

Fuji-Xerox™ XP15/20

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Remanufacturing the XP15/20

The two main cartridge sections are held together by two interior cartridge pins and two springs. The toner hopper features a "silver" magnetic roller and a direct contact stainless steel doctor blade overlaid with a rubber material. An insertable perimeter adhesive PROSEAL™ installs quickly and easily. The hopper holds a maximum of 750 grams of toner. Overfilling the toner hopper will bind (and possibly break) the toner delivery blade drive gear.

The waste bin utilizes a urethane recovery blade assembly, as well as a Mylar® dam attached to the rear of the waste bin. A large percentage of XP15/20 OEM cartridges have been identified as having a strip of adhesive tape along the base of the wiper blade assembly. The tape helps to reduce the possibility of toner leakage from the waste bin.

A replacement XP15 SuperDrum (without gears) is teamed with the XP15 Graphics 1 Toner which are both available from Static Control. The screws holding the drum axle plates are slightly longer than the other cartridge screws and should not be interchanged. Excessive torque applied to any of the screws may cause damage to the screw casings.

The XP15/20 uses an ultra-thin (25 microns) corona wire to charge the OPC drum. An epoxied electronic component is soldered to the corona grid which goes to ground through the drive gear drum axle plate. The corona assembly is removed with a slight prying motion.

The OEM cartridge is shipped with a transfer corona assembly that is installed by the end user. The assembly may or may not be bundled with the recycled cartridge.

Market Outlook

Static Control estimates a population of 60,000 to 75,000 printers in the US and Canada consuming over 500,000 cartridges a year. With less than 10% of the cartridge demand being met by remanufacturers, the recycled XP15/20 cartridge market offers huge growth potential.

The high cost and high end capabilities of the XP15/20 makes these printers a long-term addition to a work group. The high profit potential makes the cartridge very attractive to remanufacturers.



Remanufacturing Information

Estimated Remanufacturing Time	20 minutes
Suggested Remanufactured Cartridge Price	\$199.00
Toner Weight	750 grams
Toner Class	Standard
<i>Magnetic, Monocomponent, 10-12 microns</i>	
Recommended Test Printer	Dataproducts LZR 1580®

Tools Needed

- Needle Nose Pliers
- Phillips Head Screwdriver with Magnetic Head
- #1 Flathead Screwdriver
- Toner Vacuum and/or dry, filtered compressed air
- Dry, lint-free cloth
- Adhesive Tape
- Instant Adhesive

Static Control XP15/20 System Supplies

	Item #
Fuji-Xerox™ XP15 Graphics 1, 750g Bottle	XP750B
Fuji-Xerox™ XP15 OPC SuperDrum/No Gears	XP15DRUM
Fuji-Xerox™ XP15 Wiper Blade	XP15BLADE
XP15 Perimeter Adhesive PROSEAL™	XPADHSEAL
XP15 PROSEAL™ Kit	XPSEALKIT
XP15 Plexiglass Hopper Fixture	XPSEALJIG
XP15 Hard-Chromed Flexsteel Insertion Tool	XPSEALTOOL
Fuji-Xerox™ XP15 Wand - Unflocked in Polytube	XP15WAND
Fuji-Xerox™ XP15 Nomex® Felt	XP15FELT
2.5 Mil Foil Bag (13" x 21")	5001321
Conductive Cartridge Lubricant	CONCLUBE

Under Development

- Doctor Blade and Recovery Blade
- Remanufactured Magnetic Roller
- Replacement Primary and Transfer Corona Wires

Contact your Static Control Sales Representative for more information on New Products, Systems and Kits.

In the US/CAN 800.488.2424 or INT'L 919.774.3808

In the UK 0800 834675 or outside the UK +44 (0)1734 314569

About the XP15/20 Cartridge

COMPATIBILITY The XP15/20 cartridges may be used interchangeably with the compatible printers listed below. Although the internal componentry is essentially the same among the cartridges, a few minor differences have been observed. A strip of adhesive tape along the base of the wiper blade assembly has been identified in Dataproducts®, Compaq® and Apple® cartridges, but not in Genicom® cartridges. Variations in the color of the magnetic roller have also been reported, but none of these variations have been observed in current production OEM cartridges.

CARTRIDGE EVALUATION Our ongoing testing and evaluation of the XP15/20 cartridge indicates that changes in OEM toner and magnetic roller have occurred since the introduction of the XP15/20 machine. Solid image density has improved, and the incidence of intermittent white voiding has lessened, in contrast to earlier cartridges. However, our evaluation has concluded that light, uneven print density is a characteristic of the OEM XP15/20 cartridge. Consequently, light print density can be a characteristic of a remanufactured cartridge. The cause of this light print phenomenon is attributed NOT to the toner, but to the design deficiencies of

the magnetic roller. The light print characteristic is naturally more apparent in solid black pages and graphic-intensive applications, but much less noticeable in text applications.

FROM THE FIELD A limited number of primary corona wire field failures have been reported. Failed wires display a burned, pitted surface when examined under 500X magnification.

DEVELOPMENT Static Control's development laboratories are currently conducting research and testing to develop replacements for the corona wire, doctor blade and magnetic roller.

CLEANING: Dry, filtered compressed air is the preferred cleaning method for all cartridge components in the XP15/20 imaging system. Effective alternative methods are noted in parenthesis () throughout the instructions.

LUBRICATION: When conductive grease is required, use **Static Control Conductive Cartridge Lubricant**. In the following instructions, a "thin layer" refers to the thickness of a single piece of notebook paper.

Printer Information

	Compaq Pagemark 15®	Dataproducts LZR 1560®	Apple Laserwriter 810®	Xerox 4520®
Price	\$2,599	\$3,395	\$4,899	\$3,749
First Ship Date	September 1992	January 1992	November 1993	May 1994
Pages Per Minute (ppm)	15 ppm	15 ppm	20 ppm	20 ppm
Engine Duty Cycle	50,000 pages/month	25,000 pages/month	600,000 pages/lifetime	50,000 pages/month
Resolution (dpi)	800H x 400W dpi	400/600/800 dpi	400/600/800 dpi	600 dpi
Page Size	Let/Legal/A3/4/B4/5	Let/Legal/A3/4/B4/5	Let/Legal/A3/4/B4/5	Let/Legal/Led/A3/4/5/B4/5

* The OEM recommends a printer operating range of 15-85% RH (50-95°F); Cartridge Storage at 35-85% RH (32-95°F)

Cartridge Information

	Compaq Pagemark 15®	Dataproducts LZR 1560®	Apple LaserWriter 810®	Xerox 4520®
OEM Part Number	299275-502**	299275-502	M1853GA	106R55
OEM Yield*	11,000 pages	12,000 pages	11,000 pages	14,000 pages
Price (Retail List/Retail Street)	Discontinued	\$307/\$270	\$300/\$270	\$314/\$314

*Yield is based on 5% page coverage, unless noted otherwise.

** Uses Dataproducts LZR 1560® Cartridge

Printer Engine Compatibility Guide

Advanced Tech Intl LC 6820-20

Advanced Tech Intl LC 6815-15

Apple Laserwriter Pro 800/810

ATI LC 6815 15 ppm

ATI LC 6820 20 ppm

BGL Laserleader Mark 9115-1 15

BGL Laserleader Mark 9115-2/-2/-3 15

BGL Laserleader Mark 9120-3S 20

BGL Laserleader Mark 9315/9320

Compaq Pagemark 15

Compaq Pagemark 20

Dataproducts LZR 1555-1/-2/-3

Dataproducts LZR 1555/1555PS

Dataproducts LZR 1560/1560J/1560N

Dataproducts LZR 1580

Dataproducts LZR 2060/2080

Generation Systems 415

Genicom 7150

Leto Twin 360

Lotz LZ15-ENV

Mirror Tech Mirrorimage 415

Quickor 11X17 Laser

Realtech

Sun Microsystems Newsprinter 20

Sun Microsystems Sunpics Newptr

Sunpics Newsprinter 20

Xerox 4520/4520mp

XLI Xper 5000/5000LE

SEPARATE WASTE BIN AND TONER HOPPER SECTIONS

1. Remove the two holding screws at each end of the cartridge cover. (Figure 1)
2. The cover is held in place by two holding tabs on the top of the cover. Lift and tilt the cover to disengage it from the tabs.
3. Remove the two springs that hold the waste bin and hopper sections together (one spring at each end of the cartridge). Do not remove the drum shutter spring. Be very careful not to snap the drum shutter, as it could cause damage to the drum.
4. Two interior cartridge pins hold the hopper and drum sections together by hinges. Push the pins outward through the hinge casings with your finger. Remove both pins to separate the cartridge. (Figure 2)



FIG 1

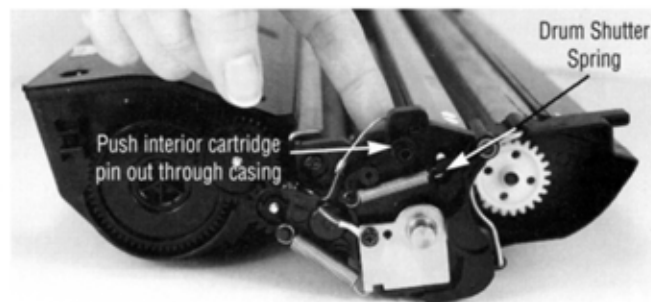


FIG 2

REMOVE AND CLEAN THE CORONA ASSEMBLY

1. Remove the screw holding the epoxied electronic component to the drive gear drum axle plate. (Figure 3)



TIP: Note that the screws holding the drum axle plates are slightly longer than the screws used with the other components.

2. Gently pry the corona assembly from its installed position by the base of the corona assembly arm. Carefully lift the corona assembly from the cartridge. (Figure 4)

IMPORTANT: Do not attempt to remove the corona assembly by using the arm of the assembly for leverage. This may cause the plastic assembly to crack or break.

3. The corona assembly is comprised of three primary components which require cleaning with each cycle. (Figure 5)

CORONA GRID: Remove the corona grid from the assembly. Clean the grid with compressed air (or a lint-free cloth dampened with 99% isopropyl alcohol).

CORONA CAGE: The corona cage houses the corona wire and is lined with a highly conductive fibrous material. Clean the cage with dry, filtered compressed air only.

CORONA WIRE: Do not remove the corona wire. Clean the wire with dry, filtered compressed air (or 99% isopropyl alcohol and a cotton swab).

IMPORTANT: Do not use ultrasonic cleaning methods or other cleaning agents to clean the corona assembly.

4. Reassemble the corona assembly.

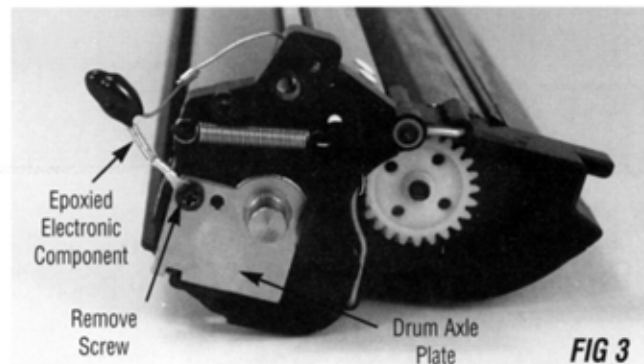


FIG 3

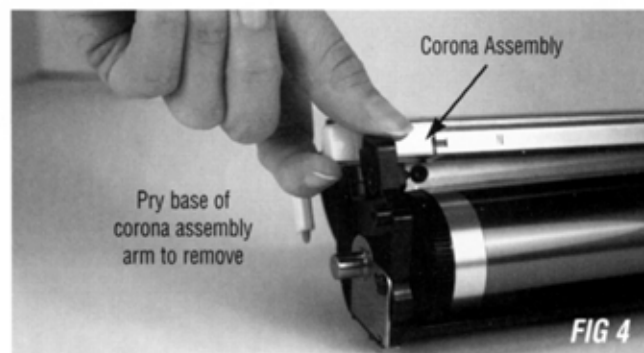


FIG 4

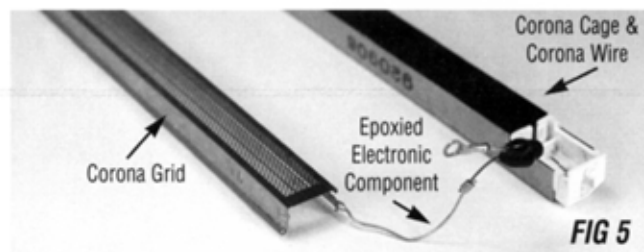


FIG 5

REMOVE AND CLEAN THE OPC DRUM

1. First, remove the drum axle plate from the straight gear end of the cartridge; then slide the drum shutter back to remove the drive gear drum axle plate. (Figure 6)

CAUTION: When both drum axles are removed, the drum will roll freely from its installed position.

2. Remove the drum and clean it with dry, filtered compressed air (or a dry, lint-free cloth). Store the drum in a light-protected area.

Replace a worn drum with a **Static Control XP15 OPC SuperDrum**. Complete gearing instructions are available upon request.

3. Clean the drum axle plates with a dry, lint-free cloth.
4. Apply a thin layer of conductive grease to the drum axles. (Figure 7)

Figure 8 illustrates the two drum axle plates.

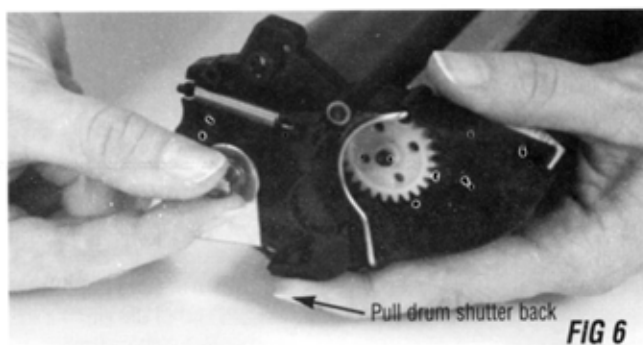


FIG 6



FIG 7

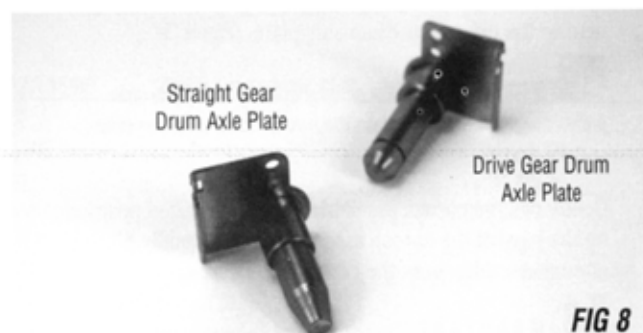


FIG 8

CLEAN THE WASTE BIN

1. First, remove the strip of adhesive tape (if present) from the base of the metal wiper blade assembly; then remove the two phillips screws holding the wiper blade.
2. Remove and inspect the wiper blade. If necessary, use a #1 flathead screwdriver to carefully pry the metal base from its installed position. Do not rip or gouge the foam underneath. (Figure 9)
3. Clean the wiper blade with dry, filtered compressed air (or a dry, lint-free cloth).

Replace a worn wiper blade with a **Static Control Fuji-Xerox™ XP15 Wiper Blade**.

4. Empty the waste bin and clean it using dry, filtered compressed air (or a toner vacuum). Be very careful not to damage the wiper blade or the Mylar® dam.

OPTIONAL: The waste bin sweeper blade may be removed to allow greater access for cleaning. Remove the holding pin opposite of the drive gear. Lift the sweeper blade out of the waste bin, clean it with compressed air (or a toner vacuum) and reinstall. (Figure 10)

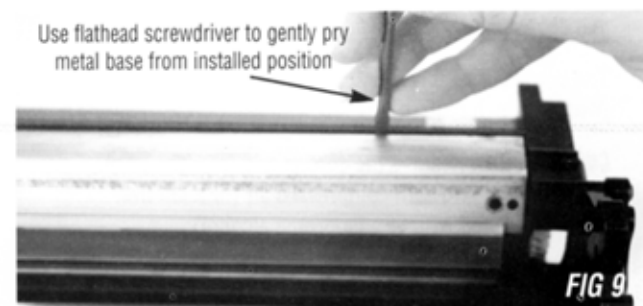


FIG 9



FIG 10

REASSEMBLE THE WASTE BIN SECTION

1. Reinstall the wiper blade. Note the locating bosses at each end of the waste bin.
2. Place a strip of cellophane tape (1/2" width) along the length of the wiper blade assembly where the metal stamping butts against the ABS plastic casing. This will lessen the possibility of leakage from the waste bin. (Figure 11)
3. Pad the OPC drum and the edge of the wiper blade with Kynar® powder. (Figure 12)
4. Reinstall the OPC drum and both drum axle plates. Secure the straight gear drum axle plate with its holding screw.
5. Manually rotate the drum 6 revolutions to completely lubricate the wiper blade with kynar powder. The excess powder will deposit in the waste bin.
6. Reinstall the corona assembly. The assembly will snap easily into its installed position.
7. Attach the corona assembly electronic component to the drive gear axle plate with the holding screw. Set the drum/waste bin section aside in a light-protected area until final reassembly.

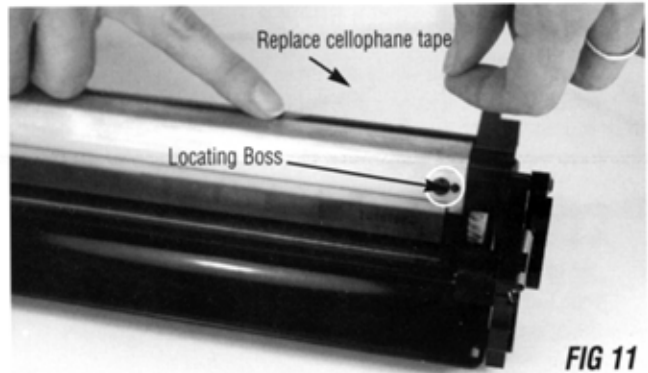


FIG 11

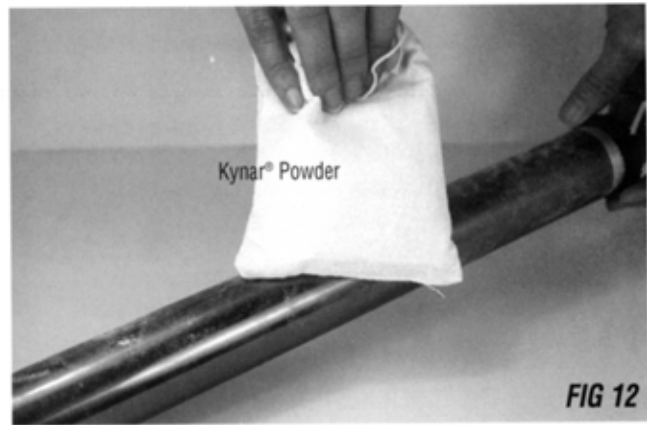


FIG 12

REMOVE AND CLEAN THE MAGNETIC ROLLER

1. Remove the magnetic roller axle covers from each end of the hopper. Lift the magnetic roller, bushings and gear from its housing. (Figure 13)
2. Clean the hubs of the magnetic roller axle covers with a dry cotton swab. Note that the three-gear cluster at the end of the hopper will slip easily off its' axles when the drive gear axle cover is removed.
3. Apply a thin layer of conductive grease to the hubs of the axle covers. Use a cotton swab to apply and spread the grease evenly in the hub areas. (Figure 14)
4. Clean the magnetic roller with dry, filtered compressed air (or a dry, lint-free cloth).

IMPORTANT: The ends of the magnetic roller felt saddles may become detached during normal cartridge operation. (Figure 15) Reattach the felts with instant adhesive. Otherwise the felt may lodge between the magnetic roller and OPC drum during operation, and may result in left-right print density variation.

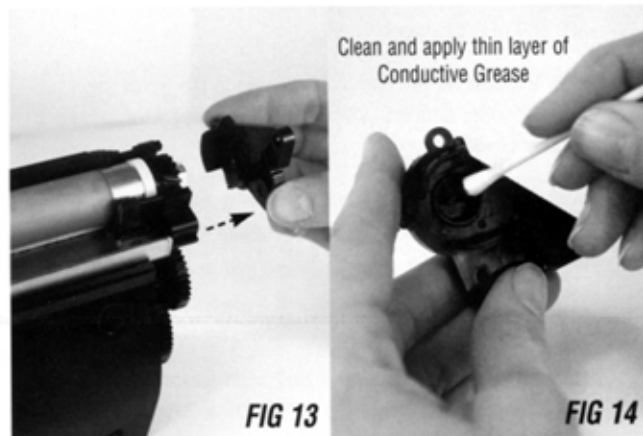


FIG 13

Clean and apply thin layer of
Conductive Grease

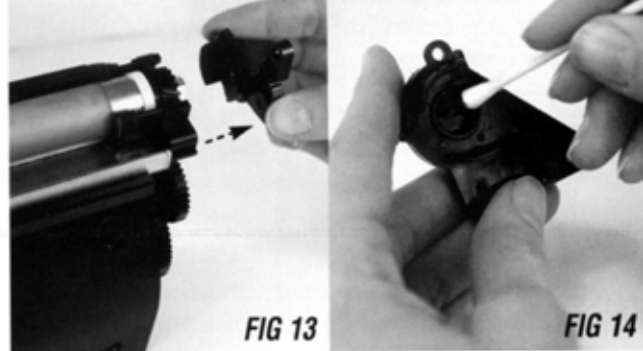


FIG 14



FIG 15

CLEAN AND FILL THE TONER HOPPER

1. Remove the doctor blade and clean it using dry, filtered compressed air and/or a dry, lint-free cloth. (Figure 16)
2. Remove the toner hopper cap by the nub of the cap.
3. Locate the toner delivery blade through the toner fill hole. Turn the large gear at the opposite end of the hopper to position the sweeper blade against the hopper wall. Clean the toner hopper with compressed air (or a toner vacuum). Make sure all toner is removed. (Figure 17)
4. Install a **Static Control XP15 Perimeter Adhesive PROSEAL™**. The **XP15 PROSEAL™ Starter Kit** includes a hopper fixture, seal insertion tool, 25 seals, and cleaning tools.
5. Fill the hopper with 750 grams of **Static Control Fuji-Xerox™ XP15 Micro Graphics 1 Toner**. Replace the toner hopper cap. The cap should fit snug over the fill hole.

I **IMPORTANT:** *Do not fill the hopper with more than 750 grams of toner. Otherwise the toner delivery blade drive gear will bind and break.*

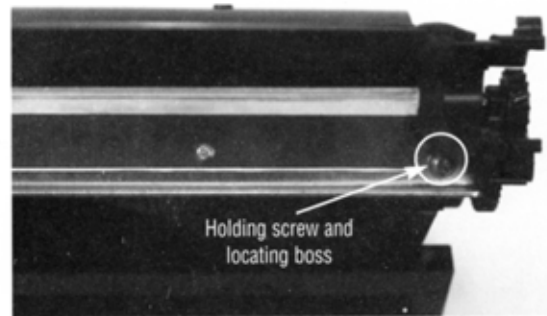


FIG 16

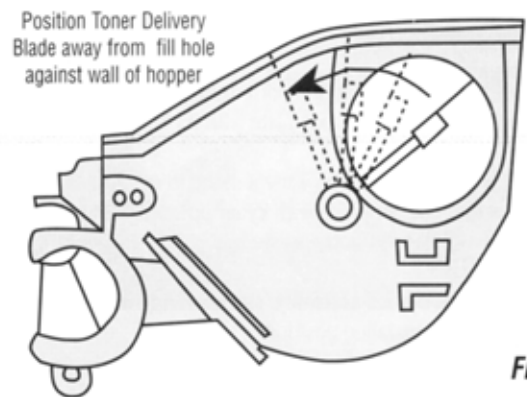


FIG 17

REASSEMBLE THE TONER HOPPER SECTION

1. Reinstall the doctor blade. Note the locating bosses at each end of the hopper.
2. Apply a thin layer of conductive grease to the tip of the magnetic roller contact axle. Reinstall the magnetic roller and axle covers.
3. Make sure the printer contact arm on the axle cover is free of toner and debris. Wipe the contact clean with a lint-free cloth. (Figure 18)

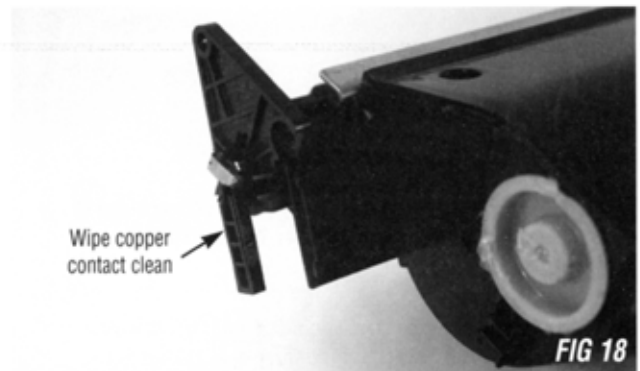


FIG 18

CARTRIDGE REASSEMBLY

1. Bring the hinges of the hopper and drum/waste bin sections together and replace the two interior cartridge pins. Make sure the corona assembly electronic component is positioned over the hinge. Otherwise it will rub against the drum gear. (Figure 19)
2. Replace the two springs that hold the cartridge sections together. The smaller spring installs at the straight gear end of the cartridge.
3. Tilt the cartridge cover up at a slight angle (arrows up) in order to insert the holding tabs in the receptacles on the top of the cover.
4. Secure the cover with the two phillips head screws at each end of the cartridge. ♦



FIG 19

ESTABLISHING BASELINE PERFORMANCE BENCHMARKS

We recommend that you perform a comprehensive series of test prints to establish the performance standards of your cartridges utilizing Static Control's Fuji-Xerox™ XP15/20 System Components. Listed below is a series of Anacom Smart Box® test targets that we regularly use in system evaluation. This test

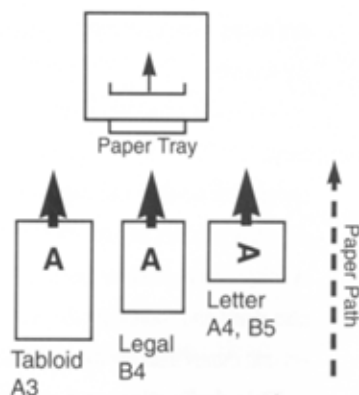
series will establish the normal print characteristics of the Fuji-Xerox™ XP15/20 cartridge for comparison with your subsequent remanufactured cartridges. We further recommend that you retain this cartridge as your standard to simplify future performance verification.

► Anacom Smart Box® TEST PRINT SERIES

Test Print	Print Characteristic Test
Murphy's Law	Small Area Solid Black Density, Gray Scale Accuracy Text Boldness, Character Blasting
Solid Black	Large Area Solid Black Density Horizontal Banding, Repetitive Defects
Gray Scale	Gray Scale Accuracy, Overtoneing Horizontal Banding
Solid White	Toner Leakage, Repetitive OPC, Mag Roller Defects
Barber Pole	Text Boldness, Side to Side Uniformity Character Blasting

► TROUBLESHOOTING REPETITIVE DEFECTS

Repetitive defects will appear on the page in relation to the orientation of the page as it is fed into the printer. Note the landscape orientation of the Letter, A4 and B5 pages.



► PRINT DEFECT TROUBLESHOOTING TIPS

The following list of common defects is provided as a general guide to help you better assess your test prints and to direct you toward the cause of the problem. If you have questions or require further assistance, call our Technical Support Staff at the telephone numbers listed below.

Print Defect	Troubleshooting List
Backgrounding	Inadequate drum charging/erasing, OPC wear, Toner properties, Low RH% conditions, Dry paper
Ghosting	Inadequate drum charging/erasing, OPC wear, Low RH% conditions, Toner properties, Dry paper
Light Print	Magnetic Roller, Electrical contacts, OPC wear, Toner properties, High RH% conditions, Damp paper, Doctor Blade
Streaking/Lines	Wiper Blade (sharp-edged lines), Corona Wire (curved, fuzzy-edged lines), Cleaning Wand (fine streaks), Upper Fuser Roller
Random Sprinkles	Recovery Blade, Magnetic Roller Felts
Smudges	OPC contamination, Upper Fuser Roller, Cleaning Wand, Magnetic Roller contamination
Toner Offsetting	Upper Fuser Roller, Lower Pressure Roller, Toner properties
Repetitive Defects	Troubleshooting List
@ 3.05" (77 mm) Intervals	Upper Fuser Roller Interval Toner offsetting, Fuser Roller/Pressure Roller incompatibility, Upper Fuser Roller/Lower Pressure Roller wear/contamination
@ 3.11" (79 mm) Intervals	Lower Pressure Roller Interval Toner/Pressure Roller incompatibility, Pressure Roller wear/contamination (Defect will appear on backside of page)
@ 2.48" (63 mm) Intervals	Magnetic Roller (MR) Interval MR wear, MR electrical contact, MR cleaning damage, MR bushing wear, Doctor Blade failure, Toner properties, MR contamination
@ 4.88" (124 mm) Intervals	OPC Drum Interval OPC wear, OPC damage, OPC contact, Elliptical drum rotation, OPC light exposure degradation

Repetitive defects include horizontal banding, dots, lines and hazing.



Integrated Product Systems You Can Count On

Quality Assurance is the cornerstone of every integrated product system from Static Control. Through extensive testing and research, we develop the optimum combination of components for each cartridge system. Integrated product systems reduce the number of variables from thousands to a mere handful, eliminating the guesswork of matching individual components. The result is a system of components that works seamlessly together in each designed cartridge application.

Developing integrated product systems, such as the Fuji-Xerox™ XP15/20, is the primary mission of our system development laboratories. Our engineering and manufacturing expertise provides us total control in design, quality and development to produce products from the ground up. We also direct and coordinate the development of matched toners and drums with our toner and OPC vendors.

This dedication and commitment results in 100% guaranteed cartridge systems that allow you to quickly attack new market opportunities with complete confidence in the reliability and performance of your products.

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