

Laser Sand Filter System

Owner's Manual and Installation Guide

Congratulations! You have purchased one of the most user-friendly pool filter systems available. Ideal for an above ground pool or in-ground vinyl liner pool, 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.

FILTER MODEL	FLOW RATE (US GPM/sq ft)	FILTER RATE (US GPM)	SAND REQ'D (POUNDS)	MAXIMUM PRESSURE (PSI)
ATL160C, L160C & AQUAMAX 160C	20.0	27	140	35
ATL190C & L190C	20.0	37	200	35
ATL192C, L192C & AQUAMAX 200C	20.0	37	200	50
ATL225C, L225C & AQUAMAX 225C	20.0	53	250	50
ATL250C, L250C & AQUAMAX 250C	20.0	66	350	50

Before installation be sure to read all instructions and warnings carefully. Refer to product label(s) for additional operation instruction and specifications.

INSPECTION

Examine the equipment when received. Notify your dealer or carrier of any damage or missing parts. Verify that equipment is of size and model specified.

IMPORTANT SAFETY INSTRUCTIONS

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

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.theapsp.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/cpscpub/pubs/363.pdf



closely supervised at all times.

WARNING

To reduce risk of injury, do not permit children to use this product unless they are

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(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.





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

(For cord & plug connected units) Do

reduce the risk of electric shock; if the pump cord is damaged or appears to be damaged, replace it immediately with the same type of cord which is available from your local dealer. The new cord must be installed by a qualified electrician. Inspect the cord annually.





of the hot tub or spa, unless so marked.

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 lo-

cated outlet



Locate the system at least five feet (1.5M) 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



ways shut off pump to relieve the pressure in the filter prior to servicing the unit. For Canada only: The motor of the filter

Your filter is a pressure vessel and should

never be serviced while under pressure. Al-

WARNING pump for above-ground pools is equipped with a splash cover and a 25 foot three conductor cord ending with a three-pin grounding plug and must be connected only to a grounding type receptacle



protected by a ground fault circuit interrupter (GFCI).

(For pumps with a 25 ft. (7.62m) cord). This pump is for use with storable pools only. Do not use with permanently installed pools. A storable pool is constructed so

that it may be readily disassembled for storage and reassembled to its original integrity. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage.



and reassembled to its original integrity.

(For pumps with a 3 ft. (.91 m) cord). This pump is for use with permanently installed pools and may also be used with tubs and spas if so marked. Do not use with storable pools. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it may be readily disassembled for storage

OPERATION/INSTALLATION INSTRUCTIONS

The filter module is equipped with a dial valve which works as follows: **1. FILTER** gives a downward flow through the filter bed. Dirt accumulates in the sand as filtering proceeds, and gradually restricts the flow of water until backwashing is necessary. This position can also be used for vacuuming. **2. BACKWASH** gives an upward flow through the filter bed that removes the

dirt from the sand and carries it to the waste.

3. DRAIN is for pumping water from the pool. It allows the flow from the pump to bypass the filter and go directly to the waste. You can also use this position to vacuum heavy concentrations of debris.

4. WHIRLPOOL bypasses the filter to obtain the optimum performance from a hydro-air fitting fed by the filter pump. (No filtration occurs in this position).
5. WINTERIZE allows air to leave or enter the tank to help priming and draining. Only to be used when pump is off.

6. RINSE gives a downward flow that settles the filter bed after backwashing and carries any remaining loose dirt to the waste.

7. TEST prevents only backflow of water from pool during pump maintenance if filter is below water level.

FILTER SAND

The outstanding filtration and superior dirt-holding capacity of this filter depends on the use of the proper grade of filter sand. It should meet the following specifications: The filter sand must be free of clay, loam, dirt and organic matter, and must consist of hard, durable, rounded or sub-angular grains of silica sand with no more than 1% of flat or micaceous particles. The grains should have an effective size of 0.44mm with a uniformity coefficient of 1.35. **DO NOT USE** "SANDBOX" SAND.

The filter sand is NOT included in the filter module and must be purchased separately. Refer to the table for the quantity required. **Do not fill the tank with sand before the filter is in its final position.** Keep the sand dry for easy installation. Use only the approved filter sand, otherwise the system may not work satisfactorily.

INSTALLATION LOCATION

Locate the system as close to pool/spa as possible, but keep at a minimum distance of five feet (1.5M). (See previous Warning.) Locate the system preferably in a dry, well ventilated area away from direct sunlight. It should be on a hard, level surface. Give consideration to: drainage-away from pump, ventilation of pump motor, access for future servicing and winterizing, and protection from the elements.

Pumps without strainer bodies are designed for flooded suction (all suction fittings and suction piping below water level) and will not self-prime. Consequently, the pump must be installed at an elevation that is below water level when pool or spa is filled; however, if suction line valves are installed, the pump may be located above the water level since the valve can be closed for priming. Keep vertical distance to a minimum if you choose to mount pump above water level. Pumps with strainer bodies are self-priming but should be mounted as close to the water level as possible or below for ease in priming. 1. Although optional, we recommend shut-off valves (A) be installed in the pump inlet for easy servicing when the system is installed below the water level of the pool.

2. Install two barbed adapters (B) in the following locations: Pump Inlet (or optional shut-off valve) and Filter Outlet.

3. Attach hose (C) using hose clamps (D) to adapters (B) according to the diagram shown below.

Note: Refer to pool manufacturer or skimmer manufacturer's installation instructions for more detail.





ASSEMBLY OF SYSTEM

1. Remove all components from carton. Your system includes a 1-piece base, a 2-piece base (filter base and pump base), or a filter base (Canada only). The 2-piece base is assembled by slipping the three tabs on pump base into any three of the slots located in the side of the filter base (attach pump to pump base in holes marked "1" and "2" using enclosed self tapping screws.) Set filter on base with the drain facing away from the pool.

2. If the laterals are not installed, hold the standpipe/manifold assembly so that the manifold is located in the middle of the tank. Take one of the lateral flow tubes in your other hand and lower it into the tank, sliding it down the tube and into one of the grooves in the manifold until a snap-fit is obtained. Repeat this action until all eight lateral flow tubes are installed, then lower the complete assembly down to the bottom of the tank. Press it down to ensure that the central tube is seated in the depression in the base of the tank.



3. Place the sand fill cover over the tank opening to prevent the sand from getting into the standpipe.

4. Fill the tank approximately 1/2 full of water.

5. Pour the recommended amount of sand into the tank, making sure that the standpipe remains centered and vertical. Level the surface upon completion.

6. Remove the sand-fill cover.

7. Preassemble the clamps with one screw and one nut, turning the screw 3-4 turns only. -8. Carefully remove all sand particles from the valve mounting surfaces.

9. Place the O-Ring onto the bottom of the valve body.

10. Lower the dial valve carefully into position so that its underside engages with the standpipe. Rotate the valve until the inlet is approximately in line with the pump.

11. Place clamps around tank and valve neck and assemble second screw and nut.

12. Firmly tap with a rubber mallet outside of the clamps as you tighten both screws alternately and evenly.

13. Make sure screws are tightened until clamps are completely closed. 14. Install the pressure gauge into the threaded opening in the dial valve

15. Install the backwash adapter,

if necessary, to reduce backwash flow. Install 2 threaded adapters into pump discharge and dial valve inlet after wrapping threads with 4 to 8 wraps of Teflon tape. Place one hose clamp over each end of pump to filter hose and push hose on to each adapter. Position clamps over barbed portion of adapter and tighten. ~

You are now ready to connect the system to your pool.

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. Connect only to a grounding type receptacle protected by a 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.



use minimum wire gauge.









0 वि Ð 3-prong twist-lock plug Standard (0 g) 3-prong plug CP (D)



PLUMBING CONNECTIONS

To guard against

The provision of gate valves and unions in the pump suction and pool return lines of a permanent installation will make servicing easier and prevent loss of water while routine maintenance is in progress. Pump Installation: Follow the instructions supplied with the pump. Connect the pipes to the filter system as shown on page 2.

Do not use pipes smaller than the connections provided. Support the plumbing so that it puts no strain on either the pump or the filter.

FOR SOLVENT WELD CONNECTIONS

Rigid or flexible PVC pipe can be used. Pipe ends should be clean and free of any debris caused by the cutting operation. Be sure that the proper adhesive is used on the type of pipe specified. Recommended Adhesives: These are examples only and are not intended to restrict brands:

PVC-PVC Joint

Uni-Weld Pool-Tite 2000 Suregard Flex 20 IPS Weld-On 705

PVC-ABS Joint Uni-Weld Pool-Tite 2000 Suregard Weld-All No. 5 IPS Weld-On 794

Note: A primer will assure that adhesive joints are superior. Suregard P-3000 has a purple tracer to qualify in areas where codes specify a primer must be used.

Caution: We recommend that you consider climatic conditions when applying adhesives. Certain atmospheric situations, such as high moisture content, make the adhesive action of certain glues less effective. Check the manufacturer's instructions.

FOR THREADED CONNECTIONS

Use only Teflon tape or equivalent on threaded plumbing connections. Other pipe compounds may damage threads. We do not recommend the use of silicone or petroleum based compounds. DO NOT OVER-TIGHTEN: HAND-TIGHTEN PLUS 1/2 TURN IS SUFFICIENT.

FILTER PLUMBING

If the filter is equipped with union connections, union adapters are needed to complete plumbing connections and may need to be ordered separately.

You are now ready to fill your pool and begin system start-up procedures.

SYSTEM START-UP

filled with water (primed).



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

1a. Press down on the valve handle and rotate to the FILTER position and release. Pool water will flow into the filter tank, pump and strainer. When water level reaches the clear strainer cover on the pump, the filter is ready for operation. NOTE: If an optional shut-off valve is installed, be sure that it is fully opened.



For in-ground pools with system

above the pool water level: 1b. Unscrew the Ring-Lok nut on the pump and remove the clear strainer cover. Prime the pump by filling the strainer with water to the bottom of the inlet. Replace the clear cover and Ring-Lok nut. HAND-TIGHTEN ONLY.

2. Turn the motor on (for only a few seconds) by plugging the unit into the Grounded electrical receptacle.



When it has been determined that the pump motor is operating properly, stop the pump and proceed to Step 3

3. A) Set dial valve to DRAIN position.

- B) Start pump.
- C) After flow has been established, stop pump.

D) Set valve to BACKWASH position.



Do not operate your pump until it has been







E) Start pump, run for one minute, (this action will clean and level the sand bed).

F) Stop pump.

G) Set valve to RINSE position, run for a few seconds. Stop pump.

H) Set valve to FILTER position.

I) Start pump - you are now in the first filtration cycle and your system is filtering your pool. Make a note of pressure gauge reading for future use in determining when to backwash.

CLEANING THE PUMP STRAINER



To avoid electrical shock, unplug the pump before performing any service or maintenance.

Rinse

Filter

1. STOP! Unplug the pump cord! For 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.

2. Press down on the dial valve handle and rotate to WINTER-IZE, release the handle. This action will allow air into the tank and prevent excessive backflow through the strainer.

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 if your system is located below pool water level.

Lift the basket out of the strainer and remove the debris. Reinstall the basket.

4. Clean the O-Ring on the clear cover and re-lubricate with petroleum ielly.

Also, clean all surfaces that come in contact with the O-Ring to assure a good seal.

5. Replace clear cover and strainer Ring-Lok. HAND-TIGHTEN ONLY. Open the optional valves if installed, and rotate dial valve to filter position.

You are now ready to perform system start-up. (See page 3).

BACKWASHING (CLEANING) THE FILTER



To avoid electrical shock, unplug the pump before performing any service or maintenance.

IMPORTANT: When the filter system is first placed in service, with serviceline valves fully open, note the reading on the pressure gauge. When the gauge reads 6 - 8 PSI above the original reading, it is time to backwash as indicated.

1. Unplug the pump cord!

2. A) Set dial valve to BACKWASH. B) Start pump.

C) Observe water flow in sight glass and when clear (usually 2-3 minutes), stop pump

D) Set valve to RINSE, run for a few seconds. This action removes any debris trapped in the filter during backwash.

E) Stop pump.

F) Set valve to FILTER.

G) Start pump, you have now resumed filtering your pool.

Backwash







WINTERIZING THE FILTER SYSTEM



To avoid electrical shock, unplug the pump before performing any service or maintenance.

1. <u>STOP!</u> 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 pool manufacturer's recommendations for winterizing the pool. Your system is full of water.

OR

STOP! Unplug the pump cord! For in-ground pools with the filter system located above the pool water level: Follow pool manufacturer's or pool builder's recommendations for winterizing the pool. Your system is full of water

2. Drain the filter tank by first removing the drain cap and then set dial valve to WINTERIZE. Replace the drain cap once filter is drained.





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





WATER CHEMISTRY

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

Chlorine is the most commonly used chemical to provide clean, sanitary water. Either dry or liquid chlorine can be used which should be added daily as it is dissipated by dirt and germs as well as by the sun and the wind.

It is also important that the correct level of acidity or alkalinity of the pool water be maintained. This is the pH of your pool with pH 7.0 being neutral. Readings above pH 7.0 are alkaline and readings below are acid. A desirable range is 7.2 to 7.4.

Consult your local pool/spa dealer for complete information on the proper application and use of chemicals.







FILTER MAINTENANCE

Filter tank and contents should not require attention other than backwashing, provided water is kept in continuous chemical balance without heavy dosages of corrosive chemicals.

TROUBLE SHOOTING

SAND BACK TO POOL

Sand too smal; Flow too high; Sand bed calcified; Broken laterals; Broken manifold; Loose standpipe; Too much sand; Dial valve not engaged; Air accumulation in filter.

SAND OUT OF BACKWASH HOSE

No backwash adapter/orifice; Flow too high; Too much sand in tank.

INADEQUATE FILTERING

Dirty make-up water; Improper sand; Sand is low; Algae in filter; Excessive dirt in pool; Calcified sand bed; Heavy swimmer load; Flow rate too high/too low; Backwashing cycle too short; Backwash adapter in wrong location; Backwash line too small.

SHORT FILTER CYCLE

Dirty filter; Improper sand; Sand is low; Algae in filter; Excessive dirt in pool; Calcified sand bed; Heavy swimmer load; Flow rate too high or too low; Backwashing cycle too short; Backwash adapter in wrong location; Channels low; Backwashing cycle too short; Backwash adapter in wrong location; Channels in sand.

FILTER LEAKS

Tank cracked; Drain plug not tight; Valve/tank O-Ring damaged.

DIAL VALVE LEAKS

Handle not properly engaged; Valve/tank O-Ring damaged; Valve cover O-Ring damaged; Pressure gauge needs sealant.

ABNORMAL LOSS OF POOL WATER

Leak inside dial valve; Leakage from pool or piping.

HIGH PRESSURE IN FILTER

Diry filter; Backwash adapter installed in return; Calcified sand bed; Return lines too small.

LOW PRESSURE IN FILTER

Dial valve incorrectly set; Pump running too slow (plugged); Air leakage into pump suction.

MOTOR DOES NOT START:

Disconnect switch open or fuses blown; Motor windings burned out; Defective starting switch inside motor or defective wiring.

MOTOR DOES NOT REACH FULL SPEED:

Low voltage; Shaft binding or impeller rubbing.

MOTOR OVERHEATS (protector trips):

Low voltage; Inadequate ventilation.

PUMP DELIVERS LITTLE, OR NO WATER/LOW PRESSURE:

Pump not primed; Leakage of air into suction system; Impeller clogged; Valve in suction or discharge line partly closed; Suction or discharge line partly plugged or too small; Plugged basket in skimmer or hair in lint strainer; Dirty filter.

HIGH PUMP PRESSURE:

Discharge valve or inlet fittings closed too much; Return lines too small; Dirty filter.

NOISY PUMP AND MOTOR:

Plugged basket in skimmer or hair in lint strainer; Defective motor bearings; Valve in suction line partly closed or line partly plugged; Vacuum cleaner hose plugged or too small; Piping causing strain on pump case; Impeller rubbing on pump case.

LEAKAGE OF WATER AT SHAFT:

Shaft seal requires replacement.

AIR BUBBLES AT INLET FITTINGS:

Leakage of air into suction line or strainer; Restriction in suction line; Low water level in pool.

NOTE: If the recommendations in the Trouble Shooting portion of this manual do not solve your particular problem(s), please contact your local dealer for service.

JACUZZI® POOL PRODUCTS - Limited Warranty

Cantar Pool Products (the Company or CPP) warrants Jacuzzi[®] pool products to be free of defects in material and workmanship for a period of **36** months from the date of purchase or **48** months from the date of manufacture, whichever comes first, with the following exceptions:

Shaft Seals - For all pumps with the Jacuzzi[®] patented "dry-run" heat sink, the shaft seal carries an *unconditional* warranty against damage or failure for 2 years from date of purchase/installation.

Light Bulbs - FullMoon Watercolor LED light bulbs are warranted for 1 year from date of purchase; incandescent bulbs are warranted for 90 days from date of purchase.

Misc. - Filter elements, DE grids, white-goods, strainer baskets, strainer basket "flap" and "priming tube", pressure gauges, square rings, o-rings, gaskets, and all replacement parts are warranted for 1 year from the date of purchase.

In order to activate this 3-year warranty, Jacuzzi[®] products may be registered with Cantar Pool Products by either of the following methods:

- Mail-in Warranty Registration Card
- Online at www.cantar.com

This warranty extends only to the original retail purchaser and only during the time in which the original retail purchaser occupies the site where the product was originally installed. CPP's warranty obligation with regard to equipment not of its own manufacture is limited to the warranty actually extended to CPP by its suppliers.

THIS WARRANTY IS EFFECTIVE January 1, 2005. ANY IMPLIED WARRANTIES WHICH THE PURCHASER MAY HAVE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE APPLICABLE WARRANTY PERIOD. Some US states or Canadian provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. IN NO EVENT SHALL CPP BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some US states or Canadian provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above may not apply to you.

This warranty applies to products used in swimming pool, spa, & aquaculture applications only and does not apply to any product which has been subjected to negligence, alteration, accident, abuse, misuse, improper installation, abrasives, corrosion and/or electrolysis, improper voltage supply, vandalism, civil disturbances, or acts of God (including but not limited to freeze damage, lightening strikes, and other damage caused by catastrophic events). The only warranties authorized by CPP are those set forth herein. CPP does not authorize other persons to extend any warranties with respect to its products, nor will CPP assume liability for any unauthorized warranties made in connection with the sale of its products. The Company will not be responsible for any statements that are made or published, written or oral, which are misleading or inconsistent with the facts as published in the literature or specifications furnished by the Company.

WARRANTY CLAIM PROCEDURE

Warranty claims shall be made by contacting the installing/selling, builder, dealer, or retailer (point of purchase) or the Jacuzzi[®] pool products distributor in your area.

All equipment must be inspected by a local Company representative or at the factory before warranty is authorized. All charges or expenses for freight to and from the factory, removal and reinstallation of the products, or installation of a replacement product are the responsibility of the purchaser unless otherwise expressly authorized by Cantar Pool Products. The Company, at its discretion, may repair or replace free of charge (F.O.B. factory in Toronto, Ontario) any product that proves defective within the warranty period, or it may issue credit in the amount of the invoice of the defective equipment in lieu of repair or replacement. The Company reserves the right to substitute new or improved equipment on any replacements.

The provisions of this additional written warranty are in addition to and not a modification of or subtraction from the statutory warranties and other rights and remedies provided by any US state law or Canadian provincial law.



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