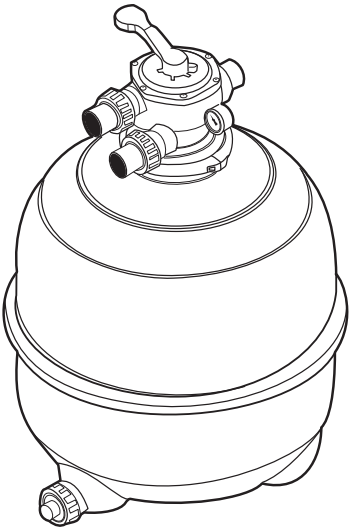
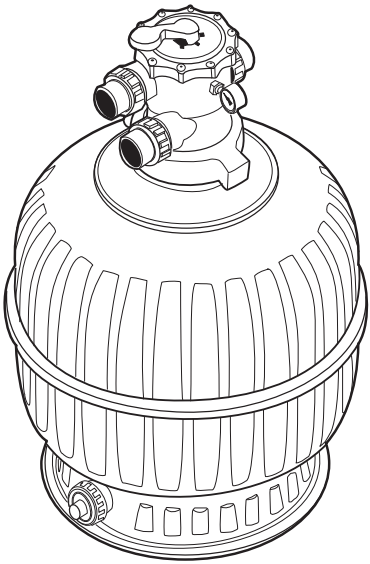


ECA Series



CA Series

# CA, ECA-Series Media Filters

Models: CA280 CA400
CA300 ECA550
CA340 ECA650

## ⚠ WARNING

**FOR YOUR SAFETY –** This product must be installed and serviced by a contractor who is licensed and qualified in pool equipment in accordance with the latest applicable local or council codes/standards. Before installing this product, read and follow all warning notices and instructions that accompany this product. Failure to follow warning notices and instructions may result in property damage, personal injury, or death. Improper installation and/or operation may void the warranty.

Improper installation and/or operation can create unwanted hazards which may cause serious injury, property damage, or death.

**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.

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# IMPORTANT SAFETY INSTRUCTIONS
# READ AND FOLLOW ALL INSTRUCTIONS

## ⚠ WARNING

**MAXIMUM OPERATING PRESSURE OF THE FILTER IS 250 kPa (CA) and 200 kPa (ECA). NEVER SUBJECT THE FILTER TO ANY OPERATING PRESSURE EXCEEDING THEM.**

- Do not connect the system to an unregulated city water system or other external source of pressurized water producing pressures greater than 35 PSI.
- This filter operates under high pressure. When any part of the circulating system, i.e., filter, pump, valve(s), etc. is serviced, air can enter the system and become pressurized when the system is restarted.

- Pressurized air in a system can cause product failure or also cause the filter lid to be blown off which can result in death, serious personal injury or property damage. Ensure that all air is out of the system before operating the equipment.
- To minimize risk of severe injury or death, the filter and/or pump should not be subjected to the piping pressurization test. Local codes may require the pool piping system to be subjected to a pressure test. These requirements are generally not intended to apply to the pool equipment such as filters or pumps. AstralPool pool equipment is pressure tested at the factory. If however, this **WARNING** cannot be followed and pressure testing of the piping system must include the filter and/or pump **BE SURE TO COMPLY WITH THE FOLLOWING SAFETY INSTRUCTIONS.**
- Check all clamps, bolts, lids, locking devices and system accessories to ensure they are properly installed and secured before testing.
- RELEASE ALL AIR in the system before testing.
- Water pressure for test must NOT EXCEED Maximum operating pressure.
- Water temperature for test must NOT EXCEED 38º C (100º F).
- Limit test to 24 hours. After test, visually check system to be sure it is ready for operation.

**NOTICE:** These parameters apply only to AstralPool equipment. For non-AstralPool equipment, consult the equipment manufacturer.

## ⚠ WARNING

To avoid electrical shock hazard, which can result in serious injury or death:

- Ensure that all electrical power to the system is turned off before approaching, inspecting or troubleshooting any leaking valves or plumbing that may have caused other electrical devices in the surrounding area to get wet.
- Water discharged from an improperly positioned filter or valve can create an electrical hazard which can cause death, serious injury or property damage.
- Improper multiport valve installation can cause product failure or also cause the filter multiport valve to be blown off, which can result in death, serious personal injury or property damage.
- Never attempt to adjust or remove the multiport valve when the pump is running or there is pressure in the system. this can cause product failure or also cause the filter multiport valve to be blown off, which can result in death, serious personal injury or property damage.

To reduce the risk of injury, do not permit children to use this product. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

## ⚠ CAUTION

- Maintain your pressure gauge in good working order. The pressure gauge is the primary indicator of how the filter is operating.
- Creating high vacuum levels can cause the tank vessel to crack and leak with the potential for property damage.
- Be sure that all provisions for waste water disposal meet local, provincial or national codes. During any backwash or draining process, 100 litres or more of water will be discharged. Do not discharge water where it will cause flooding or damage.
- To avoid damaging the laterals (spokes), slowly add the filter media until the laterals are fully covered. Consult Installation and Operation Manual for complete media filling instructions. Cracked or broken laterals (spokes) will cause media to be discharged to the pool.

# SAVE THESE INSTRUCTIONS

**General Notes**

1. Use equipment only in a pool or spa installation.
2. Before repositioning valve(s) and before beginning the assembly, disassembly, removal or adjustment of the lid, or any other service of the circulating system:
   – Turn the pump off and shut off any automatic controls to ensure the system is not inadvertently started during servicing.
3. After completing service on the circulation system, refer to *Section 4, Maintenance and Troubleshooting* in this manual for the next steps.

## Section 1. General Information

The following key information should be followed to ensure a proper installation of the filter.

1. When unpacking the filter, ensure the unit is complete with no visible shipping damage.
2. Allow a minimum 50 mm clearance around the filter and multiport valve to ensure accessibility, ease of maintenance, and to accommodate operational expansion of the filter.
3. Provide adequate ventilation for pumping equipment that is installed in conjunction with filter.
4. Provide solid mounting for the filter and pump. If installed outdoors, install the system on a slab or solid concrete base to avoid risk of settlement. Filter systems once located with filter media and water can exceed a weight of 250 kg. If installed indoors, ensure doorway allows sufficient clearance should filter tank require replacing.
5. Installation of filters and pumps should be located as close to the pool as possible to avoid excessive piping friction loss.
6. If system is installed below pool level, it is important to install isolating valves to prevent risk of flooding from back flow of water from the pool or spa.
7. The proper filter media selection is critical to good filter performance. Ensure that the media is an approved form of Quartz Silica sand, glass or Zeolite.
8. The installation of filters requires no special tools. PVC pressure glue is recommended.
9. Confirm that plumbing lines from pool are correctly identified. This will ensure proper connection to markings on filter valve (i.e. “Pump”, “Waste”, and “Return”). See *Figure 1*.

# Section 2. Initial Setup

## 2.1 Loading Filter Media

Once the filter system has been positioned, the installation of filter sand may be undertaken as follows:

1. Check filter size in order to determine necessary amount of filter media required. See *Section 5, Dimensions*.
2. Double check that the internal system consisting of a lateral hub and stand pipe are intact inside the tank. Lift the central pipe step and hand tighten each lateral to verify each are secure and undamaged.
3. Fill tank half full with water.
4. Place the disposable loading disc into the upper tank opening and the plastic cover over stand pipe to stabilise the filter and stand pipe. It is important that the stand pipe remains centered through the filter media loading procedure to ensure alignment with valve assembly opening.
5. Proceed to load correct volume of dry filter media slowly (if filter media is saturated loading can be difficult).
6. Once filter media is loaded discard loading disc and check to determine if stand pipe is properly centered in tank opening.

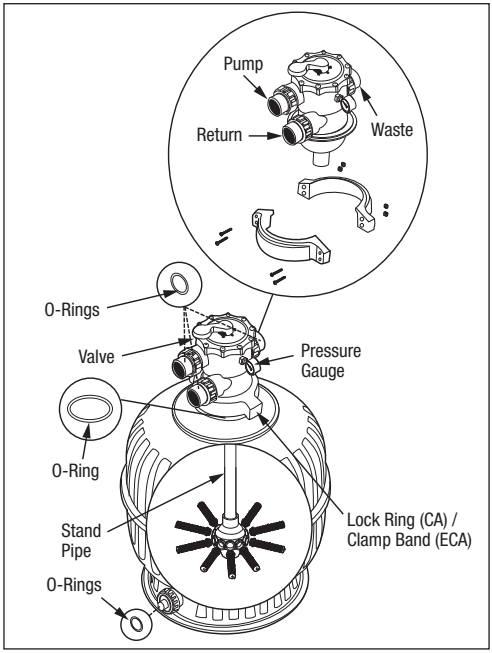


**Figure 1. Media Filter Key Components**

## 2.2 Installing the Selector Valve

1. Following the filter media loading, clean any filter media particles or debris from upper surface of tank opening.
2. Install the multiport valve after placing O-Ring in cavity on tank body. Place the valve into the tank opening while ensuring that the O-Ring has remained in position. Rotate the valve to best suit plumbing lines.
   - CA Series: Once valve positioned, tighten the lock ring firmly by hand.
   - ECA Series: Once valve positioned, fit clamp band assembly around neck of filter and valve and tighten sufficiently for good engagement.

**NOTE:** It is not necessary to over tighten.

3. Double check that incoming pool lines are connected to appropriate valve openings as marked on the valve port (i.e. pump, return (pool) and waste).
4. The threaded openings on the valve are 40mm or 50mm thread which all accommodate Astral Pool barrel unions supplied with the filter. O-rings are supplied to fit between the multiport valve and barrel union. It is only necessary to tighten by hand. THE USE OF TEFLON TAPE IS NOT REQUIRED FOR THIS STEP.
5. Remove plug from side wall of valve and install threaded pressure gauge (if not already fitted) using Teflon tape wrap. Do not over tighten. Minimal hand tightening is adequate to provide a good seal.

# Section 3. Operation

## 3.1 Initial Startup

1. Ensure the correct amount of filter media is in the filter tank.
2. While ensuring the pump is Off, set the valve handle to BACK WASH position.
3. Prime the pump.
4. Start the pump and operate in BACK WASH cycle for three (3) minutes. This will purge the filter of excessive filter media.
5. Turn the pump OFF and set the valve handle to RINSE. Start and run the pump for one (1) minute.
6. Stop the pump and set the valve handle to FILTER. Restart the pump. The system is now operating on a normal FILTER cycle.
7. Adjust the valves in the skimmer and main drain lines (if provided) to achieve a balanced flow rate.
8. When a pool is filled initially, the filter may have to be BACK WASHED once a day until the water becomes sparkling clear. From that point on, BACK WASH when the pressure gauge indicates 30 to 40 kPa higher than at starting pressure.

### 3.2 Valve Operation

**NOTE:** Always "STOP" pump when changing selector valve position.

| Valve Settings | Valve Directional Flow |
|---|---|
| Filter (also during vacuuming) | From pump down through valve, through filter media bed, up through stand pipe to valve and back through pool return. |
| Backwash | From pump, through valve, down through stand pipe, up through filter media bed, and through valve to waste. |
| Rinse | Flow from pump, through valve, down through filter media bed, up through stand pipe, through valve to waste. (Position also used for initial start-up and levelling filter media bed after Back-wash) |
| Waste | From pump, through valve to waste. Also position for lowering water level or assist in draining pool. Also vacuuming to waste. |
| Closed | From pump to valve without further circulation. Prevents any flow to filter and pool. |
| Recirculate | From pump through valve to pool. This position bi-passes the filter and is used for circulation of pool water only. |

### 3.3 Operational Tips

1. Always turn the pump "OFF" before changing valve positions.
2. Never run the pump dry as it depends on water for lubrication.
3. Always maintain minimum water levels to one-half (1/2) way up the skimmer mouth.
4. Clean the pump strainer regularly.
5. Maintain a proper chemical balance in the pool.
6. Maximum operating pressure is 250 kPa on CA Series and 200 kPa on ECA Series.
7. Ensure the valve's pressure gauge is positioned so that rain water cannot collect on the glass face.
8. Back wash the filter regularly for three to five (3-5) minutes, or until the sight glass runs clean each time to ensure filter media is completely cleaned.
9. Always rinse for one (1) minute after each backwash and before returning the valve position to FILTER.

**NOTE**: When the valve is set to backwash, waste or rinse, the water level of the pool will go down. Pool water may need to be topped up after and should always be monitored so that is doesn't go below the skimmer weir.

## Section 4. Maintenance and Troubleshooting

### 4.1 Maintenance Schedule

**IMPORTANT NOTE:** Regular maintenance is important to ensure long life and trouble free performance of your pool equipment. Contact your local pool professional or refer to our dealer locator as needed.

Your new product incorporates moving parts and withstands high velocity water with chemicals in it. Some of these parts will wear in the normal course of use, and require regular checks and maintenance.

Performing these checks and maintenance will identify parts that have worn and require repair/replacement before further serious damage is sustained. A small amount of regular care and attention to your pool equipment will help ensure long life and trouble free performance.

| Timing | Maintenance Check | Service Action If Required |
|---|---|---|
| Fortnightly | Check pressure gauge. If pressure increase is greater than 20kPa cleaning may be required. | Perform backwash according to instructions |
| Three Monthly | Check inlet/outlet o'rings for leaks | Isolate Pump, turn power off, clean and grease O rings or replace if necessary |
| Annually | Compare operating pressure of backwashed filter to initial pressure (when new). | If pressure is more than 30 – 40 kPa different from new filter, a filter media change may be required |
| | If using Zeolite or M3, regenerate filter media. This is important in commercial applications as it aids in the removal of ammonias. | Add salt to filter media as per supplier instructions. Allow to sit for 24 hours then backwash, rinse and return to filter. |

**Table 1. Filter Maintenance Schedule**

### 4.2 Troubleshooting

How to correct a liquid filled gauge that has moved off of "0 psi" during shipping?

**Why it happens**

Liquid filled pressure and vacuum gauges are tested for accuracy at the factory. However, during transport, changes in temperature and altitude may cause a shift in the gauge's internal pressure. That, in turn, causes the gauge's resting point to change. There are no long term side effects from these changes if the gauge is vented to equalize that pressure.

If the gauge is placed in a location where big temperature changes are common, you may want to vent it when major changes occur. When installing new gauges, it is a good practice to mount them with the stopper up so that they can be vented easily

**How to fix it**

On top of the gauge is a rubber stopper which secures the liquid filling. To calibrate a gauge that is not returning to zero, just lift one edge of the stopper to equalize the pressure inside. Try to position the gauge so that the stopper opening is pointed upward and any air bubble inside the pressure gauge is near the stopper. After venting the gauge, you should see the pointer move back to 0 psi, remember to keep the gauge vertical (stopper on top), so that the oil doesn't leak out.

If a little of the liquid escapes, just wipe it away. AstralPool uses non-toxic food grade glycerin to fill its gauges. Wiping away the excess is important however, as left over glycerin will collect dust and debris if it is not cleaned off. Replace the stopper when finished. The gauge will work without stopper replacement, but it should be put back in place to maintain a clear dial. An open top will allow dust and debris into the casing, which could cloud the readout and might damage the gauge over time.

## Section 5. Dimensions

### 5.1 CA Series Media Filter

| Model No. | Tank Diameter | Filter Area | Port Size | Max. Flow Rate | Sand Required | Viron Active Course Glass | Viron Active Fine Glass |
|---|---|---|---|---|---|---|---|
| CA 280 | 665 mm | 0.30 sq m | 40 mm | 280 lpm | 120 kg | 45 kg | 75 kg |
| CA 300 | 665 mm | 0.30 sq m | 50 mm | 300 lpm | 120 kg | 45 kg | 75 kg |
| CA 340 | 742 mm | 0.38 sq m | 50 mm | 340 lpm | 150 kg | 60 kg | 90 kg |
| CA 400 | 816 mm | 0.46 sq m | 50 mm | 400 lpm | 200 kg | 75 kg | 125 kg |

| Dimensions with Multiport Valve Installed | | | |
|---|---|---|---|
| **Model No.** | **Height** | **Width** | **Shipping Weight** |
| CA 280 | 1060 mm | 665 mm | 20 kg |
| CA 300 | 1076 mm | 665 mm | 20 kg |
| CA 340 | 1076 mm | 742 mm | 20 kg |
| CA 400 | 1233 mm | 816 mm | 20 kg |

### 5.2 ECA Series Media Filter

| Model No. | Tank Diameter | Filter Area | Port Size | Max. Flow Rate | Sand Required | Viron Active Course Glass | Viron Active Fine Glass |
|---|---|---|---|---|---|---|---|
| ECA 550 | 586 mm | 0.23 sq m | 40 mm | 180 lpm | 80 kg | 30 kg | 50 kg |
| ECA 650 | 665 mm | 0.30 sq m | 40 mm | 280 lpm | 120 kg | 45 kg | 75 kg |

| Dimensions with Multiport Valve Installed | | | |
|---|---|---|---|
| **Model No.** | **Height** | **Width** | **Shipping Weight** |
| ECA 550 | 980 mm | 586 mm | 13 kg |
| ECA 650 | 1050 mm | 665 mm | 17 kg |

# NOTES

| | |
|---|---|
| WARRANTY REGISTRATION | Record your equipment details here for quick reference:<br>Model No. : _____<br>Serial No. : _____ |
| | AUSTRALIA WARRANTY:<br>For full warranty terms and conditions and to register your warranty, visit *www.astralpool.com.au/warranty* and complete your details.<br>◀ Or scan the QR code to go directly to the registration page. |
| | NEW ZEALAND WARRANTY:<br>For full warranty terms and conditions and to register your warranty, visit *www.astralpool.co.nz/warranty* and complete your details.<br>◀ Or scan the QR code to go directly to the registration page. |

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