

DM™ Filter System Owner's Manual

IMPORTANT SAFETY INSTRUCTIONS READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS

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Important Notice



Attention Installer. This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner/operator of this equipment.

⚠ WARNING

Before installing this product, read and follow all warning notices and instructions accompanying this filter. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of this manual.

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SECTION I. PUMP SAFETY REMINDER INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

1. READ AND FOLLOW ALL INSTRUCTIONS.
2. WARNING - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
3. WARNING - Risk of Electrical Shock. Connect only to a grounding type receptacle protected by a ground-fault circuit-interrupter (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.
4. Do not bury the electrical cord. Locate the cord to minimize the abuse from lawn mowers, hedge trimmers, and other equipment.
5. WARNING - To reduce the risk of electrical shock, replace damaged cord immediately.
6. WARNING - To reduce the risk of electrical shock, do not use an extension cord to connect unit to electric supply; provide a properly located outlet.
7. CAUTION - For continued protection against possible electrical shock, this unit is to be mounted to the base in accordance with the installation instructions.
8. SAVE THESE INSTRUCTIONS.

 WARNING	
	To reduce the risk of electrical shock, Only connect to a GFCI protected receptacle. Failure to do so could result in an electrical shock to pool users, installers, or others which can result in serious personal injury or death.

SECTION II. HOW YOUR FILTER WORKS

Your cartridge filter is designed to produce clear, sparkling water and operate for years with a minimum of maintenance when installed, operated and maintained in accordance with these instructions.

Your filter uses a cartridge element to remove dirt particles from the water. Dirt is collected in the filter by the cartridge element as water flows through the filter. Water enters the filter through the filter inlet port and is distributed evenly through the cartridge element. The dirt is removed by the cartridge fabric and the clean water flows through the filter outlet port and is returned to the pool through the piping or hoses.

After a period of time, dirt will accumulate in the filter causing a resistance to the flow of water through the filter. This resistance results in a diminished flow of water and a rise in the filter pressure. Eventually the filter will have removed so much dirt and the filter pressure risen to such a point that it will be necessary to clean your filter, see SECTION V. CLEANING FILTER.

The filter's function is to remove suspended matter from the water and does not sanitize the water. For sparkling clear water, the water must be sanitized as well as balanced. Pool chemistry is a specialized area, and you should consult your local pool service specialist for specific details. In general, proper pool sanitation requires a free chlorine level of 1 to 2 PPM and a PH range of 7.2 to 7.6.

WARNING

Failure to operate your filter system or inadequate filtration can cause poor water clarity obstructing visibility in your pool. Poor water clarity may obscure objects in the water which while swimming and diving could cause severe personal injury and death. Never swim in a pool with poor water clarity.

SECTION III. INSTALLATION

WARNING



THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (e.g., LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BE BLOWN OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH, OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

1. BEFORE REPOSITIONING VALVES AND BEFORE BEGINNING THE ASSEMBLY, DISASSEMBLY, OR ADJUSTMENT OF THE LOCK RING OR ANY OTHER SERVICE OF THE CIRCULATING SYSTEM: (A) TURN THE PUMP OFF AND SHUT OFF ANY AUTOMATIC CONTROLS TO ENSURE THE SYSTEM IS NOT INADVERTENTLY STARTED DURING THE SERVICING; (B) OPEN AIR RELIEF VALVE; (C) WAIT UNTIL ALL PRESSURE IS RELIEVED.
2. WHENEVER INSTALLING THE FILTER LOCK RING FOLLOW THE CLEANING FILTER INSTRUCTIONS EXACTLY.
3. ONCE SERVICE ON THE CIRCULATING SYSTEM IS COMPLETE FOLLOW INITIAL START SYSTEM RESTART INSTRUCTIONS EXACTLY.
4. MAINTAIN CIRCULATION SYSTEM PROPERLY. REPLACE WORN OR DAMAGED PARTS IMMEDIATELY (e.g., lock ring, pressure gauge, relief valve, O-rings, etc.).
5. BE SURE THAT THE FILTER IS PROPERLY MOUNTED AND POSITIONED ACCORDING TO INSTRUCTIONS PROVIDED.

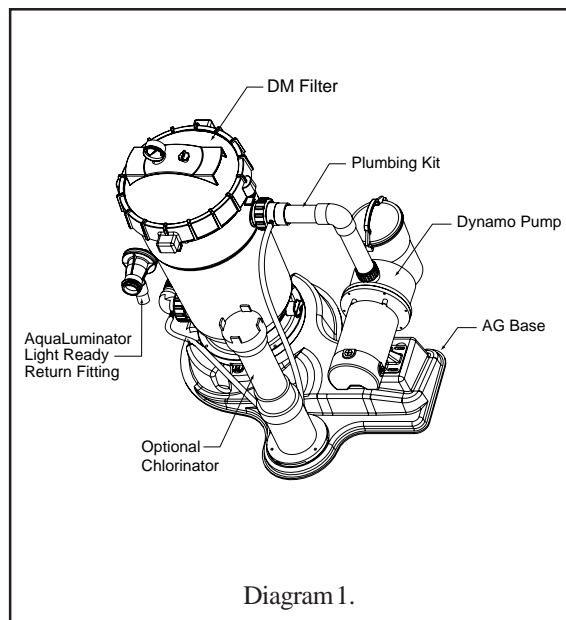
To install this filter system, you will need the following simple tools - a screwdriver, pliers, and wrench.

1. Carefully remove the equipment from the carton and check for any evidence of damage due to rough handling or shipping. If any of the equipment is damaged, immediately notify the organization where the equipment was purchased.
2. This filter should be mounted on a level concrete slab, preferably concrete poured in a form or on a platform constructed of concrete block or brick.

3. Place the pump on the mounting base; see Diagram 1. Loosely attach the pump connector to the pump and filter. This will align the pump to the correct set of mounting holes. Secure the pump to the base using two bolt-fasteners. Tighten the union fittings on the plumbing connector by hand until tight. If water leakage occurs at these connections, adjust connections with a wrench, making sure not to exceed 1/4 of a turn.

4. Do not mount electrical controls (on/off switches, timer, etc.) over the filter. You need to be able to stand clear of the filter when starting the pump.

5. Attach the hair and lint pot to the front of the pump. This is an O-ring seal fitting that requires hand tightening only. (OVER TIGHTENING CAN RESULT IN DAMAGE TO THE O-RING SEAL)



6. Install the threaded fitting, see Diagram 2, into the suction port of the pump. This is an O-ring seal fitting that requires hand tightening only. (OVER TIGHTENING CAN RESULT IN DAMAGE TO THE O-RING SEAL)
7. Install the threaded return fitting into the filter outlet port, see Diagram 1, making sure that the O-ring is in place in the filter body. Tighten this connection by hand until tight. If water leakage occurs at this connection after installation, adjust connection with a wrench making sure not to exceed 1/4 of a turn. (OVER TIGHTENING CAN RESULT IN DAMAGE TO THE FILTER)
8. Connect flexible hoses to the equipment and the pool with the clamps.
 - a. Connect the skimmer suction port from the pool to the pump inlet.
 - b. Connect the filter outlet port to the return fitting of the pool.
 - c. Install the pressure gauge using the Teflon tape provided. Wrap the threads of the pressure gauge with three layers. Install the gauge into the top of the filter tank until tight.
9. If using the optional Rainbow Chlorine feeder, position the feeder on the system base, aligning the holes in the feeder base with the three "T" nuts, see Diagram 1. Install the feeder using the three bolts supplied and tighten.

	 CAUTION
	Do not over tighten.

10. Your system includes two (2) special barbed fittings, see Diagram 3, a barbed body swivel and a barbed return elbow, *these fittings **must** be modified and drilled when installing the chlorine feeder.*
- A. Using an 1/8" drill bit; drill a hole through the center of the small protruding barbed port to the inside of the fitting (this is shipped with the hole blocked), see Diagram 3; this will allow the water to flow to and from the chlorine feeder. **See the Caution below before drilling both fittings if using a chlorine feeder with a heater.**

NOTE

Please use caution in drilling, as not to damage the barbed fitting.

- B. Attach the inlet/outlet tubing by first sliding the compression nut over the tubing.
- C. Push the tubing over the tapered end of the barb, slide nut to barb, and tighten the nut firmly by hand.

⚠ CAUTION

A highly chlorinated solution should NEVER pass through a heater, if this system was purchased with the option chlorine feeder and is to be used with a heater, "DO NOT" drill the barbed return elbow. Follow instruction "D" when installing with a heater.

- D. On the return line to the pool from the heater, drill a 1/8" hole in the return pipe and using the barbed fitting, nut, rubber washers and hose clamp supplied with the chlorine feeder, connect the outlet tubing from the chlorinator to this connection. This will allow the concentrated chlorine solution to sanitize your pool while bypassing the heater, see Diagram 4.
11. The system also includes the AquaLuminator Light Ready Water Return Fitting (P/N 543110, Diagram 1). To install the light, use the AquaLuminator upgrade kit (P/N 619398). To install the Light Ready Water Return Fitting, please refer to the installation instructions provided with it.

Diagram 2.

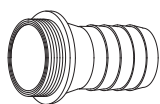


Diagram 3.

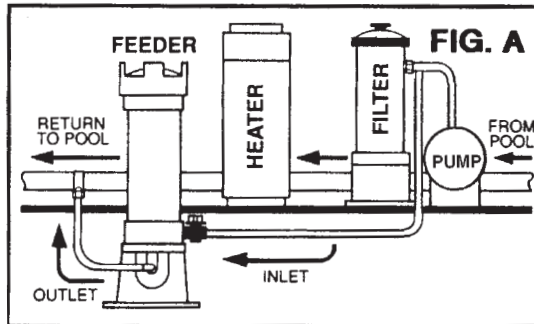
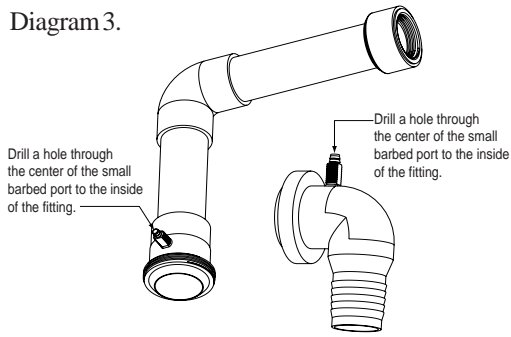




Diagram 4.

SECTION IV. INITIAL START-UP AND RESTART INSTRUCTIONS.

1. Be sure all connections have been made and are secure.
2. Make sure the hair and lint pot of the pump is filled with water. (FAILURE TO FILL THE HAIR AND LINT POT WITH WATER WILL RESULT IN DAMAGE TO THE PUMP AND PUMP SEAL).
3. **OPEN THE MANUAL AIR RELIEF VALVE UNTIL IT SNAPS INTO THE FULL OPEN POSITION .**
4. **STAND CLEAR OF THE FILTER.** Start pump allowing the filter tank to fill with water. Close the air relief valve after a steady stream of water appears.
5. Your filter has now started its filter cycle. You should check that the water is returning to the pool and take note of the operating pressure. My original starting pressure is _____ PSI with the filter clean.
6. Check the system for water leaks. If a leak is found, shut off pump before correcting the leak.

 WARNING	
	This filter operates under high pressure. When any part of the circulating system (e.g., lock ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the lid to be blown off which can result in severe injury, death, or property damage.



7. As the filter removes dirt and impurities from the pool water, the accumulation will cause the filter pressure to rise and the flow to diminish. When the pressure gauge reading is 8 to 10 PSI higher than the clean filter reading noted above, it is time to clean the filter's element grids, see SECTION V. CLEANING THE FILTER, below.

SECTION V. CLEANING THE FILTER

1. Cleaning frequency will vary from pool to pool and with other factors such as weather conditions, heavy rains, dust pollen, bather load and water chemistry. Check the pressure gauge reading on a regular basis and when the pressure gauge reading increases 8 to 10 PSI over the initial clean filter reading, it is time to clean your CARTRIDGE ELEMENT.
2. Turn the pump off, shut off any automatic controls to assure that the system is not inadvertently started during servicing.
3. Plug the skimmer port with a rag. This will prevent pool water from running out during servicing.
4. Open the filter manual air relief valve, and the filter drain plug.
5. Remove the hair and lint strainer pot lid and clean the basket. Replace the basket and secure the lid.
6. Remove the filter lock ring by depressing the two spring loaded locking blocks and rotating the ring counter clockwise until the ring is free from the filter body.
7. Remove the filter lid using the lifting handles on the lid.

8. Remove the CARTRIDGE ELEMENT assembly from the filter body by using the lifting handles and pulling straight up.
9. Remove the CARTRIDGE ELEMENT from the core assembly by placing your middle fingers into cloth area and using your thumbs on top of the lifting handles and pressing until the CARTRIDGE ELEMENT is loose and freely slides off the center core assembly.
10. Using a garden hose, direct water spray at the CARTRIDGE ELEMENT to dislodge and wash away any accumulated foreign matter. Thoroughly clean the elements.
11. Clean and remove debris from the inside of the filter tank.
12. Replace the CARTRIDGE ELEMENT over the center core assembly making sure the end of the element with the wording 'This Side Up' is facing up.
13. Replace the CARTRIDGE ELEMENT into the filter tank body making sure the arrow on the top of the center core is aligned with the filter inlet port. You will be able to feel the assembly drop into and lock into place when in the proper position.
14. Clean any debris from the O-ring at the top of the filter tank. Apply a silicone lubricant to the O-ring.
DO NOT USE A PETROLEUM-BASE LUBRICANT ON THE O-RING.
Failure to properly clean and lubricate the O-ring may result in water leakage.
15. Replace the filter tank lid making sure it is fully and firmly seated on the tank body.
16. Place the filter lock ring over the filter lid, and turn clockwise until the safety latches click and the lock ring hits the stops on the body.

DO NOT ATTEMPT TO OVER TIGHTEN THE FILTER LOCK RING AFTER THE SAFETY LATCHES HAVE ENGAGED.

 WARNING	
	<p>If the filter lock ring is damaged, replace it immediately.</p> <p>This filter operates under high pressure. Replace locking ring if damaged or worn. Failure to replace locking ring can result in the lid separating from the filter which can cause severe injury or death.</p>

17. Replace the drain cap hand tight only.
18. Follow Initial Start Up and System Restart Instructions; see Section IV.

 WARNING
<p>Failure to operate your filter system or inadequate filtration can cause poor water clarity obstructing visibility in your pool. Poor water clarity may obscure objects in the water which while swimming and diving could cause severe personal injury and death. Never swim in a pool with poor water clarity.</p>

SECTION VI. WINTERIZING THE FILTER

1. In areas that have freezing winter temperatures, the pool equipment must be winterized to protect it from damage.
2. With the pump turned off, open the manual air relief valve.
3. Remove the drain port cap, and allow the filter to drain completely.
4. Remove the drain port plugs on the pump and allow the pump to drain completely.
5. Drain all appropriate system piping.
6. It is recommended that the pump and filter be covered with a tarpaulin or plastic sheet to inhibit deterioration from the weather.

DO NOT WRAP THE PUMP MOTOR WITH PLASTIC.

7. Your filter system is now winterized.
8. See SECTION IV. INITIAL START-UP AND SYSTEM RESTART, when pool is ready to be opened for the season.

SECTION VII. TROUBLESHOOTING

Problem	Cause	Remedy
Pool water not sufficiently clean.	1. Pool chemistry not adequate to inhibit algae growth. 2. Inadequate turnover rate.	Maintain pool chemistry or consult pool service technician. Run system for longer time or consult dealer or pool service technician.
Higher filter pressure.	1. Insufficient cleaning of the filter element. 2. Partially closed valve or restriction.	Clean the filter element (see Cleaning Filter instructions). Open valve or remove obstruction in return line.
Short filter cycles.	1. Insufficient cleaning of filter element. 2. Pool chemistry not adequate to inhibit algae growth. 3. Flow rate too high.	Clean the filter element (see Cleaning Filter instructions). Maintain pool chemistry or consult pool service technician. Restrict flow to capacity of filter.
Return flow to pool diminished, low filter pressure.	1. Obstruction in the pump hair and lint pot. 2. Obstruction in pump. 3. Obstruction in suction line to pump.	Clean basket in strainer. Disassemble and clean pump. Clean skimmer basket. Remove obstruction in lines. Open valves in suction line.

SECTION VIII. PUMP INSTRUCTIONS

Systems are supplied with the Dynamo Pump.

1. TO PRIME PUMP - (pump must be off).

Unscrew the lid from the pot and fill the pot with water to level of the suction line. Inspect O-ring, lubricate with silicone lubricant. Replace lid and hand tighten, lid shoulder will come to rest on the pot surface. Turn the pump on, priming time will vary depending upon elevation above water level and horizontal distance of suction line. If the filter is installed, open the air relief valve (before turning the pump on) until a steady stream of water comes out, then close the air relief valve. The pump is now primed. If the pump is installed below water level, close the return line prior to filling the hair and lint pot with water. Line must be reopened before turning the pump on.

 WARNING	
	To reduce the risk of electrical shock, only connect to a GFCI protected receptacle. Failure to do so could result in an electrical shock to pool users, installers, or others which can result in serious personal injury or death.

2. TO CLEAN BASKET - (pump must be off)

Follow the instructions above to prime the pump. After removing the lid, remove the basket and empty the debris. Replace the basket and proceed to fill the pot with water. It is important to visually inspect the basket, through the see through lid, at least once a week. A dirty basket will reduce the efficiency of your system, and can put an abnormal load on the pump which could result in costly repair bills.

3. SHAFT SEAL - (rotary seal). The shaft seal consists of two parts:

- a. Rotating ceramic seal, press fitted into the impeller.
- b. A stationary spring loaded seal, press fitted into the rear of the volute.

4. THEELECTRICMOTOR.

- a. The electric motor should be protected from foreign matter, water splashing, hosing, and the weather. Enclosures should be well ventilated to prevent overheating. If a motor becomes wet, permit it to dry before running it. If a motor has been damaged by water or dirt, the warranty is void.
- b. The motors used on these pumps are 48 frame through bolt motors. The through bolts are used to secure the volute to the motor. When replacing the motor, mark the end bells and the motor shell to indicate alignment. Remove the four nuts from the through bolts at the shaft end. Place the shaft through the back of the volute and locate the bolts in line with the brass inserts located in the four legs at the rear of the volute. Be sure the end bell and the shell marking line up. Securely fasten the motor to the volute.
- c. Protect the motor from heat. Provide ample ventilation.

CAUTION

The highly polished and lapped faces of the seal are easily damaged. Handle with care. This centrifugal pump requires little or no service, however the shaft seal will wear with normal use over the years and will require periodic replacement.

CAUTION

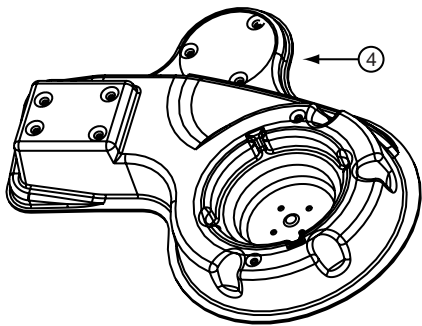
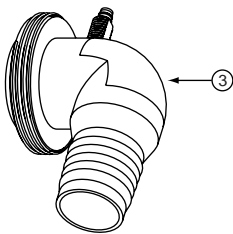
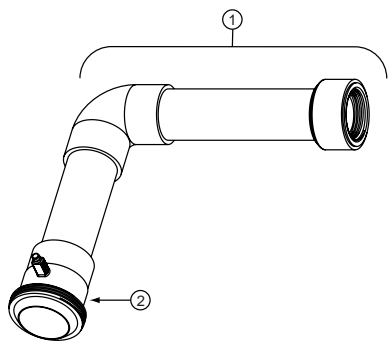
DO NOT RUN PUMP DRY. If the pump is run dry, the mechanical seal will be damaged and external leakage will occur. When a seal is damaged, the seal must be replaced.

CAUTION

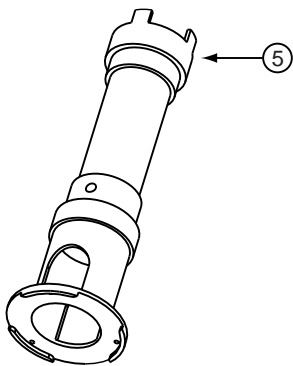
ALWAYS MAINTAIN PROPER WATER LEVEL IN THE POOL. Water level must be half way up the skimmer opening. A low water level can cause the pump motor to run dry which will damage the mechanical seal and cause external leakage.

SECTION IX. TECHNICAL DATA

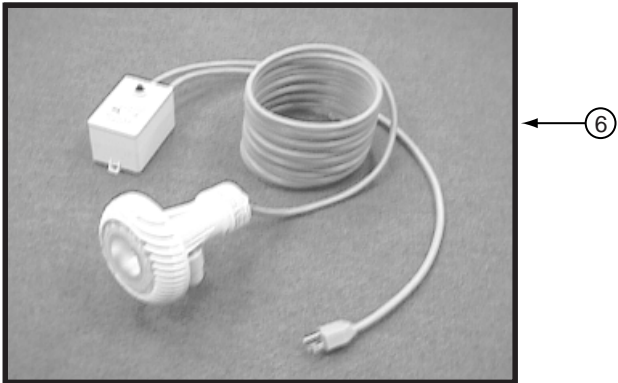
A. Above Ground Filter System Parts List



Item No.	Part No.	Description	Qty.
1	175708	Plumbing Kit Above Ground DM, Dynamo System	1
2	150045	Body Swivel	1
3	39107400	Barbed Return Elbow	1
4	150043	Base AG System	1
5	R171016	Rainbow Chlorine Feeder, Model 300 (Optional)	1
6	619398	AquaLuminator Upgrade Kit	1

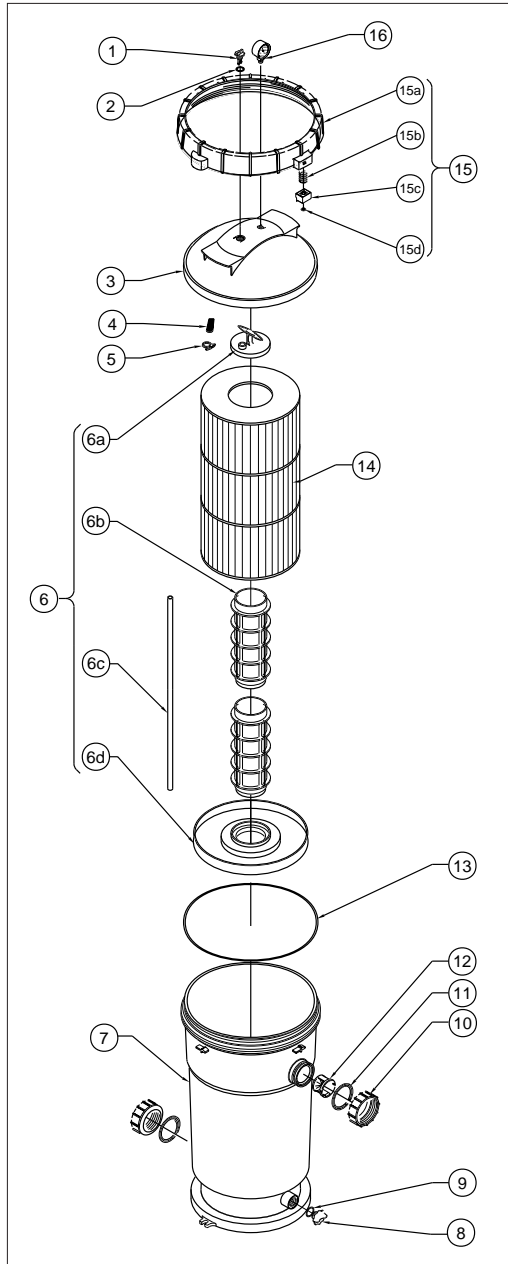


Non-Return Light for Above Ground Pools



SECTION IX. TECHNICAL DATA, (continued)

B. Cartridge Filter Parts List - Models DM-75, 90, 120

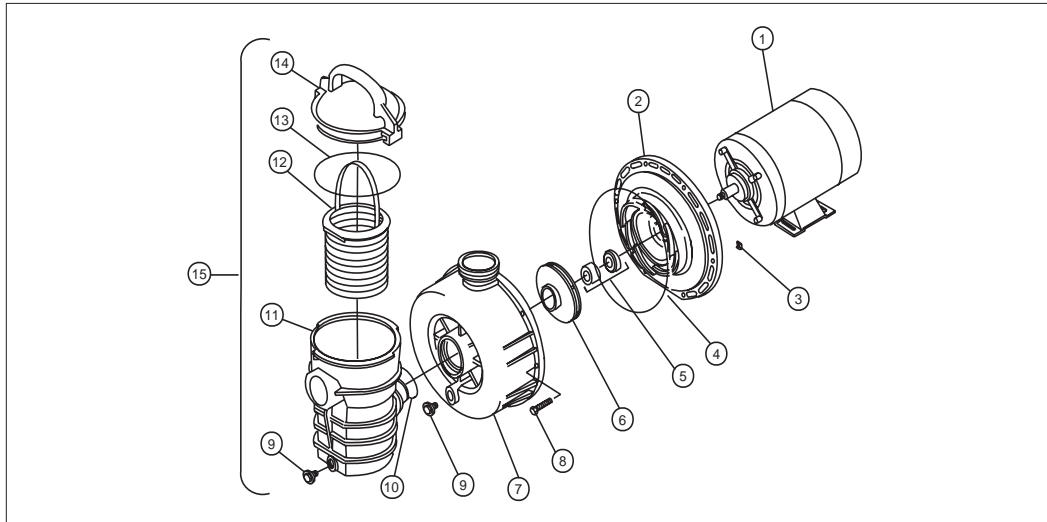


Item No.	Part No.	Description	Qty.
1	175666	Knob, Air Release	1
2	175687	O-Ring Air Release	1
3	170010	Lid 75 / 90 / 120 Assy.	1
4	59014700	Air Bleed Stock	1
5	59011700	Clamp Air Bleed	1
6	175664	Core Cartridge Assy., 75 / 90 / 120*	1
6a	Not Sold Separately	Cap - Cartridge Core	1
6b		Core Cartridge	2
6c		Tube 1/2" Dia. Acrylic, 75 / 90 / 120	21.5"
6d		Dust Collector	1
7	170012	Tank Assy.	1
8	175679	Knob - Drain Port	1
9	175680	O-Ring Drain Port	1
10	98212200	Union Nut	2
11	39104500	Union Nut "C" Clip	2
12	175674	Diffuser - Inlet	1
13	178568	O-Ring 2-451	1
14	175689	Cartridge 75 - Model DM-75	1
14	175652	Cartridge 90 - Model DM-90	1
14	175653	Cartridge 120 - Model DM-120	1
15	175667	Ring Assy.	1
15a	Not Sold Separately	Ring	1
15b		Spring Lock Ring	2
15c		Lock Ring Block	2
15d		Fastener Grip .250	2
16	53003201	Gauge, Pressure	1

* Includes #4, 5, 6a, 6b, 6c, 6d.

SECTION IX. TECHNICAL DATA (continued)

C. DYNAMO PUMP



Replacement Parts

Find No.	Part No.	Description
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Motors

1	35-6497	¾A std. 48 frame thru-bolt 115 only
1	35-6495	1A std. 48 frame thru-bolt 115 only
1	35-6469	1½A std. 48 frame thru-bolt 115/230
1	35-6445	2 std. 48 frame thru-bolt 115/230 28 lbs.
2	35-4632	Diffuser - ¾ hp bracket
2	35-4633	Diffuser - 1, 1½ hp bracket
3	35-4542	Nut - 10-24 s/s, 6 req.
4	35-4634	O-ring - 3/16 in. bracket diffuser
5	35-4545	Seal - 5/8 in. Mechanical
6	35-3002	Impeller - 1½ hp
6	35-4552	Impeller - ¾ hp
6	35-5122	Impeller 1, 1½ hp

Find No.	Part No.	Description
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7	35-4630	Housing, body
8	35-4541	Screw 10-24-1½ in. slotted hex, 6 req.
9	15-4481	Plug - ¼ in. drain, 2 req.
10	27-3062	O-ring
11	35-4530	Pot
12	35-4548	Basket w/handle
13	35-4533	O-ring, lid
14	35-4531	Lid- universal
15	35-4103	Pot assy.

Not Shown

35-4583	Adaptor, 1½ in. thrd.
35-2257	Adaptor, 1½ in. quick connect, 2 req.
35-2256	Nut, 1½ in. quick connect, 2 req.
35-4571	O-ring, 2 req.

SAVE THESE INSTRUCTIONS.

