

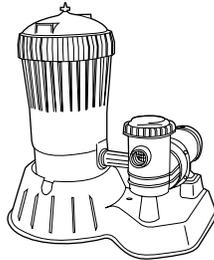
Avalanche™

D.E. Filter System Owner's Manual and Installation Guide

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Congratulations! You have purchased one of the most user-friendly pool filter systems available. Ideal for above-ground or in-ground pools, this filter system will provide you with many years of pool enjoyment.

This step-by-step installation and maintenance guide will provide the necessary information for you to install your new pool system and easily maintain the equipment.



WARNING

Warns about hazards that CAN cause serious personal injury and property damage if ignored.

WARNING

RISK OF SUCTION ENTRAPMENT HAZARD WHICH, IF NOT AVOIDED, MAY RESULT IN SERIOUS INJURY OR DEATH.

Pumps can quickly generate high suction, which poses the risk of entrapment if improperly connected to suction outlets. Disembowelment, entrapment, or drowning is possible when body parts or hair contact damaged, cracked, missing, or unsecured drain covers and suction outlets. **Pumps and fittings shall be installed in accordance with the latest NSPI or IAF standards, CPSC guidelines, and national, state and local codes, to minimize this risk.** Some of those requirements are as follows. Always consult the latest regulations to ensure that your installation meets the necessary requirements to minimize suction entrapment.

1. All fully submerged Suction Outlet Covers shall be listed to ANSI/ASME A112.19.8 standard.
2. Do not use a pump in an installation where there is only one fully submerged single suction outlet.
3. If main drains are installed in your pool, there must be a minimum of two for each pumping system, and each drain must include a Listed Suction Outlet Cover. Wading pools may have additional requirements to minimize entrapment hazards.
4. Skimmers may supply 100% of the required flow to the pump, and must be vented to atmosphere. A skimmer is not considered a second main drain.
5. When two suction outlets are used, the maximum system flow rate shall not exceed the rating of any one of the listed suction outlet covers installed. When more than two are used, the sum of the ratings shall be at least twice the maximum system flow rate.
6. Each Suction Outlet Cover shall be separated by a minimum of three feet (3'), measured from center of suction pipes.
7. Avoid installing check valves. If check valves must be used, ensure that the installation conforms to applicable standards.
8. Never use the pool or spa if a Suction Outlet Cover is damaged, cracked, missing, or not securely attached. Suction outlet cover must be attached with stainless steel screws supplied with the cover. If screws are lost, order replacement parts from your supplier.

NOTE: For the latest NSPI or IAF Standards, contact the Association of Pool and Spa Professionals (APSP) at www.theappsp.org or (703) 838-0083, ext. 301. For the latest Consumer Product Safety Commission (CPSC) Guidelines, contact the CPSC at www.cpsc.gov or (301) 504-7923. "Guidelines for Entrapment Hazards: Making Pools and Spas Safer" can be viewed at www.cpsc.gov/cpsc/pub/pubs/363.pdf

WARNING

Always make sure the filter Ring-Lok is tightened to "built-in stop" prior to operating pump. **Do Not** remove or adjust the Ring-Lok while the pump is running; doing so may cause the filter cover to blow off, causing injury or property damage.

WARNING

To reduce risk of injury, do not permit children to use this product unless they are closely supervised at all times.

WARNING

(For cord & plug connected units) **Risk of Electric 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.

WARNING

(For cord & plug connected units) **Do not bury cord.** Locate cord to minimize abuse from lawn mowers, hedge trimmers and other equipment.

WARNING

(For cord & plug connected units) To reduce the risk of electric shock, replace damaged cord immediately.

WARNING

(For cord & plug connected units) To reduce the risk of electric shock, **do not use an extension cord** to connect unit to electric supply; provide a properly located outlet.

WARNING

Locate the system at least five feet (1.5 m) from the pool to prevent it being used as a means of access to the pool by young children. (See ANSI/NSPI-8 1996 "Model Barrier Code For Residential Swimming Pools, Spas and Hot Tubs").

WARNING

If filter Ring-Lok is removed or adjusted under pressure, the filter cover may blow off, causing injury or property damage.

CAUTION

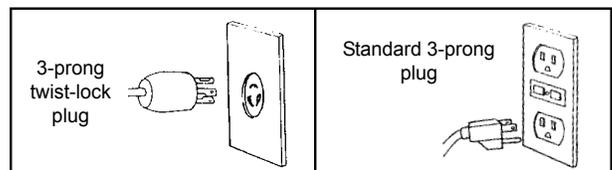
To guard against low voltage which can damage the pump motor, use minimum wire gauge shown below:

Wire Length		
HP	50 ft.	100 ft.
3/4	#14G	#12G
1	#12G	#10G

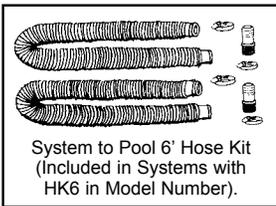
SAVE THESE INSTRUCTIONS.

Electrical Data:

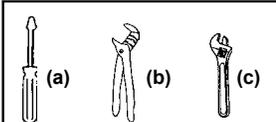
Refer to information on motor nameplate for electrical service data. If the pump on your system is supplied with a 3-prong twist lock 115V plug, then the appropriate female receptacle should be installed. **For systems with a standard 3-prong 115V plug, connect only to a grounded receptacle protected by a built-in Ground Fault Circuit Interrupter (GFCI).** Motors should have fused disconnect switch or circuit breaker and wire size large enough for pump horsepower and distance from power source. Wiring should be done in accordance with applicable codes by a competent electrician.



Filter system parts breakdown:



System to Pool 6' Hose Kit
(Included in Systems with
HK6 in Model Number).



Tools you will need:
For most installations all you
will need are (a) screwdriver
(b) wide mouth pliers and (c)
adjustable wrench.

Parts For Model LR Pumps:

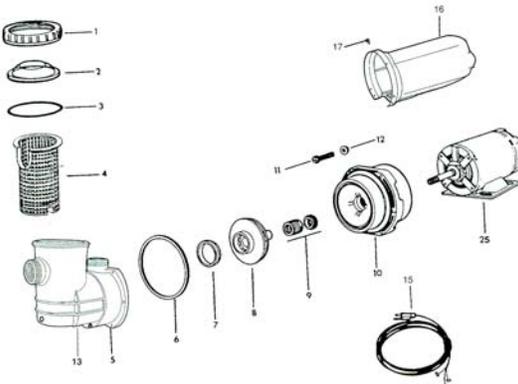
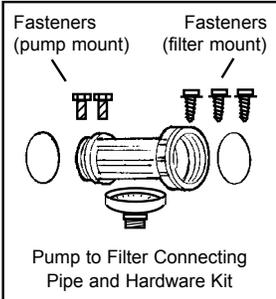


FIG NO.	PART NO.	DESCRIPTION
1	42-1678-09-R	Cover Ring-Lok™
2	39-0753-10-R	Strainer Cover
3	47-0352-41-R	O-Ring 4-7/8" x 5-1/4" x 3/16"
4	16-1052-15-R	Strainer Basket
5	16-1120-05-R	Strainer Case Assy. w/Plug 12:00 Discharge
6	16-1117-00-R	Strainer Case Assy. w/Plug 9:00 Discharge
7	47-0258-53-R	Square Ring 6-1/8" x 1/8"
8	10-1462-07-R	Seal Ring
	05-3760-09-R	Impeller for S7LR6, S7LR3 #9838 3.45 Dia.
	05-3759-02-R	Impeller for S1LR3, S1LR6 #9838 3.73 Dia.
	05-3821-06-R	Impeller for S15LR6, S15LR3 #9838 4.0 Dia.
	05-3853-07-R	Impeller for S2LR6, S2LR3 #11350 4.20 Dia.
9	10-0802-08-R	Mechanical Seal
10	02-1388-08-R	Bracket #11230
11	14-2223-01-R6	PL Hex 10-24 x 1-1/4" (6 req'd) (6/bag)
	14-4238-00-R6	S.S. Hex 10-24 x 1-1/4" (6 req'd) LRDV (6/bag)
	14-3971-03-R6	PL Hex Nut (6 req'd) (6/bag)
	14-4239-09-R6	S.S. Hex Nut 10-24 (6 req'd) LRDV (6/bag)
12	31-1609-06-R2	Plug 1/4" w/O-ring (2/bag)
13	23-4857-09-R	Cord w/Plug 6 ft. F/LR6
14	23-4856-00-R	Cord w/Plug 3 ft. F/LR3
15	32-0152-08-R	Century Mtr. cover w/Toggle
16	14-2256-01-R4	8/32" x 1/2" Hex Wash. SL (4/bag)
17	23-4864-00-R	Clamp F/6' cord
	23-4863-01-R	Clamp F/3' cord
25		Motor (Contact your local dealer)



Pump to Filter Connecting
Pipe and Hardware Kit

Parts for System Components:

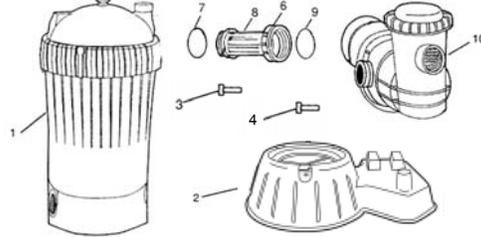


FIG NO.	PART NO.	DESCRIPTION
1	9408-7475	Avalanche 40 Filter 1.5
	9408-7483	Avalanche 60 Filter 1.5
2	12-1152-00-R	Base Assembly
3	14-4340-96-R3	P.L. Hex 12-14 x 3/4" (3 per bag)
4	14-4020-02-R2	Hex Wash. 14-10 x 3/4" (2 per bag)
5	14-4273-06-R	Interconnect Nut
6	47-0328-00-R	O-Ring 1-7/8 ID x 3/16 TK
7	42-3632-00-R	Interconnect
8	47-0228-68-R	O-Ring 2.25 ID x 1/8
9	9402-2415	S1LR9-3 Pump
	9402-2420	S15LR9-3 Pump
	9402-2430	S1LR9-6 Pump
	9402-2435	S15LR9-6 Pump

Parts for AV Filters:

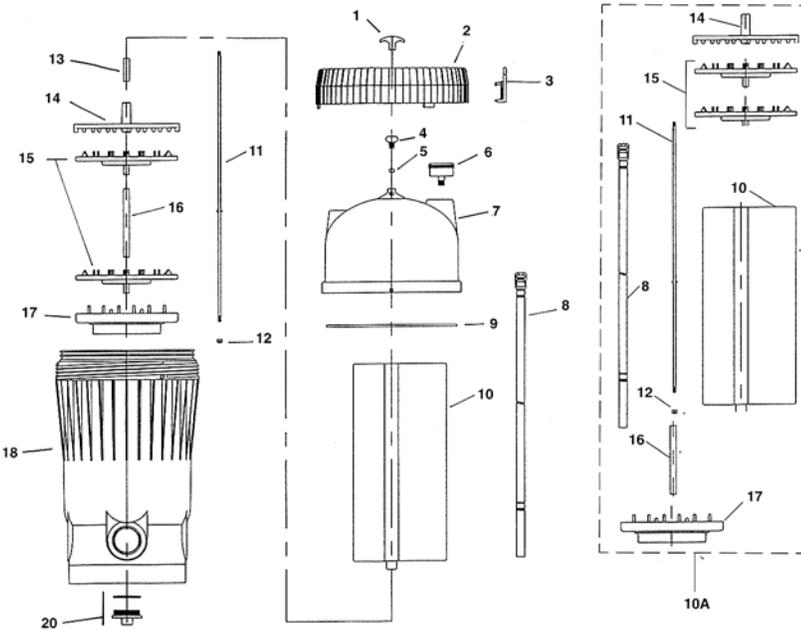


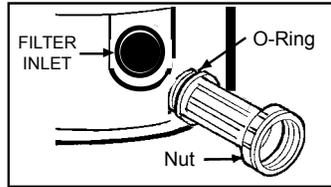
FIG NO.	PART NO.	DESCRIPTION
1	42-3614-02-R	Handle
2	42-3671-02-R	Ring-Lok™
3	42-3677-06-R	Locking Tab
	42-3677-06-R10	Locking Tab (10 per bag)
4	14-4282-05-R	Air Bleed Knob w/O-Ring Boot
5	43-3098-06-R	O-ring Boot (See #4)
6	9193-4182-R	Pressure Gauge
7	42-2852-05-R	Cover AV40
	42-2998-00-R	Cover AV60
	42-3610-00-R	Cover AV80
	42-3611-01-R	Cover AV100
8	23-4836-05-R2	Lifting Strap AV40
	23-4835-06-R2	Lifting Strap AV60
	23-4834-07-R2	Lifting Strap AV80
	23-4953-02-R2	Lifting Strap AV100
9	47-0380-47-R	O-Ring
10	42-3570-04-R	AV40 Grid 7"W x 12"L (2 Req.)
	42-3569-07-R	AV40 Grid 8-1/2"W x 12"L (4 Req.)
	42-2125-14-R	AV60 Grid 7"W x 18"L (2 Req.)
	42-2123-16-R	AV60 Grid 8-1/2"W x 18"L (4 Req.)
	42-2952-04-R	AV80 Grid 7"W x 24"L (2 Req.)
	42-2951-05-R	AV80 Grid 8-1/2"W x 24"L (4 Req.)
	42-2955-01-R	AV100 Grid 7"W x 30"L (2 Req.)
	42-2954-02-R	AV100 Grid 8-1/2"W x 30"L (4 Req.)
10A	42-3741-08-R	AV40 Grid Assembly
	47-3742-07-R	AV60 Grid Assembly
	42-3743-06-R	AV80 Grid Assembly
	42-3744-05-R	AV100 Grid Assembly
11	14-4387-09-R	Wiper Tie Rod AV40
	14-4388-08-R	Wiper Tie Rod AV60
	14-4389-07-R	Wiper Tie Rod AV80
	14-4390-04-R	Wiper Tie Rod AV100
12	14-4314-07-R	Nut
13	31-1731-07-R	Top Extension AV40
	31-1732-06-R	Top Extension AV60
	31-1733-05-R	Top Extension AV80
14	42-3544-07-R	Support Plate
15	42-3559-09-R	Wiper Plate
16	31-1687-08-R	Spacer AV40
	31-1689-09-R	Spacer AV60 and AV100 (2 Req. for AV100)
	31-1688-00-R	Spacer AV80
17	42-3546-05-R	Manifold
18	42-3673-00-R	Filter Body 2" NPT Connections
	42-3662-00-R	Filter Body 1-1/2" NPT Connections
20	43-3092-02-R	Plug 2" w/O-Ring
	43-3091-03-R	Plug 1-1/2" w/O-Ring

Setting up your system:

Step 1

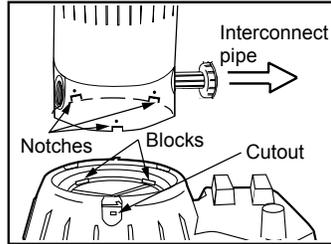
Install threaded end of interconnect pipe into the filter "INLET." Tighten until O-ring seals against filter.

NOTE: Be sure union nut is placed on interconnect pipe before it is threaded into filter. Threads on union nut should face away from the filter.



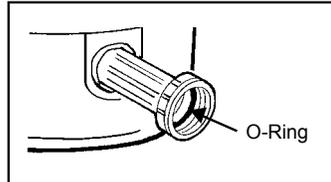
Step 2

Note that there are three (3) "notches" cut out of the bottom of the filter. Note also that there are three (3) raised "blocks" on the inner circle of the base. Place the filter onto the base with the interconnect pipe facing towards the pump mount "pedestals". Press down and rotate as necessary until the "notches" on the bottom of the filter engage with the "blocks" on the base. The filter will drop down and lock into place. Locate the three (3) large "cutouts" around the perimeter of the base where the filter inserts into the base. Look into the "cutouts" and locate the 1" slots molded into the base. The pre-drilled holes at the bottom of the filter should line up with the 1" slots in the base. Attach filter to base with the three (3) 12-14 x 1/2" screws provided.



Step 3

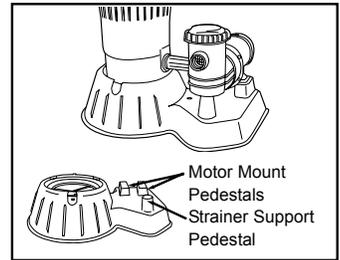
Be sure that the O-ring is firmly seated in the O-ring groove in the end of the interconnect pipe.



Step 4

Position the pump on the base "pedestals" with the pump strainer basket over the strainer support pedestal as shown. Connect the union nut on the interconnect pipe to the pump discharge and hand-tighten only.

Using the two (2) 14-10 x 3/4" screws supplied, locate the predrilled holes on the "pedestals" and secure the pump to the base.

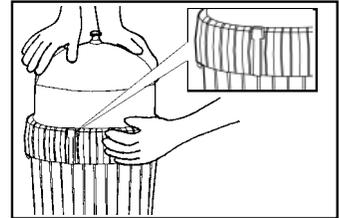


Step 5

Be certain that the filter cover is pushed completely down and the Ring-Lok nut is tightened to the "built-in stops" and yellow safety latch is engaged.



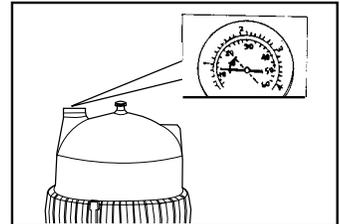
WARNING If the Ring-Lok nut is not tightened so yellow safety latch is engaged, the filter cover may blow off causing injury or property damage.



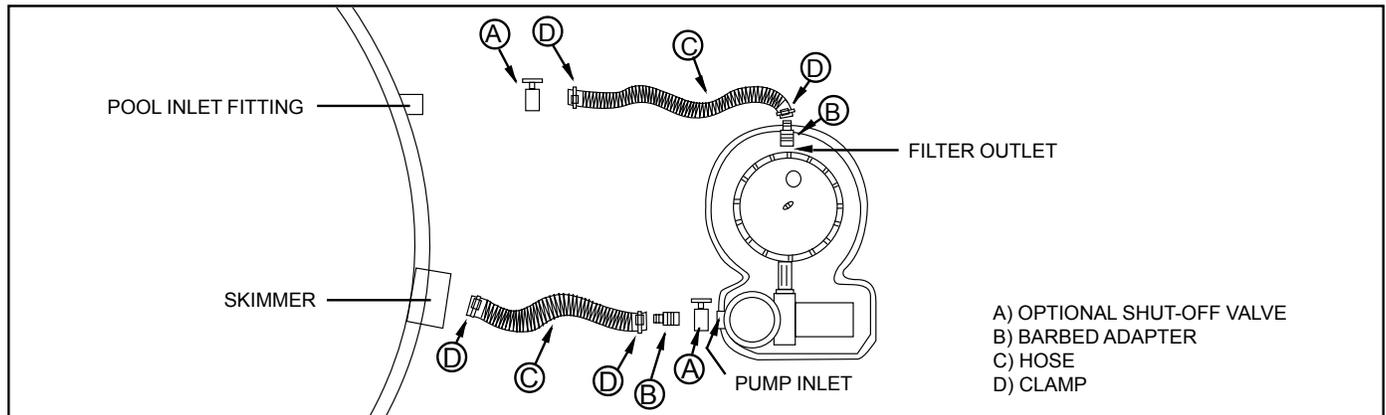
Step 6

Carefully install the pressure gauge into the filter cover after wrapping the brass threads with 4 wraps of teflon tape

TIP: Install the pressure gauge only hand-tight plus 1/4 turn.



Typical above-ground pool connection:



LOCATION OF SYSTEM:

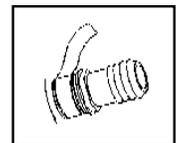
1) Locate system on solid, level foundation. 2) To reduce the risk of electrical shock, install the system at least 5 feet (1.5 m) from the pool. Give consideration to any other local codes that may apply. 3) System should have adequate access for future servicing and winterizing. 4) Provide for adequate water drainage away from equipment. 5) If you cover your system, be certain to provide adequate ventilation.

Step 1

Although optional, we recommend shut-off valves (A) be installed in the pump inlet and pool inlet fitting for easy servicing when the system is installed below the water level of the pool.

Step 2

Prepare hose adapters by wrapping threads with teflon tape. Install two hose adapters (B) in the following locations: Pump Inlet (or optional shut-off valve) and Filter Outlet.



Step 3

Attach hose (C) using hose clamps (D) to male adapters (B) according to the diagram shown above. **Note:** Refer to pool manufacturer's installation instructions for more detail.

You are now ready to fill your pool and begin system start-up procedures (see page 4).

System start-up:

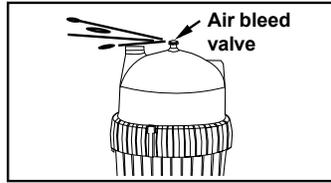
CAUTION: Water acts as a coolant for the seal. Do not operate your pump until it has been filled with water (primed).

IMPORTANT: This filter is a diatomaceous earth (D.E.) type filter and requires D.E. in order to operate. **DO NOT OPERATE FILTER WITHOUT D.E.**

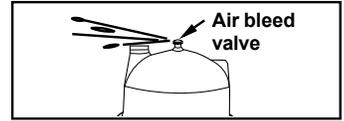
For above-ground pools with the system below the pool water level:

Step 1 → Open the air bleed valve on top of the filter to allow captured air to escape. When a steady stream of water appears, close the valve.

NOTE: If optional shut-off valves are installed, be sure that both valves are fully opened.

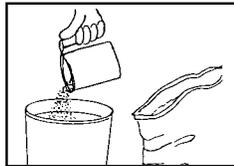


Step 4 → Open the air bleed valve to release any additional trapped air. When a steady stream of water appears, close the valve.



Step 2 → Mix diatomaceous earth in a bucket of water. See Chart for appropriate amounts. The D.E. scoop supplied with your system should be used for measuring. Set bucket of D.E. mixture aside.

Filter	Scoops of D.E.
AV40	3
AV60	4
AV80	5

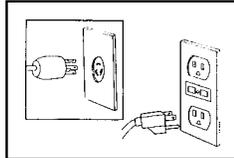


Step 5 → Pour the D.E. mixture into the pool skimmer slowly to allow the D.E. to be pumped into the filter for coating. Allow 3-5 minutes for the grids to coat sufficiently. **IMPORTANT:** Do not operate the filter for extended periods without D.E.

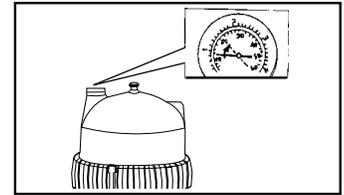


Step 3 → Turn the motor on by plugging the unit into a grounded electrical receptacle.

DO NOT USE AN EXTENSION CORD.



Step 6 → The filter is equipped with a pressure gauge to assist in determining when the filter grid cassette should be cleaned. Note the gauge reading when the filter is started up, "CLEAN." As the filter becomes dirty, the needle will move to the right. When the needle has moved 6-8 psi above the "CLEAN" reading, regenerate the D.E. See "Filter Regeneration" below.



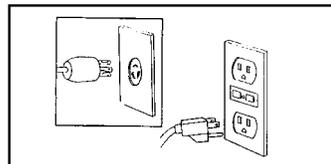
Filter regeneration:

NOTE: Regeneration of the D.E. filter is done to extend the filter cycle before cleaning of the grid cassette becomes necessary. If a 6-8 psi increase is indicated by the filter pressure gauge, follow the filter regeneration steps below.

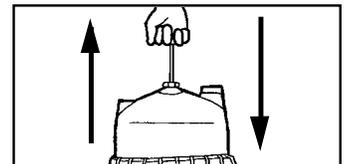
WARNING

If the filter Ring-Lok is removed or adjusted under pressure, the filter cover may blow off, causing injury or major property damage.

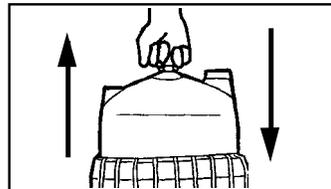
Step 1 → Unplug the pump cord. However, if the system has not been operating, plug pump cord into 3-prong grounded electrical receptacle, allow to run for 5 to 8 minutes, then unplug the pump cord. **NOTE:** Do not attempt to regenerate the filter while the pump is running.



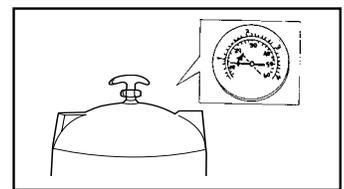
Step 3 → When full stroke is obtained, slowly move the handle up and down 4 to 5 times, then return the wiper blades to the bottom position of the stroke.



Step 2 → Grasp the wiper handle on top of the filter. D.E. cake may prevent easy up and down movement of the wiper plates. To dislodge the D.E. cake, pump the handle up and down until it moves freely. Several pumps may be necessary to initiate any movement of the regenerative system.



Step 4 → Plug the pump into 3 prong grounded electrical receptacle. Note the pressure reading. If the pressure gauge reading increases 6-8 psi within 72 hours, the grid cassette must be cleaned. Follow "Cleaning the D.E. grid cassette" instructions on page 5.



Cleaning the pump strainer:

WARNING

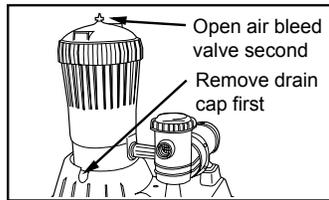
To avoid electrical shock, unplug the pump before performing any service or maintenance. If the filter Ring-Lok is removed or adjusted under pressure, the filter cover may blow off, causing injury or major property damage.

Step 1 →  **Unplug the pump cord.**

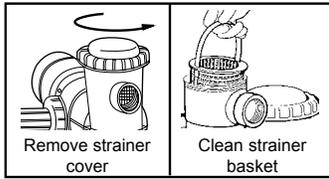


For above-ground pools with the filter system located below the pool water level: Your system is full of water. If you remove the pump strainer cover, water will run out freely from your pool. You must close the shut-off valves, if installed, or make provisions to stop the flow of water from your pool.

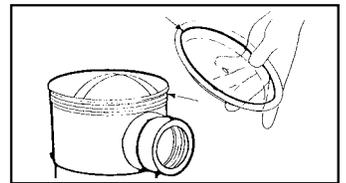
Step 2 →
 Drain the filter tank by first removing the drain cap and then opening the air bleed valve. Replace the drain cap once the filter is drained.



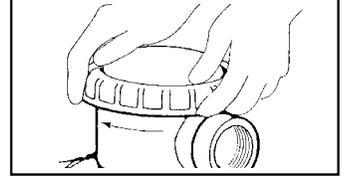
Step 3 →
 Unscrew the strainer Ring-Lok nut and remove the clear strainer cover.
CAUTION: Some remaining water may spill out of the strainer body when the clear strainer cover is removed. Lift the basket out of the strainer and remove the debris. Reinstall the basket.



Step 4 →
 Clean the O-ring on the clear strainer lid and re-lubricate with petroleum jelly. Also, clean all surfaces that come in contact with the O-ring to assure a good seal.



Step 5 →
 Replace the clear cover and strainer Ring-Lok **HAND-TIGHTEN ONLY**. Open the optional valves if installed.



You are now ready to perform the system start-up (see page 4).

Cleaning the D.E. grid cassette:

⚠ WARNING

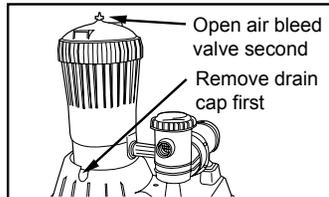
To avoid electrical shock, unplug the pump before performing any service or maintenance. If the filter Ring-Lok is removed or adjusted under pressure, the filter cover may blow off, causing injury or major property damage.

Step 1 → **⚠ Unplug the pump cord.**



For above-ground pools with the filter system located below the pool water level: Your system is full of water. If you remove the pump strainer cover, water will run out freely from your pool. You must close the shut-off valves, if installed, or make provisions to stop the flow of water from your pool.

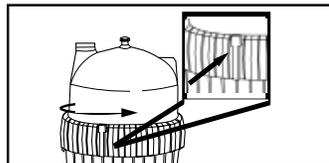
Step 2 →
 Drain the filter tank by first removing the drain cap and then opening the air bleed valve.



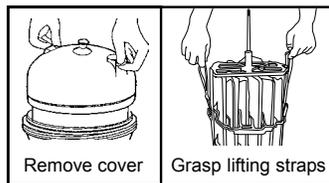
Step 3
 Unscrew the wiper handle and set aside. Then loosen the air bleed valve. (It is not necessary to remove the air bleed valve.) →



Step 4
 Press down on the filter yellow safety tab lock and rotate the large Ring-Lok nut counter-clockwise. Using both hands, continue to unscrew the Ring-Lok nut and remove. The Ring-Lok nut has tabs located around its perimeter that may be used to help separate the cover from the body. →

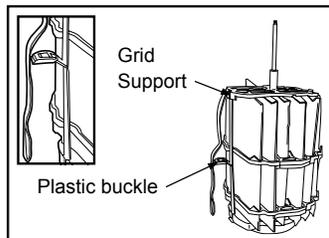


Step 5
 Remove the cover by inserting the Ring-Lok tab into the slot and rotating the Ring-Lok until the cover is separated from the filter body. You may also remove it by pulling upward on its handles while rocking the cover. →



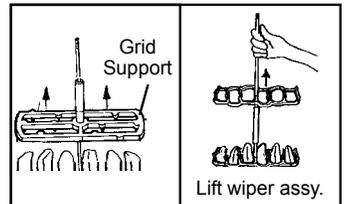
Step 6 →
 Grasp the two lifting straps and lift the grid cassette out of the filter tank, rocking gently if necessary.

Step 7 →
 Remove the lifting strap from both sides of the top grid support by loosening the top loop of the strap at the plastic buckle. Pinch the strap to remove it from the grid support.



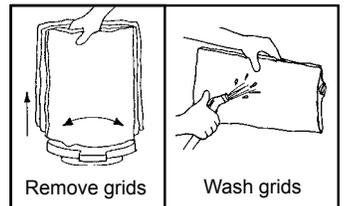
Step 8 →
 Slide the grid support off of the wiper rod.

Step 9 →
 Grasp the wiper rod and lift the wiper assembly off of the grids.

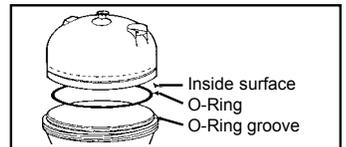


Step 10
 Remove all the grids from the manifold by gently rocking the grid and pulling upward. →

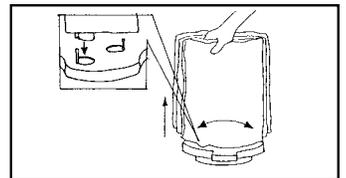
Step 11 →
 Clean the grids and bottom manifold with a high pressure nozzle on a garden hose. Also, wash out any debris remaining in the filter tank and replace the drain cap.



Step 12 →
 Clean the O-ring on the filter body and re-lubricate with petroleum jelly. Also, clean all surfaces that come in contact with the O-ring to assure a good seal. Install the O-ring on the filter body.

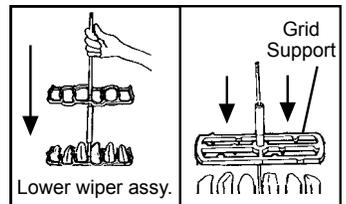


Step 13 →
 Install the clean grids into bottom manifold.
NOTE: The pin on bottom manifold must be aligned with the slot in grid tubing that is exposed.
TIP: The bottom manifold is labeled for easy locating of 7" and 8-1/2" grids.

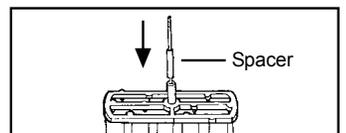


Step 14 →
 Slide the wiper assembly onto the grid cassette.

Step 15 →
 Slide the top support plate onto the wiper rod and position the grids so the support plate sits down evenly.

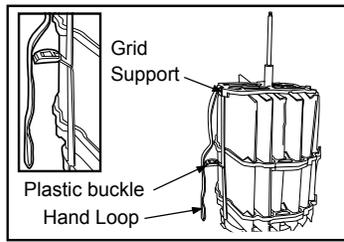


Step 16 →
 Slide the plastic spacer onto the wiper rod.
NOTE: Model AV100 does NOT have a plastic spacer. Ensure the plastic spacer is inserted into the collar on the support plate.



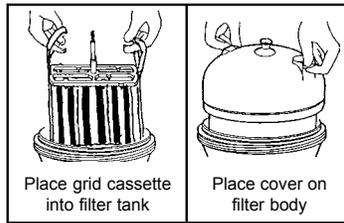
Step 17

Place the lifting straps in both sides of top grid support. Tighten the strap by pulling on the hand loop at the plastic buckle.



Step 18

Place the grid cassette back into the filter tank, making sure that it is seated properly. **NOTE:** To ensure the grid cassette seats properly, align the straps with the filter inlet and outlet ports as you replace the cassette.



Step 19

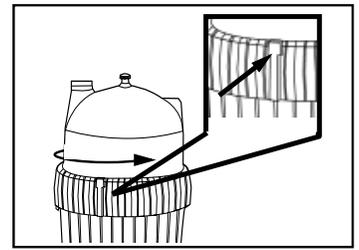
Align the wiper rod to fit through the hole in the top of the cover. Place the cover on the filter body and press firmly downward until the cover comes to a stop against the filter body.

TIP: It is easier to replace the filter cover if the air bleed valve is open.

Step 20

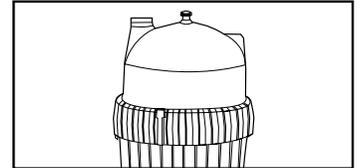
Clean the threads of the Ring-Lok nut and the threads on the filter body with water or a cloth. Place the Ring-Lok nut on the filter and tighten to the "built-in stops." Be sure the yellow safety latch is engaged.

If the Ring-Lok nut is not tightened to "built-in stops", the filter cover may blow off causing injury or property damage.



Step 21

Tighten the air bleed valve into the cover. Screw the wiper handle onto the exposed threads of the wiper rod.



You are now ready to perform the system start-up (see page 4).

Winterizing the filter system and water maintenance:

WARNING

To avoid electrical shock, unplug the pump before performing any service or maintenance. If the filter Ring-Lok is removed or adjusted under pressure, the filter cover may blow off, causing injury or major property damage.

Step 1



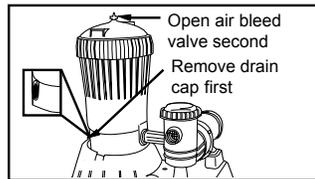
Unplug the pump cord.



For above-ground pools with the filter system located below the pool water level: You must drain the water in the pool below the skimmer and inlet fitting. Follow the pool manufacturer's recommendations for winterizing the pool. Your system is full of water.

Step 2

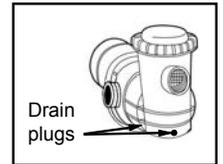
Drain the filter tank by first removing the drain cap and then opening the air bleed valve. Replace the drain cap once the filter is drained.



Step 3

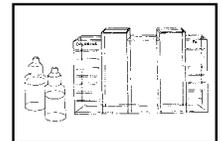
Drain pump strainer and pump case by loosening the plugs shown. The pump will drain without completely removing the plugs from the pump.

NOTE: If temperatures in the winter are severe, you may choose to disconnect your filter system from the pool and move it to a protected area.



Water maintenance:

A proper and consistent use of chemicals is necessary to maintain clean, sanitary water, to prevent a spread of germ infection and control the growth of algae which can spoil the appearance and enjoyment of your pool or spa. See your pool professional for proper chemical maintenance.



Trouble Shooting:

WARNING

Disconnect the power to motor main circuit breaker to avoid electrical shock. If the filter Ring-Lok is removed or adjusted under pressure, the filter cover may blow off, causing injury or major property damage.

THE MOTOR DOES NOT START WHEN YOU PLUG IT IN.

The disconnect switch or the circuit breaker is in the OFF position; Fuses may be blown or the thermal overload is open; Motor shaft is locked; Motor windings are burned out; A defective starting switch inside the single-phase motor; Wiring may be disconnected or defective; Low voltage in outlet.

THE MOTOR DOES NOT REACH ITS FULL SPEED.

Low voltage; Two-speed model set on low speed; Motor windings connected for wrong voltage on dual voltage model.

THE MOTOR OVERHEATS AND THE PROTECTOR TRIPS.

Low voltage; Inadequate ventilation; Motor windings connected for wrong voltage on dual voltage model.

NO WATER IS DELIVERED BY PUMP.

Pump is not primed; Closed valve in suction or discharge line; Leakage of air into the suction system; Impeller clogged.

AIR BUBBLES APPEAR AT INLET FITTINGS.

Air may be leaking into the suction line at the connections or valve stem; Cover gasket or lint strainer may need cleaning; Restriction in suction line or low water level in pool.

LOW CAPACITY WHEN PUMP IS TURNED ON.

Valve in suction or discharge line is partly closed; Suction or discharge line is partly plugged; Suction or discharge line is too small; The basket in the skimmer or the lint strainer may be clogged; The filter may be dirty or the impeller may be clogged.

LOW PRESSURE WHEN PUMP IS TURNED ON.

The discharge valve or inlet fittings may be open too wide.

HIGH PRESSURE WHEN PUMP IS TURNED ON.

The discharge valve or inlet fittings may be closed too much.

EXCESSIVE NOISE COMING FROM PUMP OR MOTOR.

The basket in the skimmer or the lint strainer may be clogged; The motor bearing may be worn out; Valve in suction line may be partly closed; Suction line may be partly plugged; The vacuum hose may be plugged or too small; The pump may not be supported properly.

WATER LEAKS FROM SHAFT.

Shaft seal requires replacement.

POOL WATER NOT SUFFICIENTLY CLEAN.

Pool chemistry not adequate to stop algae growth. *Maintain pool chemistry or consult pool ser-*

vice technician; Dirty filter needs to be regenerated or cleaned. *Use chemical cleaning of grid assembly if necessary;* Inadequate turnover rate. *Run system for longer time or consult dealer or pool service technician.*

HIGH FILTER PRESSURE.

Dirty filter. *Regenerate filter or clean if necessary. Use chemical cleaning or grid assembly if necessary;* Partially closed valve or restriction. *Open valve or remove obstruction in return line.*

SHORT CYCLES.

Dirty filter. *Regenerate filter or clean if necessary. Use chemical cleaning or grid assembly if necessary;* Pool chemistry not adequate to stop algae growth. *Maintain pool chemistry or consult pool service technician.*

RETURN FLOW TO POOL DIMINISHED, LOW FILTER PRESSURE.

Obstruction in pump strainer. *Clean basket in strainer;* Obstruction in pump. *Disassemble and clean pump;* Obstruction in suction line to pump. *Clean skimmer basket. Remove obstruction in lines. Open valves in suction line.*

LEAKAGE AT RING-LOK.

Dirt or contamination on the O-Ring sealing surface. *Shut off pump and relieve tank pressure. Remove tank top, clean O-Ring sealing surfaces. Reassemble tank properly;* Damaged or cut O-Ring. *Same as above except replace O-Ring.*

DIRT OR D.E. RETURNING TO POOL.

After regenerating and re-coating the filter with D.E., some amount of "puffback" is normal. The D.E. will eventually be filtered out of the pool. No action is necessary; Grid assembly not properly seated in filter. *Check assembly for proper seating;* Grid element torn. *Ensure that grid assembly is installed properly. Check for tear in grid cloth. Replace if necessary;* Missing or defective check valve. *Install or repair check valve.*

SERVICE & REPAIR PARTS

Refer all service to your local dealer. Order all repair parts through your dealer. Give the following information when ordering repair parts: Unit nameplate information and description of part. If the recommendations in the "Trouble Shooting" portion of this manual do not solve your particular problem please contact your local dealer for service.