FUTURE GRAPHICS

Samsung ML-6060/1650

TECHNICAL INSTRUCTIONS

ML6060/1650HTECH

Technical Instructions	Printers	OEM Info	Tools & Supplies	1

CORPORATE
LOS ANGELES, USA
US 1 800 394.9900
Int'l +1 818 837.8100
FAX 1 800 394.9910
Int'l +1 818 838.7047

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Int'l +62 03 9561-7751

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FAX 1800 004.302
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FAX +5982 900.0858

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FAX +27 11 974.3593

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ISR 09 760.12.39
Int'l +972 9760.12.39
ISR 052.38.555.82
Int'l +972 5238.555.82

See Last Page

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Philips Screwdriver
Small Flat blade Screwdriver
Cotton swab
Alcohol
Lint free cloth
Toner
Seal

Photo 1

Step 1

Place the cartridge upside down on the work bench. Slide open the drum shutter and pull the drum shutter arms from their positioning posts on each side of the cartridge. (See Photos 1 & 2)

Photo 2

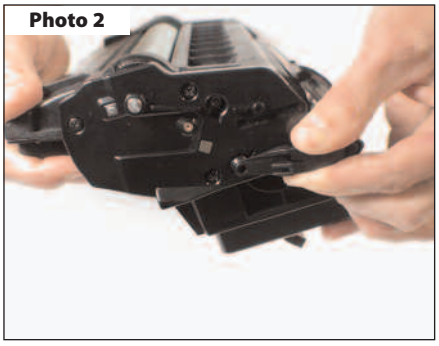
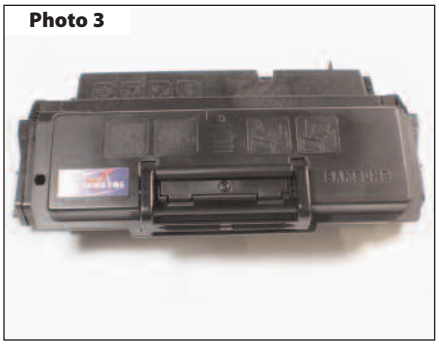


Photo 3



Step 2

Place the cartridge on the work bench so the waste hopper is facing away from you. (See Photo 3)

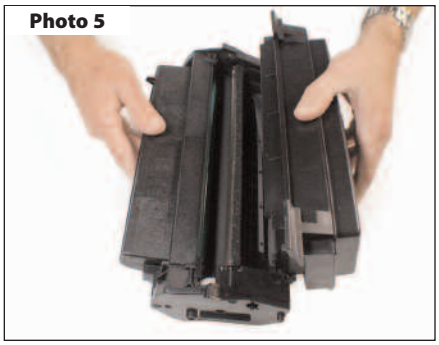
Notes

Photo 4

Step 3

Using a Philips screwdriver remove the two screws located on top of the cartridge next to the toner hopper. (See Photo 4)

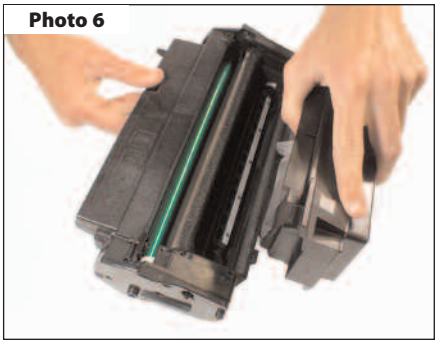
Photo 5



Step 4

Pry the front of the toner hopper reservoir back. (See Photo 5)

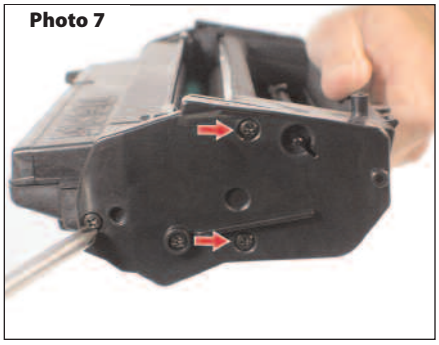
Photo 6



Step 5

Lift the toner hopper reservoir away from the cartridge. (See Photo 6) Clean the toner hopper reservoir using dry compressed air or a vacuum.

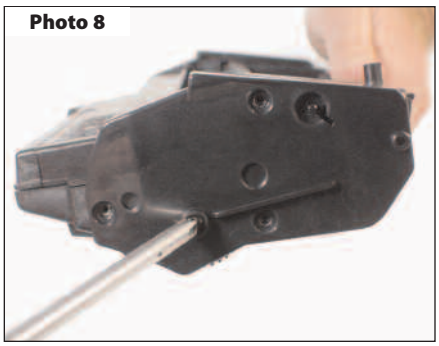
Photo 7



Step 6

Remove the three screws that hold the cartridge end cap to the toner hopper on the gear side of the cartridge.
(See Photo 7)

Photo 8



Step 7

To remove the fourth screw from the end cap rotate the screwdriver to the right.
(See Photo 8)

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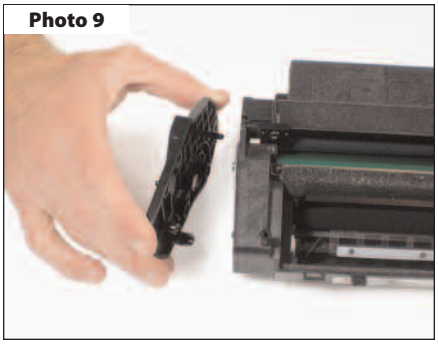
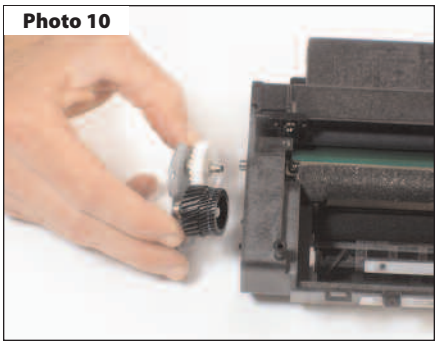
Photo 9



Step 8

Side the cartridge end cap from the side of the cartridge. (See Photo 9)

Photo 10



Step 9

Pull the metal gear housing plate from the side of the cartridge. (See Photo 10)
NOTE: Two gears may stay attached to the gear housing end plate.

Photo 11

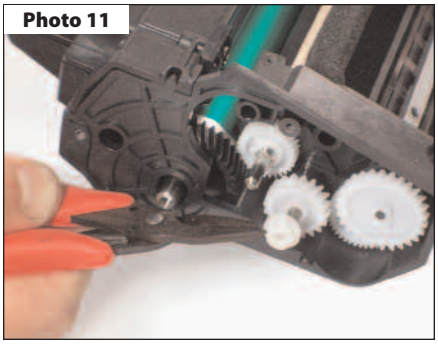
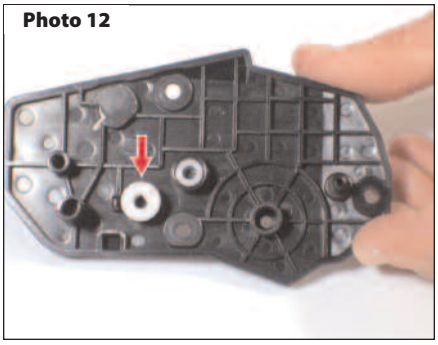


Photo 12



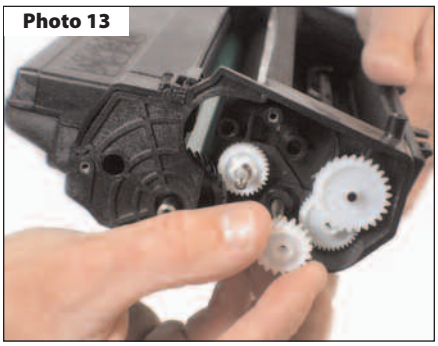
Step 10

A white bearing may be found on the shaft of the toner hopper supply roller. Slide the bearing from the supply roller shaft.
(See Photo 11)

If it the bearing is not on the shaft check the cartridge end cap.
(See Photo 12)

It is important that this bearing be present during the reassembly of the cartridge.

Photo 13



Step 11

Remove the three gears from the side of the cartridge. **(**See Photo 13)

Notes

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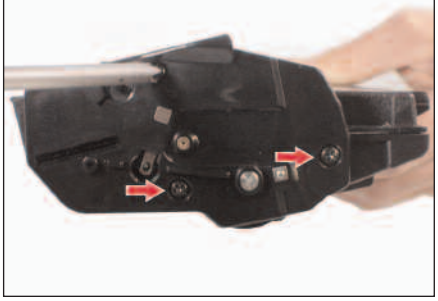
Notes

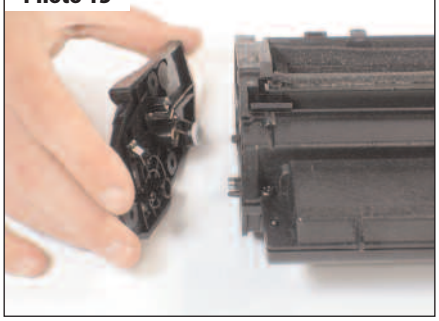
Photo 14



Step 12

Rotate the cartridge 180°. Remove the three screws that hold the contact end cap to the cartridge. (See Photo 14)

Photo 15



Step 13

Slide the end cap from the side of the cartridge. (See Photo 15)

NOTE: A white bearing may be found on the shaft of the supply roller. Remove the bearing. (See Photo 16)

If the bearing is not present check the cartridge end cap. (See Photo 17)

It is important that this bearing be present during the reassembly of the cartridge.

Photo 17

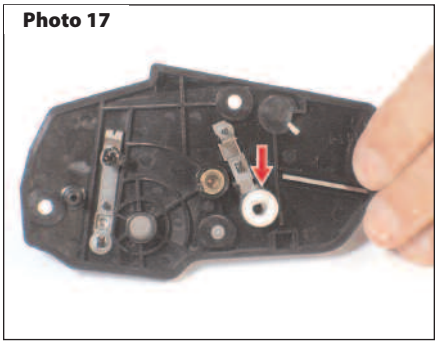


Photo 16

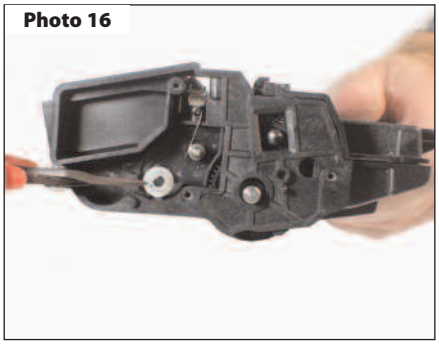
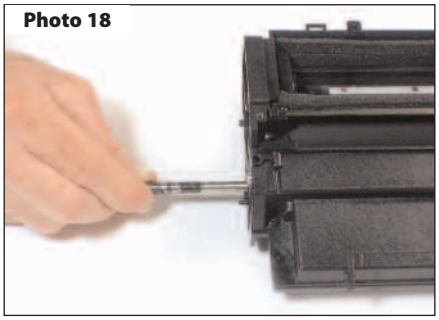


Photo 18



Step 14

NOTE: On some cartridges the drum axle can be removed at this time. Grab the drum axle on the contact side and slide the axle out of the cartridge.
(See Photo 18) If the axle cannot be removed at this time continue to the next step.

Photo 19

Step 15

Remove the two screws holding the waste hopper to the cartridge. (See Photo #19)

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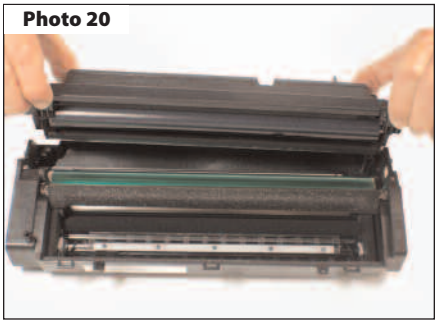
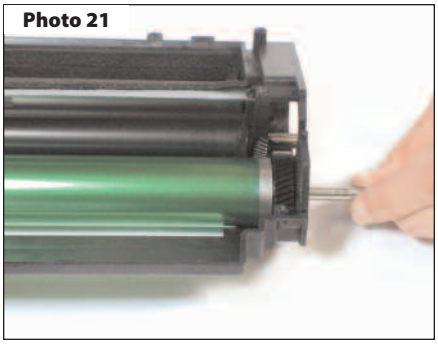
Photo 20



Step 16

Lift up on the waste hopper and remove the hopper from the cartridge.
(See Photo 20)

Photo 21



Step 17

If the drum axle has already been removed lift out the drum. If the drum axle cannot be removed from the drum slide the axle out as far as possible from the drive gear end. (See Photo 21)

Lift the small gear end of the drum up out of the cartridge and slide the drum axle out from the end of the cartridge.
(See Photo 22)

NOTE: If the drum being used is damaged and the axle cannot be removed from the drum by simply pulling the axle out, remove the small gear from the end of the drum. Install the drum axle into the new drum and glue the gear into place.

Photo 22

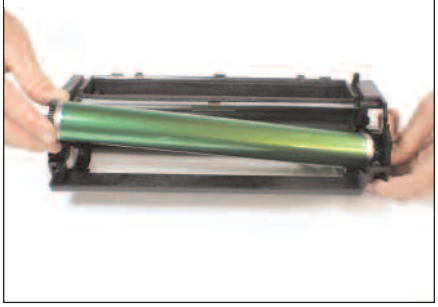


Photo 23

Step 18

Using a Philips screwdriver, remove the two screws holding the PCR to the waste hopper. (See Photo 23) Remove the PCR. Clean the PCR using a dry lint free cloth.

Photo 24

Step 19

Remove the two screws holding the wiper blade. (See Photo 24) Clean the wiper blade with dry compressed air.

Notes

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Notes

Photo 25

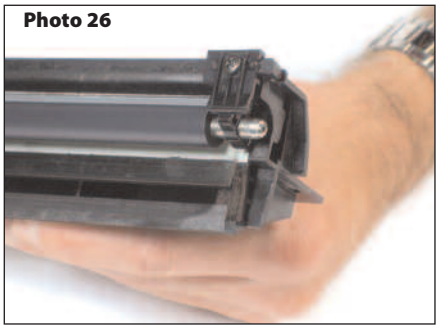
Step 20

Dump out the waste hopper. Clean the waste hopper using dry compressed air or a vacuum.

Step 21

Apply padding powder to the wiper blade. Place the blade onto the waste hopper. Install the two screws that hold the wiper blade in place. (See Photo 25)

Photo 26



Step 22

Place the cleaned PCR into the PCR saddles. The rounded end of the PCR is the contact side of the roller. Place the PCR onto the waste hopper so the contact end sticks out the side of the hopper.
(See Photo 26)

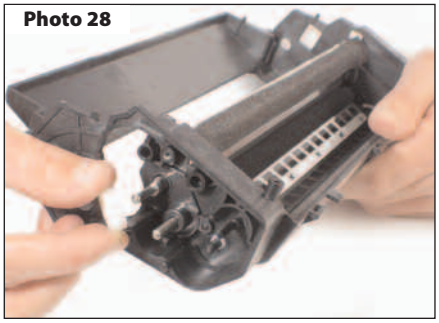
Photo 27

Step 23

Install the two screws that hold the PCR saddles in place.

See Photo 27)

Photo 28

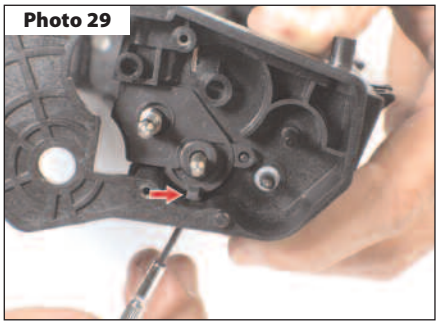


Step 24

Remove the developer roller drive gear from the side of the cartridge.

(See Photo 28)

Photo 29



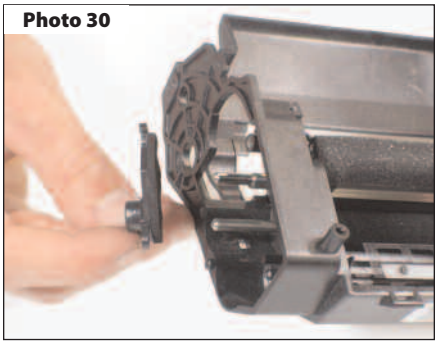
Step 25

Dump out the remaining toner from the toner hopper. Clean the hopper using dry compressed air or a vacuum.

Step 26

Release the clip the holds the developer roller end cap to the cartridge.
(See Photo 29)

Photo 30

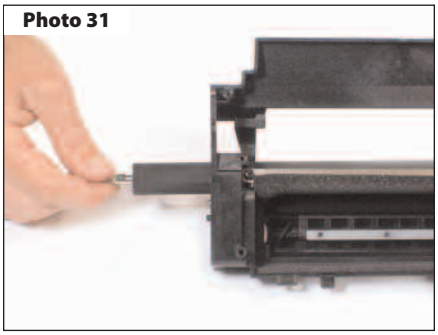


Step 27

Remove the end cap from the hopper.

(See Photo 30)

Photo 31

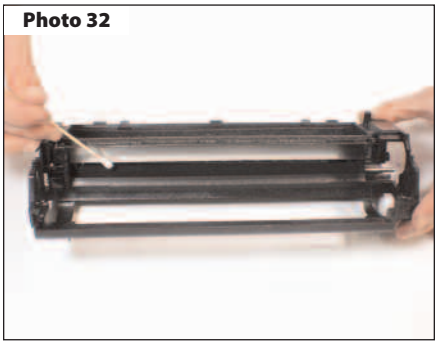


Step 28

Slide the developer roller out from the side of the cartridge.

(See Photo 31)

Photo 32



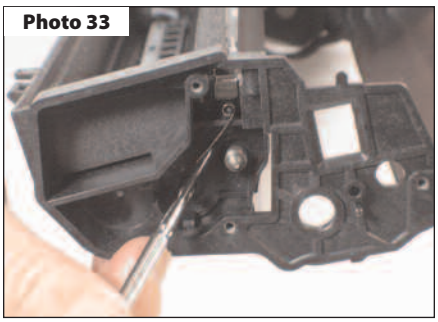
Step 29

Clean the developer roller using a dry lint free cloth.

Step 30

Carefully clean the doctor blade using Acetone and a cotton swab.
(See Photo 32)

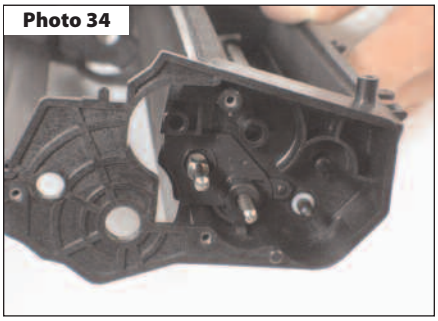
Photo 33



Step 31

Slide the developer roller back into the cartridge. Move the contact spring onto the developer roller axle. (See Photo 33)

Photo 34



Step 32

Install the developer roller end plate onto the cartridge. (See Photo 34)

NOTE: Make sure the end plate snaps into place.

Notes

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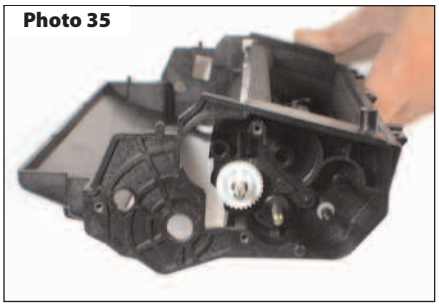
Photo 35



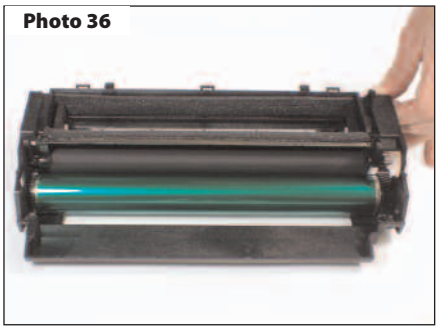
Step 33

Place the developer roller drive gear onto the rollers axle.

(See Photo 35)

Photo 37

Photo 36



Step 34

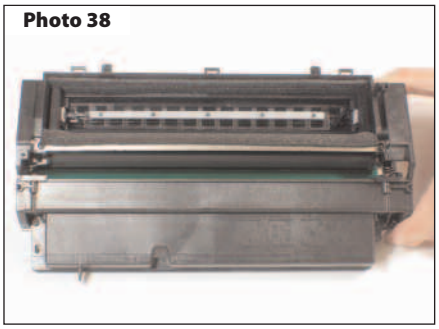
Apply padding powder to the drum. Install the drum into the cartridge.
(See Photo 36)

If the drum axle is installed in the drum slide the axle out from the small gear end as far as possible. Install the drum axle into the side of the cartridge.
(See Photo 37)

Carefully lower the drive gear end of the drum into the cartridge and slide the drum axle back into the drum.

Notes

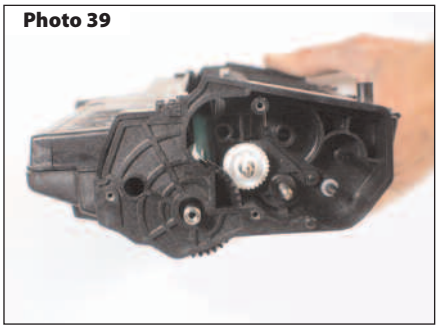
Photo 38



Step 35

Carefully place the waste hopper into the cartridge. Install the two screws that hold the waste hopper in place.
(See Photo 38)

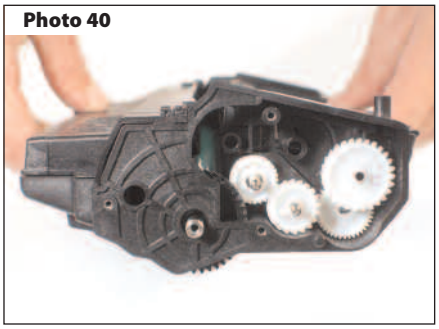
Photo 39



Step 36

If the drum axle is not attached to the drum, slide the drum axle into the drum starting on the gear side so the screw hole in the axle is visible on the gear side.
(See Photo 39)

Photo 40



Step 37

Install the three toner hopper agitator gears.
(See Photo 40)

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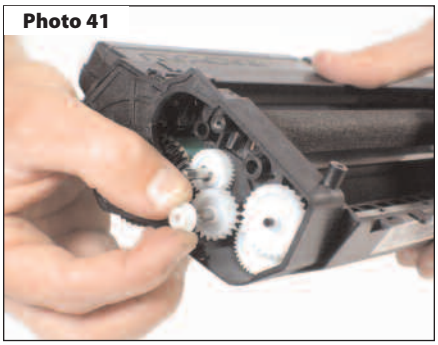
Photo 41

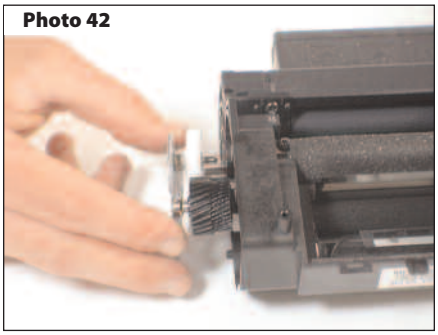


Step 38

Install the white bearing onto the supply roller axle.

(See Photo 41)

Photo 42

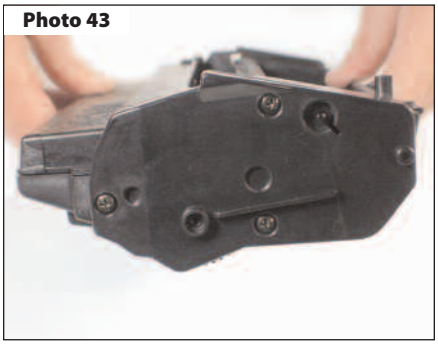


Step 39

Place the metal gear housing plate onto the side of the cartridge.

(See Photo 42)

Photo 43

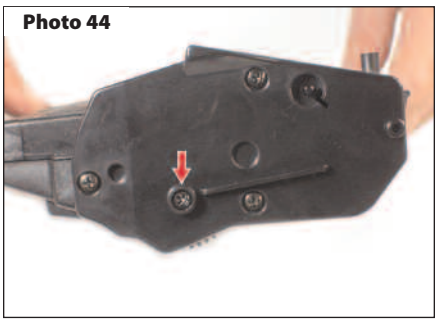


Step 40

Slide the cartridge end cap onto the cartridge. Install the three screws that hold the end cap in place.

(See Photo 43)

Photo 44



Step 41

Install the small threaded screw into the drum axle. (See Photo 44)

NOTE: Remember to rotate the screw to the left to install.

Photo 45

Step 42

Rotate the cartridge 180°. Install the white bearing onto the supply roller axle.

(See Photo 45)

Step 43

Slide the contact end cap onto the cartridge. Install the three screws that hold the end cap in place.

(See Photo 46)

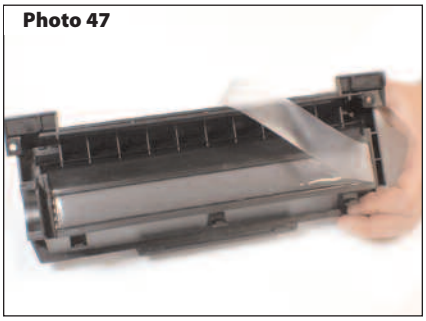
Photo 46

Step 44

Push the fill plug out of the toner hopper reservoir from the inside of the hopper. Apply a seal to the toner hopper and fill with toner.

(See Photo 47)

Photo 47

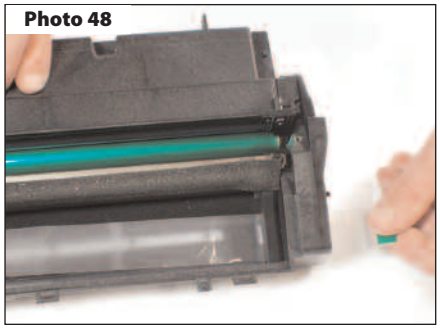


Step 45

Pour some toner into the hopper for testing.

Notes

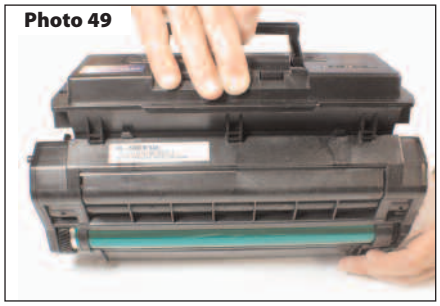
Photo 48



Step 46

Slide the tail of the seal under the toner hopper sealing end foam and out through the seal exit port on the side of the cartridge. (See Photo 48)

Photo 49



Step 47

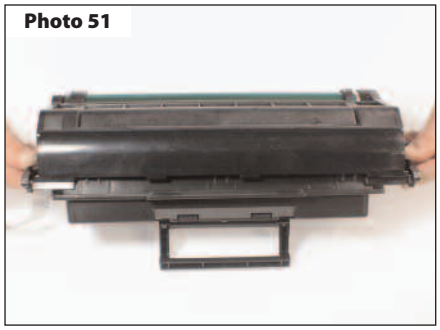
Lock the latches on the back of the cartridge and toner hopper reservoir. (See Photo 49)

Photo 50

Step 48

Rotate the toner reservoir down onto the cartridge. Install the two screws that hold the toner hopper reservoir to the cartridge. (See Photo 50)

Photo 51



Step 49

Install the drum shutter arms onto the cartridge end caps. Install the drum shutter onto the shutter arms. (See Photo 51)

Step 50

Test cartridge.

FUTURE GRAPHICS

Samsung ML-6060/1650

TECHNICAL INSTRUCTIONS

In July of 2000, NEC released a new family of printers, the SuperScript 1400, 1450, and the 1450N all using a new Samsung ML-6060 engine. Two months later Xerox and IBM released the Xerox DocuPrint P1210 and the IBM InfoPrint 12 each using the same Samsung engine. These machines are capable of printing 12 pages per minute and have a first page out speed of 14 seconds.

The new Samsung ML-6060 engine utilizes a new mono-component, all-in-one toner cartridge. Even though the cartridges use the same internal components, a molding difference on the from of the waste hopper prevents the cartridges from being used in the different machines.

Both Xerox and NEC sell two different yield cartridges, a 3,000 pages standard yield cartridge and a 6,000 page high yield cartridge, while IBM only sells the high yield version.

In 2001 Xerox and Samsung released another series of printers using the Samsung ML-1650 engine. The Xerox Phaser 3400, 3400B, 3400N and the Samsung ML1650, 1651N printers print 17 pages per minute and have a first page out time of 12 seconds.

The cartridges for these printers are very similar to the ML6060, they use same components and the remanufacturing process is almost the same. The only difference in the process has to do with the gear assembly that turns the developer roller.

A small drive belt is found on the gear and must be placed back onto the drive gear during the reassembly of the cartridge. See Figure 1. The ML1650 cartridges also hold more toner than the ML6060 and can 8,000 pages at 5% coverage with the high yield cartridge and 4,000 pages at 5% coverage with the low yield cartridge

Machine Model	OEM Number	Engine
IBM Infoprint 12	01P6897	Samsung ML-6060
NEC Superscript 1400	20-150	Samsung ML-6060
NEC Superscript 1450	20-150	Samsung ML-6060
NEC Superscript 1450N	20-150	Samsung ML-6060
Samsung ML-1440	ML6060D6	Samsung ML-6060
Samsung ML-1450	ML6060D6	Samsung ML-6060
Samsung ML-1451N	ML6060D6	Samsung ML-6060
Samsung ML-6040	ML6060D6	Samsung ML-6060
Samsung ML-6060	ML6060D6	Samsung ML-6060
Samsung ML-6060N	ML6060D6	Samsung ML-6060
Samsung ML-6060S	ML6060D6	Samsung ML-6060
Xerox Docuprint P1210	106R442	Samsung ML-6060
Xerox Phaser 3310	106R646	Samsung ML-6060
Samsung ML-1650	ML1650D8	Samsung ML-1650
Samsung ML-1651N	ML1650D8	Samsung ML-1650
Xerox Phaser 3400	106R462	Samsung ML-1650
Xerox Phaser 3400B	106R462	Samsung ML-1650
Xerox Phaser 3400N	106R462	Samsung ML-1650

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