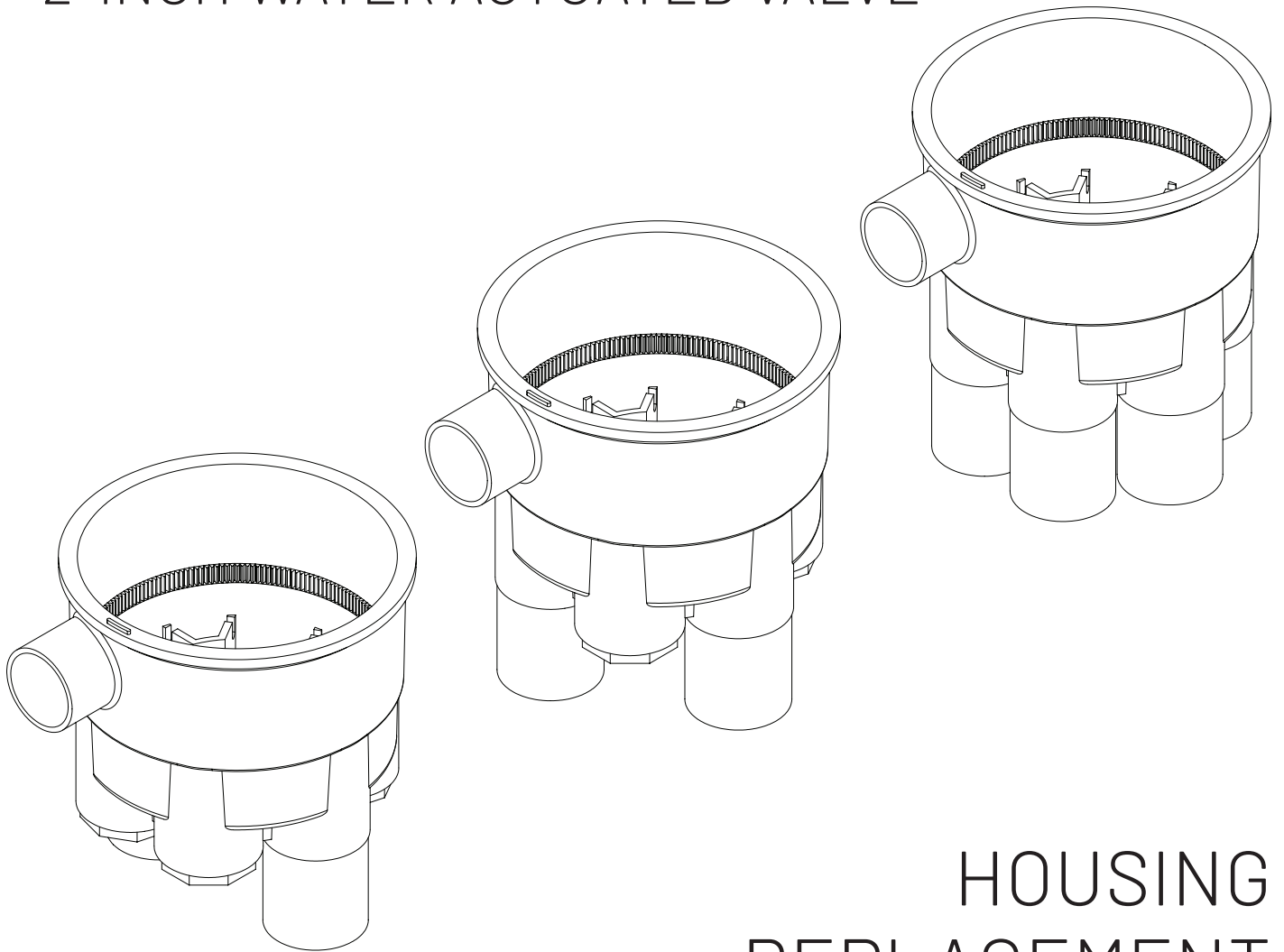




WAVE

2-INCH WATER ACTUATED VALVE



HOUSING REPLACEMENT GUIDE

IMPORTANT SAFETY INSTRUCTIONS
READ, UNDERSTAND AND FOLLOW ALL WARNINGS AND
INSTRUCTIONS
SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

READ, UNDERSTAND AND FOLLOW ALL WARNINGS AND INSTRUCTIONS

SAVE THESE INSTRUCTIONS



This guide provides important installation, operation and maintenance instructions related to this equipment. Consult Pentair or a qualified pool professional with any questions.

Attention Installer: This guide contains important information that helps ensure proper and safe installation, operation and maintenance of this equipment. Ensure this guide is given to the pool owner and/or operator of this equipment after installation.

Attention User: This guide contains important information that helps ensure proper and safe operation and maintenance of this equipment. 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, look for one of the following signal words and be aware of the potential for personal injury.



DANGER Warns of hazards that may cause death, serious personal injury, or major property damage if ignored.



WARNING Warns of hazards that may cause serious personal injury or major property damage if ignored.




CAUTION Warns of hazards that may or can cause minor personal injury or property damage if ignored.

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.

Consumer Information and Safety

This valve is designed and manufactured to provide many years of safe and reliable service when installed, operated and maintained according to the information in this manual and the installation codes referred to in later sections.

Throughout the manual, safety warnings and cautions are identified by the “” symbol. Be sure to read and comply with all of the warnings and cautions.



WARNING Before installing this product, read and follow all warning notices and instructions which are included. Failure to follow safety warnings and instructions can result in severe injury, death, or property damage. Call (800) 831-7133 for additional free copies of these instructions or replacement safety labels.



WARNING Do not operate the valve until you have read and understand clearly all the operating instructions and warning messages for all equipment that is a part of the pool circulating system. The following instructions are intended as a guide for initially operating the valve in a general pool installation. Failure to follow all operating instructions and warning messages can result in property damage or severe personal injury or death.



HAZARDOUS PRESSURE: STAND CLEAR OF PUMP AND FILTER DURING START UP.

Circulation systems operate under high pressure. When any part of the circulating system (i.e. locking ring, pump, filter, valves, etc.) is serviced, air can enter the system and become pressurized. Pressurized air can cause the pump housing cover, filter lid, and valves to violently separate which can result in severe personal injury or death. Filter tank lid and strainer cover must be properly secured to prevent violent separation. Stand clear of all circulation system equipment when turning on or starting up pump.

Before servicing equipment, make note of the filter pressure. Be sure that all controls are set to ensure the system cannot inadvertently start during service. Turn off all power to the pump. **IMPORTANT: Place filter manual air relief valve in the open position and stand clear of the filter until all pressure has been relieved and the pressure gauge reads 0 psi.**

Before starting the system, fully open the manual air relief valve and place all system valves in the “open” position to allow water to flow freely from the tank and back to the tank. Stand clear of all equipment and start the pump.

IMPORTANT: Do not close filter manual air relief valve until all pressure has been discharged from the valve and a steady stream of water appears. Observe filter pressure gauge and be sure it is not higher than the pre-service condition.



WARNING Due to the potential risk that can be involved, it is recommended that the pressure test be kept to the minimum time required by the local code. Do not allow people to work around the system when the circulation system is under pressure test. Post appropriate warning signs and establish a barrier around the pressurized equipment. If the equipment is located in an equipment room, lock the door and post a warning sign.

Never attempt to adjust any closures or lids or attempt to remove or tighten bolts when the system is pressurized. These actions can cause the valve to separate and could cause severe personal injury or death if they were to strike a person.



WARNING This valve must be installed by a qualified pool serviceman in accordance with all applicable local codes and ordinances. Improper installation could result in death or serious injury to pool users, installers, or others and may also cause damage to property.



WARNING Always disconnect power to the pool circulating system at the circuit breaker before servicing the valve. Ensure that the disconnected circuit is locked out or properly tagged so that it cannot be switched on while you are working on the valve. Failure to do so could result in serious injury or death to serviceman, pool users or others due to electric shock.



WARNING DO NOT permit children to use this product.

IMPORTANT SAFETY INSTRUCTIONS

READ, UNDERSTAND AND FOLLOW ALL WARNINGS AND INSTRUCTIONS

SAVE THESE INSTRUCTIONS

⚠ WARNING

THIS SYSTEM OPERATES UNDER HIGH PRESSURE

When any part of the circulating system, (e.g., closure, pump, filter, valve(s), etc.), is serviced, air can enter the system and become pressurized. Pressurized air can cause system components to separate which can result in severe injury, death, or property damage. To avoid this potential hazard, follow these instructions:



1. Let air and pressure out of system before and after servicing.
 - a. **Shut off pump and RELIEVE PRESSURE by opening the manual air/pressure relief valve at the filter before servicing, including before tightening the clamp bolt. Refer to the filter manual for detailed instructions.**
 - b. **The air/pressure relief valve must remain open until water comes out**, allowing all air out of the system.
2. Install lid and clamp ring properly.
 - a. Follow the instructions given in the *Wave Valve Installation and User's Guide* exactly. Tap the clamp with a rubber mallet or similar tool after clamp installation to ensure proper seating.
3. Maintain circulation system properly to help prevent air entering the system.
 - a. Replace worn or damaged parts immediately (e.g., closure, pressure gauge, valve(s), O-rings, etc.).
 - b. Maintain proper water level in the pool or spa.
4. Verify that the return line to the pool is unobstructed. Ensure return valves are open and any winterizing plugs are removed.

⚠ WARNING

AVOID DAMAGING SYSTEM

Never Exceed Maximum Pressure of System Components. Be sure the maximum pressure of the filter system does not exceed the maximum pressure of any components within the system (typically stated on each component), including during hydrostatic or external leak tests. Exceeding the maximum pressure of a component can result in that component failing. If you do not know the pool or spa system operating pressure, install an ASME approved automatic Pressure Relief or Pressure Regulator in the circulation system set to the lowest working pressure of any of the components in the system.

⚠ WARNING

Certain codes may require pressure testing the system. Performing pressure tests increases the risk of component failure. Due to the potential risk that can be involved, keep the pressure test to the minimum time required by the local code and take precautions. If pressure testing is necessary, follow these precautions:



1. Keep people away.
 - a. Do not allow people to work around the system when the circulation system is under pressure test. Post appropriate warning signs and establish a barrier around the pressurized equipment. If the equipment is located in an equipment room, lock the door and post a warning sign.
2. Never exceed maximum operating pressure.
 - a. When performing hydrostatic pressure tests or when testing for external leaks of the completed filtration and plumbing system, ensure that the Maximum Pressure that the filtration system will be subjected to does not exceed the maximum working pressure of any of the components contained within the system.

⚠ CAUTION

For Installation of Electrical Controls at Equipment Pad (ON/OFF Switches, Timers and Automation Load Center)

Install all electrical controls at equipment pad, such as on/off switches, timers, and control systems, etc. to allow the operation (startup, shut-down, or servicing) of any pump or filter so the user does not place any portion of his/her body over or near the pump strainer lid, filter lid or valve closures. This installation should allow the user enough space to stand clear of the filter and pump during system start-up, shut down or servicing of the system filter.



CUSTOMER SERVICE / TECHNICAL SUPPORT

Hours: 8:00AM to 7:30PM EST (5:00AM - 4:30PM PST)

Call: (800) 831-7133

Visit: www.pentair.com

Fax: (800) 284-4151

TABLE OF CONTENTS

IMPORTANT SAFETY INSTRUCTIONS 1-3
INSTALLATION 4-6
DIMENSIONS 7
REPLACEMENT PARTS 8

INSTALLATION

IMPORTANT:

Make all plumbing connections in accordance with local plumbing and building codes.

All valve plumbing must be a minimum of 2-inch schedule 40 PVC or equivalent.

When gluing the 2-inch schedule 40 PVC to the Wave Valve, use only a PVC-to-PVC pipe cement.

WARNING

THIS SYSTEM OPERATES UNDER HIGH PRESSURE

When any part of the circulating system, (e.g., closure, pump, filter, valve(s), etc.), is serviced, air can enter the system and become pressurized. Pressurized air can cause system components to separate which can result in severe injury, death, or property damage. To avoid this potential hazard, follow these instructions:



1. Let air and pressure out of system before and after servicing.
 - a. **Shut off pump and RELIEVE PRESSURE by opening the manual air/pressure relief valve at the filter before servicing, including before tightening the clamp bolt. Refer to the filter manual for detailed instructions.**
 - b. **The air/pressure relief valve must remain open until water comes out, allowing all air out of the system.**
2. Install lid and clamp ring properly.
 - a. Follow the instructions given in the *Wave Valve Installation and User's Guide* exactly. Tap the clamp with a rubber mallet or similar tool after clamp installation to ensure proper seating.
3. Maintain circulation system properly to help prevent air entering the system.
 - a. Replace worn or damaged parts immediately (e.g., closure, pressure gauge, valve(s), O-rings, etc.).
 - b. Maintain proper water level in the pool or spa.
4. Verify that the return line to the pool is unobstructed. Ensure return valves are open and any winterizing plugs are removed.

1. Locate the existing Wave Valve.
2. With the pump shut OFF, remove the band clamp and lid from the 2-inch T-valve.
3. Remove all the internal parts (impeller, two shims, gear plate assembly, two stainless steel anti-friction washers and the center shaft) and place these parts in a box or plastic bag.
4. With the extractor tool (**Figure 1: P/N 235090 - T-Valve Install & Removal Tool** - sold separately), remove each T-valve assembly from the valve base.
5. Raise the T-valve assembly in a vertical position and insert the extractor tool under the valve.
6. Pry the assembly out of the pin seats by pulling the extractor tool rearward. Refer to **Figure 2** below.

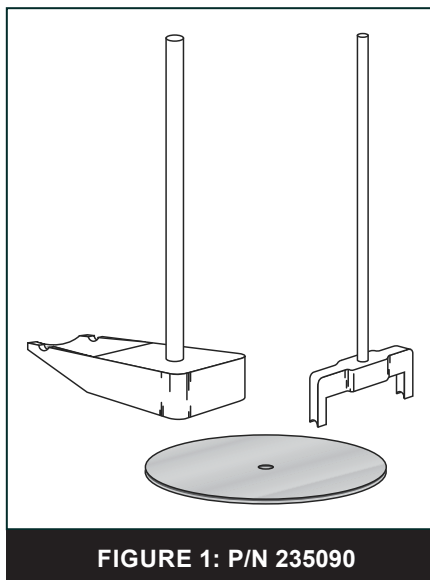


FIGURE 1: P/N 235090

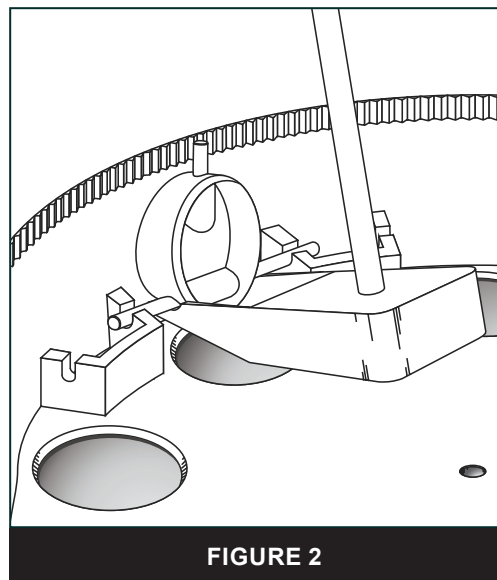


FIGURE 2

INSTALLATION (continued)

7. Cut and remove the existing valve.
8. For ease of installation, it is highly recommended to use the 2-inch 6-port valve plumbing template (P/N 230156) to properly align the pipe for the new housing.
9. Re-install the 2, 3, or 6 T-valve assemblies.
10. Place the elevation tool (disc in image) at the bottom of the valve base. This can be used to give a slight lift to the six T-valves during reinstalling.
11. Now place the pins of one of the T-valve assemblies into the notches above one of the valve seats, allowing the front of the T-valves to rest on the elevation tool.

Note: Failure to lift the T-valves during re-installation will result in damage to the valve seats and the T-valve assembly.

12. Place the forked ends of the T-valve installation tool on the pins resting on the outside of the notches.
13. With a mallet, firmly tap the top of the installation tool, driving the pins down into the hinge pins until they are fully seated. Test the assembly to make sure it raises and lowers freely.
14. Re-install the rest of the valve internals (center shaft, two seal protection discs, gear plate assembly, two stainless steel washers, and the impeller).
15. Remove the cam from the gear plate assembly and install it over the center shaft.

Note: If multiple valve configurations are present, make sure the correct cam is added to the correct valve.

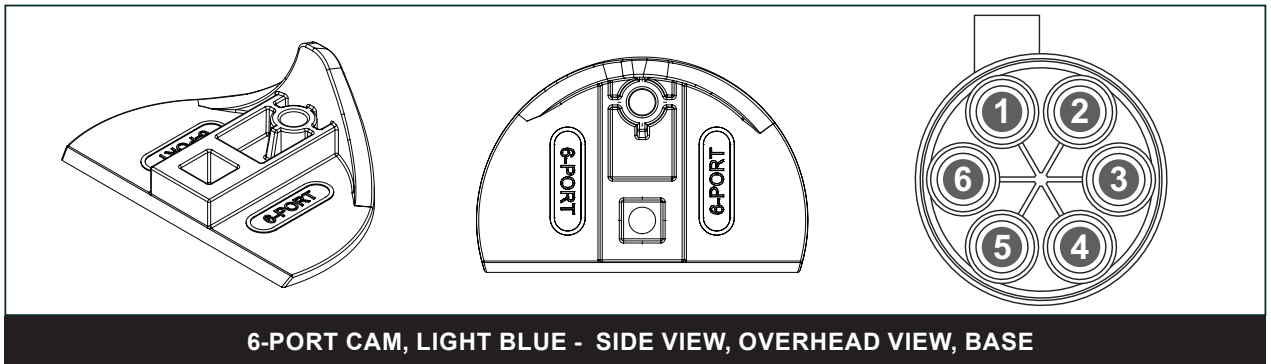
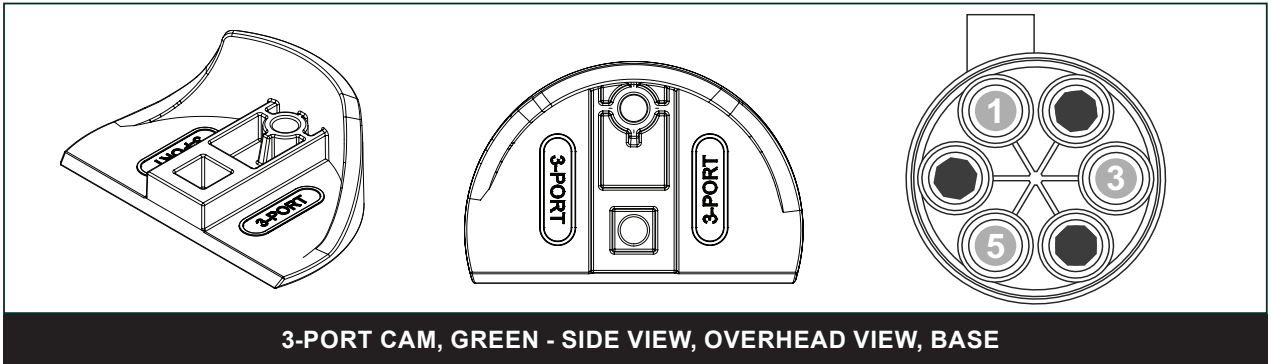
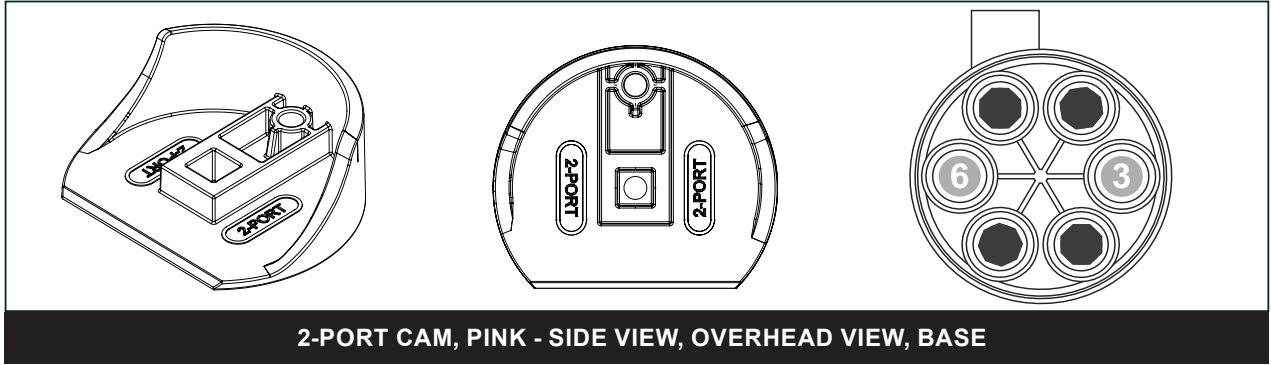
⚠ WARNING



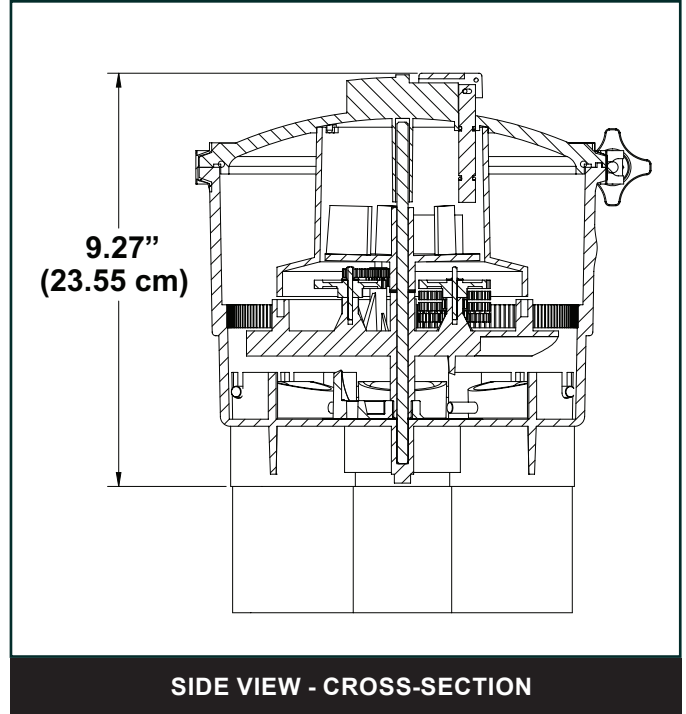
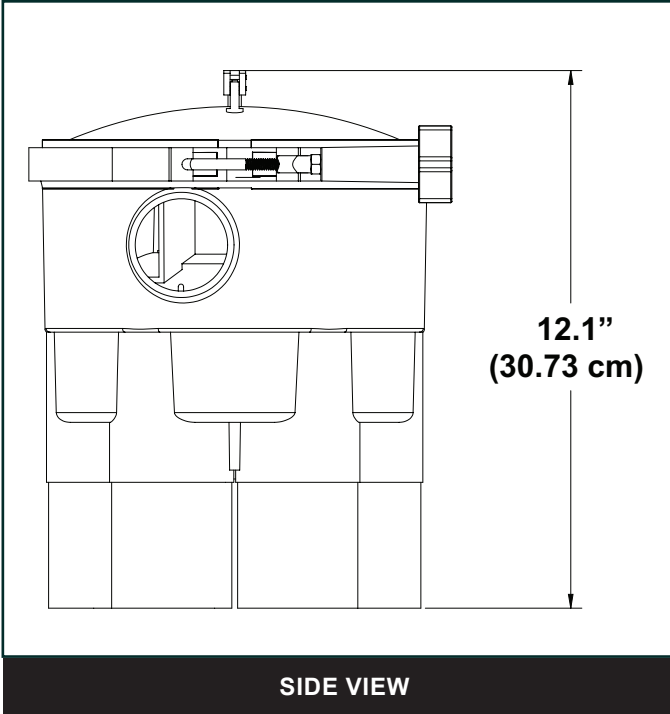
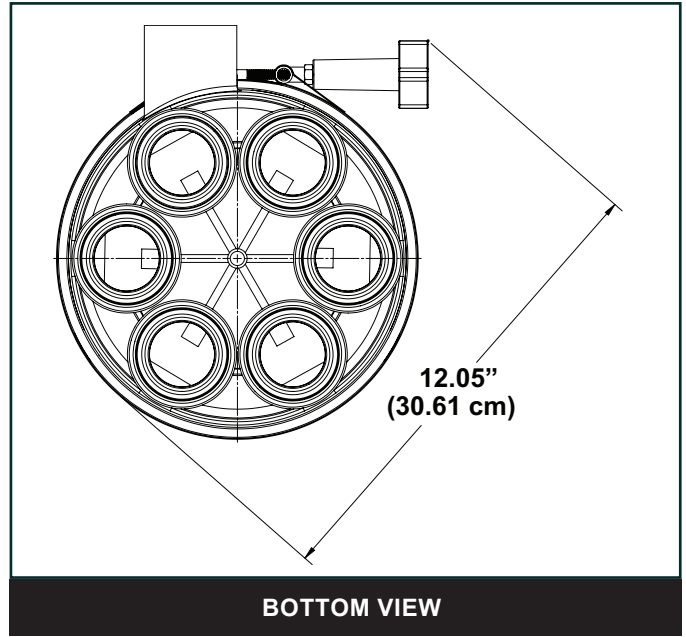
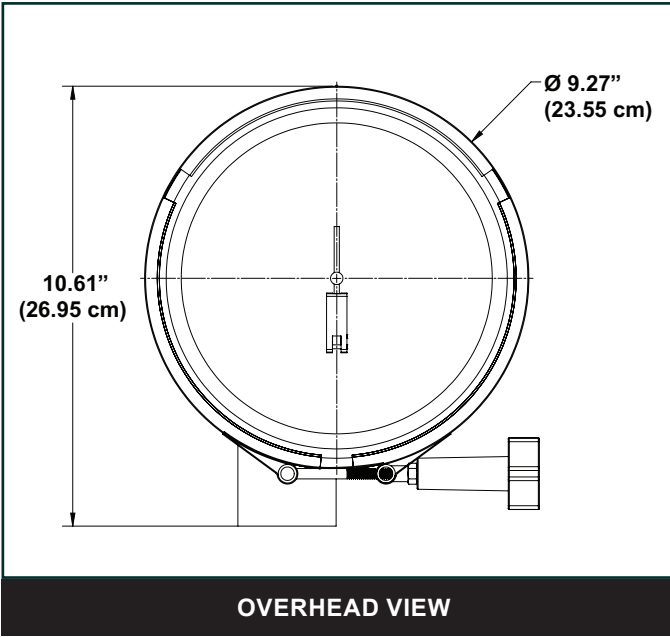
When reinstalling the valve gear kit, it is important to select the correct cam. Improper installation could result in death or serious injury to pool users, installers, or others and may also cause damage to property. Refer to figures on next page to ensure the proper cam is selected and installed.

16. Lift at least three of the T-valve assemblies and stand them in the vertical position so the cam can drop to the bottom of the valve base.
17. Allow the three vertical assemblies to fall back down on the cam.
18. Take the remaining portion of the gear plate assembly and start it over the center shaft, holding the two stainless steel shims in place so that the center shaft passes through them as it exits the top of the gear plate assembly.
19. While looking down through one of the holes in the gear plate, line up the square shaft with the square hole in the cam and line the pin in the support post with the small round hole in the cam.
20. Push the gear plate down until the square pin and the support post pin have locked completely into the cam.
21. Install the impeller.
22. Install the valve lid, making sure that the speed control guide is lined up with the groove in the underside of the lid.
23. Install the band clamp and hand tighten. Refer to the *Wave Valve Installation and User's Guide* for specific instructions.

INSTALLATION (continued)



DIMENSIONS



REPLACEMENT PARTS

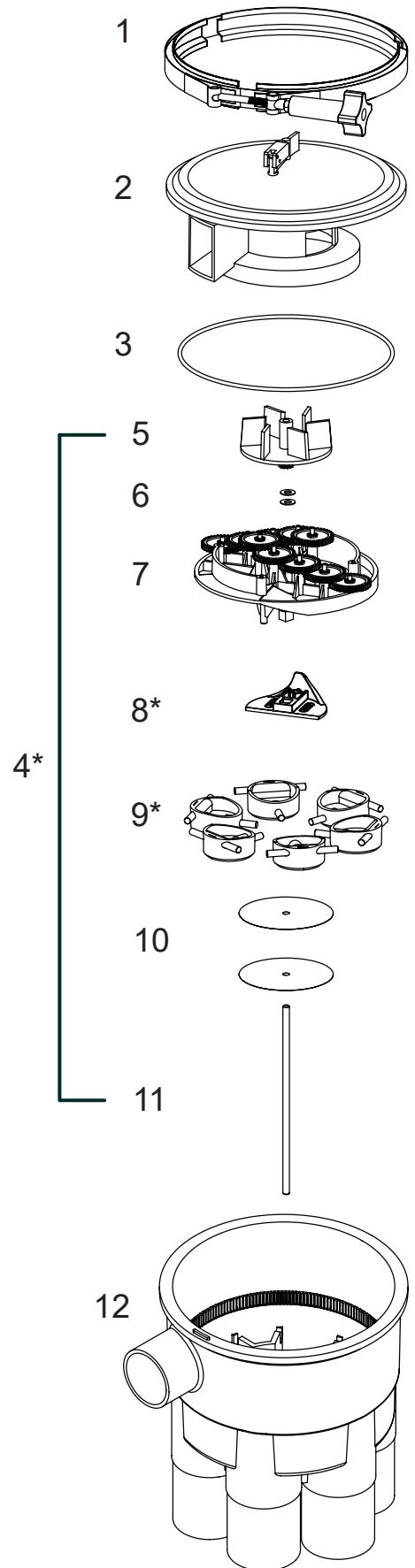
Item	Description	Part #
1	CLAMP BAND	230011
2	VALVE LID ASSY W/ O-RING	230045
3	VALVE O-RING	230046
4*	6-PORT T-VALVE KIT	230069
	3-PORT T-VALVE KIT	230146
	2-PORT T-VALVE KIT	230147
5	IMPELLER	230022
6	IMPELLER WATER VALVE SHIM	235070
7	GEAR PLATE WITH GEARS	-
8*	CAM, 6-PORT, LIGHT BLUE	230010
	CAM, 3-PORT, GREEN	230007
	CAM, 2-PORT, RED	230006
9*	T-VALVE ASSEMBLY	230041
10	WASHER ANTI-FRICTION	230049
11	SHAFT CENTER	230037
12	HOUSING, 6-PORT	230043z
	HOUSING, 3-PORT	230363z
	HOUSING, 2-PORT	230364z

Note(*):

2-port valves require two valve assemblies and red cam (P/N 230006).

3-port valves require three valve assemblies and green cam (P/N 230007).

6-port valves require six valve assemblies and light blue cam (P/N 230010).



NOTES

NOTES



1620 HAWKINS AVE., SANFORD, NC 27330 • (919) 566-8000
10951 WEST LOS ANGELES AVE., MOORPARK, CA 93021 • (805) 553-5000

All indicated Pentair trademarks and logos are property of Pentair. Third party registered and unregistered trademarks and logos are the property of their respective owners.

© 2023 Pentair. All rights reserved. WWW.PENTAIR.COM



P/N 230406 REV. A 9/6/23