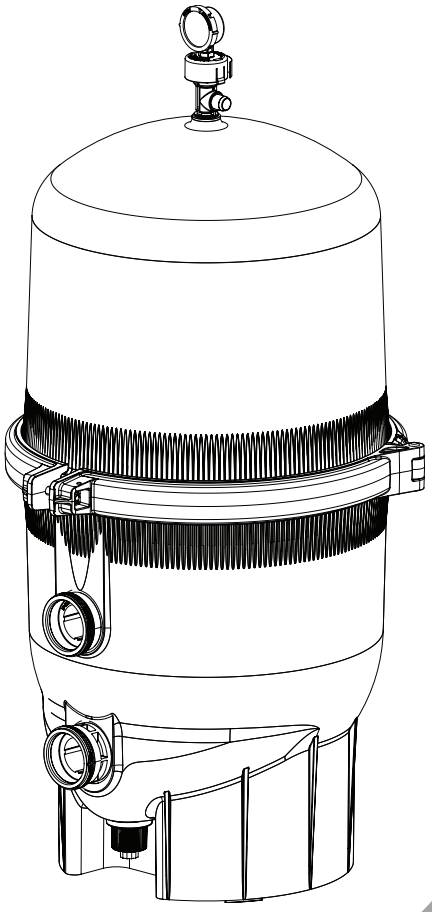
PENTAIR POOL

QUAD D.E.®
CARTRIDGE STYLE D.E. FILTER

INSTALLATION AND USER'S GUIDE



IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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TABLE OF CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

This guide provides important information that helps ensure proper and safe installation, operation, and maintenance of this equipment. If there are any concerns or questions about tasks described in this manual, consult Pentair or a qualified professional.

ATTENTION INSTALLER! Ensure this guide is given to the pool owner and/or operator after installation.

ATTENTION USER! Retain this guide for future reference.

Call (800) 831-7133 for additional free copies of these instructions or product labels. Refer to www.pentair.com for more information.

READ AND FOLLOW ALL INSTRUCTIONS SAVE THESE INSTRUCTIONS

This is the safety alert symbol. When you see this symbol in this guide or on the product itself, note the related signal word and be aware of the potential for personal injury.

DANGER Warns of hazards, that if ignored, will result in death or serious injury.

WARNING Warns of hazards, that if ignored, could result in death or serious injury.

CAUTION Warns of hazards, that if ignored, could result in minor or moderate injury.

NOTICE Indicates information, that if ignored, could result in property damage.

Carefully read and follow all instructions in this guide or displayed on the equipment. Ensure all product labels are kept in good condition and replace missing or damaged labels immediately.

WARNING FAILURE TO FOLLOW ALL INSTRUCTIONS AND WARNINGS COULD RESULT IN DEATH OR SERIOUS INJURY. **INSTALLERS, OPERATORS, AND OWNERS MUST READ AND UNDERSTAND ALL WARNINGS AND INSTRUCTIONS BEFORE OPERATING OR SERVICING THE FILTER.**

WARNING This filter must be installed by a qualified professional in accordance with all applicable codes and ordinances. Improper installation could result in death, serious injury, or property damage.

WARNING Do not permit children to use this equipment.

WARNING **TRAPPED AIR CAN LAUNCH THE LID WITH DEADLY FORCE!** When any part of the filtration system is serviced, air can enter the system and become trapped. Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, and/or property damage.

To avoid this potential hazard:

1. Before servicing the filter FOLLOW FILTER DISASSEMBLY INSTRUCTIONS EXACTLY.
2. When installing the filter clamp FOLLOW FILTER REASSEMBLY INSTRUCTIONS EXACTLY.
3. After servicing is complete FOLLOW STARTUP INSTRUCTIONS EXACTLY.
4. NEVER attempt to adjust or tighten the clamp while the system is pressurized or the filter pump is on.
5. Maintain filtration system properly. Replace worn or damaged parts immediately.

WARNING The filter air relief valve and pressure gauge are critical for ensuring safe operation of the equipment. Failure to properly maintain these components could result in death or serious injury.

WARNING Never exceed the maximum operating pressure of any filtration system component. Exceeding these limits could result in a component failing under pressure, and could result in death, serious injury, or property damage.

WARNING It is recommended that pressure tests be kept to the minimum time required by local codes. Stand clear of the filter during pressure testing. Post appropriate warning signs and establish a barrier around the pressurized equipment. Failure to take these precautions could result in death, serious injury, or property damage.

WARNING If using compressed air to winterize the filtration system, ensure the filter air relief valve is open before servicing to prevent violent lid separation and possible death or serious injury.

IMPORTANT SAFETY INSTRUCTIONS

⚠WARNING

Install all system controls (ON/OFF Switches, Timers, Automation Controllers, Valves) so that the system may be serviced and started without placing any portion of the body over or near the pump strainer lid, filter lid, or valve closures. Failure to follow these instructions could result in death or serious injury.

⚠WARNING

Always disconnect power to the equipment at the circuit breaker before servicing this equipment. Ensure the disconnected circuit is locked out or properly tagged so that it cannot be activated during servicing. Failure to do so could result in death or serious injury.

⚠WARNING

Position the filter and filter air relief valve so that purged water is directed away from electrical outlets, circuit breakers, and/or other electrically powered systems. Water discharged from an improperly positioned filter or valve can create an electrical hazard that could result in death, serious injury, or property damage.

GENERAL INFORMATION

GENERAL OPERATION

Read and follow all instructions and warnings before installing or servicing this filter. Proper installation and operation can prevent unnecessary maintenance and prolong the life of the filter and filter components.

⚠WARNING **NEVER attempt to adjust or tighten the clamp while the system is pressurized or the filter pump is on.** Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, or property damage.

1. This filter operates in a safe manner if the clamp assembly has been fully tightened and no air is trapped in the system.
2. Maximum working pressure of this filter is 50 psi [3.5 bar].
3. The pressure gauge is the primary indicator of how the filter is operating. It is important that the pressure gauge is properly maintained. Refer to *Maintaining the Pressure Gauge, page 10* for instructions.
4. Never operate the filter for longer than 3 minutes without diatomaceous earth. Operating without diatomaceous earth will damage filter cartridges.
5. **Clean your filter when pressure reads approximately 10 psi [0.7 bar] higher than the "Original Starting Pressure," or when significant reduction in flow is noticed**.

   Note: When using a variable speed pump the "Original Starting Pressure" will be dependent on the pump speed (RPM) when recording the original operating pressure. Record the "Original Pump RPM" in **TABLE 2, page 6**.

PRESSURE TESTS

Filtration system pressure tests should only be performed by a qualified professional.

The maximum working pressure of this filter is 50 psi [3.5 bar].

⚠WARNING Never exceed the maximum operating pressure of any filtration system component. Exceeding these limits could result in a component failing under pressure, and could result in death, serious injury, or property damage.

⚠WARNING It is recommended that pressure tests be kept to the minimum time required by local codes. Stand clear of the filter during pressure testing. Post appropriate warning signs and establish a barrier around the pressurized equipment. Failure to take these precautions could result in death, serious injury, or property damage.

INSTALLATION

This filter is intended for use in swimming pool applications only. Most state and local codes regulate the construction, installation, and operation of public pools and spas, and the construction of residential pools and spas. Consult your local building and health codes for more information.

⚠WARNING This filter must be installed by a qualified professional in accordance with all applicable codes and ordinances. Improper installation could result in death, serious injury, or property damage.

⚠WARNING Install all system controls (ON/OFF Switches, Timers, Automation Controllers, Valves) so that the system may be serviced and started without placing any portion of the body over or near the pump strainer lid, filter lid, or valve closures. Failure to follow these instructions could result in death or serious injury.

INSTALL LOCATION

1. Mount the filter on a level concrete slab.
2. Position the filter so that safety labels and pressure gauge are visible and easy to read.
3. Position the filter so that plumbing connections, control valve, and drain port are easily accessible.
4. Install system controls in a way that allows the user to stand clear of the filter during system startup.
5. Allow sufficient clearance around the filter for regular inspection of filter clamp tension and positioning. Refer to **FIGURE 1**.
6. Allow sufficient clearance above the filter to remove the filter lid. Refer to **TABLE 1**.
7. Position the filter and filter air relief valve so that purged air and water is directed away from electrical outlets, circuit breakers, or other electrically powered systems.

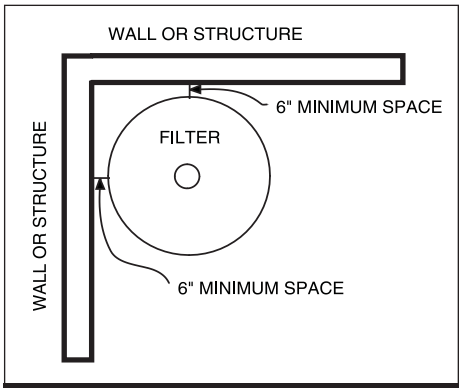


FIGURE 1

MODEL	REQUIRED VERTICAL CLEARANCE
QUAD 60	62 in. [158 cm]
QUAD 80	68 in. [173 cm]
QUAD 100	74 in. [188 cm]

TABLE 1

⚠WARNING

Position the filter and filter air relief valve so that purged water is directed away from electrical outlets, circuit breakers, or other electrically powered systems. Water discharged from an improperly positioned filter or valve can create an electrical hazard that could result in death, serious injury, or property damage.

8. A check valve ahead of the filter will prevent contaminants from draining back into the pool.
9. A check valve between the filter and heater will prevent hot water from draining back into the filter and deforming internal filter components.

PLUMBING REQUIREMENTS

1. Plumbing connections must conform to all applicable codes and ordinances.
2. Refer to local codes and ordinances for backwash, separation tank, and D.E. disposal requirements.
3. Mechanically support piping to prevent strains on filter or valve.
4. Use only PTFE or silicone based lubricant when lubricating O-rings and seals. Use of petroleum based products will damage the equipment.
5. Fittings restrict flow. Use as few fittings as possible.
6. Do not connect the system to a high pressure or city water system.
7. This filter has a different flow pattern than other Pentair D.E. filters (**FIGURE 2**). If replacing a filter or valve, verify flow pattern before permanently installing. Some compatible Pentair valves are:
    a. P/N 261055 - 2” Multiport Valve
    b. P/N 261173 - 1-1/2” Multiport Valve
    c. P/N 261050 - 2” HiFlow Valve
    d. P/N 263064 - 2” PVC Slide Valve

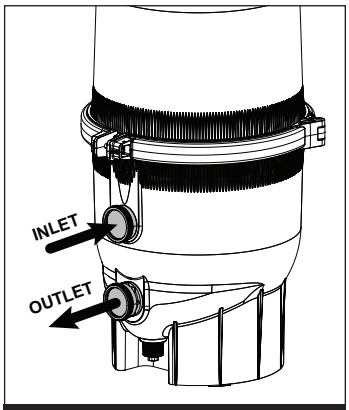


FIGURE 2

INSTALLING THE FILTER AIR RELIEF VALVE

⚠WARNING Position the filter and filter air relief valve so that purged water is directed away from electrical outlets, circuit breakers, or other electrically powered systems. Water discharged from an improperly positioned filter or valve can create an electrical hazard that could result in death, serious injury, or property damage.

⚠WARNING The filter air relief valve and pressure gauge are critical for ensuring safe operation of the equipment. Failure to properly maintain these components could result in death or serious injury.

1. Remove the Air Relief Valve and Pressure Gauge from the accessories pack included with the filter.
2. Ensure the valve O-ring is installed onto the bottom of the air relief valve.
3. Using a 9/16-inch wrench, remove the plug from the top of the air relief valve.
4. Wrap the threads of the pressure gauge with two full rounds of thread tape.
5. Thread the pressure gauge into the top of the air relief valve hand tight.
6. Follow *Startup Instructions, page 6* exactly.

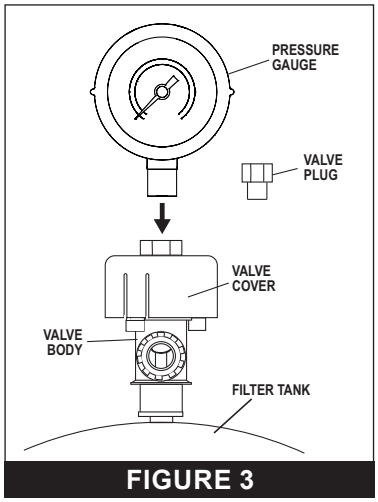


FIGURE 3

MAINTENANCE

Pentair recommends maintenance be performed by a qualified professional.

⚠WARNING **BEFORE SERVICING THE FILTER, THE USER MUST READ AND UNDERSTAND ALL MAINTENANCE AND SAFETY INSTRUCTIONS.** FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN DEATH OR SERIOUS INJURY.

Scan the QR code for a detailed servicing video.

DISASSEMBLING THE FILTER

⚠WARNING **TRAPPED AIR CAN LAUNCH THE LID WITH DEADLY FORCE!** When any part of the filtration system is serviced, air can enter the system and become trapped. Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, or property damage. FOLLOW FILTER DISASSEMBLY INSTRUCTIONS EXACTLY.

1. **BEFORE DISASSEMBLING THE FILTER:**
   a. Disconnect power to the pump and any automatic controls at the circuit breaker;
   b. Turn the top portion of the filter air relief valve 1/4 turn counter-clockwise until it snaps into the OPEN position (**FIGURE 4**);
   c. Stand clear of the filter and wait until all pressure is relieved. **Pressure gauge must read zero (0) psi**.
2. Close suction and return lines.
3. Remove the drain plug from the bottom of the filter and allow the tank to drain.
4. While holding the clamp ends together, use a 3/4-inch socket and wrench to remove the clamp nut counterclockwise. Refer to **FIGURE 5**.

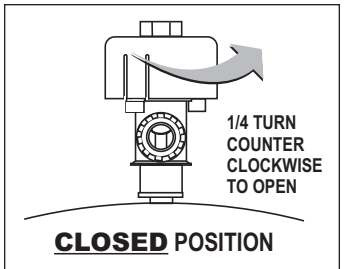


FIGURE 4

⚠CAUTION Hold the clamp halves securely in place while removing the clamp nut. This helps prevent the decompressed clamp from sliding off the tank flanges and damaging plumbing.

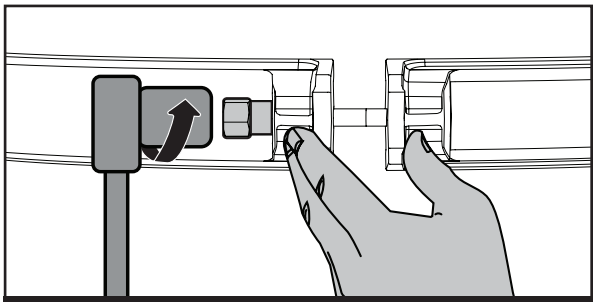


FIGURE 5

5. Remove the clamp ring from the filter and place it aside.
6. Carefully remove the filter lid.

⚠WARNING DO NOT lift the lid by the air relief valve. This may damage the valve and could result in death or serious injury.

Note: If the lid is tightly sealed to the filter base gently shift the filter lid side to side to separate the tank halves. **DO NOT use tools to break the seal. This could damage the tank O-ring.**

7. Place aside the filter lid and tank O-ring in a safe place where they will not be damaged while performing maintenance.

REASSEMBLING THE FILTER

⚠WARNING **TRAPPED AIR CAN LAUNCH THE LID WITH DEADLY FORCE!** When any part of the filtration system is serviced, air can enter the system and become trapped. Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, or property damage. FOLLOW FILTER REASSEMBLY INSTRUCTIONS EXACTLY.

1. Verify power to the pump and any automatic controls is disconnected at the circuit breaker.
2. Ensure the tank O-ring is clean and undamaged, then seat it along the flange of the filter base.
3. Place the filter lid onto the filter base and verify the O-ring is not pinched between the filter lid and base.

   ⚠WARNING DO NOT lift the lid by the air relief valve. This may damage the valve and could result in death or serious injury.

4. Position the clamp ring over both the upper and lower tank flanges, then bring the ends of the clamp together.
5. While compressing the clamp with a pair of *Tongue-and-Groove Pliers (1)*, start the *Clamp Nut (2)* by hand. Refer to **FIGURE 6**.
6. Use a *3/4-inch Socket and Wrench (3)* to tighten the *Clamp Nut (4)* between 16 and 18 ft-lbs. [22-24 Nm]. Refer to **FIGURE 7**.
7. Verify the gap between the ends of the clamp is between 1/2-inch and 3/4-inch [13-19 mm]. Refer to **FIGURE 7**.

   ⚠WARNING **The filter clamp must be fully tightened, according the instructions above, to prevent the lid from launching with deadly force during system restart.**

8. Reinstall the drain plug.
9. Follow *Startup Instructions, page 6* exactly.

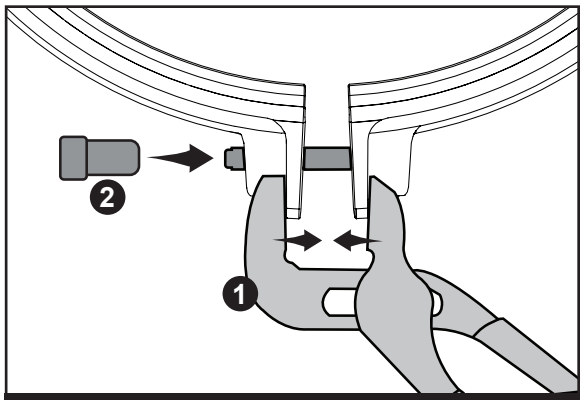


FIGURE 6

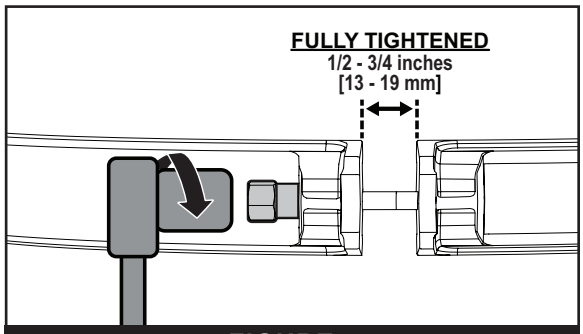


FIGURE 7

STARTUP INSTRUCTIONS

⚠WARNING **TRAPPED AIR CAN LAUNCH THE LID WITH DEADLY FORCE!** When any part of the filtration system is serviced, air can enter the system and become trapped. Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, or property damage. FOLLOW STARTUP INSTRUCTIONS EXACTLY.

1. **BEFORE STARTING THE PUMP, CONFIRM THE FOLLOWING:**
   a. Gap between the ends of the clamp is between a 1/2-inch and 3/4-inch [13-19 mm];
   b. Filter air relief valve is open.
   If not, turn the top portion of the filter air relief valve 1/4 turn counter-clockwise until it snaps into the OPEN position (**FIGURE 8**).
   c. Suction and return lines are open.
2. Reestablish power to the pump and any automatic controls at the circuit breaker.
3. Stand clear of the filter, then start the pump.
4. Verify proper operation. The system is not operating properly if:
   a. A solid stream of water does not appear from the valve within approximately 30 seconds of pump prime.
   b. Water leaks from under the clamp.
   c. Pressure gauge indicates pressure before water flows from the valve.

   IMPORTANT! If any of these conditions exist, immediately disconnect power to pump and any automatic controls. NEVER ATTEMPT TO ADJUST CLAMP WHILE PUMP IS RECEIVING POWER!

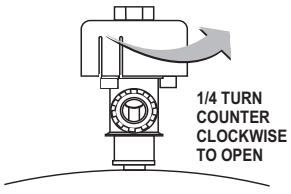


FIGURE 8

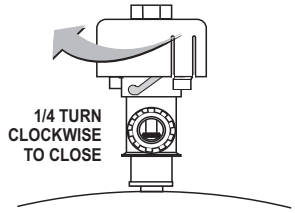


FIGURE 9

5. After proper operation is ensured, turn the top portion of the filter air relief valve 1/4 turn clockwise until it snaps into the CLOSED position (**FIGURE 9**).
6. The first time the system is started, record the following information in **TABLE 2**:
   a. Original Starting Pressure
   b. Pressure at which the filter should be cleaned/serviced. This is approximately 10 psi [0.7 bar] higher than the "Original Starting Pressure".
   c. If the system includes a variable speed pump, record Original Pump RPM at startup.

ORIGINAL STARTING PRESSURE IS: _____ psi/bar.
SERVICE THE CARTRIDGES AT: _____ psi/bar.
ORIGINAL PUMP RPM: _____ RPM.
(for Variable Speed Pumps Only)

TABLE 2

COATING CARTRIDGES WITH DIATOMACEOUS EARTH

⚠WARNING Follow all manufacturer instructions when handling diatomaceous earth (D.E.). To avoid breathing dust, wear an NIOSH/MSHA approved dust mask, as well as safety glasses to avoid dust contacting the eyes. Failure to properly handle diatomaceous earth could result in death or serious injury.

The filter cartridges must be pre-coated with diatomaceous earth (D.E. or diatomite) to ensure proper and efficient filtration and operation. Only use diatomite specifically marked for use with swimming pools and spas.

MODEL	REQUIRED DIATOMITE
QUAD 60	6 lbs. [2.7 kg]
QUAD 80	8 lbs. [3.6 kg]
QUAD 100	10 lbs. [4.5 kg]

TABLE 3

1. Mix the required amount of diatomite (**TABLE 3**) with sufficient water in a bucket.
2. **If Using a Slide Valve:** Twist valve handle to unlock, then raise the handle as far as it will go. Lock the slide in place.
   If Using Multiport Valve: Place valve in FILTER or VACUUM TO POOL position.
3. Follow *Startup Instructions, page 6* exactly.
4. With the pump running and skimmer valve open, pour the diatomite slurry directly into the skimmer.
5. Your filter is now operational. Note the original starting pressure and record it in **TABLE 2**.
   Note: When using a variable speed pump the “Original Starting Pressure” will be dependent on the pump speed (RPM). When recording the original operating pressure, also record the “Original Pump RPM” in **TABLE 2**.

BACKWASHING THE FILTER (WITHOUT SEPARATION TANK)

The filter pressure gauge is the primary way to determine when a filter needs to be backwashed or manually cleaned. Backwash your filter when pressure reads approximately 10 psi [0.7 bar] higher than the "Original Starting Pressure," or when significant reduction of flow is noticed.

⚠WARNING Ensure backwash and control valves are properly maintained according to instructions provided in the valve manual. An improperly maintained valve could produce risk of death or serious injury.

1. **Shut off pump and relieve all pressure from the filtration system.**
    a. Shut off power to the pump and any automatic controls at the circuit breaker.
    b. Open the filter air relief valve by turning the top of the valve 1/4 turn counterclockwise until it snaps into the full OPEN position.
    c. Stand clear of the filter and wait until all pressure is relieved. **Pressure gauge must read zero (0) psi**.
2. Place skimmer valve in full OPEN position and close main drain line.
3. Remove filter pump lid and cleaner the strainer basket.
4. Reinstall strainer basket and reinstall the pump lid.
5. **IF SLIDE VALVE IS INSTALLED:**
    a. Push the slide valve handle down as far as it will go and lock upper pin in cap.
    b. Open the filter air relief valve.
    c. Stand clear of the filter, then start the pump.
    d. After a steady stream of water appears, close the filter air relief valve.
    e. When water from discharge/waste line flows clear, shut off pump.
    f. Place the slide valve in the FILTER position.
    g. Proceed to Step 6.

    IF MULTIPORT VALVE IS INSTALLED:
    a. Place the multiport valve in the BACKWASH position.
    b. Open the filter air relief valve.
    c. Stand clear of the filter tank, then start the pump.
    d. After a steady stream of water appears, close the filter air relief valve.
    e. When water from the discharge/waste line flows clear, shut off pump.
    f. Place the multiport valve in the OPEN position.
    g. Proceed to Step 6.
6. Follow *Startup Instructions, page 6* exactly.
7. Introduce the recommended amount of D.E. according to *Coating the Filter Cartridges with Diatomaceous Earth, page 6*. Your filter is now in operation.

BACKWASHING THE FILTER (WITH SEPARATION TANK)

The filter pressure gauge is the primary way to determine when a filter needs to be backwashed or manually cleaned. Backwash your filter when pressure reads approximately 10 psi [0.7 bar] higher than the "Original Starting Pressure," or when significant reduction of flow is noticed.

⚠WARNING Ensure backwash and control valves are properly maintained according to instructions provided in the valve manual. An improperly maintained valve could produce risk of death or serious injury.

1. **Shut off pump and relieve all pressure from the filtration system.**
    a. Shut off power to the pump and any automatic controls at the circuit breaker.
    b. Open the filter air relief valve by turning the top of the valve 1/4 turn counterclockwise until it snaps into the full OPEN position.
    c. Stand clear of the filter and wait until all pressure is relieved. **Pressure gauge must read zero (0) psi**.
2. Place skimmer valve in full open position and close main drain line.
3. Remove filter pump lid and cleaner the strainer basket.
4. Reinstall strainer basket and reinstall the pump lid.
5. **IF SLIDE VALVE IS INSTALLED:**
    a. Push the valve handle down as far as it will go and lock upper pin in cap.
    b. Open both the filter and separation tank air relief valves.
    c. Stand clear of the filter, then start the pump.
    d. After a steady stream of water appears, close both the filter and separation tank air relief valves.
    e. When water from discharge/waste line flows clear, shut off pump.
    f. Open separation tank air relief valve and wait for water to stop draining from the valve.
    g. Open the separation tank according to the instructions given in the separation tank manual.
    h. Empty the separation bag and dispose of spent D.E. according to local codes and ordinances.
    i. Reinstall the separation bag, tank lid and clamp according to the instructions given in the separation tank manual.
    j. Place the Slide Valve in the FILTER position.
    k. Proceed to Step 6.

    IF MULTIPORT VALVE IS INSTALLED:
    a. Place the multiport valve in the BACKWASH position.
    b. Open the separation tank air relief valve.
    c. Stand clear of the filter tank, then start the pump.
    d. After a steady stream of water appears, close both the filter and separation tank air relief valves.
    e. When water from discharge/waste line flows clear, shut off pump.
    f. Open separation tank air relief valve and wait for water to stop draining from the valve.
    g. Open the separation tank according to the instructions given in the separation tank manual.
    h. Empty the separation bag and dispose of spent D.E. according to local codes and ordinances.
    i. Reinstall the separation bag, tank lid and clamp according to the instructions given in the separation tank manual.
    j. Place the multiport valve in the OPEN position.
    k. Proceed to Step 6.
6. Follow *Startup Instructions, page 6* exactly.
7. Introduce the recommended amount of D.E. according to *Coating the Filter Cartridges with Diatomaceous Earth, page 6*. Your filter is now in operation.

MANUALLY CLEANING CARTRIDGES

Filter cartridges may require manual cleaning when pressure remains high after backwashing, or when winterizing your filter.

⚠WARNING

Trapped air can launch the lid with deadly force! When any part of the filtration system is serviced, air can enter the system and become trapped. Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, or property damage. To avoid this potential hazard:

1. Before servicing the filter FOLLOW FILTER DISASSEMBLY INSTRUCTIONS EXACTLY.
2. When installing the filter clamp FOLLOW FILTER REASSEMBLY INSTRUCTIONS EXACTLY.
3. After servicing is complete FOLLOW STARTUP INSTRUCTIONS EXACTLY.
4. NEVER attempt to adjust or tighten the clamp while the system is pressurized or the filter pump is on.
5. Maintain filtration system properly. Replace worn or damaged parts immediately.

TO MANUALLY CLEAN THE FILTER CARTRIDGES:

1. Follow *Disassembling the Filter, page 4* exactly.
2. Remove the Compression Spring/Adapter from the Top Manifold. Refer to **FIGURE 10**.
3. Remove the Top Manifold (**FIGURE 10**) from the filter cartridges and lay the manifold aside.
4. Carefully remove each cartridge.
5. Using a garden hose with a straight flow nozzle, hold the nozzle at a 45-degree angle to the cartridge and wash the entire cartridge from top to bottom. Refer to **FIGURE 11**.

   Note: Pay special attention to the area between pleats.
6. Wash out the inside of the filter tank and bottom manifold. Water and debris will drain out through the drain plug.
7. Inspect the O-ring around the edge of the filter flange. The O-ring must be clean and be evenly seated around the entirety of the filter flange.
8. Reinstall the bottom manifold, cartridges, and top manifold, ensuring the spring and standpipe assembly are retained on the top manifold.
9. Follow *Reassembling the Filter, page 5* exactly.

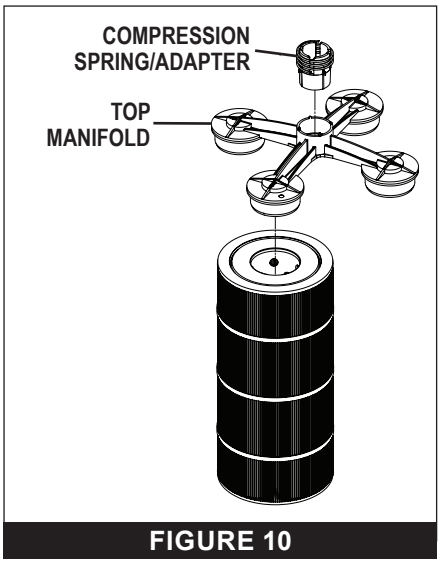


FIGURE 10

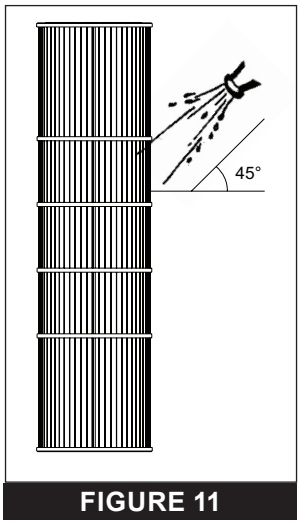


FIGURE 11

MAINTAINING THE PRESSURE GAUGE

⚠WARNING The filter air relief valve and pressure gauge are critical for ensuring safe operation of the equipment. Failure to properly maintain these components could result in death or serious injury.

Replace pressure gauge if any of the following conditions exist:

1. Pressure gauge does not read zero (0) psi when pressure is relieved and system is turned off.
2. Pressure gauge does not read correctly while system is operating.
3. Pressure gauge is difficult to read or damaged in any way.

CLEANING THE AIR RELIEF VALVE

⚠WARNING The filter air relief valve and pressure gauge are critical for ensuring safe operation of the equipment. Failure to properly maintain these components could result in death or serious injury.

1. **Shut off pump and relieve all pressure from the filtration system.**
   a. Shut off power to the pump and any automatic controls at the circuit breaker.
   b. Open the filter air relief valve by turning the top of the valve 1/4 turn counterclockwise until it snaps into the full open position.
   c. Stand clear of the filter and wait until all pressure is relieved. **Pressure gauge must read zero (0) psi**.
2. With the air relief valve installed, pull out the locking tabs and unlock the valve stem and cover assembly from the valve body counter-clockwise (**FIGURE 12**).
3. Pull the valve stem and cover assembly away from the valve body.
4. Clean and check the valve stem and body:
   a. Remove any debris.
   b. Ensure the air passage is open by inserting a 5/16-inch drill bit through the valve body.
   c. Ensure the valve stem O-rings are in good condition, properly positioned, and lubricated with a silicone-based lubricant.

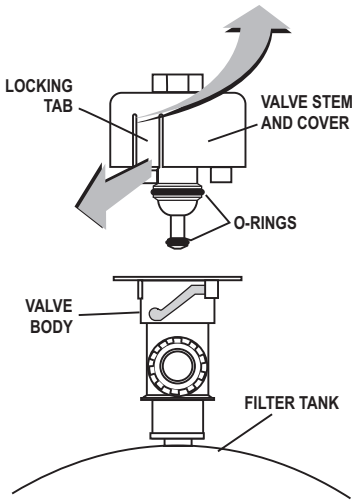


FIGURE 12

NOTICE Use only PTFE or silicone based lubricant when lubricating O-rings and seals. Use of petroleum based products will damage the equipment.

5. Reinstall the valve stem and cover assembly by pressing downwards and turning clockwise until it snaps into position on the valve body.

WINTERIZING THE SYSTEM

In milder climates, when temporary freezing conditions may occur, ensure the filtration system operates continuously until freezing conditions are no longer a concern.

If prolonged freezing conditions are expected, the filter should be fully drained and cartridges should be removed. Follow the steps below to properly winterize the filter.

1. Follow instructions given in *Disassembling the Filter, page 4* exactly.
2. Follow the instructions given in *Manually Cleaning Cartridges, page 9.*
3. Store the cartridges and drain plug in a location where they will be protected from freezing conditions.
4. Follow the instructions given in *Reassembling the Filter, page 5*.

⚠WARNING If using compressed air to winterize the filtration system, ensure the filter air relief valve is open before servicing to prevent violent lid separation and possible death or serious injury.

TROUBLESHOOTING

⚠WARNING **Trapped air can launch the lid with deadly force!** When any part of the filtration system is serviced, air can enter the system and become trapped. Trapped air can cause the filter lid to violently separate from the filter base, and could result in death, serious injury, or property damage. To avoid this potential hazard:

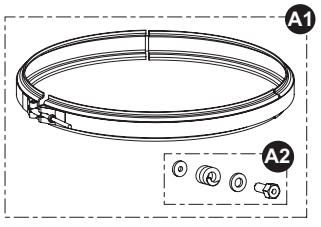
1. Before servicing the filter FOLLOW FILTER DISASSEMBLY INSTRUCTIONS EXACTLY.
2. When installing the filter clamp FOLLOW FILTER REASSEMBLY INSTRUCTIONS EXACTLY.
3. After servicing is complete FOLLOW STARTUP INSTRUCTIONS EXACTLY.
4. NEVER attempt to adjust or tighten the clamp while the system is pressurized or the filter pump is on.
5. Maintain filtration system properly. Replace worn or damaged parts immediately.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTIONS
Filter Leaks During Startup	Tank O-ring pinched between filter halves	1. Follow *Disassembling the Filter, page 4* exactly to disassemble the filter. 2. Remove the O-ring and inspect for damage. 3. If O-ring is damaged, replace O-ring. 4. Follow *Reassembling the Filter, page 5* exactly to properly reassemble the filter.
	Clamp improperly installed	1. Follow *Disassembling the Filter, page 4* exactly to disassemble the filter. 2. Follow *Reassembling the Filter, page 5* exactly to ensure the clamp is reinstalled properly.
Pressure Remains High After Backwash	Filter requires additional backwash	1. Backwash filter again and check pressure reading. 2. If pressure remains high after multiple backwashes, continue to CARTRIDGES REQUIRE CLEANING below.
	Cartridges require cleaning	1. Follow *Manually Cleaning Cartridges, page 9* to manually clean the cartridges. 2. If pressure remains high after manual cleaning, tablet soak the cartridges. 3. If pressure remains high after tablet soaking, continue to CARTRIDGES REQUIRE REPLACEMENT below.
	Cartridges require replacement	Replace cartridges if necessary. Refer to *REPLACEMENT PARTS, page 12* to determine correct replacement cartridge.
Short Filtering Cycles Between Cleanings	Pool water contains high amounts of hard minerals or other particles	Ensure the cartridges have been coated with the proper amount of diatomite. Refer to *Coating Cartridges with Diatomaceous Earth, page 6* for recommended amounts.
Pressure Drops at Gauge	Clogged skimmer or pump strainer baskets	Clean skimmer and pump strainer baskets.
	Stalled pump	Shut off power to filter pump and any automatic controls, then attempt to manually turn the pump motor shaft. a. If motor shaft turns freely, disassemble the pump according to instructions in the pump manual and inspect the impeller. b. If the motor shaft does not turn freely, there is likely an obstruction in the suction line or the motor has locked up. Refer to the pump manual for instructions.
Diatomaceous Earth Continuously Enters Pool	Torn/damaged filter cartridge, air bleed cap screen or manifold	Inspect these components for tears, holes, cracks, or other damage. Replace components if necessary.
	Cartridges improperly installed	Ensure cartridges are positioned vertically and properly secured between the top manifold and bottom manifolds.

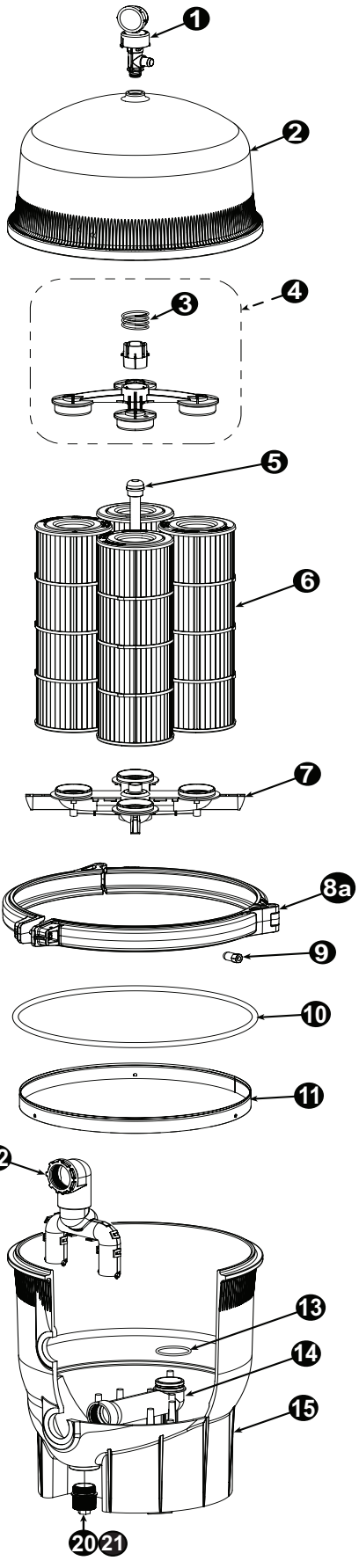
REPLACEMENT PARTS

ITEM	P/N	DESCRIPTION
1	190058z	Pressure gauge
1	98209800	Air Relief Valve w/ Pressure Gauge
2	179296	Tank Lid, QUAD 60
	179258	Tank Lid, QUAD 80
	179260	Tank Lid, QUAD 100
3	178616z	Compression Spring
4	170026	Top Manifold Assembly
5	170029	Air Bleed Assembly, QUAD 60
	170028	Air Bleed Assembly, QUAD 80
	178583	Air Bleed Assembly, QUAD 100
6	178654z	Cartridge, QUAD 60
	178655z	Cartridge, QUAD 80
	178656z	Cartridge, QUAD 100
7	170040	Bottom Manifold
8a	198102	Cast Clamp Assembly
8b	Refer to *Spring Clamp Kits* table	Spring Clamp Assembly
9	198098z	Clamp Nut
10	39010200	O-ring, Tank
11	195339	Backup Ring
12	196024s	Diverter Assembly
13	354571z	O-ring, Outlet Pipe
14	170036	Outlet Pipe
15	195999	Tank Base
16	86006900z	O-ring, Bulkhead
17	194801z	Bulkhead, Inlet
18	178575z	Bulkhead, Outlet
19	271096	Bulkhead Adapter Kit, 2” OD, White
	270004	Bulkhead Adapter Kit, 2” OD, Black
	270100z	Bulkhead Adapter Kit, 2” ID, Black
	274426z	Bulkhead Union Kit, 2-1/2” ID, White
20	191474z	O-ring, Drain Plug
21	190030z	Drain Plug w/ O-ring

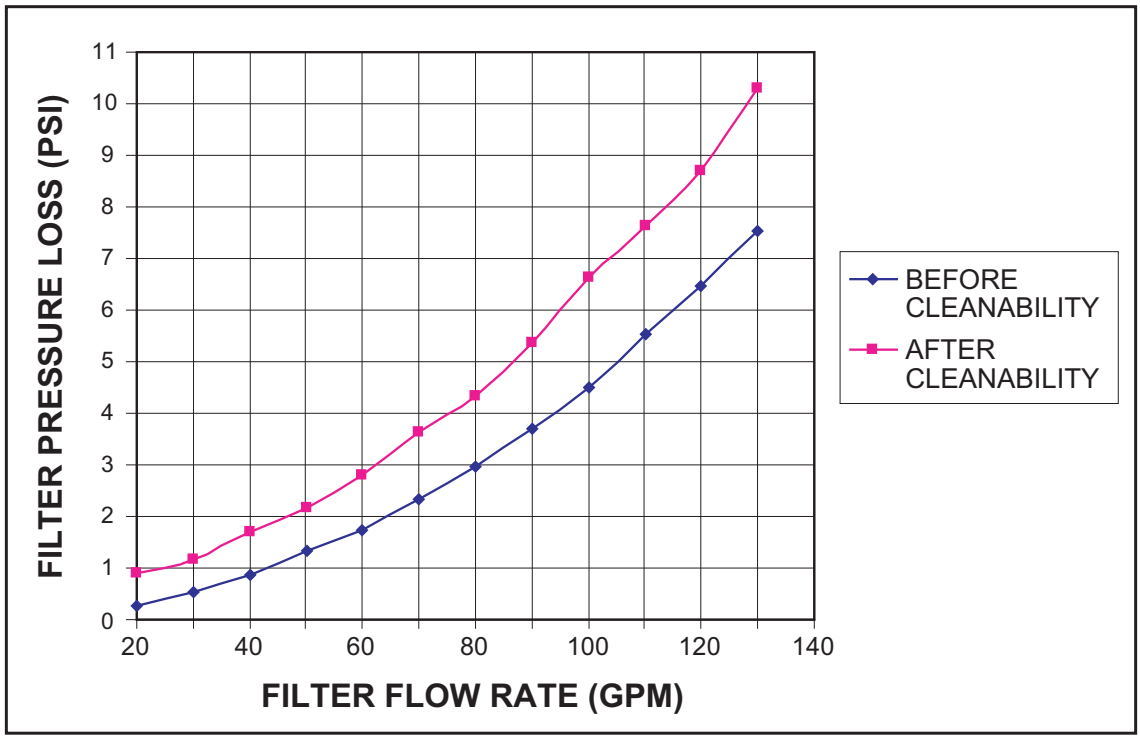
SPRING CLAMP KITS (Item 8b)		
A1	190003	Spring Clamp Assembly
A2	53108900z	Hardware Kit



Note: Spring clamps and kits are only compatible with filters manufactured before August 2025



PRESSURE LOSS CURVES



TURNOVER RATES

MODEL	FILTER AREA ft² [m²]	MAXIMUM FLOW RATE gpm [lpm]		TURNOVER RATES gallons [liters]		
		Residential	Commercial	6 hours	8 hours	12 hours
Quad 60	60 [5.6]	120 [454]	150 [568]	43,200 [163,530]	57,600 [218,040]	86,400 [327,060]
Quad 80	80 [7.4]	160 [606]	150 [568]	57,600 [218,040]	76,800 [290,720]	115,200 [436,079]
Quad 100	100 [9.3]					

NOTE: Actual system flow will vary based on plumbing size and other system components.

NOTES

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PENTAIR POOL

P/N 179263 REV. A 6/6/25