

**HAKKO**

# Matala

*Linear Diaphragm Air Pumps*



for 110V-120V

# WARNING

## IMPORTANT SAFEGUARDS READ AND FOLLOW ALL SAFETY INSTRUCTIONS

### **DANGER**

To avoid possible equipment electric shock, special care should be taken when the pump is used as aeration equipment. For each of the following situations, do not attempt to repair yourself, return the air pump to an authorized service facility for servicing, or discard the pump.

I) If the pump falls into the water, **DO NOT REACH FOR IT**: first unplug the pump, and then retrieve it.

If the pump's electrical components get wet, unplug the pump immediately.

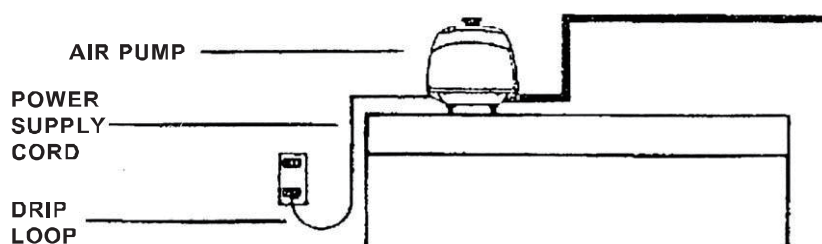
II) Carefully examine the air pump after installation. It should not be plugged in if there is water on parts that are not intended to be wet.

III) Do not operate if the cord or plug is damaged, or if the pump is malfunctioning, dropped, or damaged in any way.

IV) To prevent the plug of electrical outlet getting wet, position the water tank and stand to one side of a wall mounted outlet.

This should avoid water dripping onto the plug or outlet.

A drip loop shown in the (Figure 1), should be arranged for each cord connection an air pump to an electrical outlet. The drip loop is that part of the cord below the level of the outlet or connector if an extension cord is used. The drip loop prevents water traveling along the cord and coming into outlet.



**Figure 1**

If the plug of outlet does get wet, **DO NOT UNPLUG THE CORD**: Disconnect the fuse or circuit breaker supplying power to the pump. Then unplug and examine for the presence of water in the outlet.

V) Do not use the pump near volatile liquids such as gasoline, thinners, etc, as this creates the possibility of an explosion.

### **CAUTIONS FOR USE**

A) Close supervision is necessary when an appliance is used or near children.

B) This pump is air-operated. Do not, under any circumstances, attempt operation with water or other liquids, otherwise pump may be damaged.

C) The temperature range may result in malfunction of severely shortened service life.

D) Do not block the air being discharged. Pump must have sufficient room to allow for heat dissipation.

Under the extreme operating temperature conditions which may be caused by failure to observe cautions C) or D), pump will automatically switch off until cool. **DO NOT REMOVE PUMP CASING UNTIL UNIT IS DISCONNECTED FROM MAIN SUPPLY.**

E) Always unplug pump prior to servicing. Grasp plug to remove cord from outlet. Do not remove by pulling on power cord.

F) Do not use the air pump for any other purpose which is different from its original use. Use of unauthorized replacement parts may jeopardize safety.

G) Do not store pump under freezing condition.

H) Ensure pump is securely mounted prior to operation.

I) Read and observe all important markings on pump.

J) Ensure that extension cords (if required) have the correct or higher rating (amperes or watts). Ensure cord is properly positioned to avoid tripping.

## **INSTRUCTIONS NOTES**

### **1. INSTALLATION**

A) When using the pump to inject air into a liquid, ensure the pump is placed higher than the surface level of the liquid, otherwise the liquid may run back into the pump when the power is turned off.

B) Do not keep the air pump in a damp and stuffy place.

C) Please ensure the air pump is placed on a strongly built place horizontally.

### **2. GROUNDING**

This air pump must be grounded to minimize the possibility of electric shock.

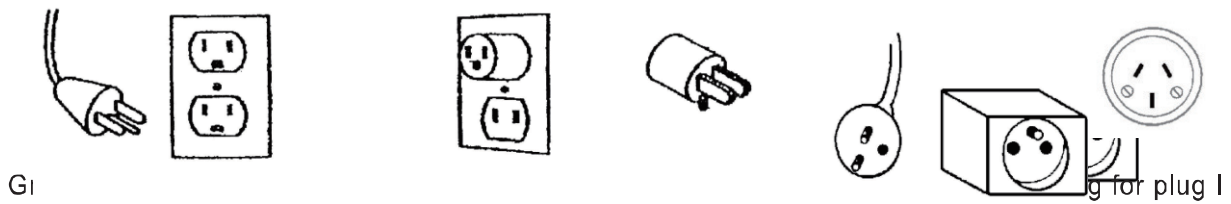
This air pump is equipped with an electric cord having an equipment grounding conductor and a grounding type plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all appropriate codes and ordinances.

**DANGER** –Improper installation of the grounding plug can result in a risk of electric shock. If repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat blade terminal. The wire with insulation having other surface that is green with or without yellow stripes is the grounding wire.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded. Do not modify the plug provided; if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

This air pump is for use on a nominal 110-120 volt circuit as indicated on the sticker, and has a grounded plug which is illustrated in (Figure 2). Carefully read the specification on the nominal

volt circuit as indicated on the sticker! For Canada, USA: the nominal volt circuit is 110-120 volt. Australia is 240 volt. 220 volt for other countries.



### 3. OPERATION AND MAINTENANCE

When the pump is connected to a proper receptacle, the pump will operate.

The filter must be periodically cleaned or replaced. The air pump has no sliding parts and therefore no need for lubrication. Also the exhausted the air pump is always clean. This air pump has no user serviceable parts.

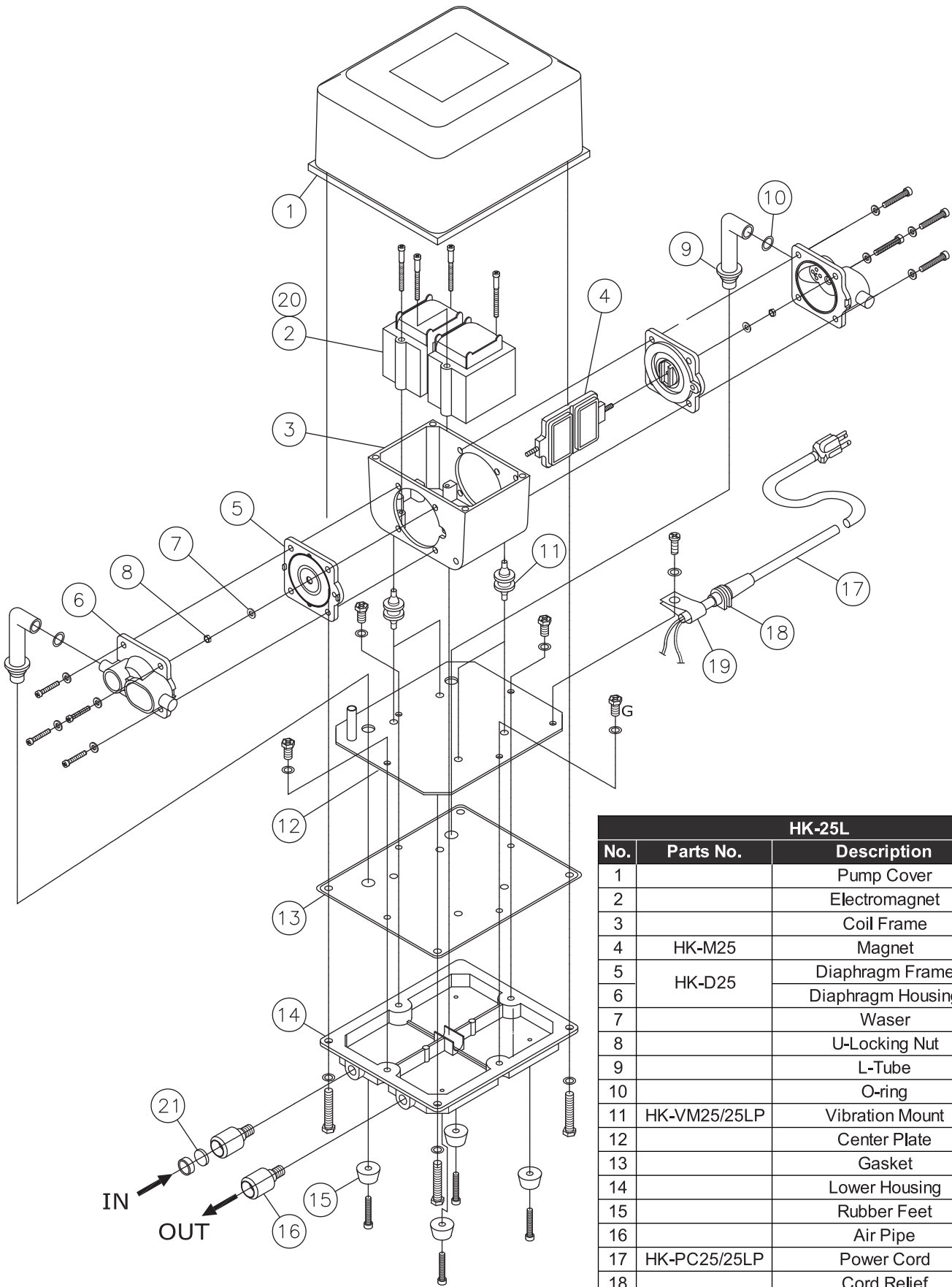
### ASSEMBLY AND OPERATIONAL INSTRUCTIONS

1. Inspect unit for any damage due to shipment.
2. Ensure that no parts are missing.
3. The AIR PUMP is designed to be positioned horizontally. Ensure that the location is dry and free of excessive dust or debris. Dust protection around the entire unit may be constructed of furnace filters. Please ensure the air circulation is maintained all the time.
4. The air pump should be placed above water level to ensure no siphoning can occur if power failed. A proper installed check valve will prevent backflow and allow placement of the pump below water surface level.
5. For store requirement. The air pump should be attached to a permanent pie assembly with minimum diameter of pump outlet (18mm) Rigid plastic pipe is preferable over flexible hosing for valve attachment. Air valve should be tapped into this line to supply individual aerations with standard aeration airline. Teflon tape on valve threads will reduce air leakage from the pipe.
6. Outside diameter of the output stem is 18mm, hose can be directly attached for straight line installation, or provided elbow can be used if a corner is required.
7. See figures outlining typical set-ups for proper installation of rigid pipe assembly. Do not block air pump's output. Excessive backpressure will prematurely damage diaphragm.
8. If the air pump produces more air than required, bleed excess into atmosphere with a valve to reduce damaging backpressure.

NOTE:

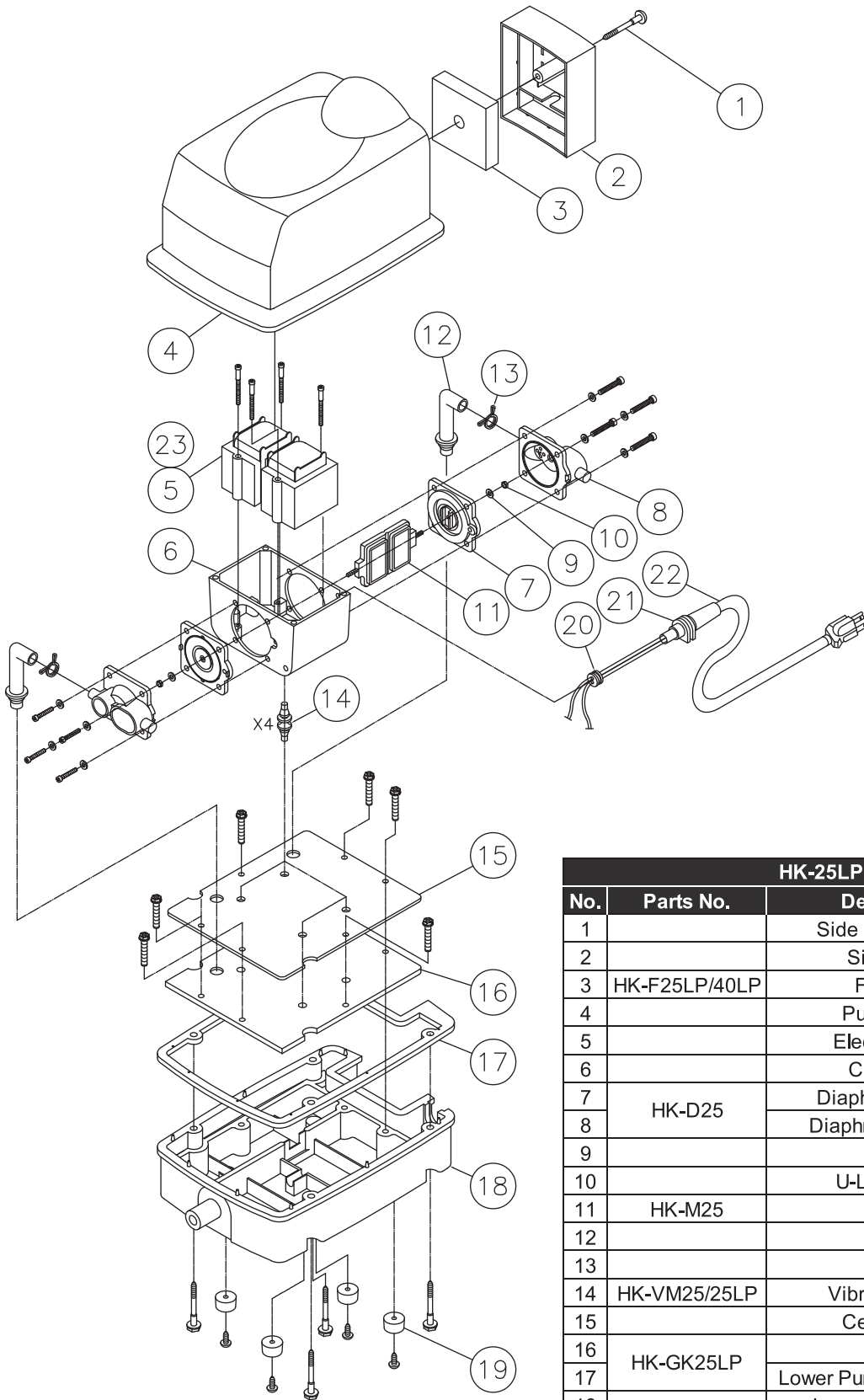
FULL LOOP PROVIDES EVEN AIR PRESSURE TO ALL AREAS OF INSTALLATION.

# Construction 25L



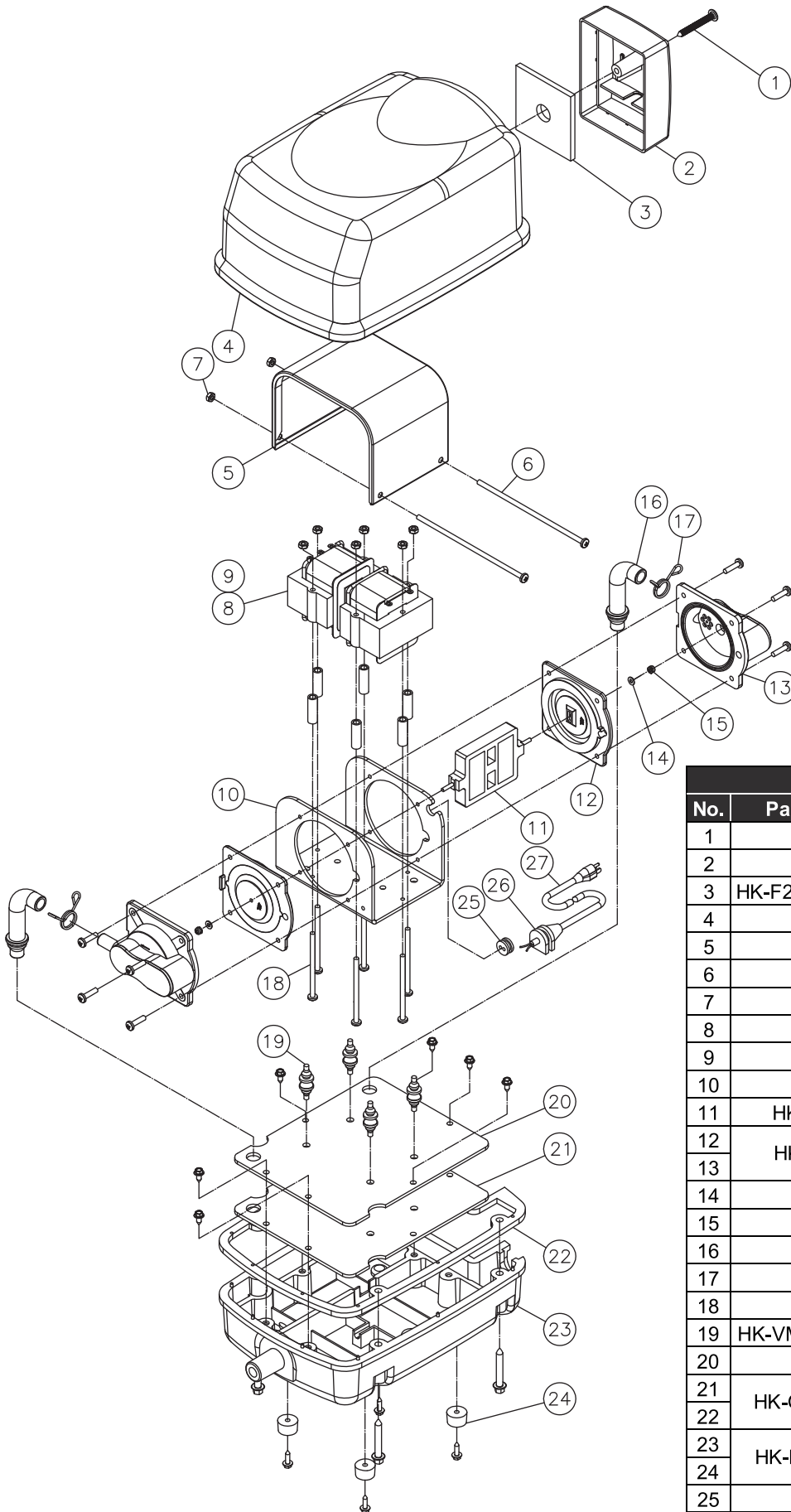
| HK-25L |              |                           |      |
|--------|--------------|---------------------------|------|
| No.    | Parts No.    | Description               | Q'ty |
| 1      |              | Pump Cover                | 1    |
| 2      |              | Electromagnet             | 2    |
| 3      |              | Coil Frame                | 1    |
| 4      | HK-M25       | Magnet                    | 1    |
| 5      | HK-D25       | Diaphragm Frame           | 2    |
| 6      |              | Diaphragm Housing         | 2    |
| 7      |              | Washer                    | 2    |
| 8      |              | U-Locking Nut             | 2    |
| 9      |              | L-Tube                    | 2    |
| 10     |              | O-ring                    | 2    |
| 11     | HK-VM25/25LP | Vibration Mount           | 4    |
| 12     |              | Center Plate              | 1    |
| 13     |              | Gasket                    | 1    |
| 14     |              | Lower Housing             | 1    |
| 15     |              | Rubber Feet               | 1    |
| 16     |              | Air Pipe                  | 2    |
| 17     | HK-PC25/25LP | Power Cord                | 1    |
| 18     |              | Cord Relief               | 1    |
| 19     |              | Cable Clamp               | 1    |
| 20     |              | Thermal Protective Switch | 1    |
| 21     | HK-F25       | Filter                    | 1    |

# Construction 25LP



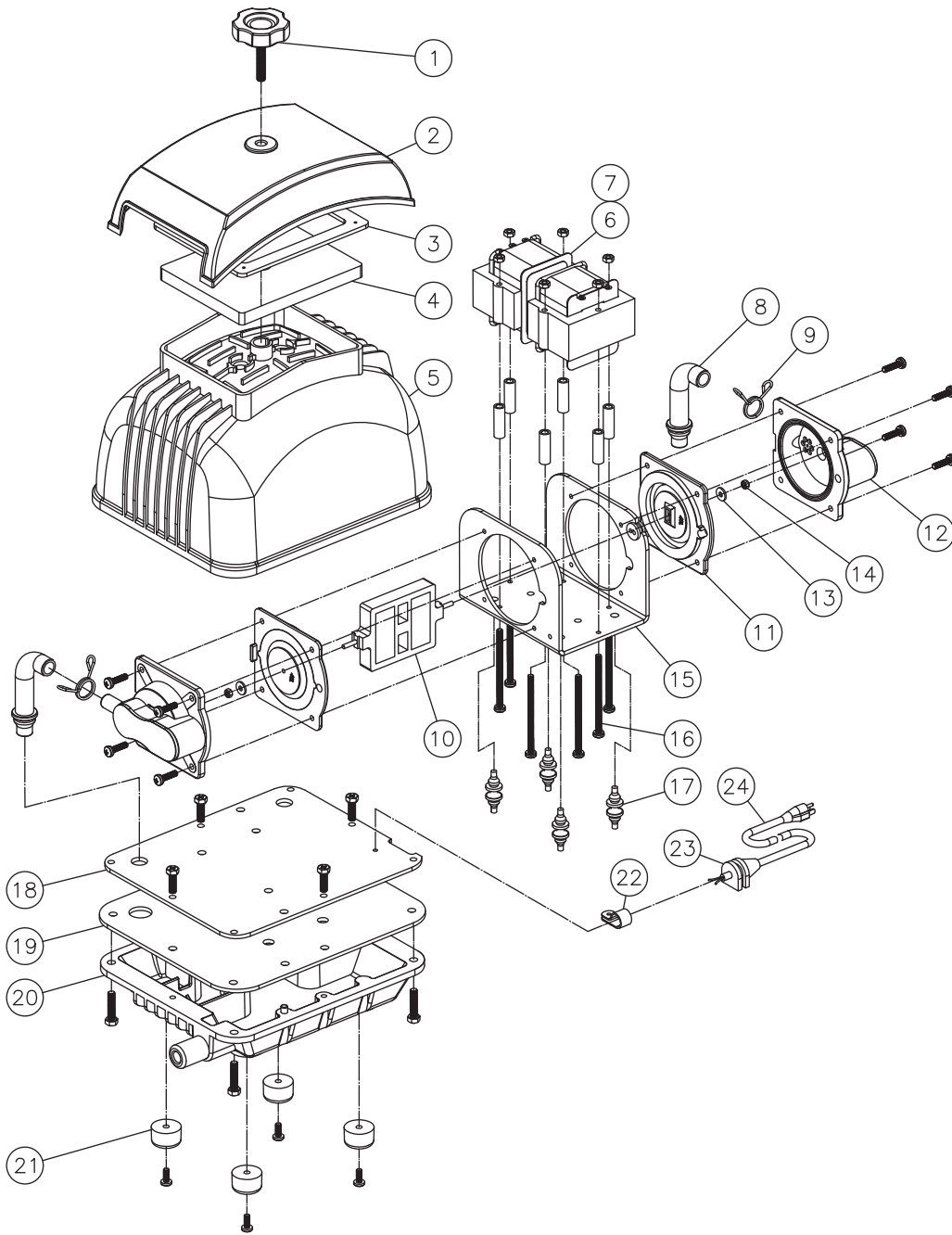
| HK-25LP |               |                           |      |
|---------|---------------|---------------------------|------|
| No.     | Parts No.     | Description               | Q'ty |
| 1       |               | Side Cover Screw          | 1    |
| 2       |               | Side Cover                | 1    |
| 3       | HK-F25LP/40LP | Filter Pad                | 1    |
| 4       |               | Pump Cover                | 1    |
| 5       |               | Electromagnet             | 2    |
| 6       |               | Coil Frame                | 1    |
| 7       | HK-D25        | Diaphragm Frame           | 1    |
| 8       |               | Diaphragm Housing         | 1    |
| 9       |               | Washer                    | 2    |
| 10      |               | U-Locking Nut             | 2    |
| 11      | HK-M25        | Magnet                    | 1    |
| 12      |               | L-Tube                    | 2    |
| 13      |               | O-ring                    | 2    |
| 14      | HK-VM25/25LP  | Vibration Mount           | 4    |
| 15      |               | Center Plate              | 1    |
| 16      | HK-GK25LP     | Gasket                    | 1    |
| 17      |               | Lower Pump Cover Gasket   | 1    |
| 18      |               | Lower Pump Cover          | 1    |
| 19      |               | Rubber Feet               | 4    |
| 20      |               | Cable Clamp               | 1    |
| 21      |               | Cord Rubber Bushing       | 1    |
| 22      | HK-PC25/25LP  | Power Cord                | 1    |
| 23      |               | Thermal Protective Switch | 1    |

# Construction 40LP



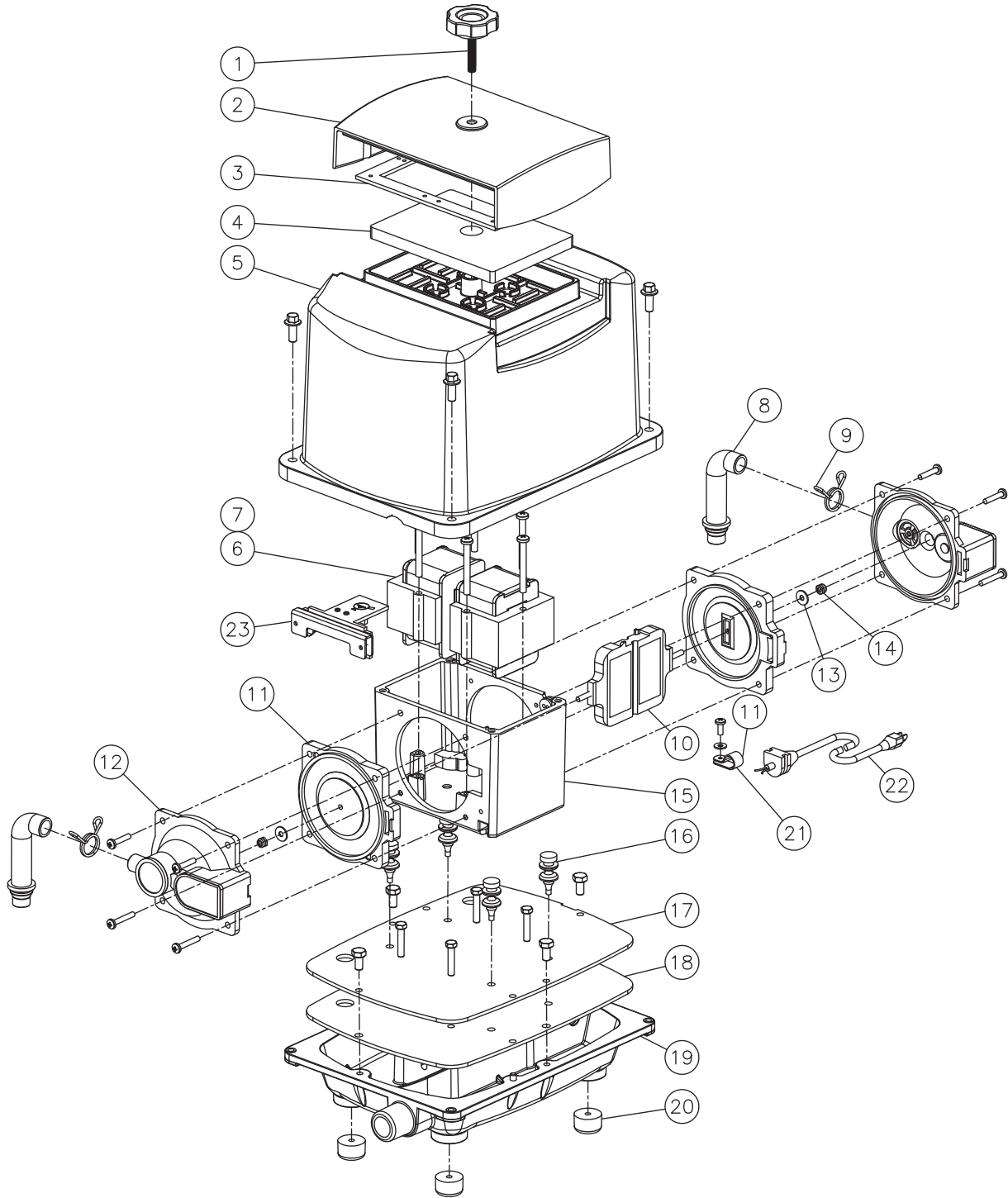
| HK-40LP |                     |                           |      |
|---------|---------------------|---------------------------|------|
| No.     | Parts No.           | Description               | Q'ty |
| 1       |                     | Side Cover Screw          | 1    |
| 2       |                     | Side Cover                | 1    |
| 3       | HK-F25LP/40LP       | Filter Pad                | 1    |
| 4       |                     | Pump Cover                | 1    |
| 5       |                     | Cover For Coil Frame      | 1    |
| 6       |                     | Screw                     | 2    |
| 7       |                     | Nut                       | 2    |
| 8       |                     | Electromagnet             | 2    |
| 9       |                     | Thermal Protective Seitch | 1    |
| 10      |                     | Coil Frame                | 1    |
| 11      | HK-M40              | Magnet                    | 1    |
| 12      | HK-D40              | Diaphragm Frame           | 2    |
| 13      |                     | Diaphragm Housing         | 2    |
| 14      |                     | Waser                     | 2    |
| 15      |                     | U-Locking Nut             | 2    |
| 16      |                     | L-Tube                    | 2    |
| 17      |                     | Hose Tightening Clip      | 2    |
| 18      |                     | Screw                     | 6    |
| 19      | HK-VM40/60/80       | Vibration Mount           | 4    |
| 20      |                     | Center Plate              | 1    |
| 21      | HK-GK40LP           | Gasket                    | 1    |
| 22      |                     | Lower Pump Cover Gasket   | 1    |
| 23      | HK-LC40LP           | Lower Pump Cover          | 1    |
| 24      |                     | Rubber Feet               | 1    |
| 25      |                     | Cable Clamp               | 1    |
| 26      |                     | Cord Rubber Bushing       | 1    |
| 27      | HK-PC40/40LP /60/80 | Power Cord                | 1    |

# Construction 40L, 60L, 80LH



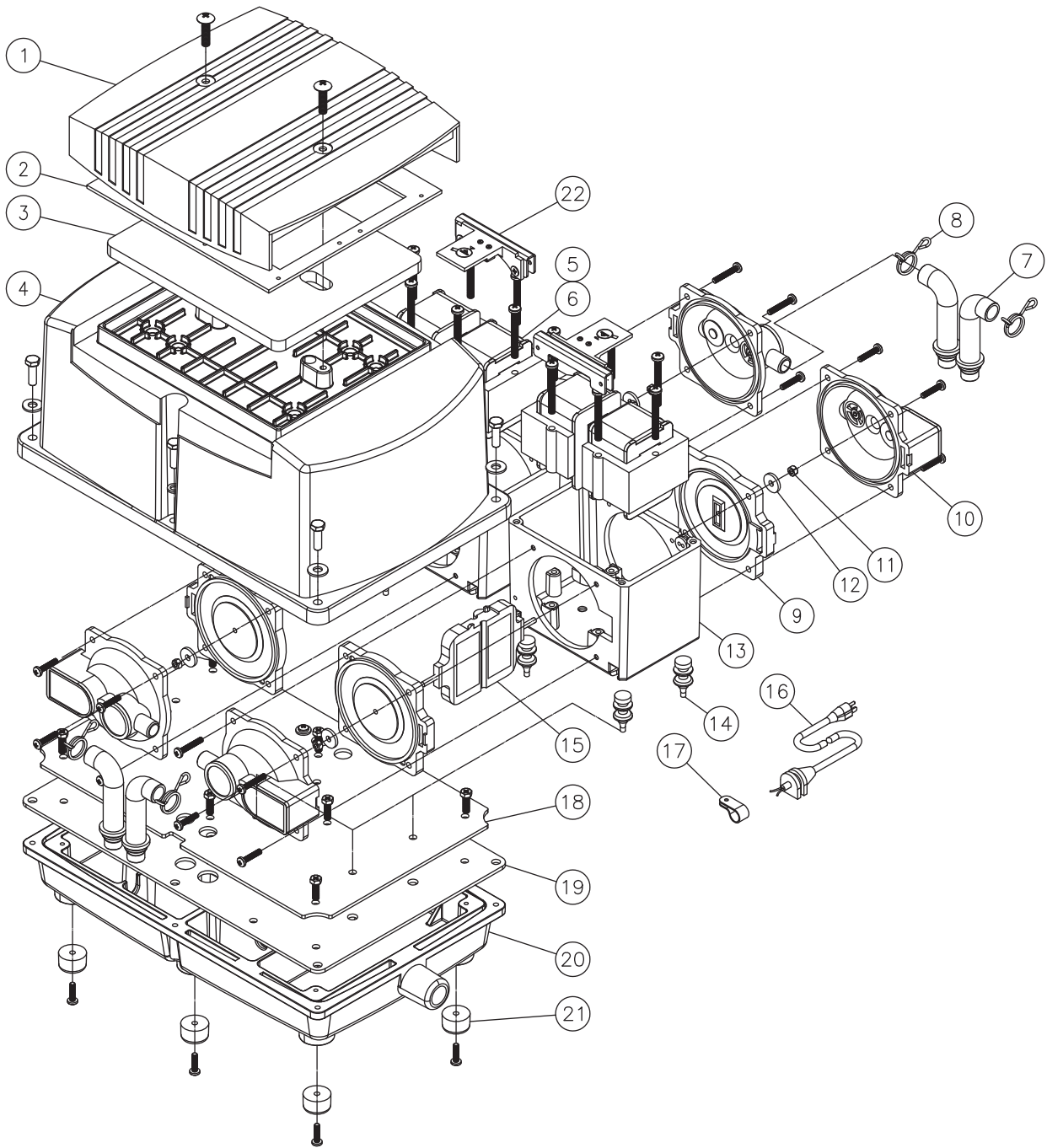
| HK-40L, 60L, 80LH |               |                           |      |     |                     |                                |      |
|-------------------|---------------|---------------------------|------|-----|---------------------|--------------------------------|------|
| No.               | Parts No.     | Description               | Q'ty | No. | Parts No.           | Description                    | Q'ty |
| 1                 |               | Cover Bolt For 40L/60L    | 1    | 11  | HK-D40<br>HK-D60/80 | Diaphragm Frame For 40L        | 2    |
|                   |               | Cover Bolt For 80LH       |      |     |                     | Diaphragm Frame For 60L/80LH   |      |
| 2                 |               | Filter Cover              | 1    | 12  |                     | Diaphragm Housing For 40L      | 2    |
| 3                 | HK-FP40/60/80 | Filter Cover Packing      | 1    |     |                     | Diaphragm Housing For 60L/80LH |      |
| 4                 | HK-F40/60/80  | Filter Pad                | 1    | 13  |                     | Waser                          | 2    |
| 5                 |               | Pump Cover                | 1    | 14  |                     | U-Locking Nut                  | 2    |
| 6                 | HK-E40        | Electromagnet For 40L     | 2    | 15  |                     | Coil Frame                     | 1    |
|                   | HK-E60        | Electromagnet For 60L     |      | 16  |                     | Screw                          | 6    |
|                   | HK-E80H       | Electromagnet For 80LH    |      | 17  | HK-VM40/60/80       | Vibration Mount                | 4    |
| 7                 |               | Thermal Protective Switch | 1    | 18  |                     | Center Plate                   | 1    |
| 8                 | HK-IT40/60/80 | L-Tube                    | 2    | 19  | HK-GK40/60/80       | Lower Pump Cover Gasket        | 1    |
| 9                 |               | Hose Tightening Clip      | 2    | 20  |                     | Lower Pump Cover               | 1    |
| 10                | HK-M40        | Magnet For 40L            | 1    | 21  |                     | Rubber Stand                   | 4    |
|                   | HK-M60/80     | Magnet For 60L            |      | 22  |                     | Cable Clamp                    | 1    |
|                   | HK-M80H       | Magnet For 80LH           |      | 23  |                     | Cord Rubber Bushing            | 1    |
|                   |               |                           |      | 24  | HK-PC40/40LP/60/80  | Power Cord                     | 1    |

# Construction 100L, 120LH



| HK-100L, 120LH |              |                           |      |     |              |                            |      |
|----------------|--------------|---------------------------|------|-----|--------------|----------------------------|------|
| No.            | Parts No.    | Description               | Q'ty | No. | Parts No.    | Description                | Q'ty |
| 1              |              | Cover Bolt For 100L       | 1    | 13  |              | Washer                     | 2    |
|                |              | Cover Bolt For 120LH      |      | 14  |              | U-Locking Nut              | 2    |
| 2              |              | Filter Cover              | 1    | 15  |              | Coil Frame                 | 1    |
| 3              | HK-FP100/120 | Filter Cover Gasket       | 1    | 16  | HK-VM100/120 | Vibration Mount            | 4    |
| 4              | HK-F100/120  | Filter Pad                | 1    | 17  |              | Center Plate               | 1    |
| 5              |              | Pump Cover                | 1    | 18  | HK-GK100/120 | Lower Pump Cover Gasket    | 1    |
| 6              |              | Electromagnet             | 2    | 19  |              | Lower Pump Cover For 100L  | 1    |
| 7              |              | Thermal Protective Switch | 1    |     |              | Lower Pump Cover For 120LH |      |
| 8              |              | L-Tube                    | 2    | 20  |              | Rubber Stand               | 4    |
| 9              |              | Hose Tightening Clip      | 2    | 21  |              | Cord Rubber Bushing        | 1    |
| 10             | HK-M100/150  | Magnet for 100L           | 1    | 22  | HK-PC100/120 | Power Cord                 | 1    |
|                | HK-M120H/200 | Magnet For 120LH          |      |     |              |                            |      |
| 11             | HK-D100/120  | Diaphragm Frame           | 2    | 23  | HK-SS100/120 | Safety Switch              | 1    |
| 12             |              | Diaphragm Housing         |      |     |              |                            |      |

# Construction 150L, 200L, 250L



| HK-150L, 200L, 250L |                 |                           |      |     |                  |                         |      |
|---------------------|-----------------|---------------------------|------|-----|------------------|-------------------------|------|
| No.                 | Parts No.       | Description               | Q'ty | No. | Parts No.        | Description             | Q'ty |
| 1                   |                 | Top Cover                 | 1    | 13  |                  | Coil Frame              | 2    |
| 2                   |                 | Top Cover Gasket          | 1    | 14  | HK-VM100/120     | Vibration Mount         | 8    |
| 3                   | HK-F150/200/250 | Filter Pad                | 1    | 15  | HK-M100/150      | Magnet For 150L         | 2    |
| 4                   |                 | Pump Cover                | 1    |     | HK-M120H/200     | Magnet For 200L         |      |
| 5                   |                 | Electromagnet             | 4    |     | H-M250           | Magnet For 250L         |      |
| 6                   |                 | Thermal Protective Switch | 2    | 16  | HK-PC150/200/250 | Power Cord              | 1    |
| 7                   |                 | L-Tube                    | 4    | 17  |                  | Cord Rubber Bushing     | 1    |
| 8                   |                 | Hose Tightening Clip      | 4    | 18  |                  | Center Plate            | 1    |
| 9                   | HK-D100/120     | Diaphragm Frame           | 4    | 19  |                  | Lower Pump Cover Gasket | 1    |
| 10                  |                 | Diaphragm Housing         |      | 20  |                  | Lower Pump Cover        | 1    |
| 11                  |                 | U-Locking Nut             | 4    | 21  |                  | Rubber Stand            | 6    |
| 12                  |                 | Waser                     | 4    | 22  |                  | Safety Switch           | 2    |

## MAINTENANCE

Cleaning the filter: FILTER MUST BE CLEANED EVERY 6 MONTHS

- I) Undo the cover bolt securing the filter cover to the pump housing, and remove the filter pad. (Figure 3)
- II) Gently dust the filter pad then wash in mild, soapy water and dry.
- III) Replace the filter pad and filter cover. Secure with the cover bolt.

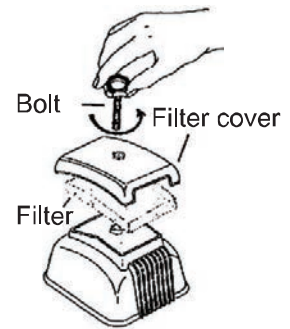


Figure 3

Connecting the Piping: IMPROPER CONNECTION WILL CAUSE LEAKAGE OF AIR

- I) Connect the pump's exhaust port and PVC (Plastic) pipe with an L-shaped rubber hose.
- II) Secure place of connection with a hose tightening clip (Figure 4).

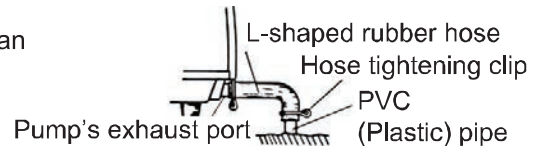


Figure 4

Removing the Pump Housing

1. Changing the casing block
  - I) Invert the pump and remove corner screws. (Figure 5a)
  - II) Insert screw driver between exhaust outlet and upper housing and try open gently. (Figure 5b)
  - III) Remove the assembly screws on the left and right of the diaphragm Casing. Remove the diaphragm Casing from diaphragm frame and disconnect L-tube. Replace with new casing block.
  - IV) Put back in place, ensure all screws are tight. (Figure 5c)



Figure 5a

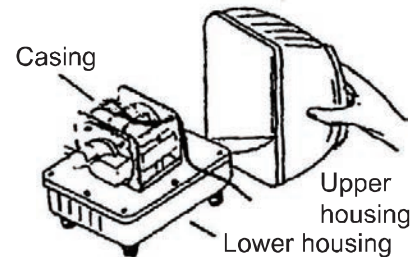


Figure 5b

Replacing the Diaphragm Mounting Block

- I) Undo the six sides U-Nut in the center of the frame.
- II) Remove and replace frame. (Figure 6)
- III) Reassemble, ensure tightness of screws.

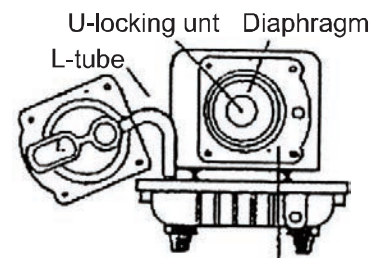


Figure 5c

Inserting a new Magnet

Insert the rod into the slot on the side of the diaphragm frame and then slide into the motor unit. The rod should be positioned with the "S" at the top. (Figure 7)

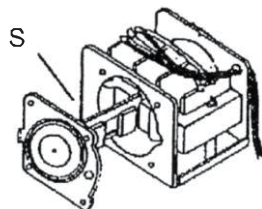


Figure 7

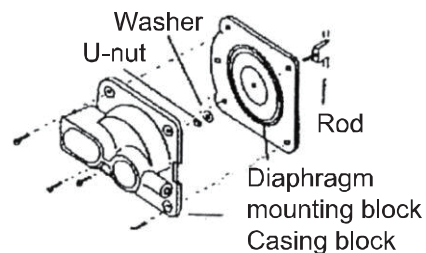
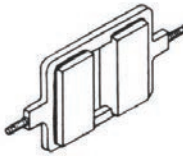
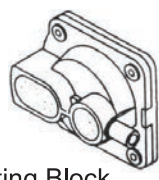
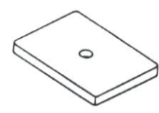


Figure 6

List of repair parts for 25L-120LH

|  |              |               |
|--|--------------|---------------|
| Magnet<br><br><br><br>1 pcs per set   | 25L/25LP     | HK-M25        |
|  | 40L/40LP     | HK-M40        |
|  | 60L          | HK-M60/80     |
|  | 80LH         | HK-M80H       |
|  | 100L         | HK-M100/150   |
|  | 120LH        | HK-M120H/200  |
| Diaphragm Chamber Block<br>2 pcs per set<br><br>Includes:<br>Casing Block<br>Diaphragm Mounting Block<br><br> | 25L/25LP     | HK-D25        |
|  | 40L/40LP     | HK-D40        |
|  | 60L/80LH     | HK-D60/80     |
|  | 100L/120LH   | HK-D100/120   |
| Filter Pad<br><br><br><br>1 pcs per set  | 25L          | HK-F25        |
|  | 25LP/40LP    | HK-F25LP/40LP |
|  | 40L/60L/80LH | HK-F40/60/80  |
|  | 100L/120LH   | HK-F100/120   |

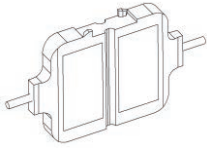
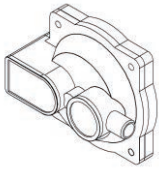
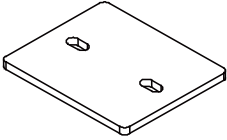
Specifications

| Model                           | 25L             | 25LP      | 40LP        | 40L        | 60L         | 80LH       | 100L        | 120LH       |
|---------------------------------|-----------------|-----------|-------------|------------|-------------|------------|-------------|-------------|
| Max flow (cfm) / (lpm)          | 1.3 / 37        |           | 2.5 / 70    |            | 3.3 / 94    | 4.2 / 119  | 4.6 / 129   | 6.1 / 172   |
| Rated voltage (V)               | AC 110/115/120V |           |             |            |             |            |             |             |
| Power supply frequency(Hz)      | 60 Hz           |           |             |            |             |            |             |             |
| Rated pressure (psi) / (bar)    | 1.42 / 0.10     |           | 1.85 / 0.13 |            | 2.13 / 0.15 |            | 2.56 / 0.18 | 2.85 / 0.20 |
| Rated performance (cfm) / (lpm) | 0.92 / 26       |           | 1.59 / 45   |            | 2.30 / 65   | 2.83 / 80  | 3.60 / 102  | 4.24 / 120  |
| Power (W)                       | 24              |           | 38          |            | 61          | 82         | 110         | 130         |
| Noise level (dB)                | 32              | 36        | 35          | 39         | 38          | 38         | 40          | 42          |
| Closed pressure (psi) / (bar)   | 5.26 / 0.37     |           | 4.84 / 0.34 |            | 6.4 / 0.44  | 6.4 / 0.44 | 7.05 / 0.49 | 6.4 / 0.44  |
| Weight (lbs) / (kg)             | 7.1 / 3.2       | 7.8 / 3.5 | 10.8 / 4.9  | 12.6 / 5.7 | 14.8 / 6.7  |            | 20.3 / 9.2  |             |

• The above specifications are subject to change without prior notice.

**Note:**  
**The air pumps are application of inhaling and exhaling. The pump uses of exhaling function, then inhaling hole function to air filter. Air filter necessary to be cleaned, periodicity (Pump put in outside every 3 months, inside every 6 months).**

List of repair parts 150L-250L

|  |                      |                    |
|--|----------------------|--------------------|
| Magnet<br><br>1 pcs per set   | 150L                 | HK-M100/150 x2set  |
|  | 200L                 | HK-M120H/200 x2set |
|  | 250L                 | HK-M250 x2set      |
| Diaphragm Chamber Block<br>2 pcs per set<br><br>Includes:<br>Casing Block<br>Diaphragm Mounting Block | 150L<br>200L<br>250L | HK-D100/120 x2set  |
| Filter Pad<br><br>1 pcs per set  | 150L<br>200L<br>250L | HK-F150/200/250    |

Specifications

| Specification                   | Model | 150L            | 200L        | 250L        |
|---------------------------------|-------|-----------------|-------------|-------------|
| Max flow (cfm) / (lpm)          |       | 8.4 / 238       | 10.0 / 284  | 13.4 / 378  |
| Rated voltage (V)               |       | AC 110/115/120V |             |             |
| Power supply frequency(Hz)      |       | 60 Hz           |             |             |
| Rated pressure (psi) / (bar)    |       | 2.85 / 0.20     | 2.85 / 0.20 | 2.85 / 0.20 |
| Rated performance (cfm) / (lpm) |       | 5.30 / 150      | 7.06 / 200  | 8.83 / 250  |
| Power (W)                       |       | 145             | 160         | 227         |
| Noise level (dB)                |       | 52              | 54          | 56          |
| Closed pressure (psi) / (bar)   |       | 5.68 / 0.39     | 6.4 / 0.44  | 6.4 / 0.44  |
| Weight (lbs) / (kg)             |       | 34.6 / 15.7     | 34.6 / 15.7 | 34.6 / 15.7 |

• The above specifications are subject to change without prior notice.

**Note:**  
 The air pumps are application of inhaling and exhaling. The pump uses of exhaling function, then inhaling hole function to air filter. Air filter necessary to be cleaned, periodicity (Pump put in outside every 3 months, inside every 6 months).

**MATALA WATER TECHNOLOGY CO., LTD.**  
**GUARANTEE PROVISIONS**

- 1) This Air pump/compressor has a limited guarantee for 3 years from the date of purchase provided that:
  - [a] It is operated in accordance with the instruction manual.
  - [b] Any repairs to the Air pump, which must be accompanied by this certificate are undertaken or authorized by the dealer or distributor from whom it was purchased.
  - [c] Warranty is void if electrical cord is cut or if pump has been flooded.
  - [d] Warranty does not include diaphragms, magnet and air filter.
    - \*Diaphragm----- item no.5,6 for 25L, item no.7, 8 for 25LP,  
item no.12, 13 for 40LP, item no.11, 12 for 40L~120LH,  
item no. 9, 10 for 150~250L.
    - \*Magnet----- item no.4 for 25L, item no.11 for 25LP/40LP,  
item no.10 for 40L~120LH,  
item no.15 for 150~250L.
    - \*Filter----- item no.21 for 25L, item no.3 for 25LP/40LP, 150L~250L,  
item no.4 for 40L~120LH.
- 2) Though the guarantee period may not have expired, payment for repairs must be made in the following cases:
  - [a] When the fault is due to improper usage or repairs have been attempted by persons other than an authorized dealer.
  - [b] When the fault is due to fire, natural disaster or incorrect voltage.
  - [c] If the guarantee has been lost, incorrectly completed or details fraudulently changed.
- 3) Original purchase receipt and serial# must be retained and provided to Authorized Dealer and Authorized Distributor for this warranty to be valid.

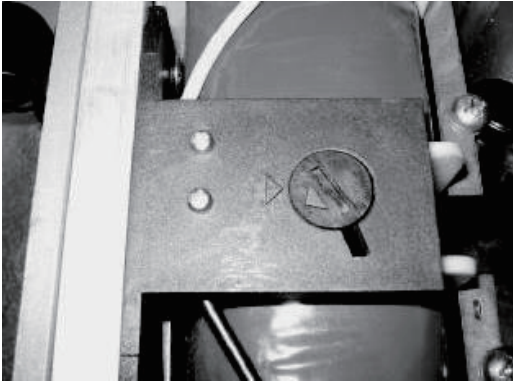
## 100L, 120LH TROUBLE SHOOTING

### A. If you plug power cable but Air Pump do not turn-on:

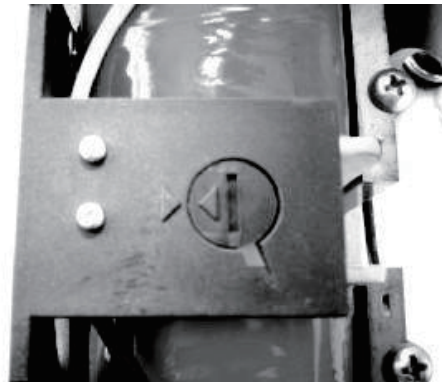
1. Unscrew the 4 screws which connect the body to the base. Remove the pump cover (please see operation manual page 8) and check the part no.23 (Safety Switch).

If the Safety Switch the triangle symbol like (picture 1) is wrong. That is because the shipment or people who movement the ari pump in wrong way. Please use the screw driver or onin turn the Triangle symbol like (picture 2).

2. Put the Air pump cover back then plug in the power cable turn on again.



Picture 1

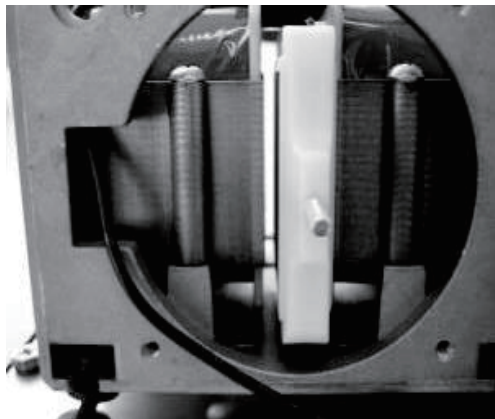


Picture 2

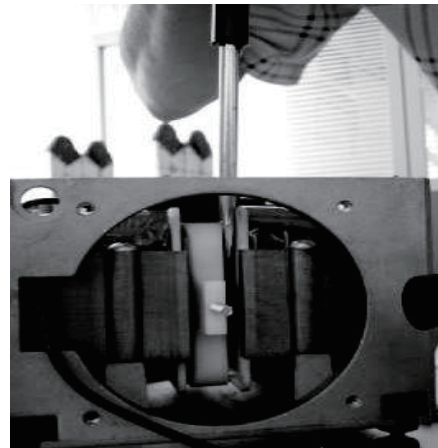
### B. If your pump running after several days or several weeks then stop:

Unscrew the 4 screws which connect the body to the base. Remove the pump cover (please see operation manual page 8) and check the part no.10 (magnet).

If you see the Magnet position already shift (please see the picture 3) not in the middle of Electromagnet then please use screw driver to move the Magnet back to the normal position (please see the picture 4).



Picture 3



Picture 4

## MATALA LINEAR AIR PUMP DIAPHRAGM REBUILD INSTRUCTIONS MATALA 40L, 60L, 80LH shown

Your new diaphragm kit includes two diaphragms. Each diaphragm consists of two halves. Also included is a bag with new nuts and washers.

Tools you will need: Flat head screw driver, Phillips head screw driver, Adjustable wrench.

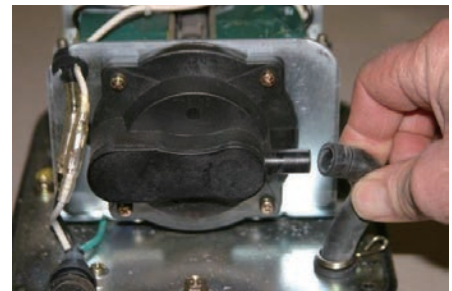
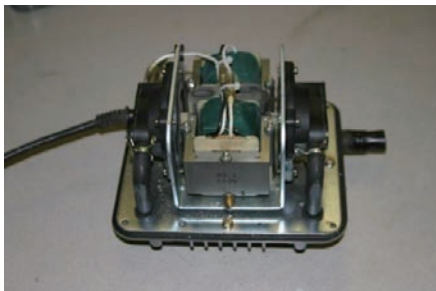
- 1) Remove top filter cover and filter pad.



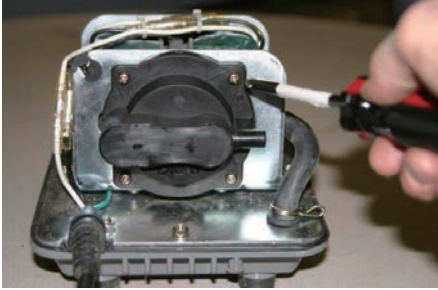
- 2) Turn pump over and unscrew the 4 screws which connect the body to the base.
- 3) Use a flat head screw driver to pry outer metal body away from the base.



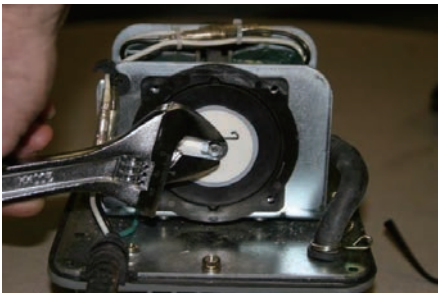
- 4) Remove body.
- 5) Inspect motor for burned wire, torn rubber hoses, fine metal dust. Clean gently with damp paper towel.
- 6) Repair only one diaphragm at a time. Remove the black J-tube from diaphragm outlet. Once removed, just push the top of tube to the side out of the way.



- 7) Use a Phillips screw driver and remove the 4 screws which connect the diaphragm to the motor plate. You might have to use a flat head screw driver to separate the two halves of the diaphragm.

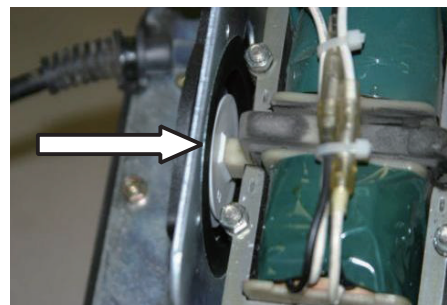
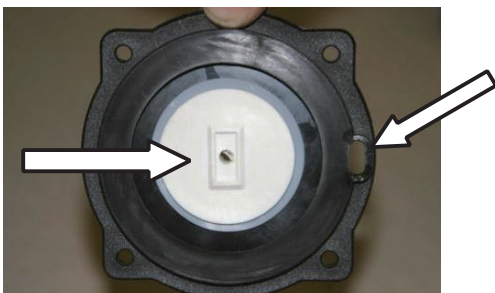


- 8) Use an adjustable wrench to remove the nut on the diaphragm. This will separate the magnet.  
9) Tap or push the center screw in order to separate the diaphragm from the magnet. You might need to use a flat head screw driver to separate the diaphragm from the motor plate.

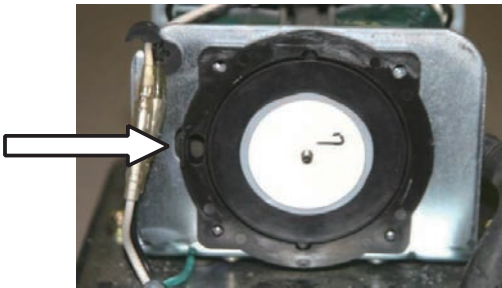


\*At this point you will have a better look at the magnet. The magnet rarely needs to be replaced. If there is a lot of fine metal dust in the motor area then the magnet may need to be replaced. Inspect the top and bottom part of the magnet. If it looks very worn or melted proceed to the optional section on “How to Replace the Magnet”.

- 10) Inspect one new diaphragm. There are two halves for each diaphragm. Notice that the half with the round soft rubber looks different on each side. One side has a rectangular impression. This impression must line up with the magnet screw. There is also an oval peg on the hard black plastic part which must align properly with the motor plate.



- 11) Align the new half diaphragm properly with the magnet screw and the motor plate. Push the diaphragm completely until it touches the magnet screw. You might need to push the soft rubber from behind with your finger. Use the wrench to screw on the new washer and nut. Be sure the new nut is very tight. (You may also use a drop of removable "Lock-Tight" glue to secure the nut to the magnet.)

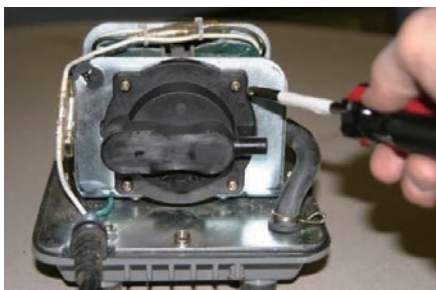


- 12) Again, properly align the hard plastic with the motor plate. Be sure it is set flush with the motor plate and the oval plug is aligned with hole in motor plate. Now, align the second outer half diaphragm with the first half screw holes. Squeeze both halves together with your fingers really hard. The two halves will not completely connect until you screw them together.



- 13) Screw the 4 screws in just a little at a time while gradually increasing the torque. Progress around the screws gradually tightening evenly until both halves are fully connected and tight with the motor plate.

- 14) Replace the black J-Tube over the diaphragm outlet. Use existing clip to secure tube to outlet.



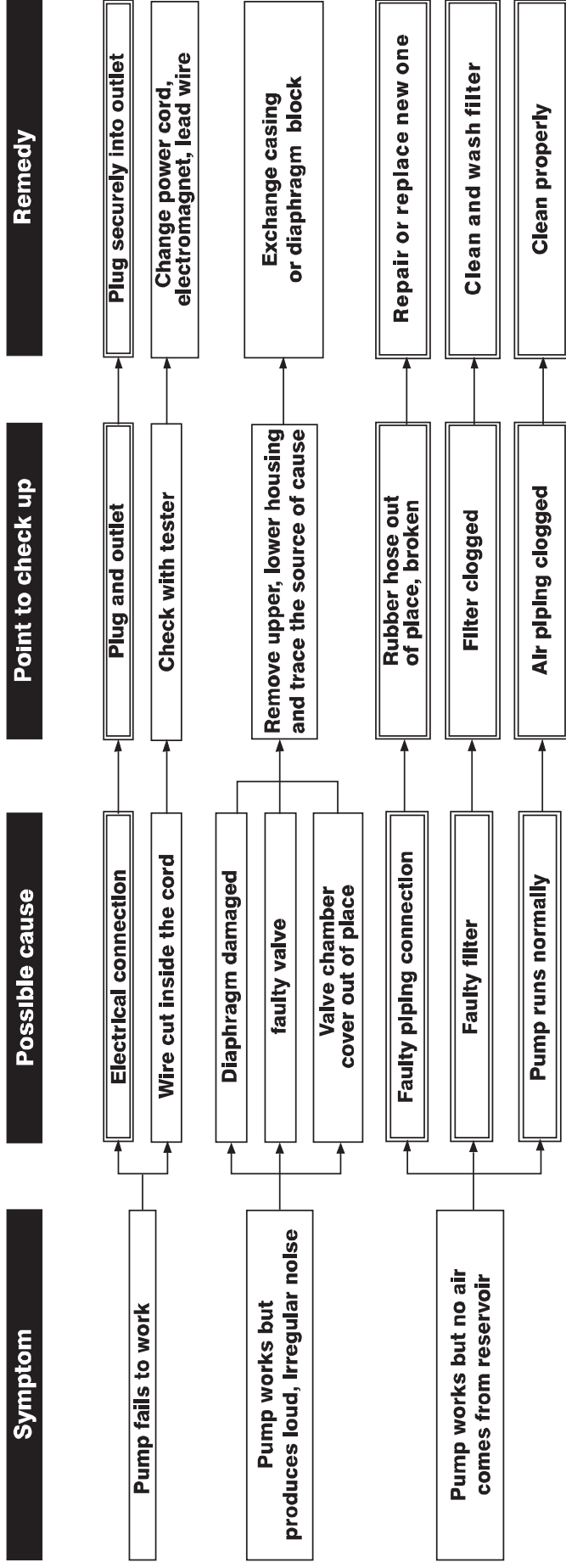
Repeat these instructions for the second diaphragm starting at #6.

15)After both diaphragms have been replaced.

16)Replace the outer metal housing onto the base and tighten the 4 screw. Wash the square air filter with tap water and shake dry. Reinstall into the top of metal housing and replace the filter cover. Congratulations, you've done it!



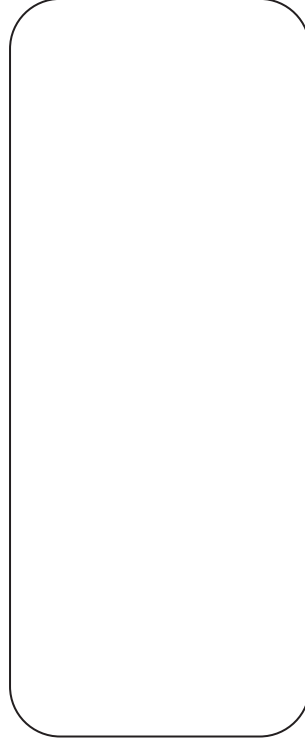
## Diagnosing malfunction - No air is discharged



### Caution:

- 1) Double bracketed items can be repaired by customer. For other troubles, return pump to nearest repair depot for repairs by manufacturer.
- 2) Change diaphragms once a year.
- 3) During operation, do not touch the lower housing with bare hands as the temperature will become about 70°C. (This temperature will not affect the performance of the pump.)

### DISTRIBUTED BY



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