

CrystalPro

Pool Cartridge Filter

Owner's Manual

Installation, Operation and Service

Models: CP120, CP150

WARNING

This equipment must be installed and serviced by a qualified technician in accordance with all applicable codes and ordinances. Improper installation can create hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.

The NOTICE label indicates special instructions that are important but not related to hazards.



Notice to Installer

This manual contains important information about the installation, operation and safe use of this product. Once installation is complete, this manual must be given to the owner/operator of this equipment.

Table of Contents

Safety Information	2	Winterizing	5
Installation	3	Trouble Shooting	6
Initial Startup of Filter	3	CrystalPro Parts Listing	7
Product Specifications	4	Warranty	8
Cartridge Cleaning	5		

■ Safety Information

Safety Guidelines

This manual contains information that is very important to know and understand. This information is provided for SAFETY and to PREVENT EQUIPMENT PROBLEMS. To help recognize this information, observe the following symbols.

⚠ **DANGER:** indicates imminently hazardous situations which, if not avoided, WILL result in death or serious injury.

⚠ **WARNING:** indicates potentially hazardous situations which, if not avoided, COULD result in death/serious injury.

⚠ **CAUTION:** indicates potentially hazardous situations which, if not avoided, MAY result in minor/moderate injury.

⚠ **NOTICE:** indicates important information, that if not followed, may cause damage to equipment.

⚠ **NOTE:** indicates information requires special attention.

General Safety Information

⚠ **WARNING: California Proposition 65 - This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.**

Read all product manuals carefully. Be familiar with the controls and the proper use of the equipment.



⚠ **WARNING: This filter operates under high pressure. Incorrectly installed/serviced equipment could explode, causing severe injury, death, and/or property damage.**



- Have a trained pool professional perform all pressure tests.
- Never connect filter to compressed air.
- Use filter only in a pool or spa installation.
- Never connect filter to external city/ pressurized water.
- Do not connect to pumps that exceed 50 PSI pressure.
- Do not subject filter to pressure in excess of 50 PSI, even when conducting hydrostatic pressure tests. Pressures exceeding 50 psi can cause the tank to rupture and could result in severe injury, death or property damage.

- Air trapped in the system can cause an explosion. Open the air relief valve to vent all air from the system before operating or testing the system.

⚠ **WARNING: Do not use solvents to clean the filter assembly as they may damage the plastic components.**

⚠ **WARNING: Wear rubber gloves, protective clothing and eye-wear when using acids and cleaners. Avoid contact with skin and eyes. If ingested, call local poison control center. Observe all warnings and precautions supplied with acids and cleaners.**



⚠ **WARNING: Risk of electrical shock/electrocution.**



- Position the filter drain and air relief valve to safely direct drainage and purged air or water away from the pump and other electrical components. Water discharged from an improperly positioned assembly can create an electrical hazard that can cause serious injury, death, and/or property damage.

- Ensure filter installation, grounding and bonding meets local codes and National Electrical Code (NEC) standards. All wiring, grounding, and bonding of associated equipment must be performed by a qualified electrician.

⚠ **WARNING: Risk of falling and drowning.**

- Place equipment 4 ft or more from pool so children cannot climb over it into pool. Do not stand/play on equipment.
- Never leave filter open/unattended. Secure filter area.
- Keep children away from equipment at all times.

⚠ **WARNING: This filter is designed to remove debris and particulates from pool and spa water. Proper water chemistry MUST be maintained to keep water clean and avoid spreading diseases. Consult a local pool professional for more information.**

⚠ **NOTICE: This filter is not designed for backwashing. If unit is plumbed backwards or backwashed, it will damage the filter cartridge and will void the warranty.**

⚠ **NOTICE: Attention Installer: This manual contains important information about the installation, operation and safe use of this filter. This information should be furnished to the end user of this equipment.**

■ Installation

Unpacking

Inspect this unit before it is used. Occasionally, products are damaged during shipment. If the filter or components are damaged, return the unit to the place of purchase for replacement. Failure to do so could result in serious injury or death. **READ & FOLLOW ALL INSTRUCTIONS. SAVE THESE INSTRUCTIONS. DO NOT DISCARD.**

Filter Location

It is important to first determine where your pump and filter will be located. If above the water line, a self-priming pump must be used. Self-priming pumps have the ability to lift water from a lower level and prime automatically.

1. Since plumbing fittings offer a resistance to water flow, position the filter as close to the swimming pool as local codes allow. Keep the number of fittings to a minimum. Select a well drained area, one that will not flood when it rains.
2. Set the filter on a solid, level surface. Be sure filter, pump, drain and pressure gauge are accessible for convenient operation.
3. Position the filter so the tank can drain by gravity.
4. If practical, place pump and filter in the shade to shield it from continuous, direct heat from the sun.

Plumbing

1. Use 1-1/2" or 2" piping. When making permanent connections, be sure to provide unions for easy servicing.
2. Refer to the diagrams for basic suggested valving. Ball valves are recommended where needed. While all systems vary, the main consideration is to provide the desired control of water flow from the pool to the pump and filter, and back to the pool. When the filter is located below water level, provide valves to prevent back flow of water to the filter during cleaning and routine servicing.
3. All plumbing on the filter are 1-1/2" or 2" N.P.T. or socket (solvent weld). When making threaded connections to the filter use plastic adapters. Apply three turns of Teflon tape (or use special plastic pipe sealant) to male threads. Screw the fitting into the thread hand tight, then using a wrench, tighten one more full turn. Additional tightening is unnecessary and will result in broken or damaged fittings.
4. Connect the pool suction plumbing between the skimmer, pool outlet, etc. and the pump.
5. Install the pool return plumbing.
6. If pressure gauge is not installed, apply Teflon tape to the gauge threads, and carefully screw the gauge into the threaded hole in the filter head.
7. A filter drain plug is furnished with each filter and is all that is needed for complete filter draining. A manual air relief valve is furnished to aid in bleeding off unwanted air when starting the filter. The auto air relief provides air removal during operation.
8. All electrical connections should be made in accordance with local codes.
9. Check for joint leaks before operating.
10. Refer to pump instruction booklet for pump information.

■ Initial Startup of Filter

Be sure filter drain plug is closed. Open manual air relief valve a few turns and open the suction and return valves (when used).

⚠ CAUTION: All suction and discharge valves must be open when starting the system. Failure to do so could cause severe personal injury and/or property damage. Be sure locking knob is secure (hand tighten--only slight pressure is required).

Stand clear of the filter and prime and start the pump, following the manufacturer's instructions. Air trapped in the system will automatically vent to the pool and out air relief valve. Close air relief valve as soon as air is vented.

Filtering

Filtration starts as soon as flow is steady through the filter. As the filter cartridge removes dirt from the pool water, the accumulated dirt causes a resistance to flow. As a result, the gauge pressure will rise and the flow will decrease.

When the pressure rises 7-10 psi (.49-.70 Bar) above the starting pressure, or when flow decreases below desired rate, clean or replace the filter cartridge.

Product Specifications

Pool/Spa Chemistry

Maintaining water chemistry at the correct levels is critical for health of pool / spa users and will help prolong the life of pool / spa equipment. This chart contains the recommended levels for a typical pool / spa. If you have questions about maintaining your pool / spa and its chemistry, consult your local APSP / NSPI pool professional.

TABLE 1

Industry Standard	Pool/Spa	Minimum	Ideal Water Chemistry	Maximum
Free Chlorine (ppm)	Pool	1.0	2.0 - 4.0	530
	Spa	2.0	3.0 - 5.0	10.0
Total Bromine (ppm)	Pool / Spa	2.0	4.0 - 6.0	10.0
pH	Pool / Spa	7.2	7.4 - 7.6	7.8
Total Alkalinity (ppm)	Pool / Spa	60	80 - 100* 100 - 120**	180
Calcium Hardness (ppm as CaCO ₃)	Pool	150	200 - 400	1000
	Spa	100	150 - 250	800
Cyanuric Acid (ppm)	Pool / Spa	0	30 - 50	***

* For Calcium Hypochlorite, Lithium Hypochlorite, or Sodium Hypochlorite

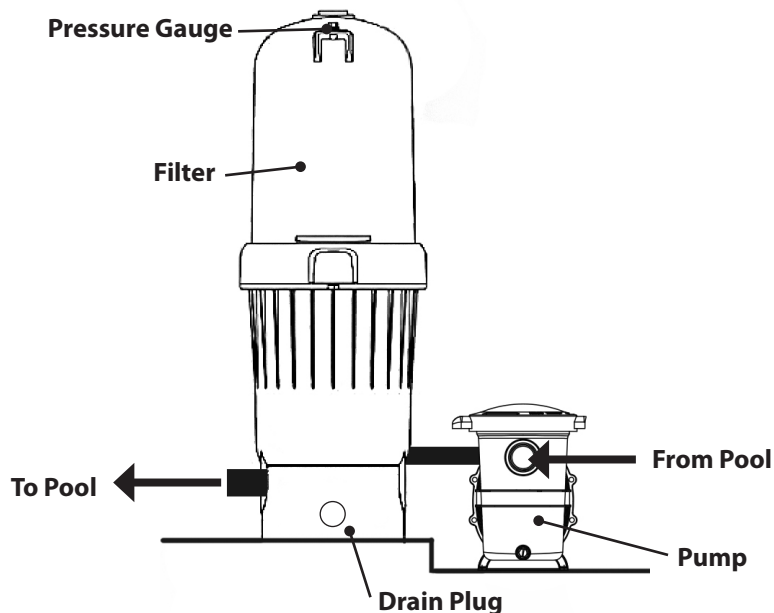
** For Sodium Dichlor, Trichlor, Chlorite gas, BCDMH (Bromine Tablets).

*** Dictated by state or local codes. Typically 100 ppm.

ppm = parts per million

Common Specifications

Model	Filtration Rate		Design-flow rate		Maximum Working Pressure		Maximum Continuous Water Temperature		Net. Weight (lbs.)
	Ft ²	M ²	GPM	M ³ /h	PSI	BAR	F	C	
CP120	120	11.1	120	27.3	50	3.5	104°	40°	24.2
CP150	150	13.9	120	27.3	50	3.5	104°	40°	24.2



■ Cartridge Cleaning

Removing Cartridge Element

1. Shut off the pump.
2. If filter is located below water level, close valves (or block off suction and discharge lines) to prevent backflow of water from the pool.
3. Unscrew and remove drain plug and allow water to drain from filter. Close drain plug.
⚠ **NOTE: To assist draining process: open air vent a few turns.**
4. Unscrew and remove locking-ring (counterclockwise direction).
5. Carefully lift off top cover to gain access to filter cartridge.
6. Lift out cartridge and clean. Or, replace with clean, spare cartridge. (See Cleaning Cartridge.)

Cleaning Cartridge

The cartridge filter element can be cleaned by pressure washing inside and out with a garden hose. (The cartridge is easier to clean when dry.) After hosing the cartridge, for best results, allow cartridge to dry and carefully brush pleated surface areas to remove fine particles.

Algae, suntan oil and body oils can form a coating on the cartridge pleats which may not be thoroughly removed by hosing. To remove such materials, soak the cartridge in a solution of filter element cleaner (various brands available at pool dealer). Follow manufacturer's directions for use and allow an hour for soaking. Hose thoroughly before reinstalling in filter.

If calcium or mineral deposits are excessive, the cartridge may be restored to "like new" condition by soaking in muriatic acid. Use commercially available 20% muriatic acid added to water in 1 to 1 ratio. Use a plastic container and take extreme care when handling cleaning agents as they can be harmful to eyes, skin and clothing. After cleaning, flush with water.

A spare cartridge filter element is an excellent investment. It provides convenience and ensures that your filter will always be ready to operate at peak efficiency.

Reinstalling Cartridge Element

1. Clean any collected debris from the bottom of filter body.
2. Carefully replace cartridge element over tie rod and into filter body ensuring that the cartridge sits evenly on the collector hub in bottom of filter body.
3. Tighten locking-ring in clockwise direction. (Hand tight only.)
4. Start the filter. See INITIAL STARTUP OF FILTER instructions.

■ Winterizing

In areas where sub-freezing temperatures can be expected the filter should be drained and/or removed from its operating location and stored indoors. Remove and clean cartridge. Reinstall cartridge in filter tank. Tighten locking-ring only a few turns when storing.

■ Trouble Shooting

Short Cycle Time

Cycle time will vary between installations and different areas of the country. Check the following to remedy this problem:

- **New pool / spa installation** - Until the water in a new pool is completely filtered, cycle time will be short due to plaster dust and construction debris. Clean the cartridge, refer to the "Cartridge Cleaning" section of this owner's manual.
- **Low chlorine residual** - Maintain proper chlorine residual (consult local pool professional for recommendation.)
- **Dirty or plugged filter cartridge** - Clean the filter. Refer to the "Cartridge Cleaning" section of this owner's manual.
- **Excessive air in filter** - Vent all air from the filter tank and check system for suction pipe leaks or low water level. Also, check and clean air bleed tube.
- **Chemical imbalance in water** - Check pool chemistry (refer to Table 1 on page 4). Consult local pool professional.
- **Algae in system** - Apply heavy dose of chlorine or algaecide as recommended by the pool manufacturer and/or local professional.
- **Cartridge is at the end of its life** - When cleaning procedure no longer adequately cleans the cartridge, replace the cartridge.

Low Flow / High Pressure

Resistance in or after the filter will reduce the flow and increase the pressure inside the filter. Check the following to remedy this problem:

- **Dirty or plugged filter cartridge** - Thoroughly clean the filter. Refer to the "Cartridge Cleaning" section of this owner's manual.
- **Piping is blocked downstream from the filter** - Remove the obstruction.
- **Return valve is not fully open** - Fully open return valve
- **Piping is too small** - Use larger pipe, consult manufacturer.
- **Filter is undersized / pump is oversized** - Use a filter with higher square footage or use a smaller HP pump. Consult a customer service representative for sizing information.

Low Flow / Low Pressure

Resistance before the filter will reduce the flow and pressure inside the filter. Check the following to remedy this problem:

- **Skimmer basket(s) clogged** - Clean the skimmer basket(s).
- **Pump plugged** - Clean the suction trap in the pump.
- **Drain and skimmer valves are not fully open** - Fully open the drain and skimmer valves
- **Piping is blocked upstream from the filter**: Remove the obstruction.

Plugged Cartridge

Over time, the filter media will become clogged and will not perform properly. If the cartridge cannot be cleaned, replace it. If the cartridge needs replacement often, check the following:

- **Insufficient cleaning** - Refer to the "Cartridge Cleaning" section of this owner's manual.
- **Excessive air in filter** - Vent all air from the filter tank and check system for suction pipe leaks. Also, check and clean air bleed tube.
- **Low chlorine residual** - Maintain proper residual. Consult local pool professional.
- **Chemical imbalance in water** - Check pool chemistry (refer to Table 1 on page 4). Consult local pool professional.
- **Algae in system** - Apply heavy dose of chlorine or algaecide as recommended by the pool manufacturer and/or local professional.
- **High iron water content** - Consult local pool professional.
- **Improper use of powdered chlorine tablets containing binders** - Consult local pool professional.
- **Cleaning with incorrect chemicals when using PHMB sanitizers** - Replace the filter cartridge. Only use cleaners specifically made for PHMB sanitizers.

Water Not Clear

A number of factors can affect water clarity. Check the following to remedy this problem:

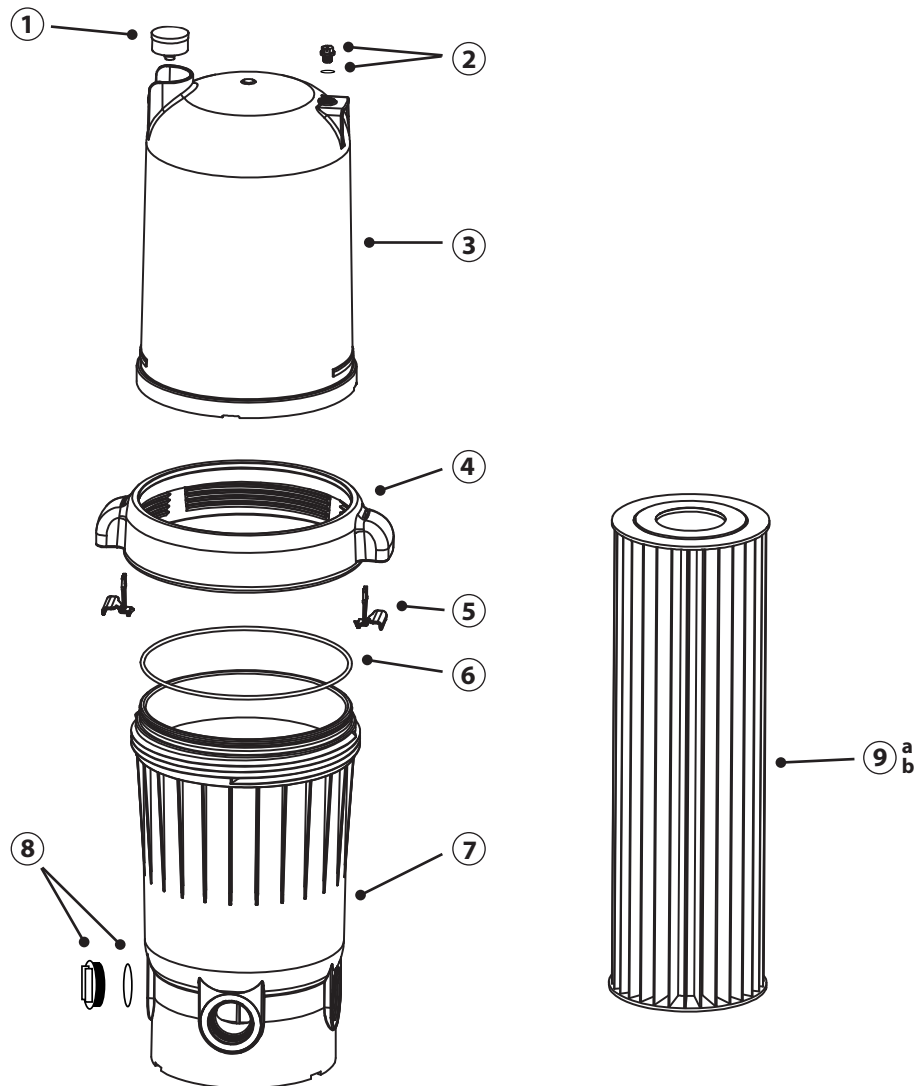
- **Chemical imbalance in water** - Check pool chemistry (refer to Table 1 on page 4). Consult local pool professional.
- **Low chlorine residual** - Maintain proper chlorine residual (consult local pool professional for recommendation).
- **Damaged filter cartridge** - If cartridge is torn or punctured, replace it.
- **High iron water content** - Consult local pool professional.
- **Improper use of powdered chlorine tablets containing binders** - Consult local pool professional.
- **Algae in system** - Apply heavy dose of chlorine or algaecide as recommended by the manufacturer or local professional.

Automatic Pool Cleaner Stops Working

Pool cleaners may be noticeably affected by the normal decrease in flow as the filter becomes clogged. If the filter stops working, thoroughly clean the cartridge. Refer to the "Cartridge Cleaning" section of this owner's manual. If the pool cleaner performs better after the filter is cleaned, clean the filter more often than recommended. ⚠ **Note: pressure increase from start-up may be less than 8 - 10 PSI.**

CrystalPro Parts Listing

Models: CP120, CP150



No.	Part Number	Description	Req'd Qty
1	AGX972020	Pressure Gauge	1
2	AGX886014	Drain Plug with Gasket	1
3	AGX310302	Filter Head	1
4	AGX310303	Locking Ring	1
5	AGX310304	Locking Ring Latch	2
6	AGX310930	Filter Tank O-Ring	1
7	AGX310301	Filter Body	1
8	AGX912160	Plug with O-Ring 2"	1
9a	AGX220360	120 Ft ² Cartridge Element for CP120	1
9b	AGX220370	150 Ft ² Cartridge Element for CP150	1

■ Limited Warranty

For one (1) year from the date of purchase, will repair or replace, at its option, for the original owner any parts of its filters ("Product") which are found upon examination to be defective in materials or workmanship. This Limited Warranty covers parts only for a period of one (1) year.

Please contact the store you purchased the filter from for instructions. Be prepared to provide a receipt, the model number and serial number when exercising this limited warranty.

Purchaser must pay all transportation charges on Products or parts submitted for repair or replacement.

All non-warranty service charges are the responsibility of the original owner. Failure to pay for non-warranty service charges will void this Limited Warranty.

This Limited Warranty does not cover Products that have been damaged as a result of accident, freezing, abuse, misuse, neglect, improper installation, improper maintenance or failure to operate in accordance with written instructions. All maintenance and service must be performed by service agents approved. Any unauthorized alteration or repairs will void this Limited Warranty.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE (1) YEAR FROM THE DATE OF PURCHASE. THIS IS THE EXCLUSIVE REMEDY AND ANY LIABILITY FOR ANY AND ALL INDIRECT OR CONSEQUENTIAL DAMAGES OR EXPENSES WHATSOEVER IS EXCLUDED.

Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusions or limitations of incidental or consequential damages, so the above limitations might not apply to you. This limited warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state.

In no event, whether as a result of breach of contract warranty, tort (including negligence) or otherwise, shall its suppliers be liable for any special, consequential, incidental or penal damages including, but not limited to loss of profit or revenues, loss of use of the products or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities, services or replacement power, downtime costs, or claims of buyer's customers for such damages.

This Limited Warranty does not include freight charges for equipment or component parts, to and from the factory, services such as maintenance or inspection, repair or damage due to negligence such as freezing conditions, incorrect installation, nor acts of God. The liability shall not exceed the repair or replacement of defective parts under this Limited Warranty.

This Limited Warranty also does not include unnecessary service calls due to erroneous operational reports, external valve positions, or electrical service. If a non-warranty service call is made, and the homeowner is unwilling to pay for the service call, this Limited Warranty will be voided. This Limited Warranty is voided if the product is repaired or altered by any persons or agencies other than those authorized. This Limited warranty applies only within the continental USA. For warranty outside the continental USA.

You MUST retain your purchase receipt along with this form. In the event you need to exercise a warranty claim, you MUST present a copy of the purchase receipt at the time of service. Please contact the store you purchased the filter from for service or return authorization and instructions.

DO NOT MAIL THIS FORM. Use this form only to maintain your records.

MODEL NO. _____ SERIAL NO. _____ INSTALLATION DATE _____

Thank you for choosing AquaGuard!