EVOLUTION AQUA

AIRPUMP 70, 75, 95, 130 and 150 operation & maintenance manual

IMPORTANT : Please read this manual and save for further reference.

Thank you for purchasing this product. It is manufactured to the highest standards using quality materials. Please follow all recommended maintenance, operational and safety instructions and you will recieve years of trouble free service

WARNING

- IMPORTANT SAFEGUARDS
- READ AND FOLLOW ALL SAFETY INSTRUCTIONS
- TO REPLACE OR CHANGE ANY OF THE PARTS REFERRED IN THE SERVICE MANUAL, WE STRONGLY RECOMMEND YOU CONTACT AN AUTHORIZED TECHNICIAN.

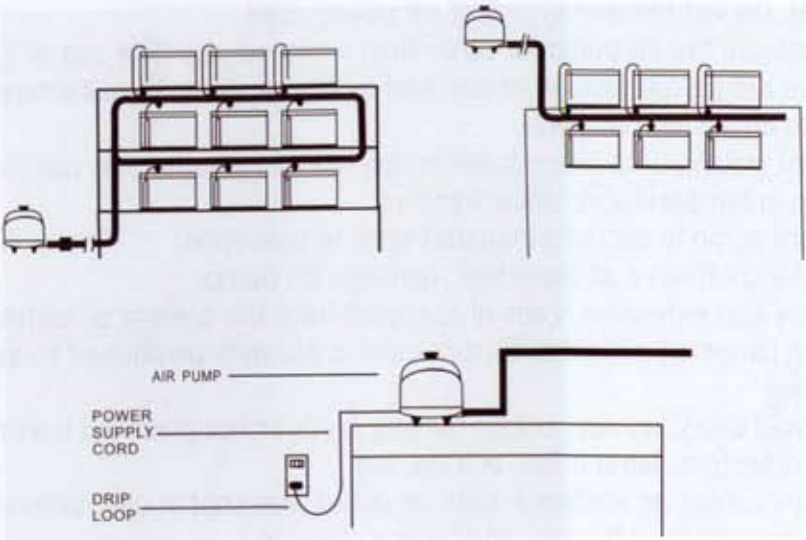
DANGER

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

1. 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.
2. 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.
3. Do not operate if the cord or plug is damaged, or if the pump is malfunctioning, dropped, or damaged in any way.
4. To prevent the plug or electrical outlet getting wet, position the aquarium tank and stand to one side of a wall mounted outlet. A "drip loop" shown in the figure below, should be arranged for each cord connecting 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 contact with outlet. If the plug or 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.
5. Do not use the pump near volatile liquids such as gasoline, thinners,

etc,. as this creates the possibility of an explosion.

6. Safety switch system (only in DBMX and DBMS series) when the magnet, in the center of the mchine, slides over times; or when either diaphragm is broken, causing an unusual longer stroke of the magnet, the micro-switch on top of the coil frames will automatically shut down the power.



CAUTIONS FOR USE

1. Close supervision is necessary when an appliance is used by or near children.
2. This pump is intended to **deal with clean, dry air only**. Do not, under any circumstances, attempt operation with water or other liquids, otherwise pump may be damaged.
3. The ambient operating temperature for this pump is between 41°F(5°C) and 104°F(40°C). Operation of pump in temperatures outside recommended temperature range may result in malfunction or severely shortened service life.
4. 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 cause by failure to observe cautions 3) or 4), pump will automatically switch off until cool. DO NOT REMOVE PUMP CASING UNLESS UNIT IS DISCONNECT FROM MAINS SUPPLY.

5. Always unplug pump prior to servicing. Grasp plug to remove cord from outlet. Do not remove by pulling on power cord.
6. Do not use the air pump for other than intended use. The use of attachments not recommended or not sold by the air pump manufacturer may cause an unsafe condition.
7. Do not install pump where it will be exposed to weather, do not store pump in temperatures below freezing.
8. Ensure pump is securely mounted prior to operation.
9. Read and observe all important markings on pump.
10. Ensure that extension cords (if required) have the correct or higher rating (amperes or watts). Ensure cord is properly positioned to avoid tripping.
11. To avoid injury, do not contact moving parts or hot parts such as heaters, reflectors, lamp bulbs, and the like.
12. Always unplug an appliance from an outlet when not in use, before Putting on or taking off parts, and before cleaning.

SAVE THESE INSTRUCTIONS

INSTALLATION

Disconnect electrical power at the circuit breaker of fuse box before installing this product. Install this product where it will not come into contact with water or other liquids. Install this product where it will be weather protected. Electrically ground this product. Failure to follow these instructions can result in death, fire or electrical shock.

Correct installation is your responsibility.

Make sure you have the proper installation conditions and that installation

clearances do not block air flow.

Mounting

This product must be installed on a flat, horizontal surface. Mounting the product to a stable, rigid operating surface and using shock mounts will reduce noise and vibration.

Plumbing

Remove plug from the OUT port. Connect with pipe and fittings that are the same size or larger than the product's port.

Accessories

Install relief valve and gauge at outlet to monitor performance. A check valve may be required to prevent back streaming through the compressor.

Motor Control

It is your responsibility to contact a qualified electrician and assure that the electrical installation is adequate and in conformance with all national and local codes and ordinances.

ELECTRICAL CONNECTION

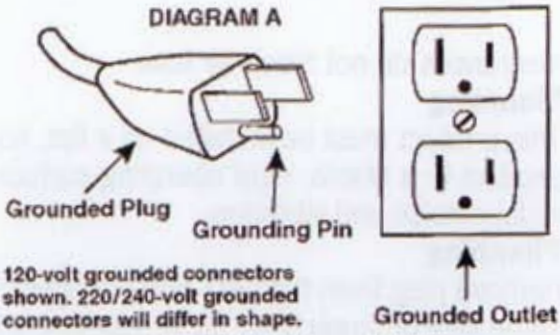
This product must be properly grounded. Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.

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 that is green with or without yellow stripes is the grounding wire. Check the condition of the power supply wiring. Do not permanently connect this product to wiring that is not in good condition or is inadequate for the requirements of this product. Failure to follow these instructions can result in death, fire or electrical shock.

Model with a power supply cord:

This product must be grounded. For either 120-volt or 220/240-volt circuits connect power supply cord grounding plug to a matching grounded outlet. Do not use an adapter. (See DIAGRAM A)

DIAGRAM A



In the event of and electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product may be equipped with a power supply cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if you are not sure whether the product is grounded. Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Model that is permanently wired:

This product must be connected to a grounded, metallic, permanent wiring system, or an equipment grounding terminal or lead on the product. Power supply wiring must conform to all required safety codes and be installed by a qualified person. Check that supply voltage agrees with that listed on product nameplate.

Extension cords:

Use only a 3-wire extension cord that has a 3-blade grounding plug. Connect extension cord plug to a matching 3-slot receptacle. Do not use an adapter. Make sure your extension cord is in good condition. Check that the wire gage of the extension cord is the correct size wire to carry the current this product will draw. An undersized cord is a potential fire hazard, and will cause a drop in line voltage resulting in loss of power causing the product to overheat. DIAGRAM B indicates the correct gage cord for length required and the ampere rating listed on the product nameplate. If in doubt, use the next heavier gage cord. The smaller the gage number, the heavier the wire gage.

Diagram B - Minium gage For Extension Cords Amps Volts	lenght of cord in feet (1m is 3 feet)								
120V	25	50	100	150	200	250	300	400	500
240V	50	100	200	300	400	500	600	800	1000
0 - 2	18	18	18	16	16	14	14	12	12
2 - 3	18	18	16	14	14	12	12	10	10
3 - 4	18	18	16	14	12	12	10	10	8
4 - 5	18	18	14	12	12	10	10	8	8
5 - 6	18	18	14	12	10	10	8	8	6

OPERATION

Use only recommended air handling parts acceptable for pressure not less than 10 psi. When provided, motor terminal covers must be in place for safe operation. Product surfaces may become hot during operation. Do Not direct air stream at body. Air stream from product may contain solid or liquid material that can result in eye or skin damage, wear proper eye protection. Do Not spray flammable or combustible liquid. Failure to follow these instructions can result in burns, eye injury or other serious injury.
It is your responsibility to operate this product at recommended pressure duty and room ambient temperature.

Start Up

If pump fails to start or slows down significantly under load, shut off and disconnect from power supply. Check that the voltage is correct for the pump.

MAINTENANCE

Disconnect electrical power supply cord before performing maintenance on this product. If product is hard wired into system, disconnect electrical power at the circuit breaker or fuse box before performing maintenance on this product. Failure to follow these instructions can result in death, fire or electrical shock. Product surfaces may become hot during operation, allow

product surfaces to cool before handling. Do Not direct air stream at body. Air stream from product may contain solid or liquid material that can result in eye or skin damage, wear proper eye protection. Clean this product in a well ventilated area. Failure to follow these instructions can result in burns, eye injury or other serious injury.

It is your responsibility to:

- Regularly inspect and make necessary repairs to product in order to maintain proper operation.
- Make sure that pressure is released from product before starting maintenance.
- Never add oil to this oil-less compressor.

Check intake filter after first 500 hours of operation. Clean filter and determine how frequently filter should be checked during future operation. This one procedure will help to assure the product's performance and service life.

Cleaning

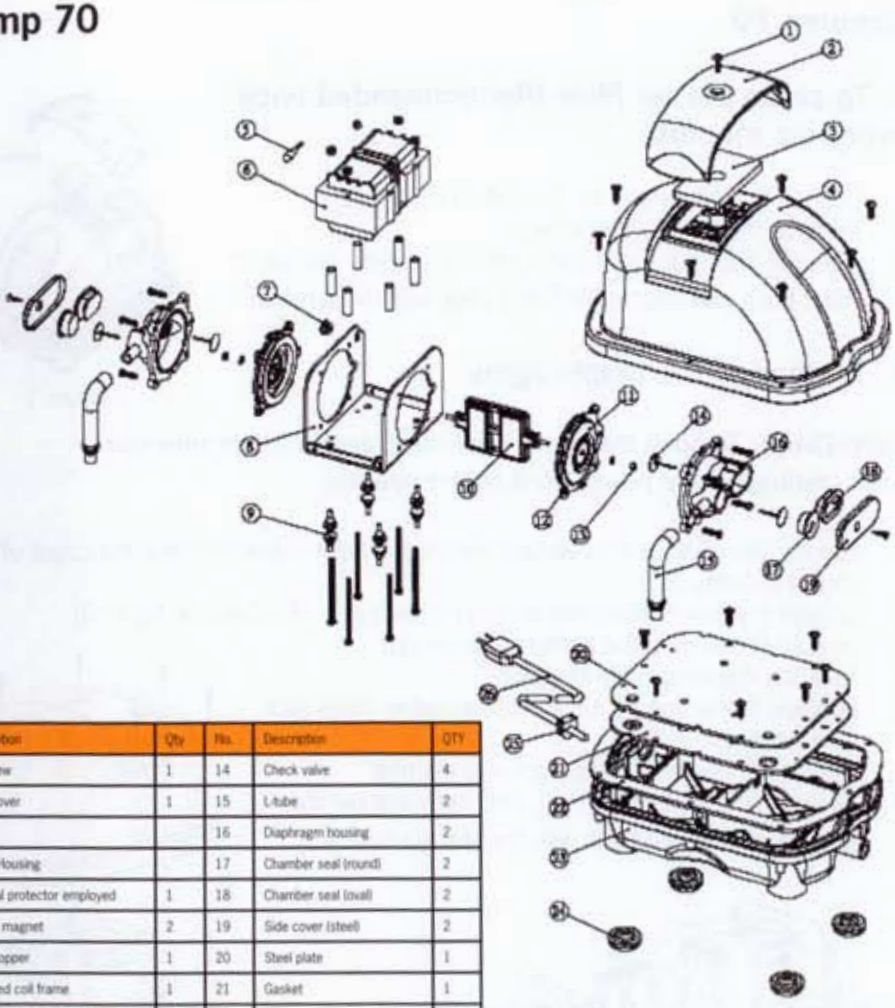
Do Not use kerosene or ANY other combustible solvent to clean product.

1. Remove filter and clean using detergent and water.
2. Rinse filter well and air dry.

Check that all external accessories such as relief valves and gauges are attached to cover and are not damaged before re-operating product.

EVOLUTION AQUA

Airpump 70



No.	Description	Qty	No.	Description	QTY
1	Topscrew	1	14	Check valve	4
2	Filter cover	1	15	L-tube	2
3	Filter		16	Diaphragm housing	2
4	Upper Housing		17	Chamber seal (round)	2
5	Thermal protector employed	1	18	Chamber seal (oval)	2
6	Electro magnet	2	19	Side cover (steel)	2
7	Wire stopper	1	20	Steel plate	1
8	U-shaped coil frame	1	21	Gasket	1
9	Vibration control rubber	4	22	Gasket	1
10	Activating arm	1	23	Lower housing	1
11	Diaphragm	2	24	Rubber feet	4
12	Diaphragm frame	2	25	Cord relief	1
13	U-nut	2	26	Power cord	1

DIY Maintenance Manual

Airpump 70

1. To clean the air filter (Recommended once every six months)

figure 1

1. Loosen the screw on top. (As shown in Figure1)
2. Remove the plastic filter cover.
3. Take the filter out and clean it with clean water and dry it.
4. Put it back and secure the fixing plate with the screw in.

2. To change the diaphragms

IMPORTANT: To open the upper enclosure, please make sure you have unplugged the power cord before opening.

1. Loosen the eight screws around the plastic upper cover and take the cover off. (As shown in figure 2)
2. Loosen the four screws and dissemble the parts. (As shown in figure 3)
3. Loosen the u-nut in the center of diaphragm.
4. Take the diaphragm off its place.
5. Replace a new one by mounting the rubber studs into their position.
6. Press the rim of the diaphragm into the ring.
7. Secure the magnet with U-nit and screw and put the diaphragm housing back with the four screws on.

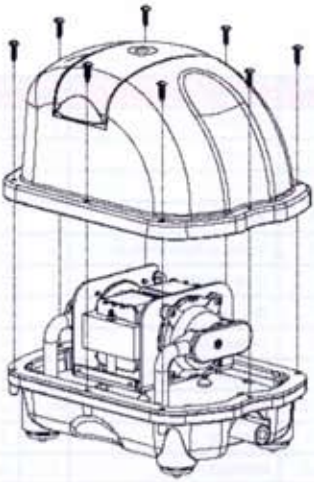


figure 2

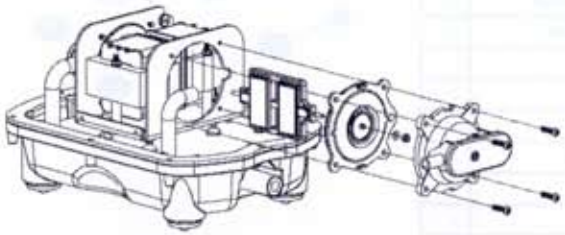
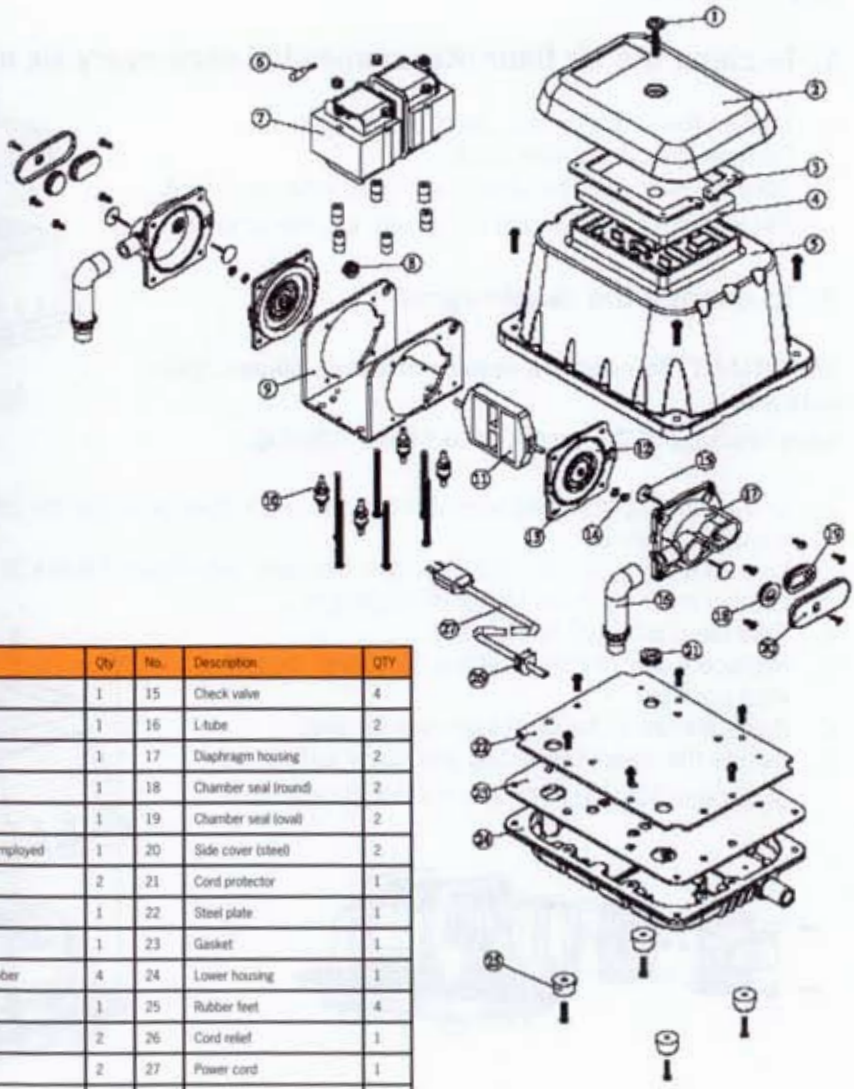


figure 3

EVOLUTION AQUA

Airpump 75/95



No.	Description	Qty	No.	Description	QTY
1	Topscrew	1	15	Check valve	4
2	Filter cover	1	16	L-tube	2
3	Foam seal	1	17	Diaphragm housing	2
4	Filter	1	18	Chamber seal (round)	2
5	Upper housing	1	19	Chamber seal (oval)	2
6	Thermal protertor employed	1	20	Side cover (steel)	2
7	Electromagnet	2	21	Cord protector	1
8	Wire stopper	1	22	Steel plate	1
9	U-shape coil frame	1	23	Gasket	1
10	Vibration control rubber	4	24	Lower housing	1
11	Activating arm	1	25	Rubber feet	4
12	Diaphragm	2	26	Cord relief	1
13	Diaphragm frame	2	27	Power cord	1
14	U-nut	2	28		

DIY Maintenance Manual

Airpump 75/95

1. To clean the air filter (Recommended once every six months)

1. Loosen the screw on top. (As shown in Figure1)
2. Remove the plastic filter cover.
3. Take the filter out and clean it with clean water and dry it.
4. Put it back and secure the fixing plate with the screw in.

figure 1

2. To change the diaphragms

IMPORTANT: To open the upper enclosure, please make sure you have unplugged the power cord before opening.

1. Loosen the eight screws around the plastic upper cover and take the cover off. (As shown in figure 2)
2. Loosen the four screws and dissemble the parts. (As shown in figure 3)
3. Loosen the u-nut in the center of diaphragm.
4. Take the diaphragm off its place.
5. Replace a new one by mounting the rubber studs into their position.
6. Press the rim of the diaphragm into the ring.
7. Secure the magnet with U-nit and screw and put the diaphragm housing back with the four screws on.

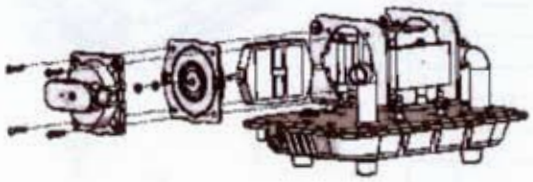


figure 3

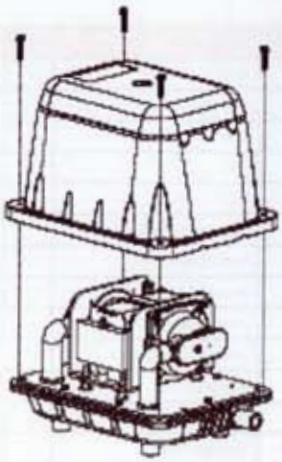
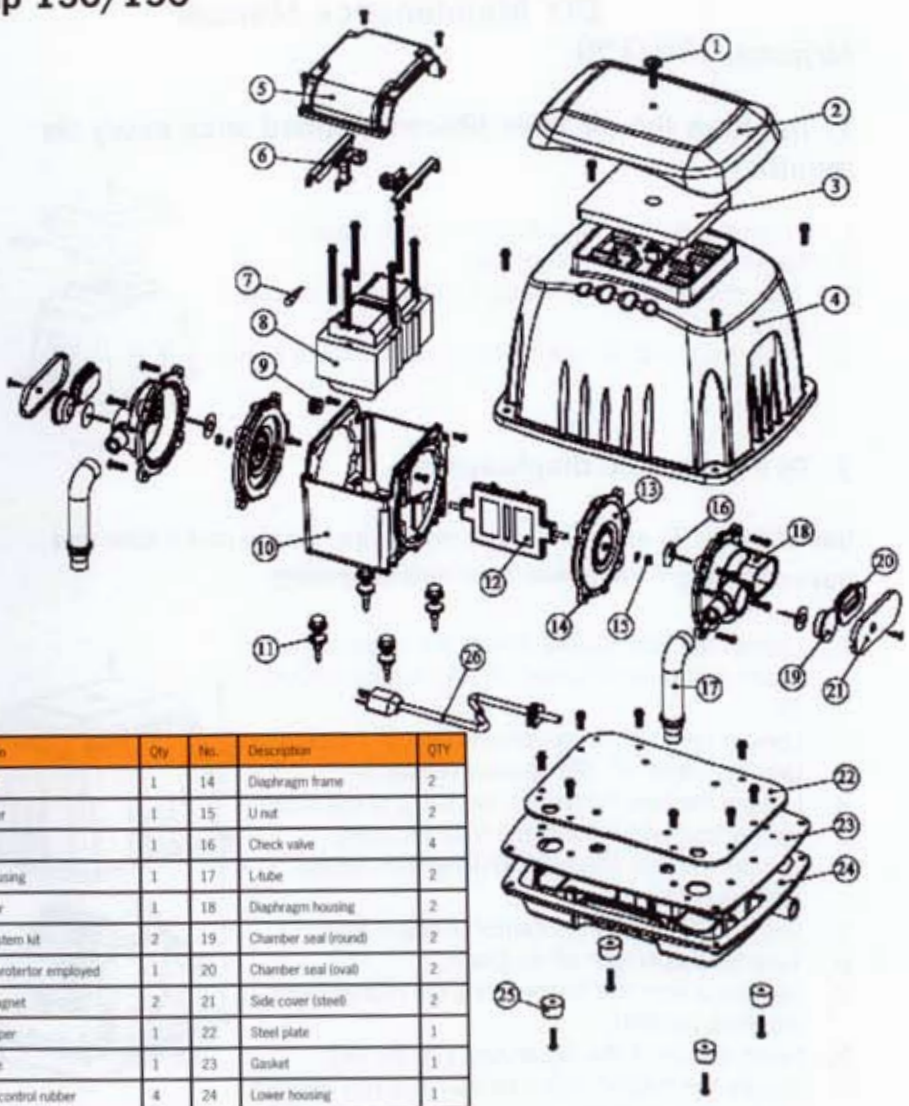


figure 2

EVOLUTION AQUA

Airpump 130/150



No.	Description	Qty	No.	Description	QTY
1	Topscrew	1	14	Diaphragm frame	2
2	Filter cover	1	15	U nut	2
3	Filter	1	16	Check valve	4
4	Upper Housing	1	17	L-tube	2
5	Coil cover	1	18	Diaphragm housing	2
6	Safety system kit	2	19	Chamber seal (round)	2
7	Thermal protertor employed	1	20	Chamber seal (oval)	2
8	Electromagnet	2	21	Side cover (steel)	2
9	Wire stopper	1	22	Steel plate	1
10	Coil frame	1	23	Gasket	1
11	Vibration control rubber	4	24	Lower housing	1
12	Activating arm	2	25	Rubber feet	4
13	Diaphragm	2	26	Power cord	1

DIY Maintenance Manual

Airpump 130/150

1. To clean the air filter (Recommended once every six months)

1. Loosen the screw on top. (As shown in Figure1)
2. Remove the plastic filter cover.
3. Take the filter out and clean it with clean water and dry it.
4. Put it back and secure the fixing plate with the screw in.

Figure 1

2. To change the diaphragms

IMPORTANT: To open the upper enclosure, please make sure you have unplugged the power cord before opening.

1. Loosen the four screws around the aluminum upper cover, and take the cover off. (As shown in figure 2)
2. Loosen the four screws around the coil cover, and take the cover off. (As shown in figure 3)
3. Loosen the four screws on two sides of the safety switch first, and remove the bars vertically.
4. Loosen the four screws and dissemble the diaphragm housing.
5. Loosen the u-nut in the center of diaphragm.
6. Take the diaphragm off its place.
7. Replace a new one by mounting the rubber studs into their position.
8. Press the rim of the diaphragm into the ring.
9. Secure the magnet with a new u-nut screw and put the diaphragm housing back with the four screws on.

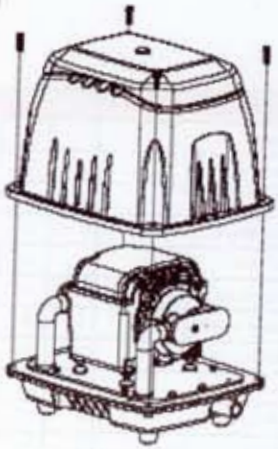


Figure 2

10. Place the two plastic safety switch bars back to their position and secure the four screws on both sides. Put on the aluminum cover and secure the four screws firmly.

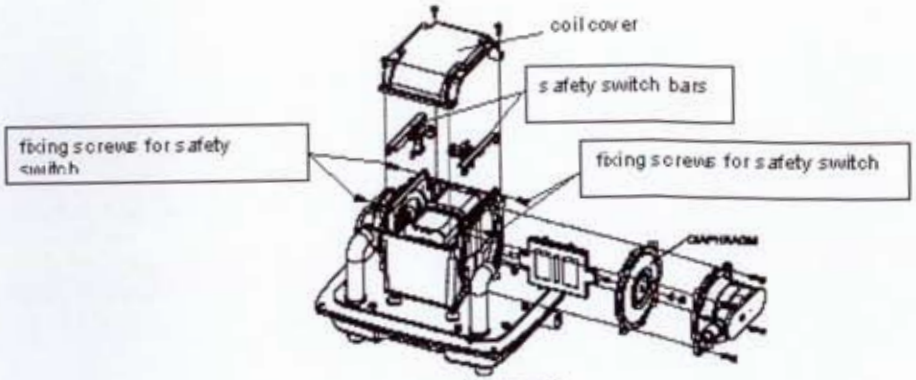


Figure 3