

SAFETY INSTRUCTIONS



ATTENTION:

Before installing or servicing this equipment, turn power supply OFF to the pump. This product should only be installed and serviced by qualified professionals. Use of non-Praher replacement parts voids warranty.

WARNING:

-Do not permit children to use or climb on this product. Children should be supervised at all times. Components such as this valve must be positioned to prevent children from gaining access. -Pool and Spa components have a life span. All components should be inspected frequently and replaced at least every ten years, or if found to be damaged, missing, or not securely attached.

HAZARDS:

Suction entrapment hazards can occur at suction outlets and/or suction outlet covers, which are damaged, broken, cracked, missing or unsecured causing severe injury and/or death due to the following entrapment hazards.

Hair Entrapment- Hair can be entangled in suction outlet cover.

Limb Entrapment- A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing or not securely attached can result in a mechanical bind or swelling of the limb.

Body Suction Entrapment-A different pressure applied to a large portion of the body or limbs can result in an entrapment.

Evisceration/Disembowelment- A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is damaged, broken, cracked, missing, or unsecured can result in evisceration/disembowelment.

Mechanical Entrapment- There is potential for jewelry, swimsuits, hair decorations, fingers, toes or knuckles to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

Hazardous pressure could cause serious injury or death. Pool and spa water circulation systems operate under hazardous pressure during start-up, normal operation and after drive shut-off. Stand clear of circulation system equipment during start-up. Failure to follow safety and operation instructions could result in violent separation of the drive housing and cover due to pressure in the system, which could cause property damage, severe personal injury or death. Before servicing pool and spa water circulation system, all system and drive controls must be in off position and filter manual air relief valve must be in open position. Before starting system drive, all system valves must be set in a position to allow system water to return back to the pool. Do not change filter control valve position while system drive is running. Before starting system drive, fully open filter manual air relief valve. Do not close filter manual air relief valve until a steady stream of water (not air or air water mix) is discharged from the valve. All suction and discharge valves **must be open** when starting the circulation system. Failure to do so could result in severe personal injury and/or property damage.

Separation hazard could cause serious injury or death. Failure to follow safety and operation instructions could result in violent separation of drive components. Strainer cover must be properly secured to drive housing with strainer cover lock ring. Before servicing pool and spa circulation system, all system and drive controls must be in off position and filter manual air relief valve must be in open position. Do not operate pool and spa circulation system if a system component is not assembled properly, damaged or missing. Do not operate pool and spa circulation system unless filter manual air relief valve body is in locked position in filter upper body. All suction and discharge valves must be open when starting the circulation of the system. Failure to do so could result in severe personal injury and/or property damage.

Never operate or test the circulation system at more than **50 PSI** max.

FUNCTIONS OF THE MULTI-PORTRVALVE



Hazardous pressure can cause severe injury or major property damage from valve blow up. Release all pressure and read instructions before working on system

To avoid severe injury and major property damage, stop pump before changing handle positions.

To avoid major property damage due to flooding, make sure pointer is accurately positioned and down all the way before restarting pump.

Press down on handle to release pressure before turning. Rotate Clockwise.

1. FILTER - Normal position during operation of system.
2. BACKWASH - Position when operating system to purge filter of accumulated debris. This normally is necessary when filter pressure gauge reads 10 PSI higher than starting pressure on a clean filter. Consult your filter operating instructions.
3. RINSE - This position is only used with sand filters and is designed to flush stray sand from system before returning to filter operation after backwashing. Consult your filter operation instructions.
4. CLOSED - Valve may be set in closed position when servicing filter tanks located below water level.
5. RECIRCULATION - This position permits pump to continue recirculating water (chemical, heat, etc) without flow through filter. This is advantageous when filter or its components are being repaired or replaced.
6. WASTE - This position permits draining or lowering of pool water level. When pump is stopped with valve in this position, quickly move handle to another position to avoid air getting into piping.

VALVE MAINTENANCE



To avoid severe personal injury and major property damage, stop pump and release all pressure from system before servicing valve. No regular maintenance is required for proper operation of multi-port valve.

Winterizing for Freezing Climate:

Place valve handle between regular setting positions.

Part Replacement:

To prevent flooding, make sure that system is drained or isolation valves are closed before opening multi-port valve.

Replacing Handle:

1. STOP PUMP and release all pressure from system.
2. Place handle in 'FILTER' position.
3. Remove all bolts and nuts holding cover to valve body.
4. Remove cover, handle, and diverter as a unity from the valve body.
5. Compress diverter as shown in figures 1 and 2.
6. Remove handle pin from handle; remove handle and replace with new one, making sure pointer is in 'FILTER' position.
7. Replace pin by tapping lightly into place with hammer and punch.
8. Remove fixture, align cover pin (see fig.3) and reinstall cover and diverter. Tighten all bolts securely.

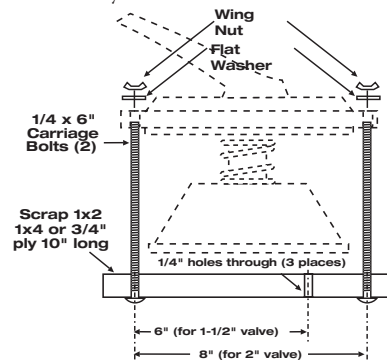


Fig. 1 - Fixture dimensions for valve spring compressor

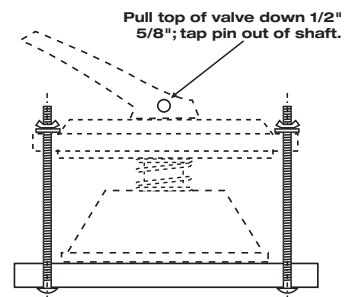


Fig. 2 - Tighten wing-nuts to compress spring

To prevent flooding, make sure that the system is drained or isolation valves are closed before opening multi-port valve.

Replacing Cover and Diverter Assembly (as a unit):

1. STOP PUMP and release all pressure from system.
2. Remove all bolts and nuts around perimeter of cover.
3. Remove assembly by lifting straight up.
4. Align tabs (see fig. 3) and install new cover and diverter. Press down on cover to allow bolts to engage nuts; tighten each bolt securely.

Replacing Internal Valve Parts:

1. STOP PUMP and release all pressure from system.
2. Place handle in 'FILTER' position.
3. Remove all bolts and nuts.
4. Remove cover by lifting straight up.
5. Remove handle pin and handle (see procedure on prior page).
6. Remove washer.
7. While disassembled, check condition of diverter, rubber gasket, spring, O-ring and internal plastic washer. If any of these parts appear worn or damaged, replace them.
8. Reassembly diverter, cover and handle by compressing spring (see figs 1 & 2) and reversing procedure on previous page.
9. Before reinstalling cover, be sure diverter and handle are in same position as when cover was removed.
10. Align tabs (see fig 3.). Press down on cover or set handle to 'Winterize' to allow bolts to engage nuts. Tighten each bolt securely.

Spider Gasket Replacement:

Read Instructions completely before starting. Once step 6 is started, continue through step 10 without interruption.

1. STOP PUMP and release all pressure from system.
2. Place the selector handle at the 'WINTERIZE' position (this lifts the diverter off the spider gasket).
3. Remove the bolts and nuts holding the cover to the valve body. Remove the cover assembly.
4. Remove the old gasket from the valve body.
5. Make sure that the gasket groove is free of water, grease, oils, debris and parts of the old gasket.
6. NOTICE: Once this step is started, continue through step 10 without interruption.
7. Insert the gasket into the groove with the rounded bead up. Press the gasket firmly into all the groove areas to seat the new gasket evenly.
8. Align the tab on the cover assembly with the tab on the valve body (see fig. 3) and insert the cover assembly into the body, fastening with the bolts and nuts removed in step 3. Tighten all bolts securely.
9. Depress the valve handle and rotate it to the closest standard position (FILTER or RINSE), being careful not to rub the diverter on the new gasket. Release the handle, allowing the diverter to hold the gasket in place while curing.
10. Minimum cure time is 2 hours. Curing for 24 hours is recommended for full strength.

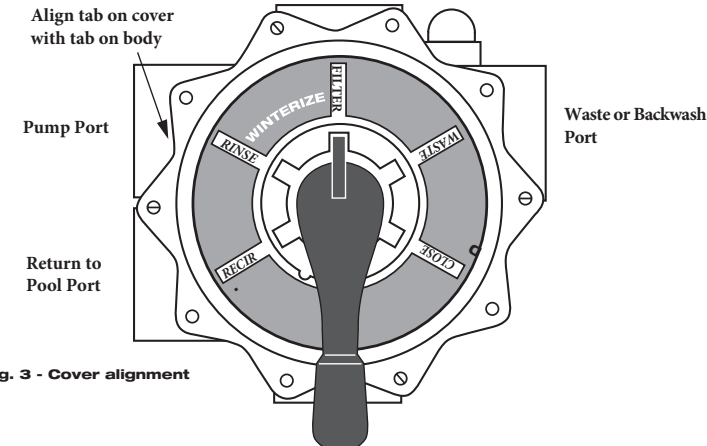


Fig. 3 - Cover alignment

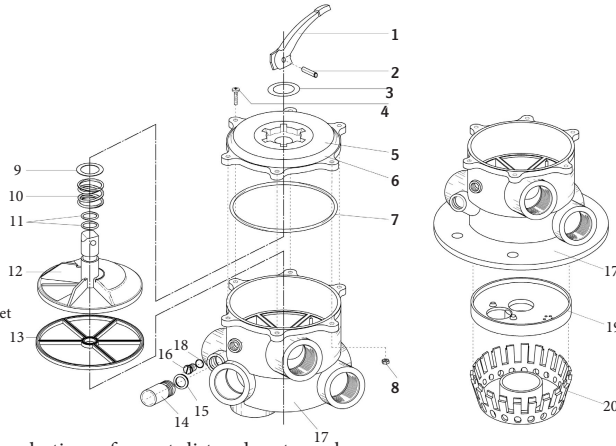
Head Loss Curves



Multi-Port Valve Assembly

Side Mount Multi-Port Valve Top Mount Multi-Port Valve

1. Handle
2. Handle Pin
3. Washer
4. Bolt
5. Label
6. Cover
7. Cover O-Ring
8. Nut
9. Washer
10. Spring
11. Shaft O-Rings
12. Diverter
13. Spider Gasket
14. Sight Glass
15. Sight Glass Gasket
16. Plug
17. Valve Body
18. Plug O-Ring
19. Plate
20. Diffuser



Visit www.praherplastics.ca for parts list and part numbers

Valve Position Functions

Valve Setting	Flow Direction Through Valve
FILTER	PUMP — TOP — THROUGH FILTER — BOTTOM — RETURN For normal filtration and vacuuming pool through filter.
BACKWASH	PUMP — BOTTOM — THROUGH FILTER — TOP — WASTE For reversing flow for cleaning filter.
RINSE	PUMP — TOP — THROUGH FILTER — BOTTOM — WASTE For initial start-up cleaning plus resetting filter bed after backwashing.
WASTE	PUMP — WASTE For vacuuming directly to waste, lowering pool level/drainage pool.
CLOSED	NO CIRCULATION PAST PUMP PORT For shutting off all flow to filter and pool.
RECIRCULATE	PUMP — RETURN For by-passing filter, but circulating pool water. may be plumbed for "off-system" pool water access. Ideal for Jet-Air fittings.

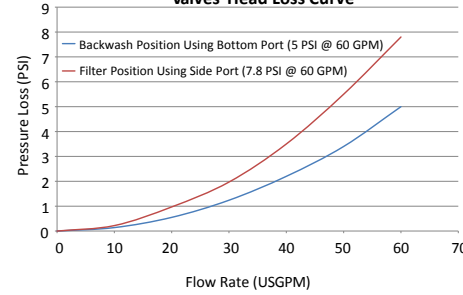
Troubleshooting

Leakage to WASTE PORT

1. Shut pump OFF. Depress handle fully in FILTER position and quickly release handle. Repeat this several times. If leakage still occurs through WASTE port, proceed to step 2.
2. Shut pump OFF. Put handle in WINTER position. Have someone hold the handle in WINTER position. Start pump up for approx 30 seconds; this should wash any debris lodged to the gasket out of the valve body. Repeat step 1.
3. If step 1 and 2 did not resolve the problem, remove the key hub assembly and inspect the spider gasket for visible damage (replace if damaged). Also inspect the diverter for any damage on the bottom surface that makes contact with the spider gasket. At this point, we recommend to disassemble the top key hub assembly and clean the O-rings on the diverter shaft and add some silicone lubricant to them.

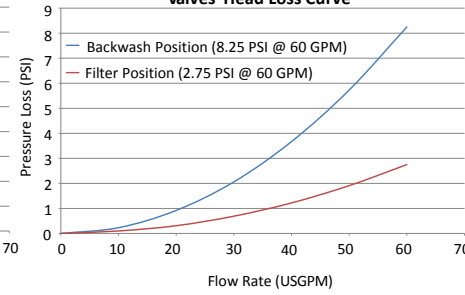
If replacement of gasket is not an option, install a ball valve into the WASTE port. Keep that ball valve closed in FILTER position. Keep the valve open in BACKWASH, RINSE and DRAIN position. Install an operator instruction plaque at the valve location, as opening the ball valve and the correct operation of the multi-port valve is extremely critical. Water hammers could damage other equipment, including the valve.

1.5" Side Mount Multi-Port Valves Head Loss Curve



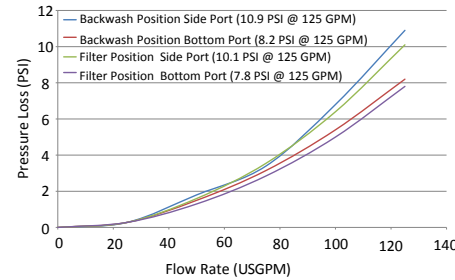
Includes Models: SM-10-2, SM-10-3, SM-10-AO, SM-10-AOS, SM1-HP3, SM1-HPX62, SM1-PP3, SM1-HP2, SM1-PP21, SM1-PP2

1.5" Top Mount Multi-Port Valves Head Loss Curve



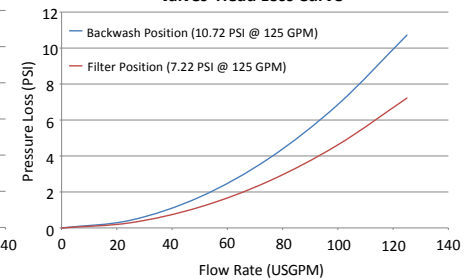
Includes Models: TM-12-A, TM-12-B, TM-12-E, TM-12-S, TM-12-S8, TM-12-H8, TM-12-L, TM-12-JL, TM-12-JL7, TM-12-PB, TM-12-9BH

2" Side Mount Multi-Port Valves Head Loss Curve



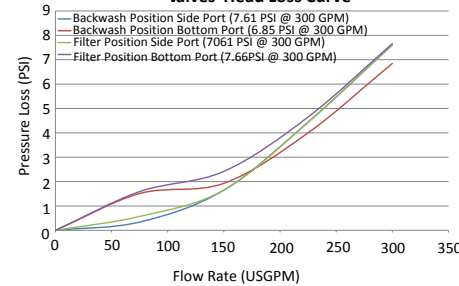
Includes Models: SM-20-2, SM-20-3, SM-20-AO, SM-20-AOS, SM2-HP3, SM2-PP3, SM2-HPX62, SM2-HPXR50, SM2-HPXR50S, SM2-PP2, SM2-SR3U, SM2-SR2, SM2-PP2JY, SM2-PP3JY, SM2-2WPC, SFS-MMPV

2" Top Mount Multi-Port Valves Head Loss Curve



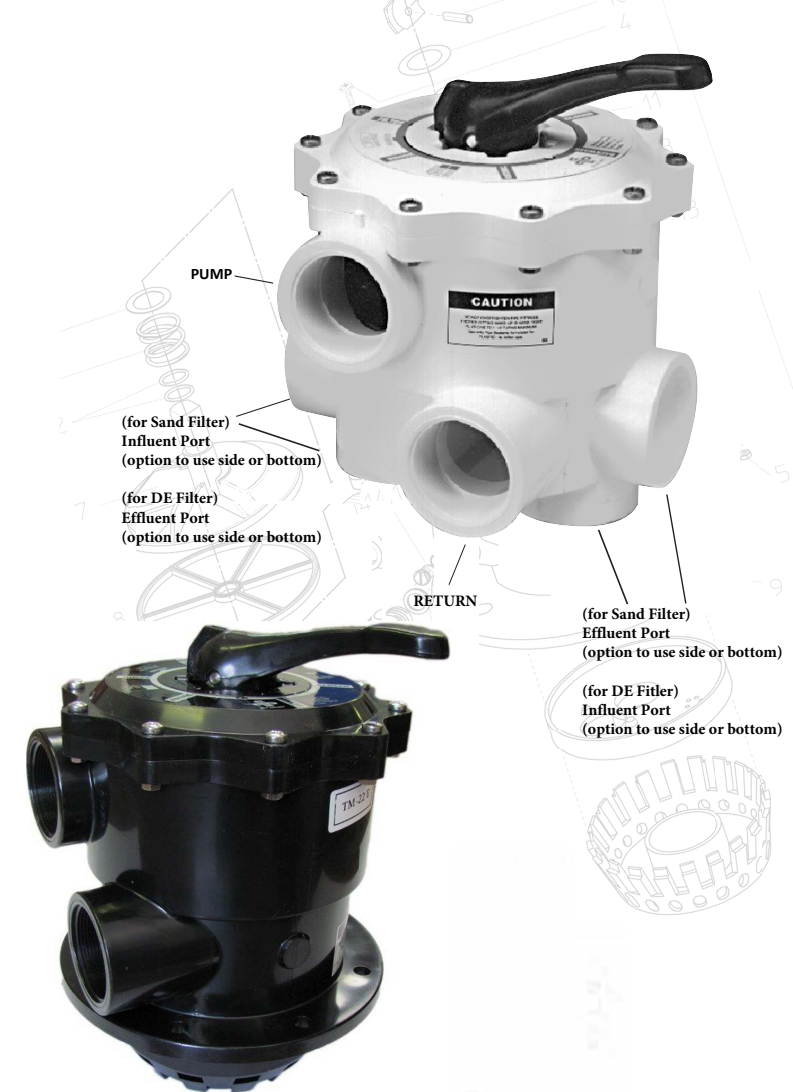
Includes Models: TM-22-L, TM-22-JAC, TM-22-PB, TM-22-E, TM-22-PA, TM-22-H8, TM-22-LA

3" Side Mount Multi-Port Valves Head Loss Curve



Includes Models: SM-30-AOB, SM3-PP3TRC

Owner's Manual For Side Mount & Top Mount Multi-Port Valves



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