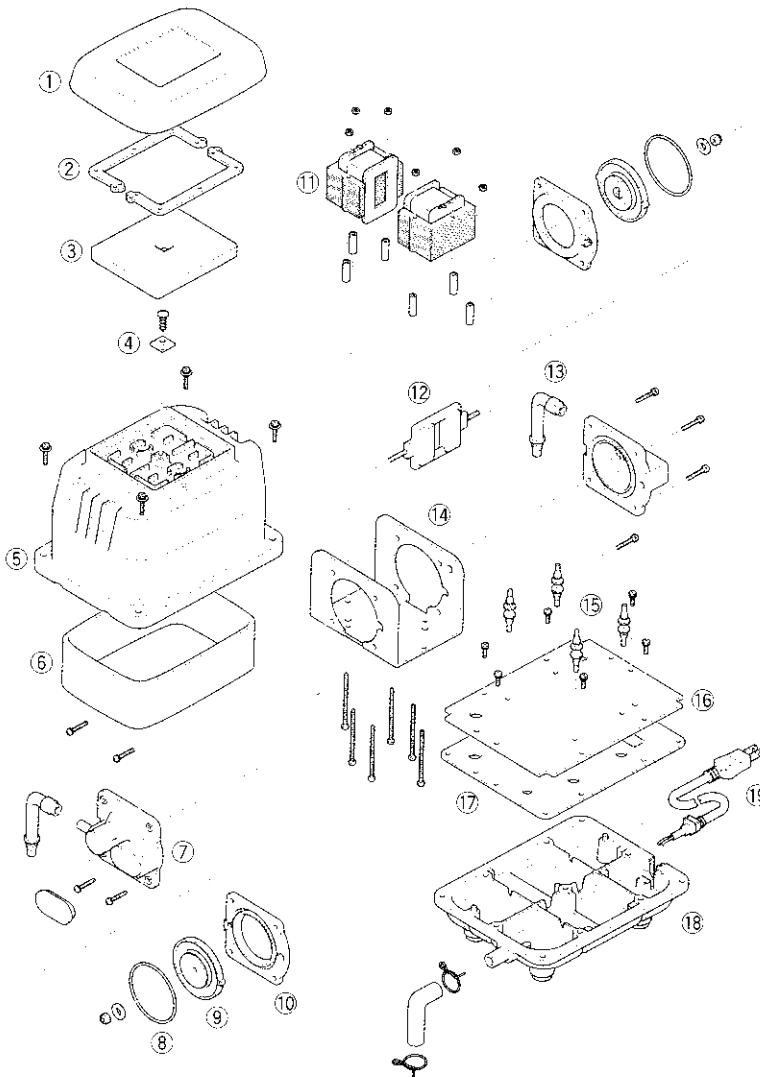




Air pump	Start of production	Discontinuance of production
HP-30	1998/8	—
HP-40	1998/8	—
HP-50	1998/12	—

HP Series

STRUCTURE AND PART NAMES



HP-30/40/50

- ① Filter Cover
- ② Semi Cover Packing
- ③ Filter
- ④ Fitting Boss
- ⑤ Upper Housing
- ⑥ Sound Absorber (HP50)
- ⑦ Casing Block
- ⑧ Diaphragm Ring
- ⑨ Diaphragm
- ⑩ Diaphragm Base
- ⑪ Electromagnet
- ⑫ Actuating Rod
- ⑬ L-Tube
- ⑭ Frame
- ⑮ Vibration Control Rubber
- ⑯ Center Plate
- ⑰ Gasket
- ⑱ Lower Housing
- ⑲ Power Cord

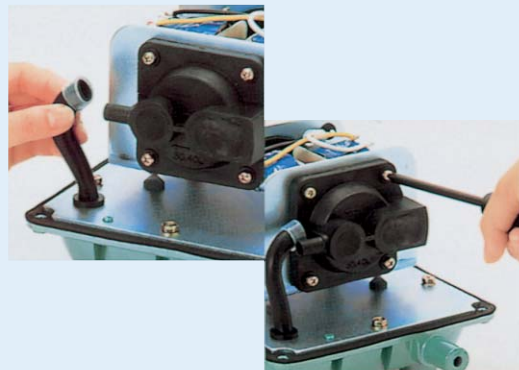
⚠ CAUTION

- Be sure to unplug the pump unit.
- Replace the diaphragms and the valves with new ones at least once a year to one and a half year regularly in order to maintain their initial performance.
- For chamber block replacement, be sure to change both chamber blocks at the same time.
- The rod employs powerful permanent magnets. Therefore, be sure to remove your watch and any other precision machines before operation as they may be affected by the strong magnetic force.
- Do not put the actuating rod close to a magnetic card, a magnetic disk or other magnetic media as the data may be destroyed.

STEP 1

REMOVAL OF THE CHAMBER BLOCKS

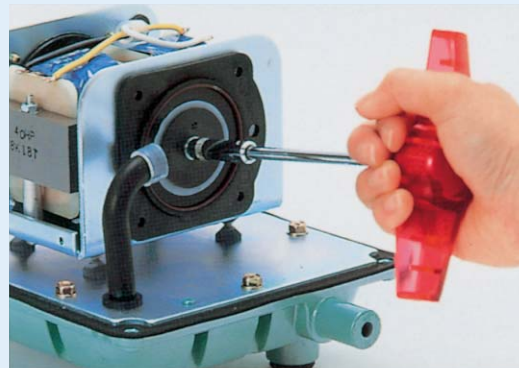
To remove the upper housing.
 To remove the sound absorber.
 Pull out the L-tube from the casing block.
 Remove the 4 screws holding the chamber block and the casing block. (4 screws on each side)



STEP 2

Remove 1 U-lock nuts from one side holding the diaphragm mounting block to the rod.

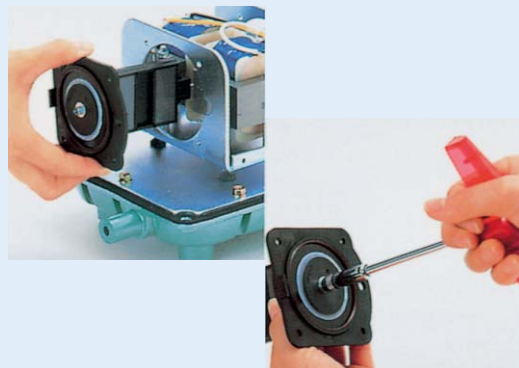
- Use the nut driver to loosen (or tighten) the U-lock nut.



STEP 3

Remove one of the diaphragm mounting blocks from the actuating rod and pull out the other diaphragm mounting block with the rod. After that, separate the diaphragm mounting block and the rod.

This completes the chamber block removal procedure.



STEP 4

FITTING CHAMBER BLOCKS

Fit the actuating rod by aligning it with the groove and tighten U-lock nut and flat washer by the nut driver.

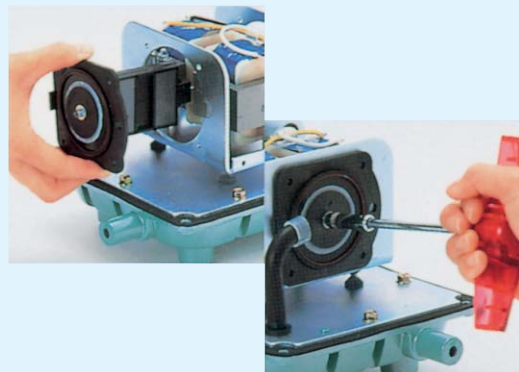
- Use new U-lock nut and washer, otherwise, U-lock nut may work loose and cause malfunction.



STEP 5

Insert the actuating rod into the machine body. Be sure to fit the positioning boss on the diaphragm base into the concave part of the frame stay. Secure the diaphragm mounting block on the other side and tighten washers and U-lock nuts with the nut driver.

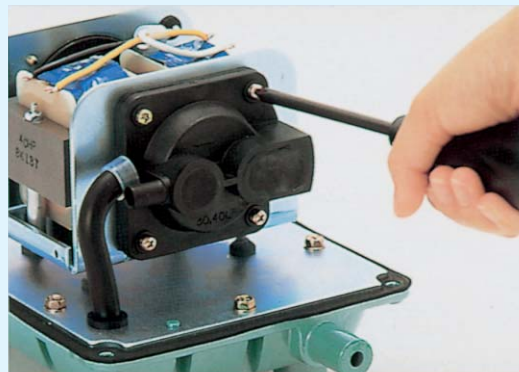
Make sure that gap between the actuating rod and the electromagnets is even.



STEP 6

Mount the casing block with screws (4 screws on each side).

And insert L-tube into the nozzle of casing block. Complete the other casing block at the same way.



STEP 7

Install the sound absorber. (HP-50)

- Be extremely careful not to pinch the Sound Absorber in the Upper Housing.

Place the upper housing back on body.

Fasten it with the bolts.

Then, place the filter and filter cover on the upper housing. (Refer to "**FILTER CLEANING AND REPLACEMENT**")



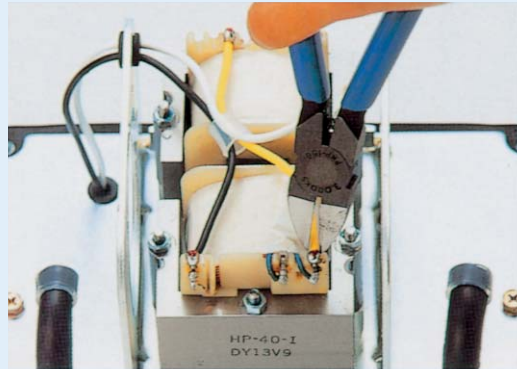
CAUTION

- Be sure to unplug the pump unit.
- When performing replacement work, the pump body may be still hot and you may get burnt. Therefore, wait until the pump has been allowed to cool.
- Be sure to remove the chamber block and the actuating rod before replacing the electromagnet.
- It is better to let an experienced technician handle the soldering process.
Take precautions against being burnt.
- In case of HP-10/20, do the same way of replacing the electromagnet.

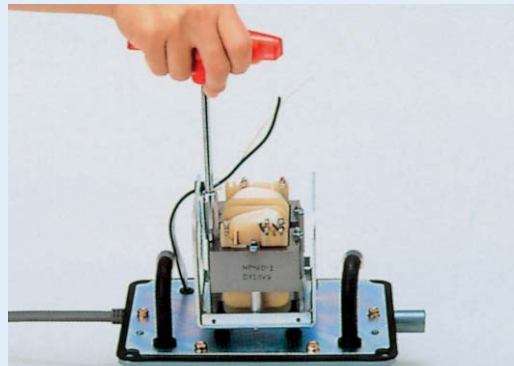
STEP 1**REMOVING THE ELECTROMAGNET**

Cut the wire from the terminals on the electromagnet with nippers.

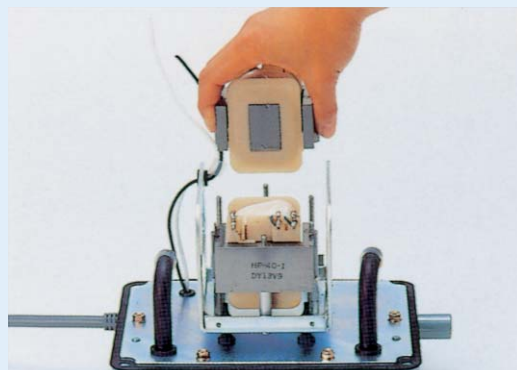
- It is recommended that you make a note of the wiring.

**STEP 2**

Remove the nuts with the box driver.
(7mm wrench.)

**STEP 3**

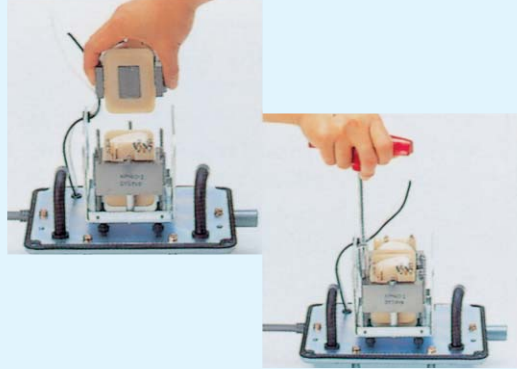
Pull out electromagnets from the pump body.



STEP 4

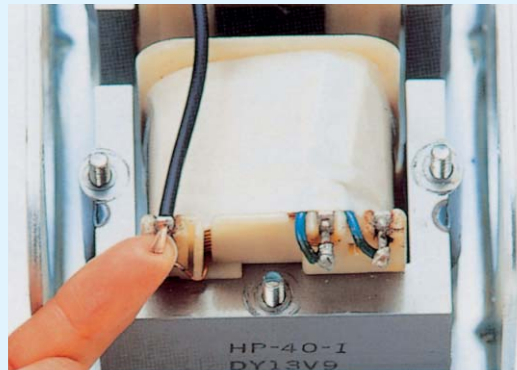
FITTING THE ELECTROMAGNET

Secure the electromagnets to the body by the nuts. Use the box driver. (7mm wrench)



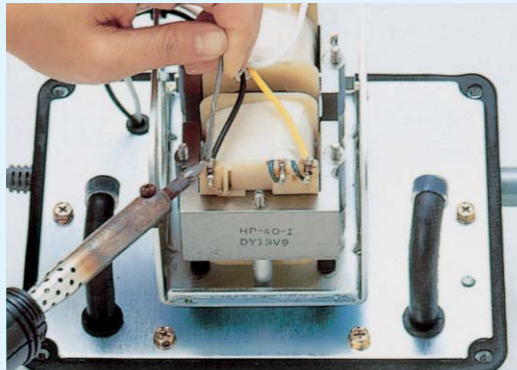
STEP 5

Tie the wires in a bundle with a silicon tube. Connect the wires to the terminals.



STEP 6

Solder the wires to the terminals. The wire requires a soldered connection.



STEP 7

This completes the electromagnet replacement procedure.

