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IBM® Infoprint® 20 / Fuji-Xerox® 20
Remanufacturing Instructions

About the Cartridge

IBM® reentered the network printer market in 1999 with the Infoprint® 20, a 20 ppm monochrome printer that utilizes the Fuji-Xerox® 20 (FJX20) engine. First introduced in the Apple® 8500 laser printer in August of 1997, the all-in-one design is typical Fuji-Xerox, and is similar to the Xerox® DocuPrint® N32. Its microfine toner is magnetic, mono-component, with a weight of 640 grams and an OEM page yield of 14,000 pages at 5% coverage.

The cartridge is mechanically easy to remanufacture, separating into hopper and waste bin sections. These sections are held together with two cartridge pins.

Key Points

- The drum shutter is made of a flexible poly material that wraps over the top of the drum.
- The drum is very similar to the N32, and has three OEM inserts installed.
- The drum axle diameter is slightly different between the IBM and Apple models, which inhibits interchangeability of the axle between the two waste bins. At this time it is uncertain just how this affects the other cartridges utilizing this engine.
- The wiper blade is a non-profile, glue-on member made of polyurethane. A sealing foam is attached, wraps around the blade edge, and adheres to the cartridge. In order to remove the wiper blade this foam must be cut, but should not be removed from the cartridge. Left in place it helps to prevent toner leakage, though to what extent is yet to be determined. Two locating posts molded to the cartridge are easily broken off when the blade is removed.
- The developer roller has a 16.4 mm diameter aluminum sleeve with a removable magnet, and a black coating similar to the Fuji-Xerox 12 and 17. Coating wear results in reduced print quality after a single cycle, and a replacement sleeve may be needed.
- The PCR is black, and has the same diameter and stepped shaft design as the N32, though its length is longer than the N32's shaft.
- No splitting of the cartridge is required for sealing. The OEM uses a polypropylene material heat-sealed to the cartridge.
- The recovery blade is made of polyurethane.
- The doctor blade is made of white silicone affixed to a flexible stainless steel member, attached to a stamped metal base.
- There is one mag roller bushing and one bearing. The bushing is significantly worn after a single cycle.

Fuji-Xerox® 20 (FJX XP20/P880) Engine Information

Printer Name	IBM® Infoprint® 20
Date of Printer Introduction (Current/Discontinued)	August 1997 (Current)
Print Speed	20 ppm

Cartridge Information

Toner Cartridge OEM Part Number (Code)	90H0748 (IBM®)
Cartridge List/Wholesale Price*	$243/$160
OEM Rated Page Yield	14,000 pages
Toner Weight	640 grams
Toner Class	Magnetic, Mono-component

**Prices as of April 2000*

Model Compatibility

Fuji-Xerox® 20 (P880), IBM® Infoprint® 20/4320, Apple® LaserWriter® 8500, Fujitsu® 307A, Casio® CP-DTC8, APTI-E 840, Ricoh® NX5000

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Get the latest information on the web at Static Control's IBM® Infoprint® 20 Online Engine Center at
www.scc-inc.com

System Support Series™ Documents are available on our Web site in Adobe® Acrobat® format.

If you need additional information or technical assistance, please contact your Regional Support Team.

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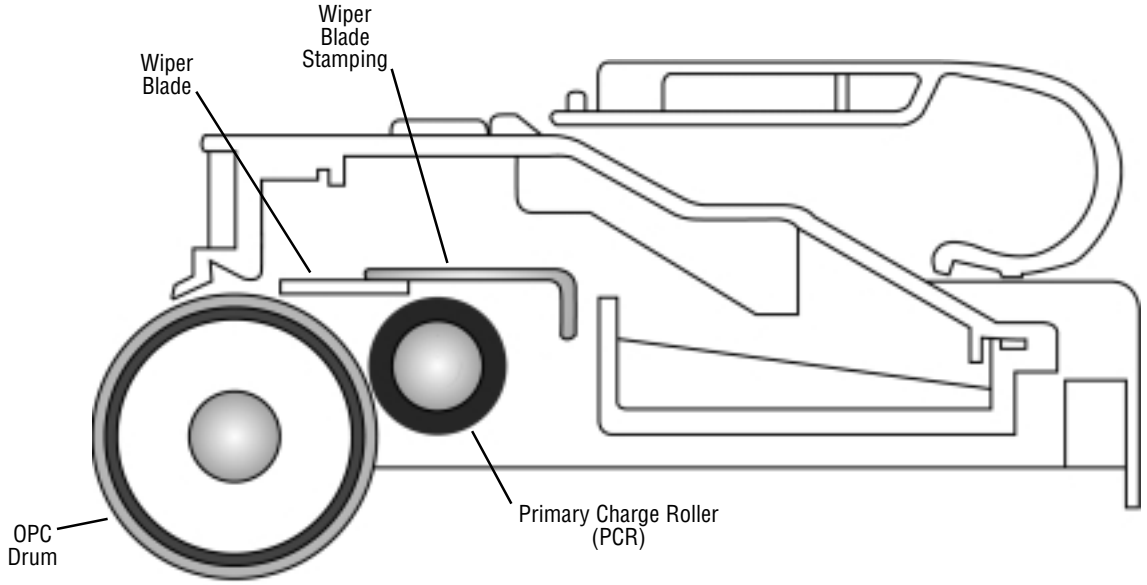
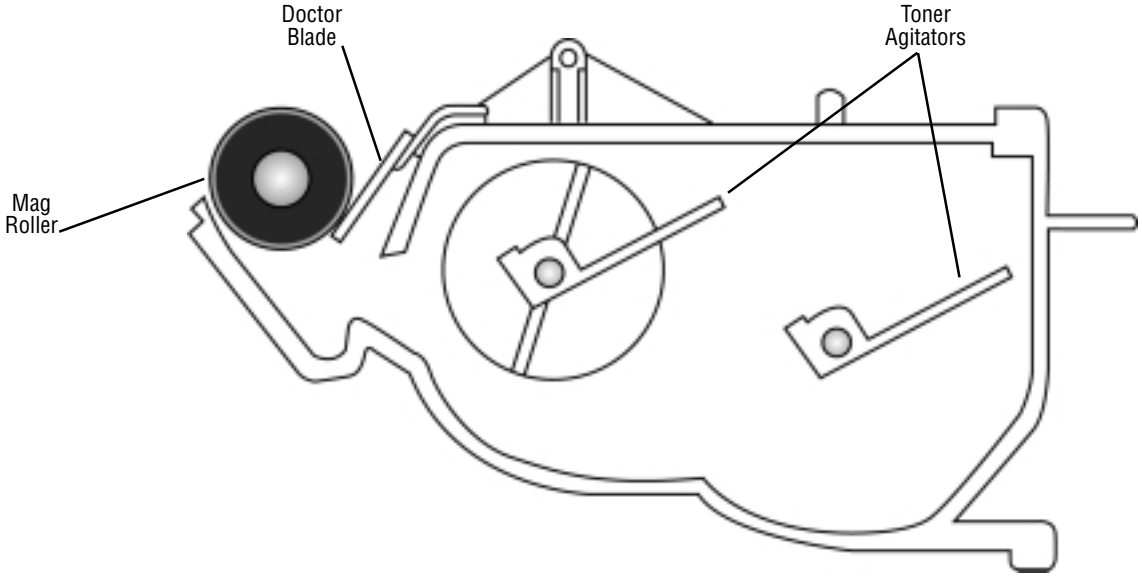
Version 1 - April 2000

Drum Unit



Toner/Developer Unit



Tools and Supplies You Will Need

Use of Compressed Air

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

Use of Isopropyl Alcohol

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

Tools and Supplies You Will Need

Recommended For Basic Remanufacturing:

- 5Si Aluminum Hammer . . . . . .WXHAMMER)
- 5Si Brass Punch . . . . . .(WXPUNCH)
- Angle Blade Knife . . . . . .ABKTOOL
- Conductive Cartridge Lubricant . . . . . .CONCLUBE
- Kynar® Lubricating Powder . . . . . .KPOW
- Lint-Free Cleaning Cloth . . . . . .LFCCLOTH
- Lint-Free Foam Tip Swab . . . . . .LFSWAB
- Toner XC170B
- Toner Pour Spout TPS-90
- 91-99% Isopropyl Alcohol . . . . . *(See left)*
- Compressed Air for Cleaning . . . . . *(See left)*
- Phillips Screwdriver #2
- Shallow Trough for Dipping the Wiper Blade
- Standard Flat-Blade Screwdriver

System Support Series™ Available

SSS™#	Title
281	How to Use Your IBM® Infoprint® 20 Adhesive ProSeal™

Separating the Cartridge

1. Release the cartridge spring

With the cartridge lying upside-down, use a pair of needlenose pliers to carefully detach the upper end of the spring from the cartridge (FIG 1). Leave the lower end of the spring in place.

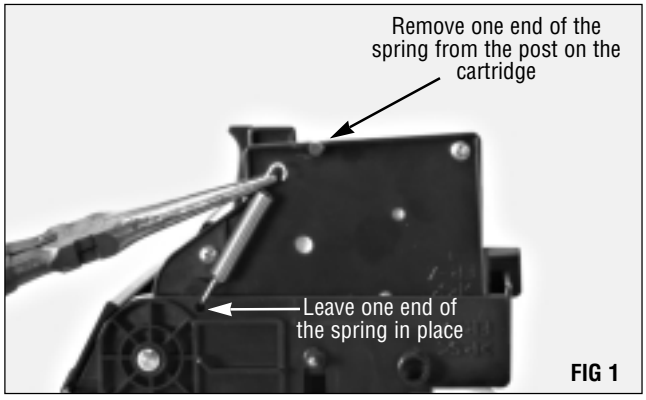


FIG 1

2. Remove the cartridge pins

Using needlenose pliers, carefully remove the two cartridge pins. There is one pin below the hopper cap, and one pin near the cartridge spring (FIG 2).

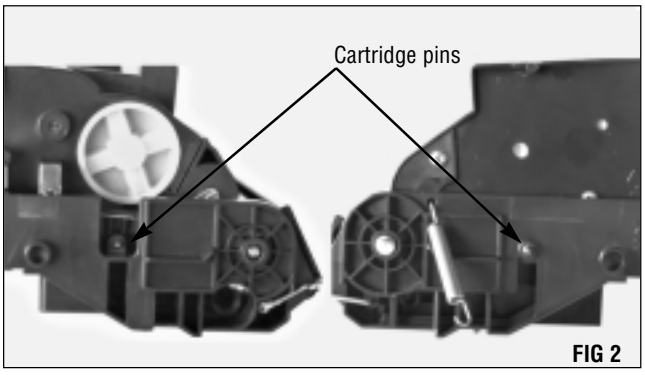


FIG 2

3. Separate the two halves

Carefully separate the hopper section from the drum section (FIG 3), and set the hopper section aside.

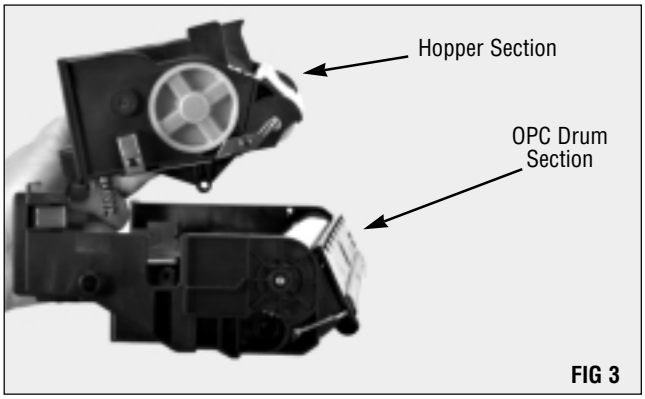


FIG 3

Remove the spring from the drum section and set it aside (FIG 4). Do not misplace this spring as the cartridge will not function properly without it.

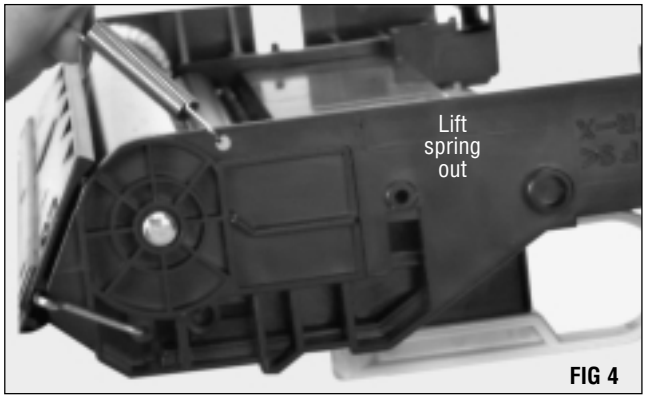


FIG 4

Disassembly of the Drum/Waste Bin Section

NOTE Do not use a steel punch to tap out the axle. Damage to the axle or the axle plating could result.

1. Remove the OPC drum

Remove the drum axle by centering a brass punch over the end of the axle at the large helical gear end of the waste bin. With an aluminum hammer, carefully tap out about one inch of the drum axle. Be careful not to damage the cartridge housing as you tap out the axle (FIG 5).

The axle will exit from the small helical gear end of the drum.

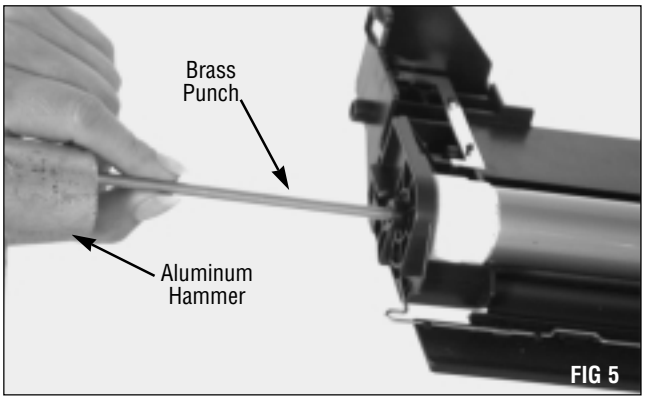


FIG 5

The drum axle must be removed from the small helical gear end only. Support the drum by the large helical gear with one hand while removing the axle by pulling it to the right (FIG 6).

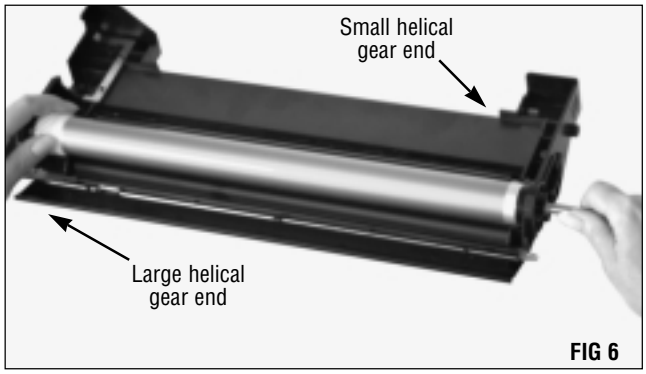


FIG 6

Lift the OPC drum by the large helical gear to remove it from the cartridge (FIG 7). If you plan to reuse the drum, store it so that it is protected from light and impact damage.

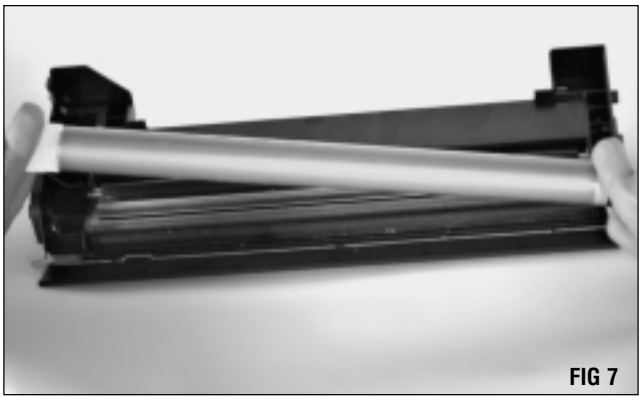


FIG 7

2. Remove the Primary Charge Roller (PCR)

If not using clean latex gloves, handle the PCR by the axle only.

Snap the axle out of the conductive saddle and lift it up and out of the waste bin section (FIG 8).

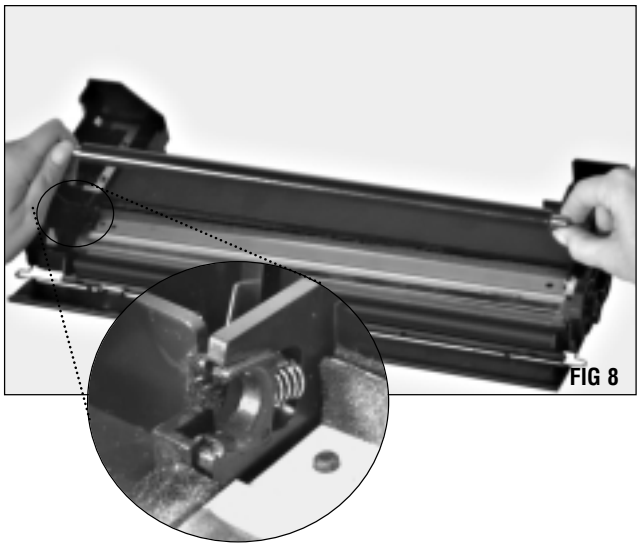


FIG 8

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

3. Clean the PCR

To clean the PCR, blow off using dry filtered compressed air at no more than 30 psi. (FIG 9).

The conductive lube on the end of the PCR axle can be cleaned using 91-99% Isopropyl Alcohol and a lint free cloth. However, **do not** apply alcohol to the PCR surface.

FIG 9

NOTE The drum shutter is attached to the cartridge by a flexible film-like flap. Be careful not to tear this flap or detach it from the OPC section.

4. Remove the wiper blade

Turn the OPC section so that the drum shutter is lying flat on the work surface, facing toward you (FIG 10).

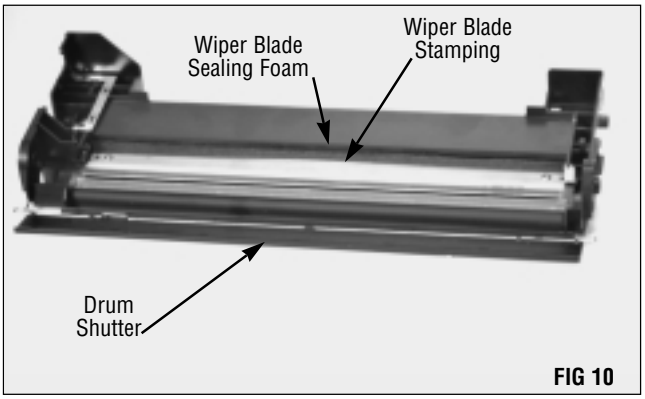


FIG 10

NOTE A wiper blade sealing foam is attached to the cartridge, which wraps around and adheres to the wiper blade stamping. Do not remove this sealing foam or toner leakage may occur.

Caution Any cutting instrument may be extremely sharp and may cause serious injury. Use caution when using any cutting tool.

Using an Angle Blade Knife (ABKTOOL) or similar instrument, carefully cut through the wiper blade sealing foam along the area where the foam meets the cartridge (FIG 11). Be sure to use a finger rest to steady your hand. Try to make as clean a cut as possible, without tearing the foam, to avoid possible toner leakage problems.

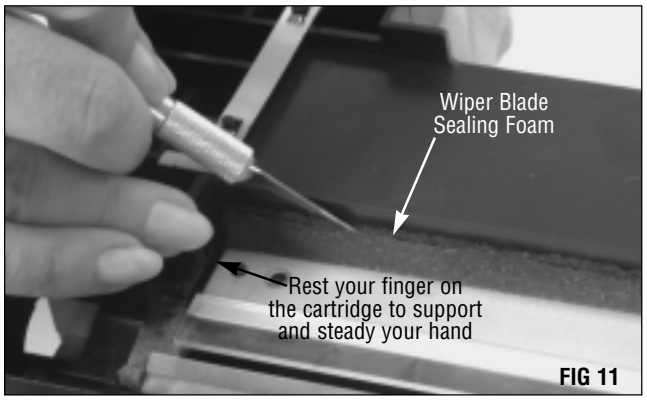


FIG 11

Using a Phillips screwdriver, remove the two screws that secure the wiper blade (FIG 12).

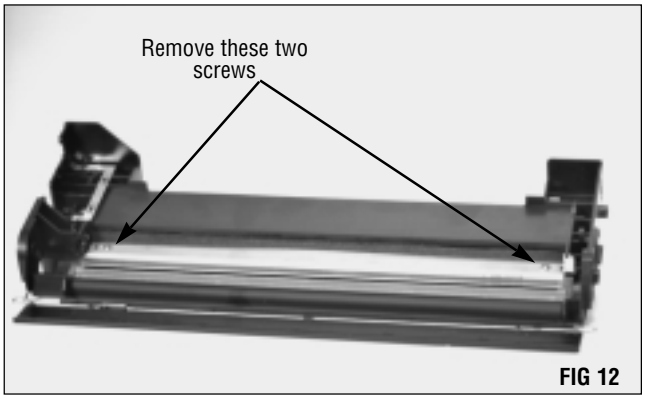


FIG 12

NOTE The left end of the wiper blade is seated over a small plastic alignment post that is easily broken during removal of the wiper blade. Without this post the blade may be aligned improperly, resulting in toner leakage.

Using a small flat blade screwdriver, gently pry the blade up, being careful not to break the alignment post (FIG 13).

Remove the wiper blade and inspect it for damage. Clean with a lint free cloth.

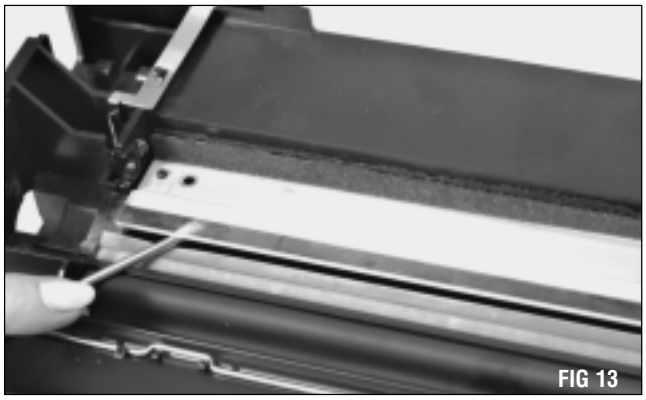


FIG 13

5. Clean the waste bin

Using dry, filtered, compressed air, clean the toner waste bin and the areas around the felts and foams of residual toner (FIG 14).

FIG 14

Using 91/99% Isopropyl Alcohol on a Lint Free Foam Tip Swab (LFSWAB) clean the PCR conductive saddle and surrounding area.

6. Perform a visual inspection

Inspect the wiper blade sealing foam, recovery blade, wiper blade and end foams for defects (FIG 15).

Foam components, such as the wiper blade sealing foam and end foams, should display a smooth surface without pits or tears in the material. Tears in the material can allow toner leakage.

The recovery blade should display a smooth, flat surface without kinks or waviness along the edge. Replace the recovery blade if it is damaged, dislodged or missing.

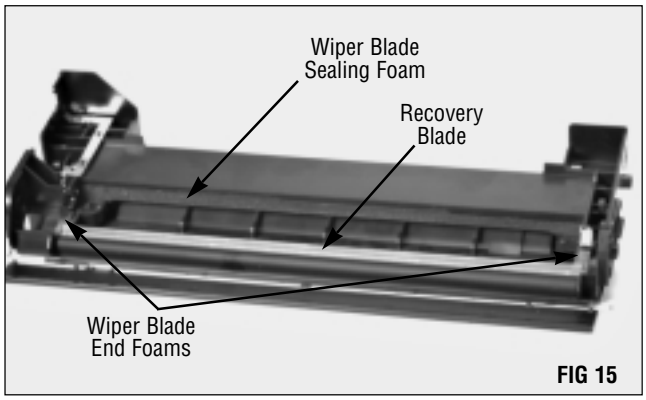


FIG 15

Assembly of the Drum/Waste Bin Section

1. Clean and inspect the wiper blade

To avoid damaging the working edge of the wiper blade, SCC recommends cleaning with only dry, filtered, compressed air (FIG 16). For best results, replace the wiper blade each time you replace the drum.

FIG 16

NOTE For best results, we do not recommend using alcohol or any alcohol-based solvent to clean the polyurethane blade.

2. Powder 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. Powder 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 (FIG 17). Examine the blade to ensure even coverage. Repeat one time.

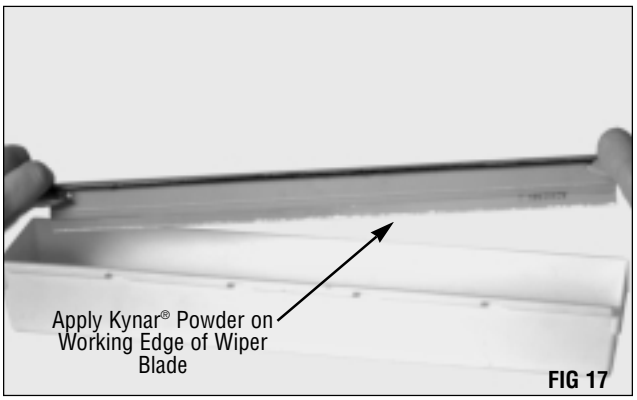


FIG 17

3. Replace the wiper blade

Carefully align the hole on the left end of the wiper blade over the alignment post. Make sure the slot on the right end of the wiper blade is aligned with the small rectangular post before gently pressing the wiper blade into place (FIG 18).

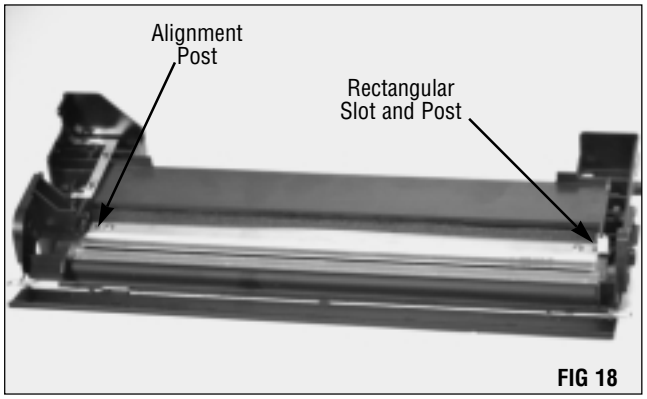


FIG 18

4. Re-install the PCR

Place a small amount of conductive lube on the contact end of the PCR shaft and slide it into the conductive saddle located on the left end of the wiper blade (FIG 19).

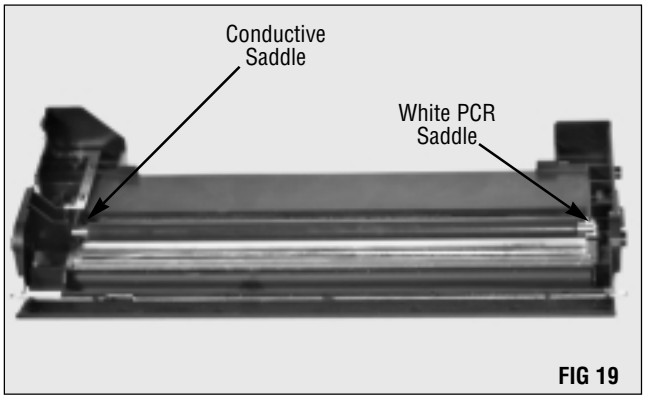


FIG 19

Snap the right end of the PCR shaft into the white PCR saddle located on the right end of the wiper blade (FIG 19).

5. Clean the OPC drum

If you are reusing the drum, clean the OPC surface with dry, filtered, compressed air or a soft, lint-free cloth. Inspect the drum for deep concentric wear lines, scratches or cracks in the coating (FIG 20).

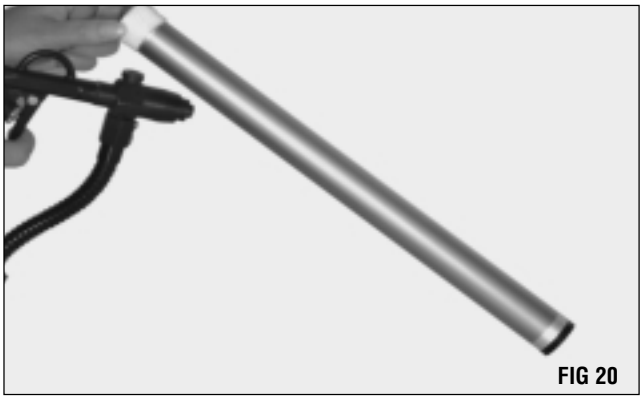


FIG 20

NOTE Do not use cleaning agents or coatings on the drum, and be careful not to nick the surface of the drum with the air nozzle.

6. Pad the drum

Hold the drum by the large helical gear, rotating the drum as you gently pad the coated area with Kynar® Lubricating Powder (KPOW). Be careful to avoid sprinkling Kynar on the gears (FIG 21).

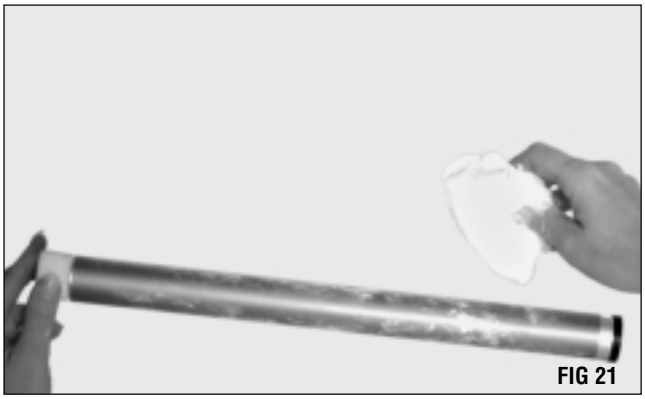


FIG 21

7. Install the OPC drum

With the waste bin section positioned with the drum shutter toward you, position the drum in the waste bin with the small helical gear on the right (FIG 22).

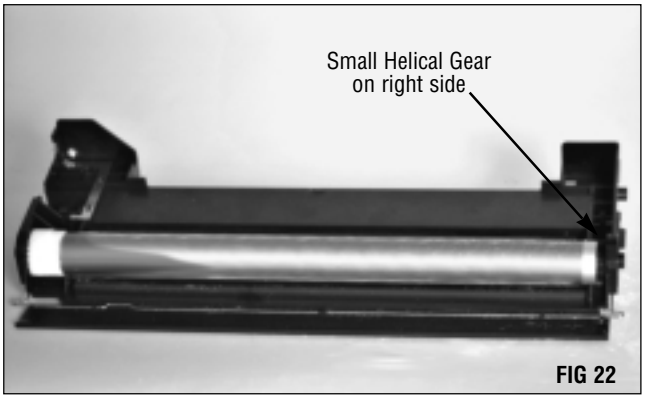


FIG 22

8. Install the OPC drum axle

Install the drum axle at the right end of the waste bin (small helical gear side). Make sure the splined end of the axle (FIG 23) is on the right. You may have to press down slightly on the helical gear in order to guide the axle through the casing at the left end (FIG 24).

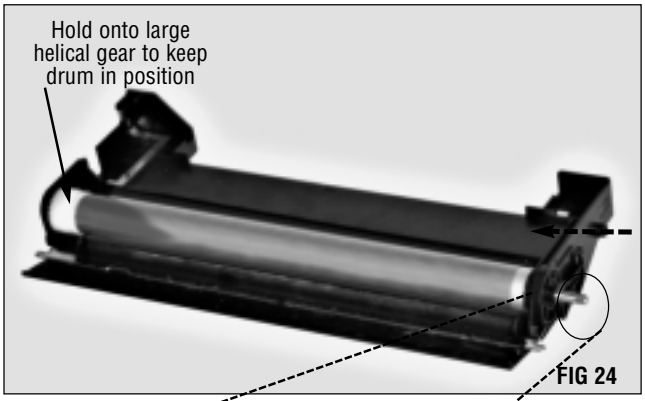


FIG 24

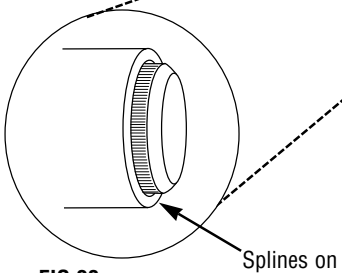


FIG 23

While supporting the drum on the large helical gear (left) end, push the axle into the waste bin until it is seated in the left casing. Then push the axle as far as it will go.

Use the aluminum hammer to gently tap the axle into position (FIG 25). The axle should protrude slightly from the collar housing on the right (small helical gear) end.

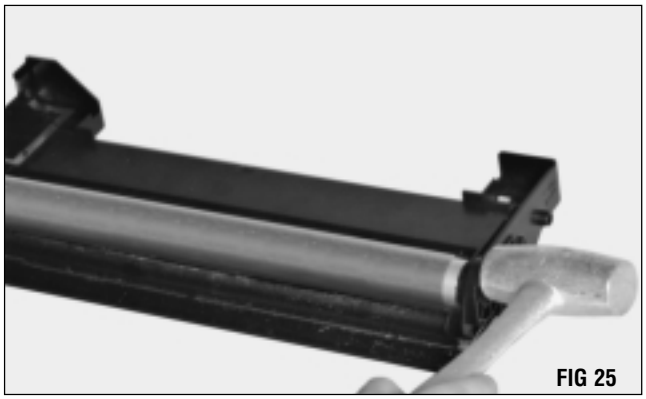


FIG 25

NOTE Do not use a steel hammer to tap the axle. Damage to the axle or axle plating may occur.

Rotate the drum at least six revolutions toward you as you wipe the Kynar® powder from the PCR using a lint-free cloth (FIG 26).

Rotating the drum will help lubricate the wiper blade and prevent potential blade flip overs. Any Kynar wiped from the drum by the wiper blade will be deposited in the waste bin.

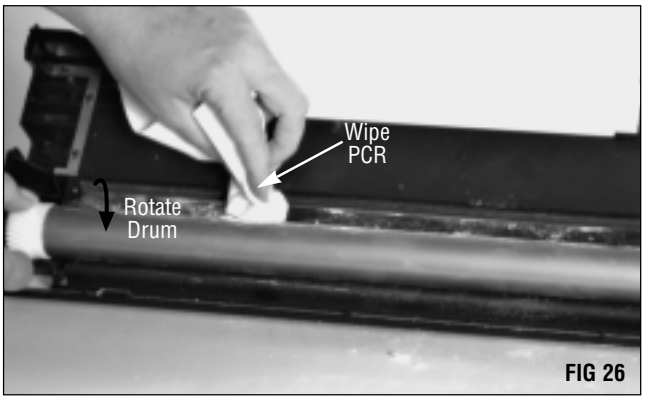


FIG 26

NOTE Make sure all Kynar® powder has been removed from the PCR.

9. Replace the cartridge spring

Insert one end of the cartridge spring into the small hole in the cartridge, located just above the OPC's small helical gear (FIG 27).

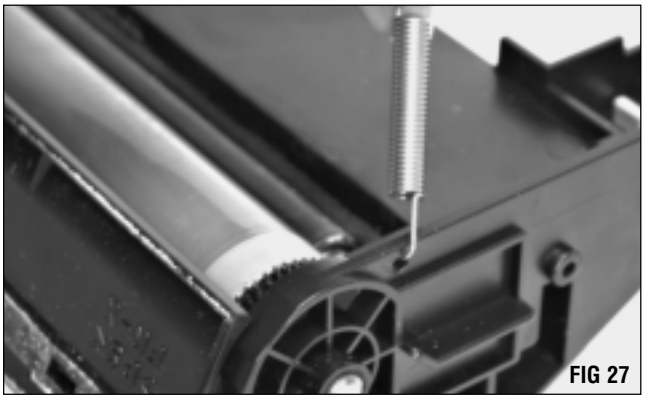


FIG 27

Set the waste bin section aside. Make sure you cover the OPC drum to protect it from light and impact damage.

Disassembly of the Toner Hopper Section

1. Remove the magnetic developer roller (mag roller)
Using a Phillips screwdriver, remove the three screws that secure the endplate (FIG 28). Carefully pull the endplate straight back, away from the cartridge.

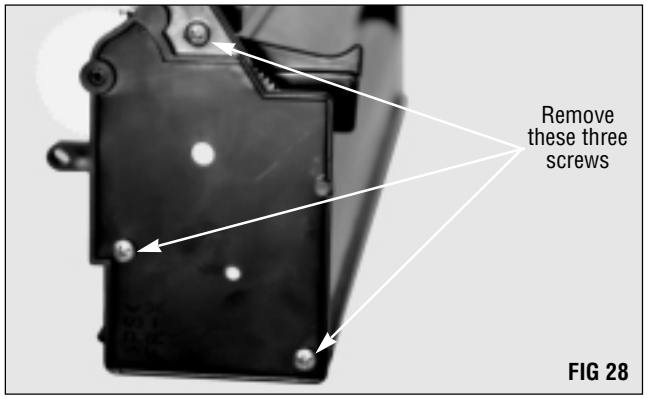


FIG 28

Remove the main agitator drive gear (FIG 29).

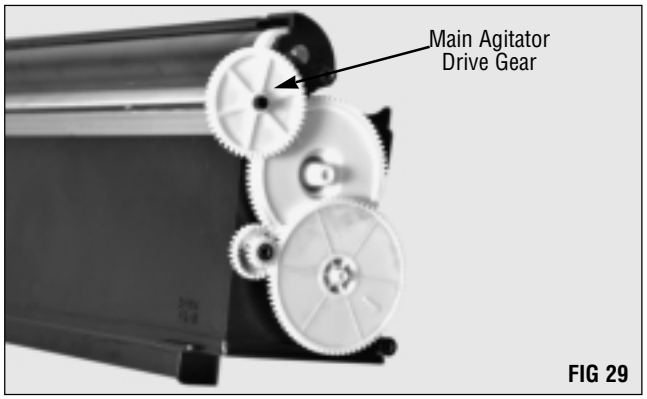


FIG 29

Using needlenose pliers, carefully turn the mag roller axle so that the flat edge is nearly horizontal and on the top (FIG 30). Be sure to stabilize the cartridge with your free hand.

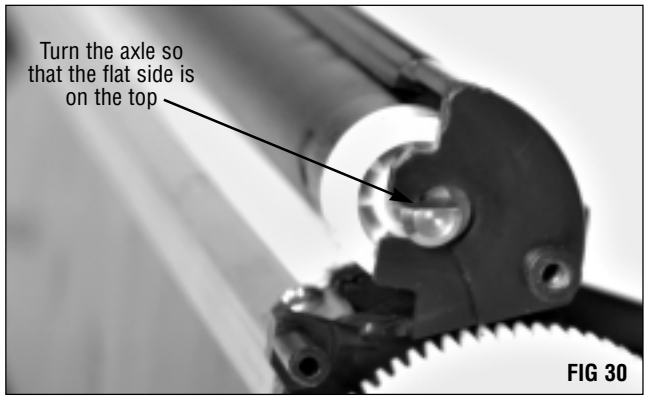


FIG 30

While still steadying the cartridge with one hand, press the mag roller axle down and out of the mag roller housing (FIG 31).

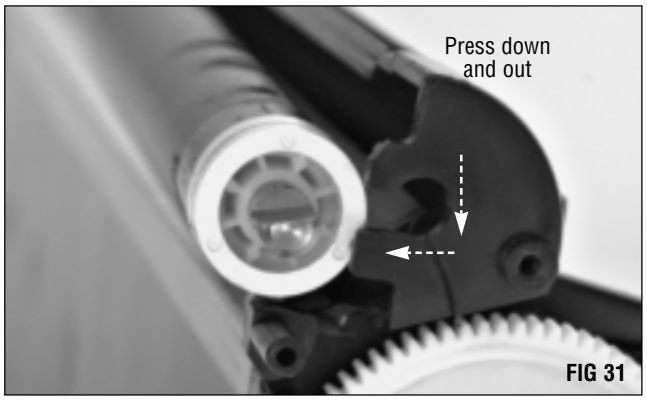


FIG 31

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

Remove the mag roller from the housing. You may need to push against the contact end to free the axle from the cartridge (FIG 32). If you plan to reuse the mag roller, store it on a soft surface.

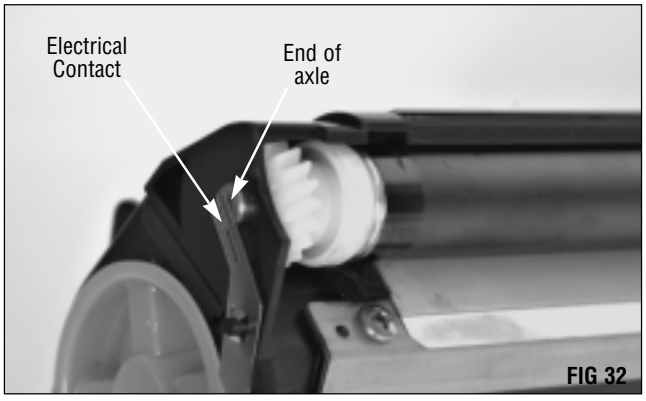


FIG 32

NOTE The mag roller drive gear, bushing and bearings will easily slip off the mag roller. Be careful not to lose these components, as your cartridge will not function properly without them.

2. Remove the doctor blade

SCC recommends removing the doctor blade and thoroughly cleaning the area under the stamping each time you remanufacture the cartridge.

Remove the two Phillips screws that secure the blade stamping (FIG 33).

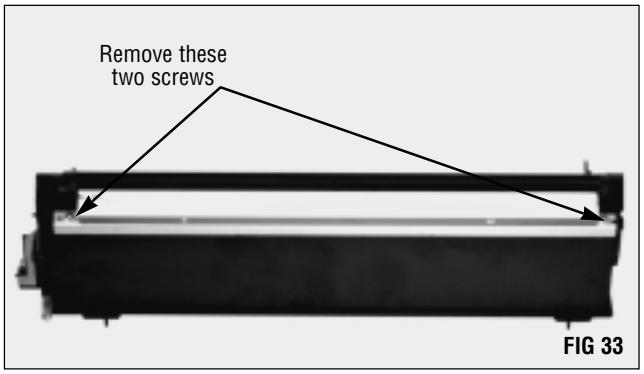


FIG 33

Lift the doctor blade from the cartridge housing and set it aside (FIG 34).

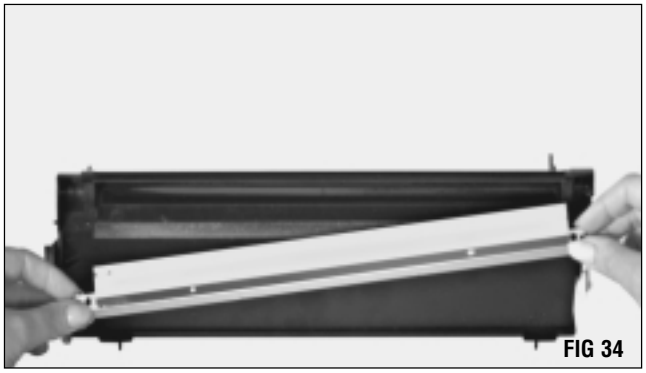


FIG 34

3. Remove the toner hopper cap

Using needlenose pliers, carefully remove the hopper cap (FIG 35). If necessary, you may start by prying the edges up gently with a flat blade screwdriver.

FIG 35

4. Clean the hopper

Clean the hopper with dry, filtered, compressed air. Direct the air stream on and around foam and felt components in order to remove as much toner and debris as possible (FIG 36).

FIG 36

5. Inspect the sealing components

Components such as the doctor blade sealing foam and mag roller sealing felts should display a smooth, clean surface (FIG 37). Make sure the foam materials are secured in the correct position.

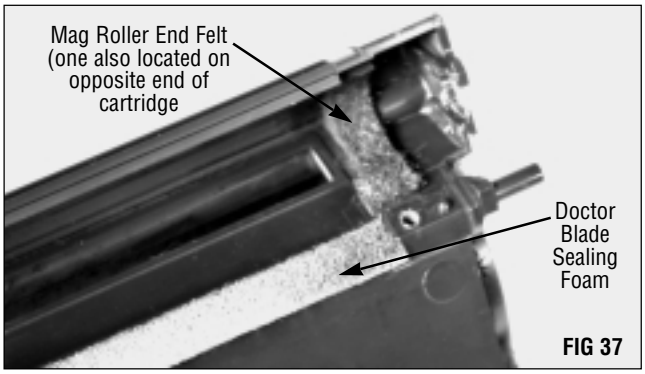


FIG 37

6. Refill the toner hopper

The most reliable and effective method of guarding against toner leakage from the IBM® Infoprint® 20 cartridge is with an OEM-type seal. Static Control has developed an easy-to-apply adhesive-backed ProSeal™ designed to minimize toner leakage. For more information, refer to System Support Series™ (SSS™) #281, "*How to Install Your IBM Infoprint 20 Adhesive ProSeal™*.

To fill the toner hopper without sealing, simply replace the hopper cap after thoroughly cleaning the hopper and fill through the mag roller port. Be sure to clean any spilled toner from the hopper surface with a lint free cleaning cloth.

Assembly of the Toner Hopper Section

1. Clean the doctor blade

Clean the doctor blade with dry, filtered, compressed air (FIG 38).

FIG 38

2. Install the doctor blade

Position the doctor blade stamping over the locating posts in the hopper section (FIG 39).

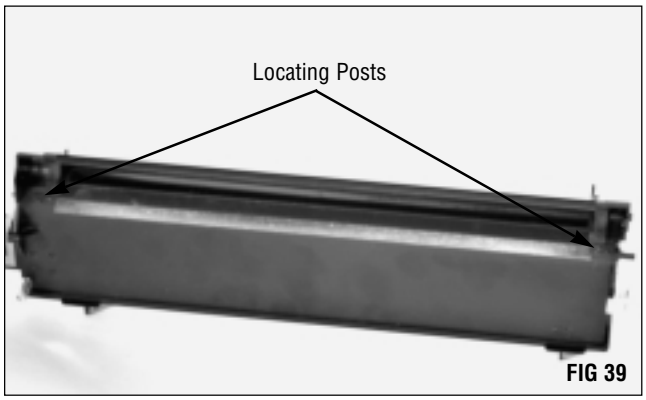


FIG 39

Using a Phillips screwdriver, replace the two screws (FIG 40).

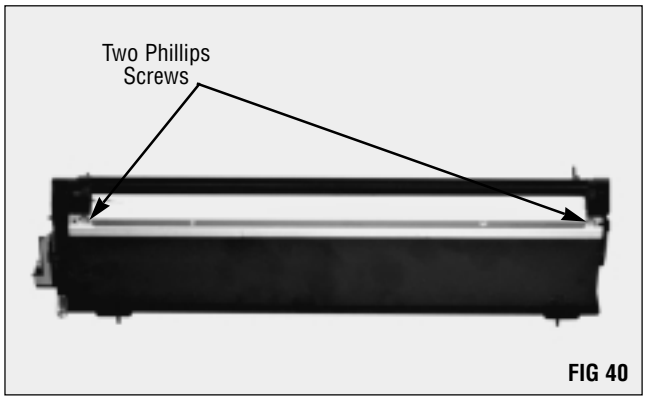


FIG 40

3. Clean and install the mag roller

Thoroughly clean the mag roller sleeve and the area around the gear, bushing, bearing and stabilizer with dry, filtered, compressed air (FIG 41).

FIG 41

NOTE Do not scratch the coated area of the roller with the air nozzle or touch the mag roller with your fingers.

Check to make sure the mag roller bearing, bushing and drive gear are in place (FIG 42). The gear and bearing should be on the left, with the bushing on the right end of the mag roller.

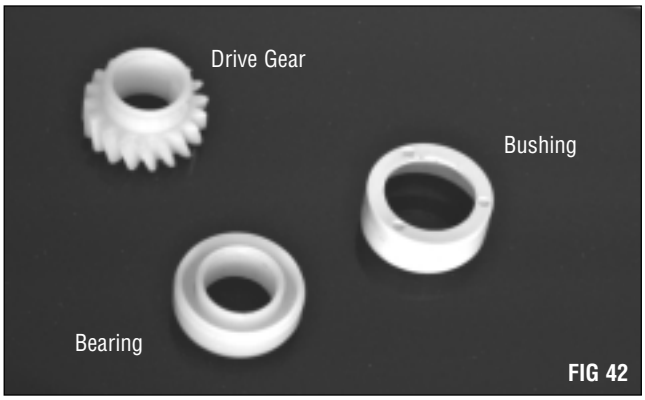


FIG 42

NOTE Do not touch the surface of the mag roller with your fingers. Take care not to scratch the surface of the mag roller.

Install the mag roller with the drive gear and bearing at the left end of the cartridge. Carefully place the axle into the hole at the left end of the housing. (FIG 43). The axle should cause the electrical contact to bow out slightly.

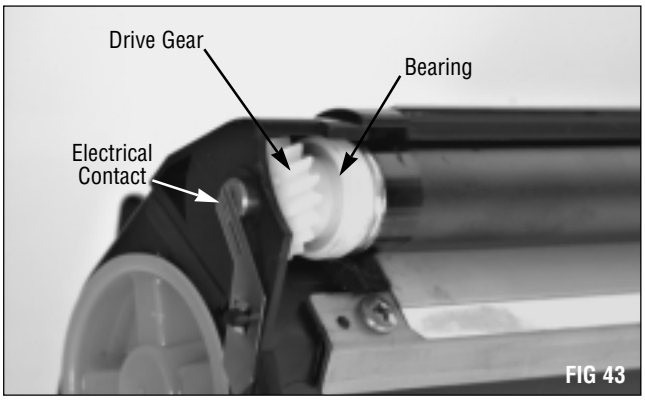


FIG 43

Position the mag roller axle with the flat side up (FIG 44), and push it down and back. The mag roller will lock into place.

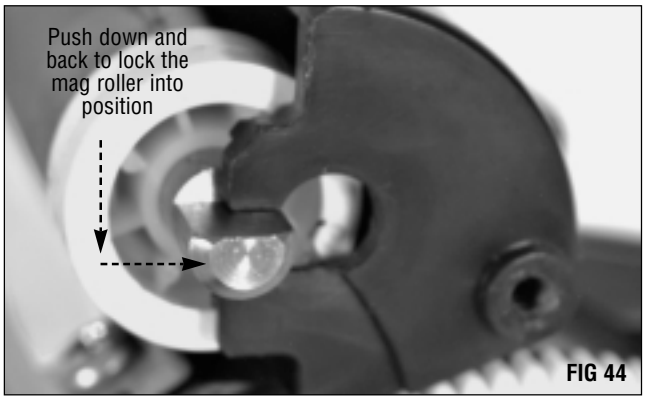


FIG 44

4. Replace the mag roller drive gear

With the small molded gears to the inside, place the mag roller drive gear onto the gear axle on the cartridge housing (FIG 45).

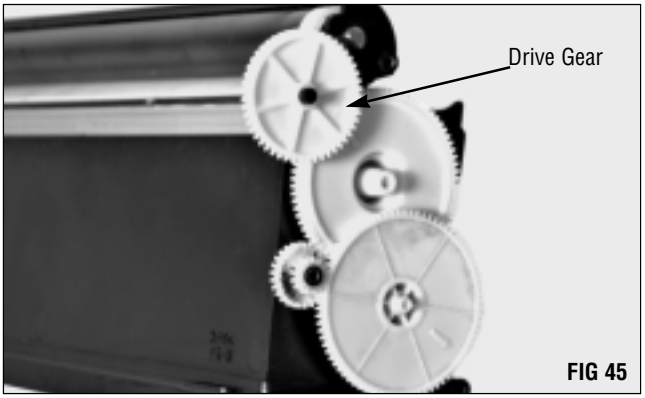


FIG 45

5. Replace the endplate

Using needlenose pliers, turn the mag roller axle so that the flat edge lines up with the recess in the endplate (FIG 46).

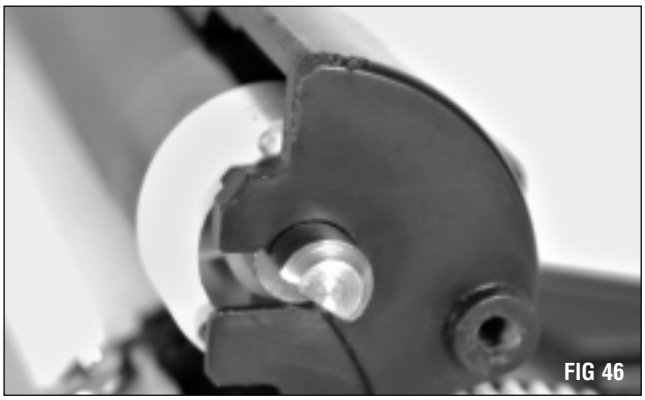


FIG 46

Align the recess in the endplate with the mag roller axle and press the endplate into place (FIG 47).

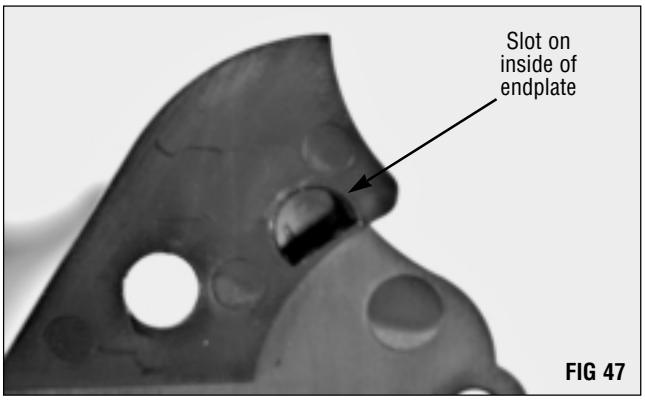


FIG 47

Using a Phillips screwdriver, secure the endplate with the three Phillips screws (FIG 48).

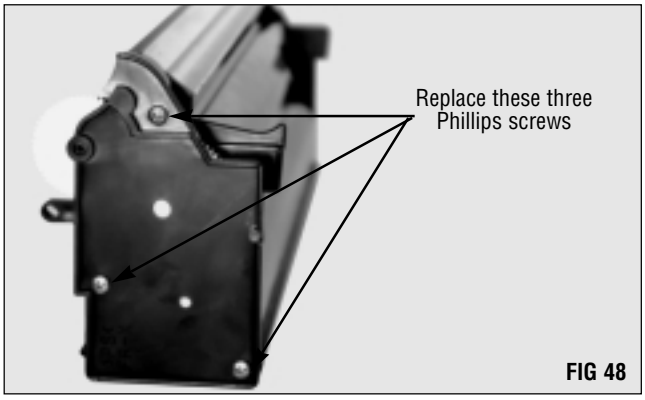


FIG 48

Reassembly of the Cartridge

1. Join the hopper and waste bin sections

Place the two halves of the cartridge together, making sure the large spring on the toner hopper is seated in the recess in the waste bin section (FIG 49).

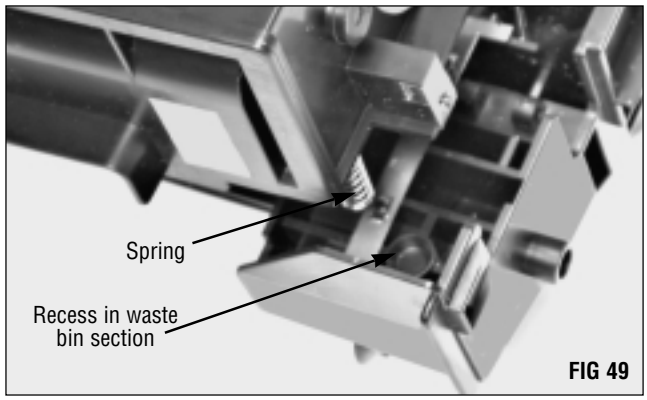


FIG 49

Using needlenose pliers, replace both the left and right cartridge pins (FIG 50).

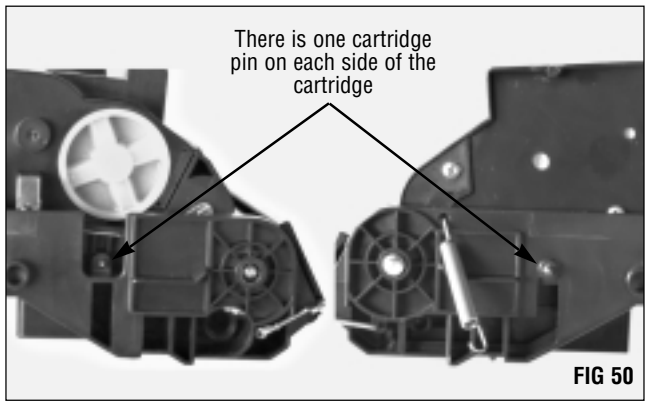


FIG 50

Using needlenose pliers, stretch the cartridge spring up and place the hooked end over the peg on the toner hopper section (FIG 51).

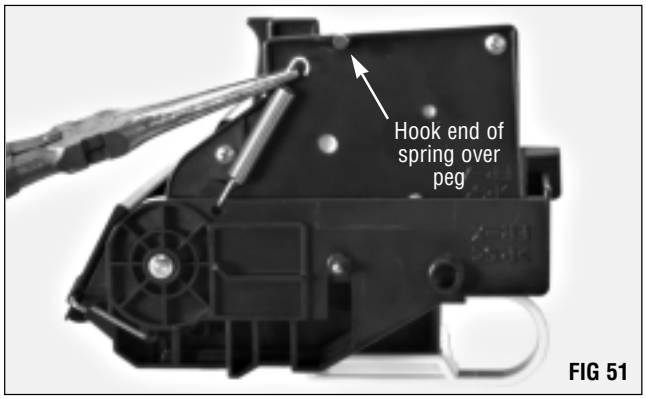


FIG 51

Imaging System Technology You Can Count On!

The development of cartridge imaging systems, such as the IBM® Infoprint® 20 System, is the primary mission of our 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 cartridge application.

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

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