

## TECHNICAL DOCUMENT

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## Sharp AR-163 Toner Cartridges

DOC-0289

### OVERVIEW



First released in January 2001, the Sharp AR-163 Engine is a 16ppm digital copier engine that runs at 1200 dpi. Unlike all other small Sharp copiers (other than the AR-152), the toner cartridge is separate from the developer unit. The toner unit has a chip in it that must be replaced. The developer unit and the drum units are not user replaceable. According to Sharp, they must be replaced/rebuilt by sharp technicians. These instructions cover the toner and developer units, the drum unit will be covered in a later article.

Both the toner unit and the developer units are very easy to rebuild. Since the toner unit is user replaceable, extra used toner cartridges will be available. The developer units however, will need to be rebuilt in the field. Sharp sells the developer in 400g bags just for that purpose. New developer units are not readily available even through Sharp dealers.

The toner unit when new comes with a plastic seal in the waste hopper (See Figure 1). The plastic seal across the waste chamber in this cartridge actually has a use as the new cartridges we received had leaked toner into the waste from the supply hopper. If shipping this cartridge, we recommend that this seal be replaced to prevent any outside leakage. The feed section has it's own spring loaded cover to close it off. (See Figure 2)

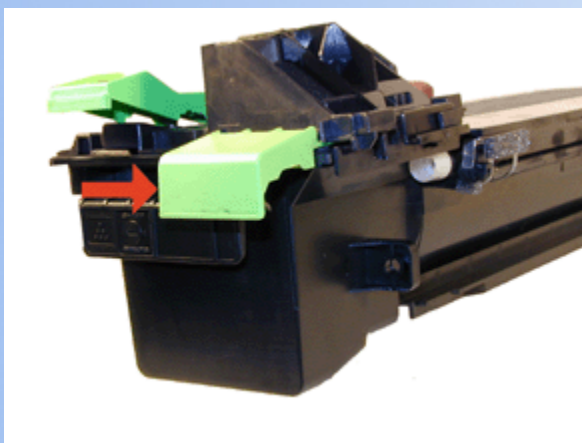


FIGURE 1



FIGURE 2

Machine troubleshooting as well as developer reset are both covered at the end of this article.

Current machines based on the AR-163 engine are:

- AR-162
- AR-163
- AR-201
- AR-207

## TOOLS REQUIRED



- Phillips head screwdriver
- Small common screw driver
- Safety goggles and breathing mask
- Vacuum approved for toner

## SUPPLIES REQUIRED



- 475g toner
- 400g developer
- Reset chip for the toner cartridge

## DISASSEMBLY (TONER UNIT)



1. Remove the six screws located on the top of the cartridge by the green handle. See Figure # 3.
2. Lift the cover up from the handle side, slide the cover away from you, & remove. See Figure # 4

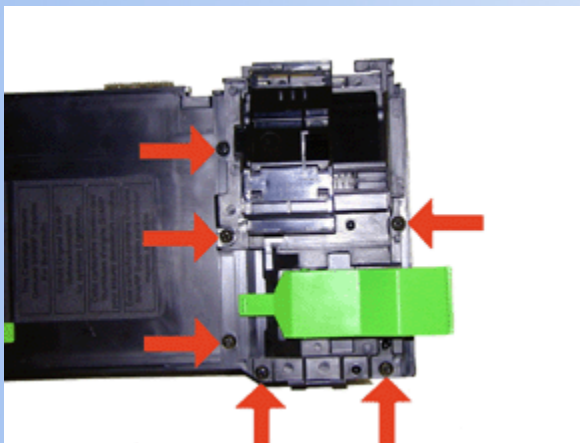
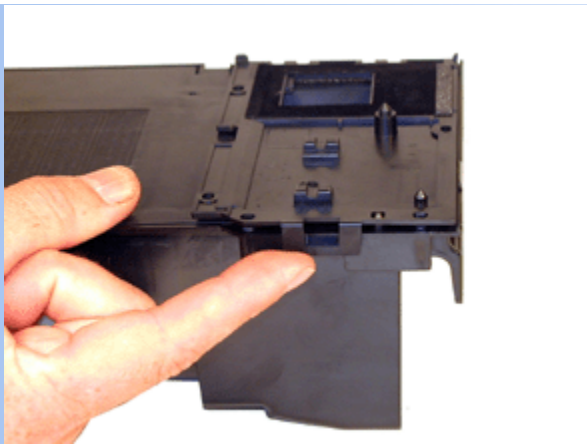


FIGURE 3



FIGURE 4

3. Lift up on the clip that holds the flat cover down. See Figure # 5
4. Remove the flat cover. See Figure # 6

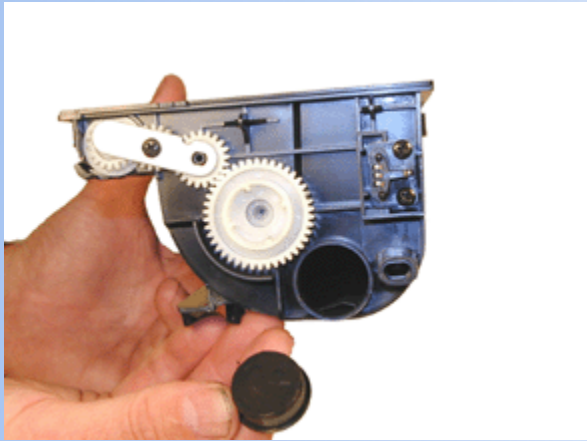


**FIGURE 5**

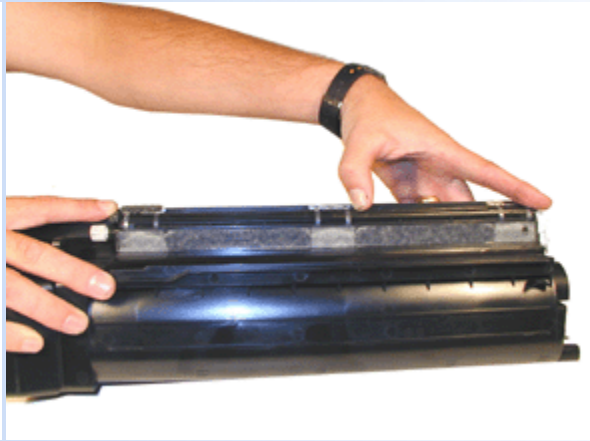


**FIGURE 6**

5. Vacuum/blow out the waste chamber clean.
6. From the opposite side, remove the toner fill plug. See Figure # 7
7. Vacuum/blow out the toner supply chamber clean. Make sure that you also clean the long slit behind the spring-loaded cover where the toner is fed into the developer section. See Figure # 8.

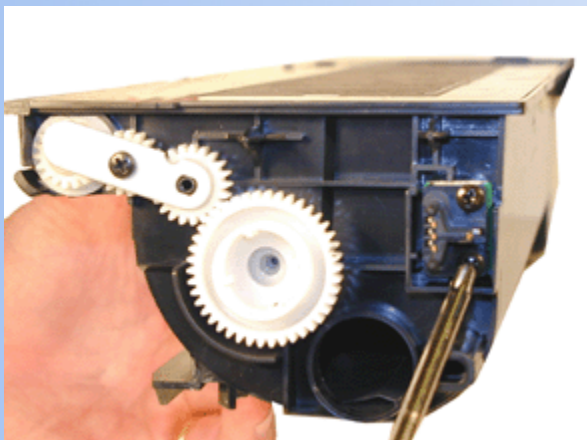


**FIGURE 7**

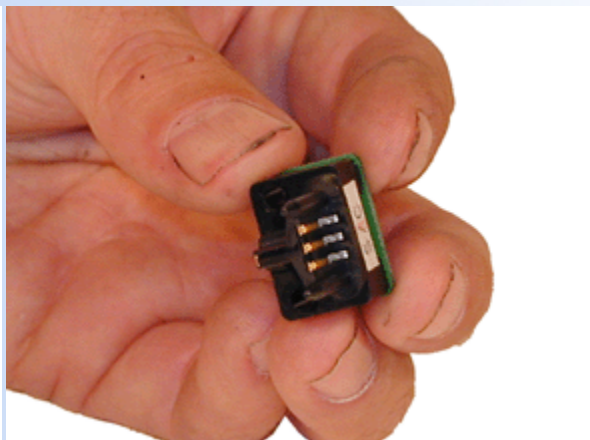


**FIGURE 8**

8. Remove the two screws and the old chip from the cartridge. See Figure # 9
9. Install the new chip and two screws. See Figure # 10.



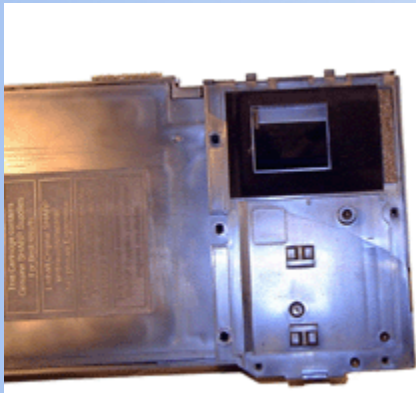
**FIGURE 9**



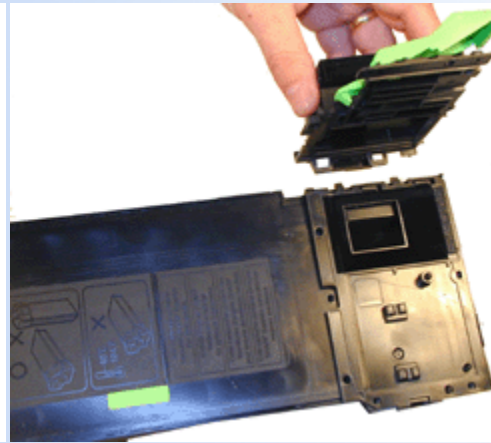
**FIGURE 10**

10. Take the flat cover and align the tabs and pins, press in place so the tab locks . See Figure # 11.

11. Align the top cover so all the tabs and pins line up. See Figure # 12



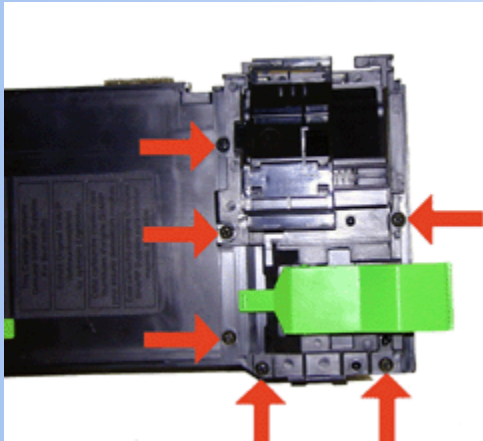
**FIGURE 11**



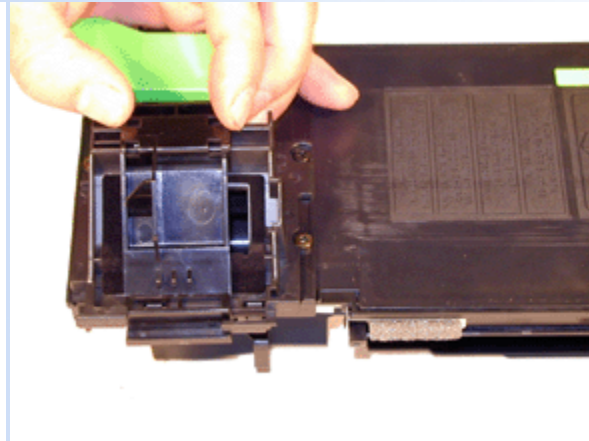
**FIGURE 12**

12. Install the six screws. See Figure # 13.

13. Check to see that the spring-loaded cover moves freely. See Figure # 14.



**FIGURE 13**



**FIGURE 14**

14. Fill with AR-163 toner. See Figure # 15.

15. Replace the Fill Plug, check for leaks.



**FIGURE 15**



1. Open the front and right side covers on the copier. Remove the large screw at the base of the developer unit. Carefully remove the developer unit.
2. The developer unit consists of two halves, the upper and lower. Remove the three screws from the upper half. See Figure # 16
3. Carefully dump out all the old developer into an empty garbage bag, vacuum the unit clean. (I recommend that you double up on the bags in case one leaks.)
4. Carefully pour the new developer across the feed auger in the lower unit. Be careful not to spill any outside the unit. See Figure # 17

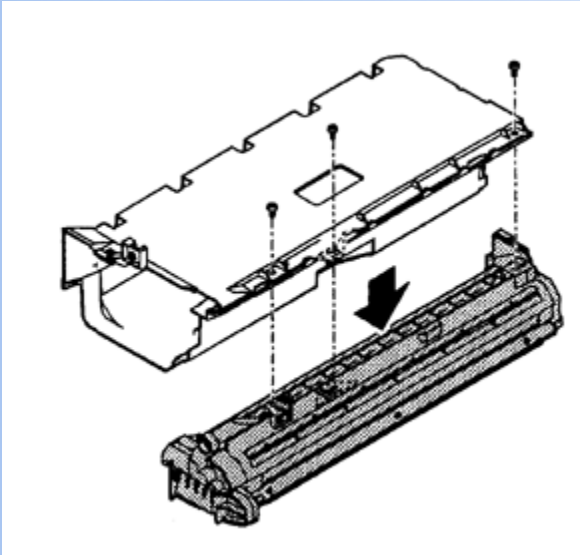


FIGURE 16

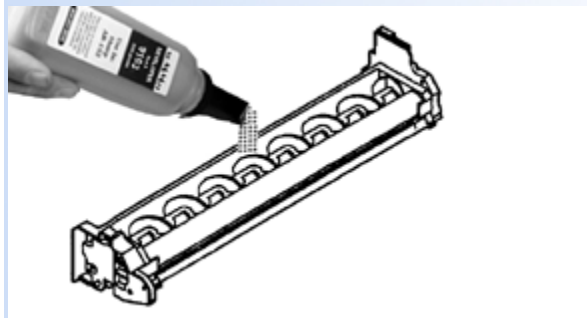


FIGURE 17

5. Reinstall the upper unit and screw.
6. Rotate the developer drive gear in the direction indicated to distribute the developer evenly.

Reinstall the developer unit, and lock in place with the large screw.

**NOTE:** Although the Doctor Blade can be removed, (See Figure # 18), it is not recommended because the blade must be gapped properly in order for it to work. The blade should be gapped at 1.5mm at all three of the positions shown in Figure #19

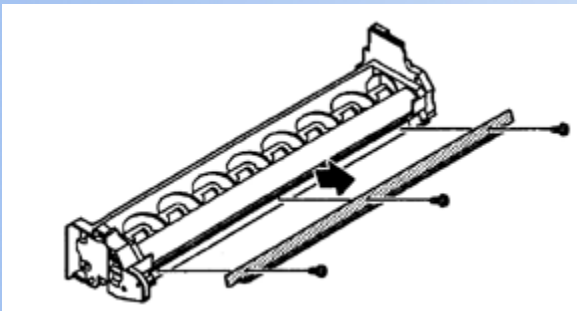


FIGURE 18

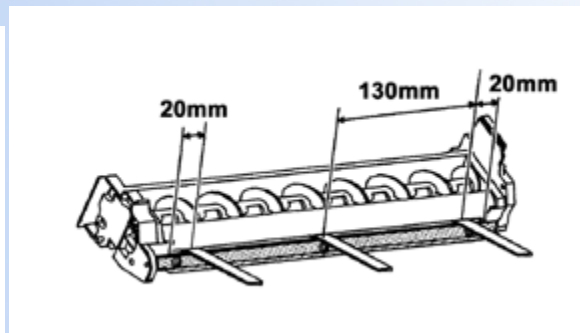


FIGURE 19

**NOTE:** The magnetic roller can be removed by removing the three screws on the left end cap. Remove the wire, spring and hub. The magnetic roller can now be removed. This is really not recommended at all as the hub is not in a fixed position. The hub's purpose is to position the roller for proper density. Unless the roller has been replaced or the unit was dropped, I would not do this, as the adjustment procedure is very tedious. The procedure is as follows: (See Figures 20, 21, & 22).

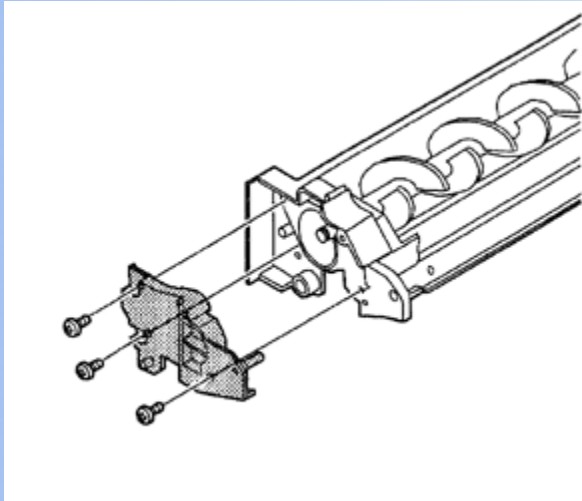


FIGURE 20

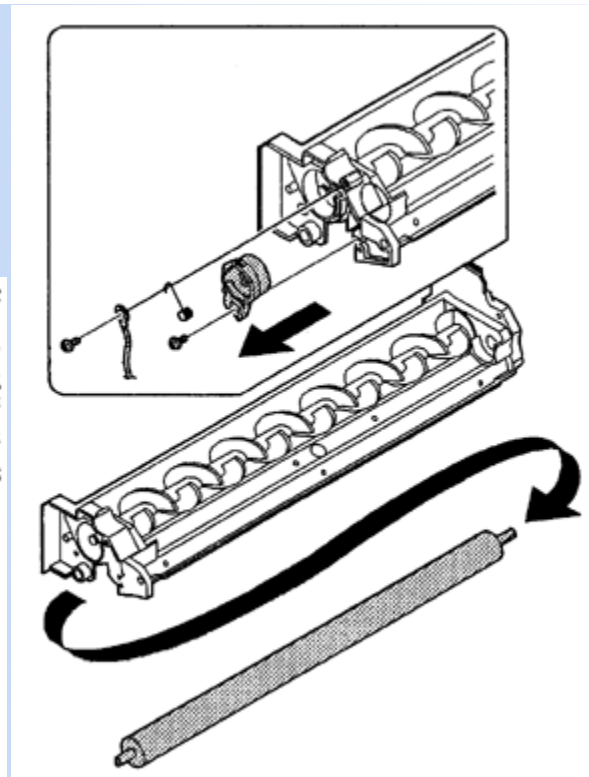


FIGURE 21

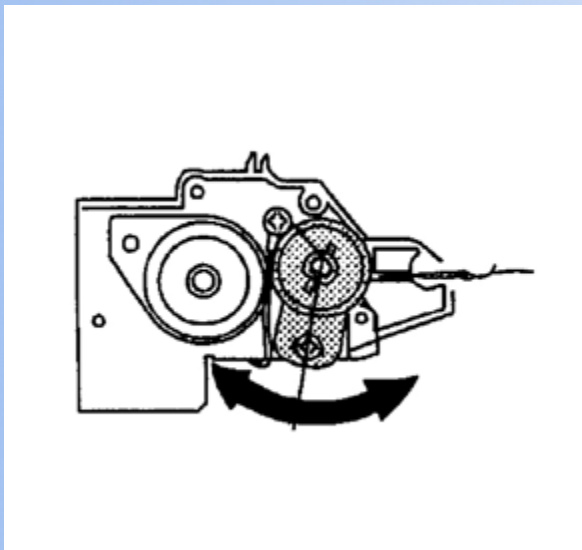


FIGURE 22

(Please note this is the procedure as recommended by Sharp. I did not write this!)

- A. Tie a string to a needle or a pin.
- B. Hold the string and bring the needle close to the magnetic roller horizontally. (Do not use a paper clip as it is too heavy to make a correct adjustment.) (Place the developer unit horizontally).
- C. Bring the needle to within 2-3mm from the magnetic roller. Do not let it touch. Mark the point on the magnetic roller which is on the extension line from the needle tip.

Measure the distance from the marked position to the top of the doctor blade to ensure it is 18mm. If it is not, loosen the hub and adjust it's position until the distance is 18mm. (See Figure 21)

I've seen a lot of strange procedures over the years, but this takes the cake! This is definitely a case where leaving it alone is the best action to take.

The developer is rated for 30,000 pages. The default setting on the machine is to keep running even after the 30K pages. That same default setting can be set by the dealer to stop at 30K pages. It is considered a dealer option.

To clear the developer after a stop, or to reset the counter, simulation 24-06 must be run.

To enter the simulation mode, press the "CLEAR KEY", "INTERRUPT KEY", "0" KEY", "INTERRUPT KEY", "MAIN CODE" "START KEY", "SUB CODE" "START KEY",

"Main code" for clearing the developer = 42

"SUB CODE" for clearing the developer = 1

The developer count is now cleared.

To exit the simulation mode press the "CLEAR ALL KEY"

Turn the machine off and on.

## TROUBLE SHOOTING



The codes as listed in the service manual, are not all that helpful for normal problems (Paper jams are not listed at all) I have listed the code categories generally just as an aid.

**E Codes:** Seem to all be circuit board/sorter errors.

**L Codes:** Motor/Mirror problems

**H Codes:** Fuser Problems

**U codes:** EEPROM Errors/communication errors

**F Codes:** Fax board communication errors/Printer board communication errors

## CHECKING THE TONER CARTRIDGE LIFE LEFT



To see how much life is left in the toner cartridge, Press and hold the "LIGHT" key for approximately 5 seconds, or until all the lights flash, and two dashes appear in the display.

Press and hold down the copy ratio display "%" for 5 seconds. The approximate amount of toner left in the cartridge will display as a percentage "100", "75", "50", "25", or "10". When less than 10% is left, "LO" will be displayed.

Press either the "LIGHT" Key, all the flashing lights will go out.

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## RECOMMENDED SUPPLIES



Microsoft OLE DB Provider for ODBC Drivers error '80004005'

[Microsoft][ODBC Microsoft Access Driver]General error Unable to open registry key 'Temporary (volatile) Jet DSN for process 0x698 Thread 0xee0 DBC 0x97a4044 Jet'.

/script/catSearch.asp, line 58