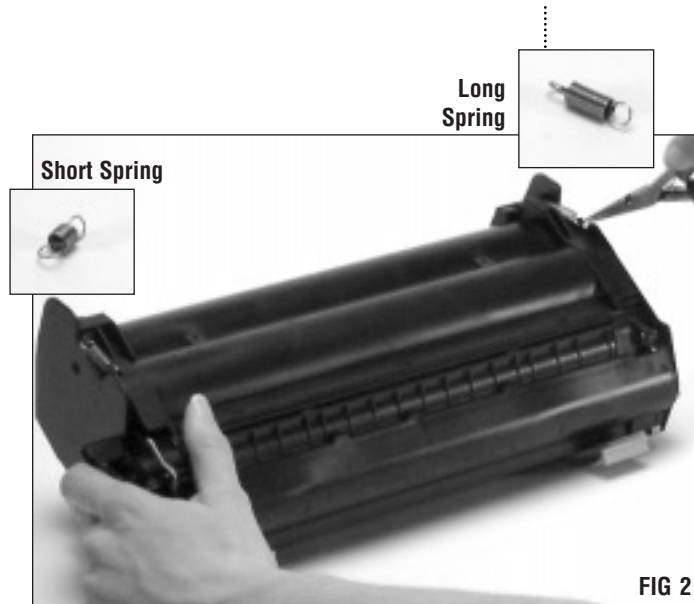Stretched long spring; should be replaced

Long spring in good condition

FIG 1

Do not use springs from other cartridge systems, as they may not meet the tension or length specifications required for the FX-V(KX) application. The FX-V(KX) springs differ in size; the long spring is installed on the drum spur gear end of the cartridge and the short spring is installed on the drum helical gear end of the cartridge(FIG 2).

PRODUCT INFORMATION

FX-V Hopper Tension Spring - Long . . . .
   FX5HTS-L (drum spur gear side)

FX-V Hopper Tension Spring - Short . . . .
   FX5HTS-S (drum helical gear side)

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Toner Low Sensor Bar

Bar Requires Removal for Seal Installation

The cartridge features a uniquely designed toner sensor bar: a long thin strip that runs the length of the hopper sealing channel. The bar is installed in the sealing channel on top of the OEM seal and is secured in place with plastic rivets. In remanufacturing the cartridge and installing a seal, the hopper must be sealed without hindering operation of the toner low sensor bar.

Attempting to install the seal directly over the toner low sensor bar can hinder both the functionality of the seal and toner low sensor bar. Firstly, the varying layers of the sensor bar and rivets do not provide a suitable, smooth and level base for the seal adhesive. The plastic rivets can raise the base of seal, allowing toner to migrate under the seal. Secondly, a seal installed over the toner low sensor bar may hinder the operation of the bar, leaving some potential for false toner low readings.

A Unique Solution

SCC's solution to seal installation involves removing the bar and the OEM seal material. With the rivets and bar, as well as the OEM seal material removed, the sealing channel provides a suitable surface for seal adhesion. A new seal is installed directly to the sealing surface and then the toner low bar is installed over the seal in the same configuration used on the OEM cartridge.

Plastic L-shaped brackets with adhesive backing (FIG 3) are installed over the bar, in place of the rivets, to secure the toner sensor bar in the hopper, as shown in FIGs 1 and 2. Each time you install a new seal, remove the brackets and old seal, then install a new seal and new brackets. *For an overview of the FX-V sealing system installation process, refer to SSS 99-A,* FX-V(KX) Remanufacturing Instructions, *or refer to SSS 119 for complete sealing system instructions.*

FIG 1

Side View of Hopper Section

FIG 2

Adhesive on Two Sides

FIG 3
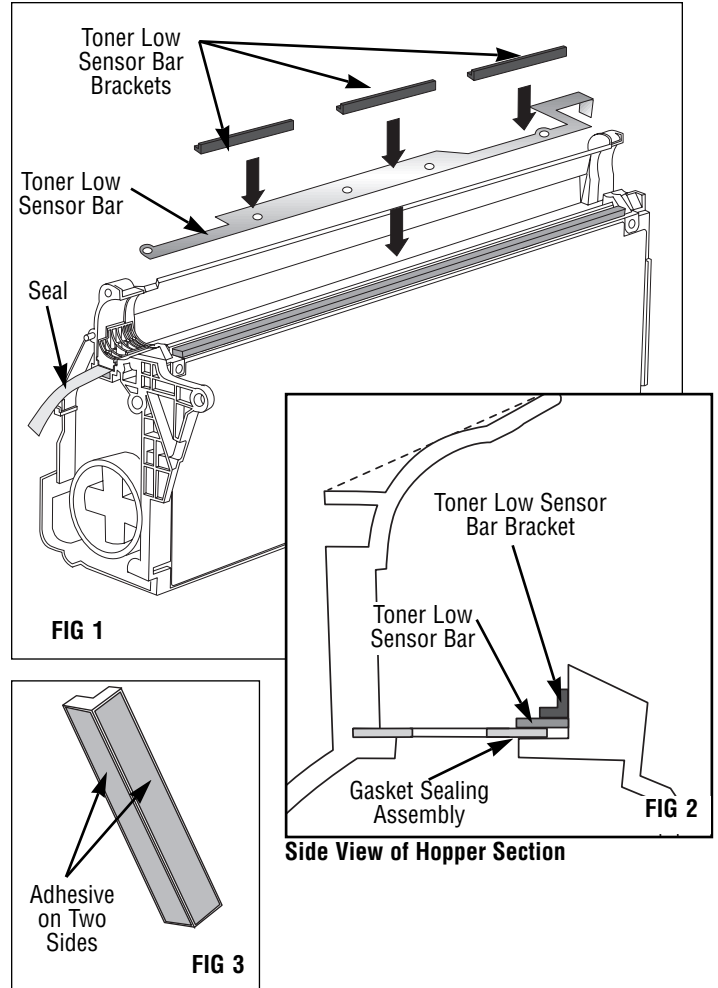
PRODUCT INFORMATION

FX-V GSA Seal Installation Kit FX5GSAKIT
Includes: FX-V GSA seals, pull tabs with dots, hopper fixture, curved scraper blade tool, knife blade tool, installation tool, mag roller felts, toner low sensor bar brackets, vertical flush-cutting pliers.

Resupply Items:
Gasket Seal Pack FX5GSAPK
Includes: GSA seal, pull tab with dots, toner low sensor bar bracket
Toner Low Sensor Bar Bracket FX5TLSBRAC
Mag Roller Felts FX5MRFELT

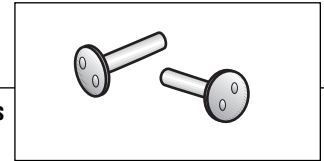# Cartridge Pins

Engineered for Ease of Use

Cartridge pins are installed in the ends of the cartridge to secure the hopper and waste bin sections together. These pins can be somewhat difficult to remove since they are completely straight, lacking a raised head or notch that can be easily grasped with pliers. The pin at the spur gear end of the cartridge in particular can be extremely difficult to remove if it is pushed too far into the pin casing. A stop incorporated into the interior of the waste bin section prevents pin from being pushed completely through the cartridge. Furthermore, the stop is also positioned such that the pin can be pushed well into the casing out of reach. The stop at the helical gear end of the cartridge is positioned so that the end of the pin sticks out from the casing when the pin is fully installed.

SCC offers an aftermarket cartridge pin designed specially for the FX-V(KX) cartridge and engineered for ease of use as well as compatibility. The FX-V(KX) cartridge pin features a slim-line head that prevents the pin from lodging into the casing.

The pin is also designed for systems with minimal tolerances between the installed cartridge and printer. Pins with raised heads or pins that are too long can protrude from the cartridge body causing damage to the printer interior when the cartridge is installed or removed. The FX-V(KX) pin installs close to the cartridge body to prevent damage and keep cartridge sections secure.
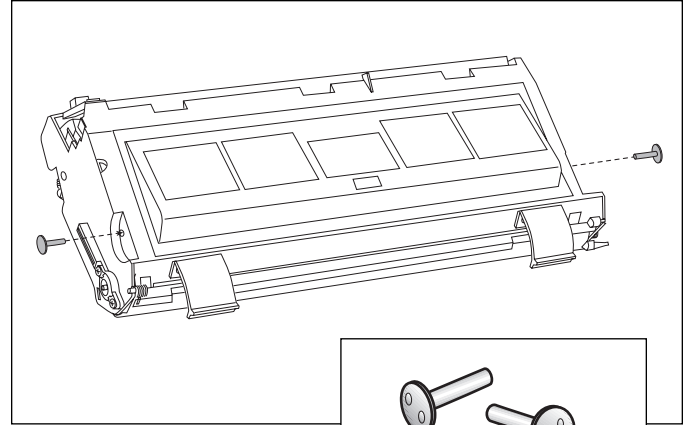
SCC Cartridge Pins

PRODUCT INFORMATION
FX-V Cartridge Pins . . . . .CARTPIN-S
(Two pins per cartridge; FX-V pins are identified by two small dots on the head of the pin)

Imaging System Technology You Can Count On!

The development of cartridge imaging systems, such as the FX-V(KX) Imaging System, is the primary mission of our imaging technology laboratories. Through extensive testing and research, we develop the optimum combination of matched components for each cartridge system. Our engineering and manufacturing expertise provides us with total control in design, quality and development to produce products from the ground up. The result is a system of components that seamlessly work together in each designed cartridge application.

This dedication and commitment results in integrated cartridge systems that SCC Imaging Division fully supports, allowing you to quickly attack new market opportunities with complete confidence in the reliability and performance of your cartridges.

STATIC CONTROL COMPONENTS, INC.