



PVR

IN-FLOOR CLEANING & CIRCULATION TM

AUTOMATIC IN-FLOOR CLEANING & CIRCULATING SYSTEM INSTALLATION MANUAL



004-027-8711-00 REV120415

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US and Foreign patents and patents pending see
www.1paramount.com/about/patents/



Paramount
Pool Life. Simplified.

Signal Words and Symbols Used In This Manual

This Owner's Manual and Installation Guide contains specific precautions and symbols to identify safety-related information. You will find DANGER, CAUTION, WARNING and NOTICE symbols which require special attention. Please read them carefully and follow these precautions as indicated! They will explain how to avoid hazards that may endanger you or persons using or maintaining your pool or spa.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

PLEASE REVIEW THE OWNER'S MANUAL AND INSTALLATION GUIDE IN ITS ENTIRETY AND HEED ALL SAFETY INFORMATION. Failure to follow these instructions and warnings can result in DEATH OR SERIOUS INJURY.

FORWARD

The Paramount PVR® IN-FLOOR CLEANING SYSTEM is the culmination of years of extensive testing and engineering which provides your customers with the most advanced and trouble-free system available. The information contained in this manual is intended to answer some of the most common questions associated with the installation of the System. We urge you to take time to review it thoroughly.

If you have any questions call Toll Free 1.800.621.5886 or visit www.1Paramount.com

IMPORTANT NOTICE

The Paramount In-Floor Systems and other optional Paramount products are protected patented products and the "methods and installation" of said products are patented. An installer of these products must be trained and licensed by Paramount. This manual and documents contained within have been copyrighted and any reproductions are illegal without the written permission of Paramount Pool and Spa Systems.

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DESIGN & LAYOUT

PRINCIPLE OF OPERATION

The IN-FLOOR SYSTEM cleans by injecting pressurized water through a series of nozzles located throughout the pool. The pressurized water flow keeps dirt in suspension for removal by the pool filtration system, an active main drain, a skimmer, and an optional in-deck debris canister.

The water flow is directed to various cleaning nozzles in a sequential manner by Paramount's patented water-actuated distributor valve. The flow is constant and lasts for approximately 60 seconds. When the flow stops, the nozzle will retract and rotate slightly to a new position so that when it is energized again it will clean a different portion of the pool.

BENEFITS OF THE SYSTEM

- Reduction in chemical costs due to enhanced water circulation
- Reduced electrical costs due to reduced pump time due to increased water circulation
- Reduction of heating costs
- Elimination of unsightly devices
- Lifetime warranty and replacement under warranty conditions of cleaning nozzles
- Elimination of large leaves and debris with one of Paramount's patented optional line of VGB Compliant Debris Drains and Debris Containment Canister

BRUSHING IS NOT COMPLETELY ELIMINATED. Although the system GREATLY reduces the time and cost of maintaining a pool, it DOES NOT ELIMINATE the need to:

- Maintain a proper chemical balance
- Brush the pool periodically
- Clean baskets and filters on a regular basis

In conclusion, the IN-FLOOR SYSTEM is not a 100% cleaner and should never be presented as such.

SURFACE RETURNS

Surface returns used in conjunction with the IN-FLOOR SYSTEM are a builder's option. If all six ports of the water valve are not required, the use of surface returns (particularly in areas with excessive surface debris) is highly recommended.

If all six ports of the water valve are utilized for the floor, steps and/or spa, and automatic surface returns are desired, we recommend a separate pump and filter. Another option is to oversize the pump and plumb a manual return. The flow through the manual return would have to be regulated in order to insure adequate flow through the floor system.

Surface returns are also advisable in shallow "game" pools. They would enable people to use the pool and have the filtration system operating without the possibility of stepping on the cleaning nozzles.

PROPER NOZZLE PLACEMENT

Proper nozzle placement is the single most important item in making the SYSTEM clean properly. As a general rule, one head is required for each 60 square feet of surface area (in pebble - 50 sq. ft.). Pools with breaks and free form pools will generally require two (2) additional nozzles. This formula does not include nozzles required for steps and benches. The exact total cannot be determined until a scaled drawing has been made and nozzles have been properly placed.

NOZZLE PLACEMENT CRITERIA

1. 6' RADIUS CLEANING IN PLASTER, 5'6" IN PEBBLE
2. DISTANCE FROM VERTICAL SURFACES (WALL OR STEP) MINIMUM 2' - MAXIMUM 3'
3. MAXIMUM DISTANCE FROM CORNER (4 FEET).
4. ALL AREAS MUST INTERSECT OR OVERLAP.

NOTICE

Calculations based on a 1' radius dig in the shallow end and a 5' radius in the deep end (assuming maximum depth of 4' shallow and 9' deep.)

NOZZLE PLACEMENT

STEP 1 - DRAW POOL SHAPE

A scaled drawing of the pool must be made including the following details:

- A. Outline of pool shape
- B. All steps, benches, offsets, etc.
- C. Normal main drain location
- D. Break or transition point between shallow and deep end (if applicable)
- E. Any other items that may affect the water flow from the nozzles - i.e., in pool umbrella or tables
- F. Water line on zero entry beach entry

Use either 1/8 in. = 1 ft. scale or 1/4 in. = 1 ft scale

Use either 1mm = 100mm scale or 1mm = 50mm scale

SUBMITTING DRAWING TO PARAMOUNT

Download the most current drawing request form at <http://www.1paramount.com/products/aapdf/pvr-requestform.pdf>

Fill out a cover sheet and email with drawing to Paramount and we will layout your pool cleaning system.

Submit plans

1. E-Mail - cad@1Paramount.com (scalable electronic files – .dxf, .dwg)



Toll Free: 1.800.621.5886
Fax: 480.893.7621
cad@1Paramount.com
REV. 111715

Drawing Request Form
Please Allow 2 Business Days For Layout

If You Would Like Information On E-Mailing Drawings Please E-Mails Us At Cad@1Paramount.com					
*Company			*Job Name		
*City		*State	Address		
Contact Name			City		Zip
*Sales Person			Revisions		
Telephone			Previous Drawing #		
E-mail .pdf .dwg			What Is Revised		
Fax			Reply by fax		
Length-Width Measurements, Breakline & Drain Location Must Be Shown On A Scaled Pool Drawing					
Pool Dimensions:	X	Square Feet:	Pool Depths:	X	Select Pool Finish:
Check Corresponding Boxes And Fill In The Blanks To Best Describe The Cleaning System Requested					
Booster Pump For Cleaning System	Pool & Spa Are Not Connected (Requires Separate System For Spa)	Solar Heated	Perimeter Overflow	Zero Entry	
		Pool Floor	Steps	Benches	Spa Basin
Nozzle Placement					
SwingJet Placement (Note: 3 SwingJets per zone)					
Drains / Canisters / Skimmers					For Special Combo Pricing Select Ultra UV & Clear O3
MDX-R3	Channel Drain	Equipment Canister	Deck Canister	Canister w/ MVFuse	Ultra UV Water Sanitizer: 120V 230V Number of Lamps
Pool					JetPaks qty. Oscillator Clusterspray Spinalassage
Basin					MV Fuse Deck Clear O3 AirPort SDX (2 pk)
Spa					Paralevel (Water Leveler) Parascope Mini Bubbler qty.
Standard Skimmer	qty.	Venturi Skimmer	qty.		Paraglo LED Pool & Spa Light qty.

Product Ordering Section

Completing this section will result in an order being processed and product being shipped based on the bill of materials in the drawing

Order Type: Pre-Gunite Order Complete Order

Color Selections

Nozzle/Drain/Fountain: White - 01 Grey - 02 Black - 03 Taupe - 04 Blue - 05 Light Blue - 06 Beige - 07 Light Grey - 08

Canister/Paralevel Lid: White - 01 Grey - 02 Beige - 07

Jetpaks: Pearl - 51 Mirage - 52 Sapphire - 58 Midnight Canyon - 59

Shipping Priority: Ground 2-Day 3-Day Next Day AM Next Day PM Will Call Desk

NOTES:

** In order to receive a quote you must email paramount@1paramount.com and provide them with the drawing number on your plan**

Submit Email

To insure incentive points are awarded accurately be sure to fill out the pool builder information completely

DIMENSIONED NOZZLE PLACEMENT DRAWING

After the nozzle placement has been determined, a scaled drawing will be made with dimensions clearly indicated. The dimensioned drawing should be the plumber's guide and a part of the superintendent's check sheet to insure proper placement.

As stated earlier, proper nozzle location is critical. Should the pool's configuration change (i.e., step location, break location, overall dimension) the nozzle placement must also change. A revised plan must be drawn. Choose one nozzle to use as a starting point and indicate dimensions to outer walls. This will enable the plumbers to find location of first nozzle and then use triangulation to locate the remaining ones.

The sequencing order, from a cleaning aspect, is immaterial. Since the cleaning nozzles operate on a random principle, the need for sequencing is eliminated. However, sequencing from shallow to deep is recommended for ease of plumbing, installation and trouble-shooting.

DRAWING		<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>○ ROTATING NOZZLE 16</p> <p>6-PORT VALVE 1</p> <p>9-PORT VALVE 0</p> <p>12-PORT VALVE 0</p> <p>2-PORT 4-GEAR 0</p> <p>3-PORT VALVE 0</p> <p>MDX-R3 1</p> <p>BUZZTOP 0</p> <p>CANISTER 0</p> <p>EDC 0</p> <p>CANISTER W/MV FUSE 0</p> <p>VENTURI SKIM 0</p> <p>DOWNJET 0</p> <p>SWINGJET 0</p> <p>ULTRA UV 0</p> <p>JETPACK 0</p> <p>MV FUSE DECKMOUNT 0</p> <p>CLEAR O3 0</p> <p>AIRPORT 0</p> <p>SDX 2-PACK 0</p> <p>PARALEVEL 0</p> <p>PARASCOPE 0</p> <p>PARAGLO 0</p> <p>MINI BUBBLER 0</p> <p>PLUMBING DIAGRAM IS FOR ILLUSTRATION PURPOSES ONLY</p> </div> <div style="width: 40%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th></th> <th>5/8" JET</th> <th>3/8" JET</th> <th>1/4" JET</th> </tr> <tr><td>1.</td><td>3</td><td></td><td></td></tr> <tr><td>2.</td><td>3</td><td></td><td></td></tr> <tr><td>3.</td><td>3</td><td></td><td></td></tr> <tr><td>4.</td><td>3</td><td></td><td></td></tr> <tr><td>5.</td><td>3</td><td></td><td></td></tr> <tr><td>6.</td><td>2</td><td>2</td><td></td></tr> </table> </div> </div>			5/8" JET	3/8" JET	1/4" JET	1.	3			2.	3			3.	3			4.	3			5.	3			6.	2	2	
	5/8" JET	3/8" JET	1/4" JET																												
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4.	3																														
5.	3																														
6.	2	2																													
<div style="display: flex;"> <div style="width: 40%;"> <p>CUSTOMER: _____</p> <p>DATE IN: _____</p> <p>DATE OUT: _____</p> <p>ADDRESS: _____</p> <p>CITY: _____</p> <p>STATE: _____</p> <p>ZIP: _____</p> <p>FINISH: _____</p> <p>FAX: _____</p> </div> <div style="width: 60%;"> <p style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> MDX-R3, AND SDX MUST BE INSTALLED IN ACCORDANCE WITH PARAMOUNT'S WRITTEN INSTRUCTION MANUAL, AND IN CONFORMITY WITH APPLICABLE FEDERAL, STATE, LOCAL AND SWIMMING POOL INDUSTRY BUILDING AND SAFETY CODES. </p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>CIRCULATION SYSTEM</p> <p>PUMP: <input checked="" type="checkbox"/> G.P.M. @ <input checked="" type="checkbox"/> HD</p> <p>CLEANING SYSTEM</p> <p>PUMP: 60 G.P.M. @ 60 HD</p> </div> </div> </div> </div>		<p>*The 99% Cleaning Guarantee will only qualify to AREAS of the pool and / or spa equipped with an MDXR3 and cleaning nozzles on the floor, steps, benches, sundecks, catch basins or any other design features of the pool or spa, and must be built to the specifications of this layout*.</p> <p style="text-align: center;">MDX-R3 MUST BE PLUMBED WITH A SECONDARY SUCTION</p>																													
<p>DRAWN BY: PVR</p> <p>APPROVED BY: Order <input type="checkbox"/></p>		<p style="text-align: center;">THIS DRAWING IS FOR THE PURPOSE OF IN-FLOOR LAYOUT ONLY</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>NOTE:</p> <p>LOCATION OF CANISTER, SKIMMER AND SECOND POINT OF SUCTION IS OPTIONAL</p> <p>ALL PERIMETER DIMENSIONS ARE FROM FINISHED WALL 1' RADIUS SHALLOW END AND 2' DEEP END.</p> </div> <div style="width: 45%;"> <p>PLUMBERS' NOTICE:</p> <p>*Only one Skimmer to be used on a single pump system.</p> <p>*Heater must have bypass</p> <p>*No 1-1/2" multiport backwash valves</p> <p>*Check valve is required on all raised features using the PV3 System.</p> </div> </div>																													

PUMP REQUIREMENTS

Selecting Proper Pump Size

1. Determine GPM and Ft./Hd. requirements from Specification Chart below.
2. Refer to manufacturer's pump curve for the equipment specified for the pool.
3. Compare Part # and Model #. Do not rely on horsepower. Most manufacturers make both full-rated and up-rated pumps. This also relates to low and high service factors.
4. Most pump curves will show Total Head in Feet on the left side vertically. Gallons per Minute are indicated horizontally across the page.
5. Draw an X where the two lines intersect. This will give you the pump required.

IN-FLOOR SYSTEM SPECIFICATION CHART

SINGLE PUMP	DUAL PUMP
*60 GPM @ 70 TDH or *40 GPM @ 60 TDH Filter / Cleaner Pump	*40 GPM @ 60 TDH or *60 GPM @ 60 TDH Cleaner Pump
MINIMUM FILTER	MINIMUM FILTER
Sand 4.9 D.E. 48 Sq. Ft. Cartridge 200 Sq. Ft.	Sand 3.1 D.E. 36 Sq. Ft. Cartridge 200 Sq. Ft.
No multi-port filter valves. Bypass on heater	Size filter pump to pool turnover. Multi-port ok. No bypass on heater required

* Any time the equipment is more than 50 ft. away from pool the pipe size must be 2 1/2" or larger for suction & return. GPM stated are the requirements of the in-floor system. Additional equipment such as chlorine generators, spa overflows, water features, etc., require more water flow. Adjust pump GPM requirements accordingly.

FILTER REQUIREMENTS SELECTING PROPER FILTER SIZE

When selecting filter sizes, if the filter requirements fall in between available sizes, select the next larger filter. Refer to Equipment Spec Chart for required rate.

Diatomaceous Earth (D.E.) D.E. filters are rated at 2 GPM per square foot of filter area.

Sand filters are rated at 20 GPM per square foot.

1-1/2" MULTI-PORT VALVES ARE NOT RECOMMENDED BECAUSE HEAD LOSS IS GREATLY INCREASED.

PARAMOUNT RECOMMENDS THE USE OF 2" PUSH/PULL OR 2" MULTI-PORT VALVES ON SINGLE PUMP SYSTEMS.

NOTE: Filter rates in excess of 20 GPM per sq. ft. can cause channeling of the filter bed.

Cartridge filters are rated at .25 GPM per square foot of filter area.

NOTICE

Excess flow rates can cause the fibers of a cartridge to become impacted.

IMPORTANT TECHNICAL NOTICE REGARDING MULTIPLE SKIMMERS AND CLEANING EFFICIENCIES

The usage of more than one skimmer with any In-Floor systems may create conditions where the main drain and skimmers are not effective. This is particularly true with Paramount's line of VGB Compliant Debris Drains.

When the pool incorporates a single pump design with up to a 2 hp (2-1/2 hp up rated) pump and an In-Floor system, the maximum flow of water through the hydraulic system is only 60-75 GPM.

The Paramount optional VGB Compliant Debris Drains require 35 GPM to operate properly. The remaining suction flow is through the skimmer.

When a second skimmer is added, the flow then becomes reduced. Having only 17-20 GPM over a skimmer weir is not effective. Traditionally, consumers adjust the skimmers to effectively pull water and surface debris and thus reduce the suction upon the main drain.

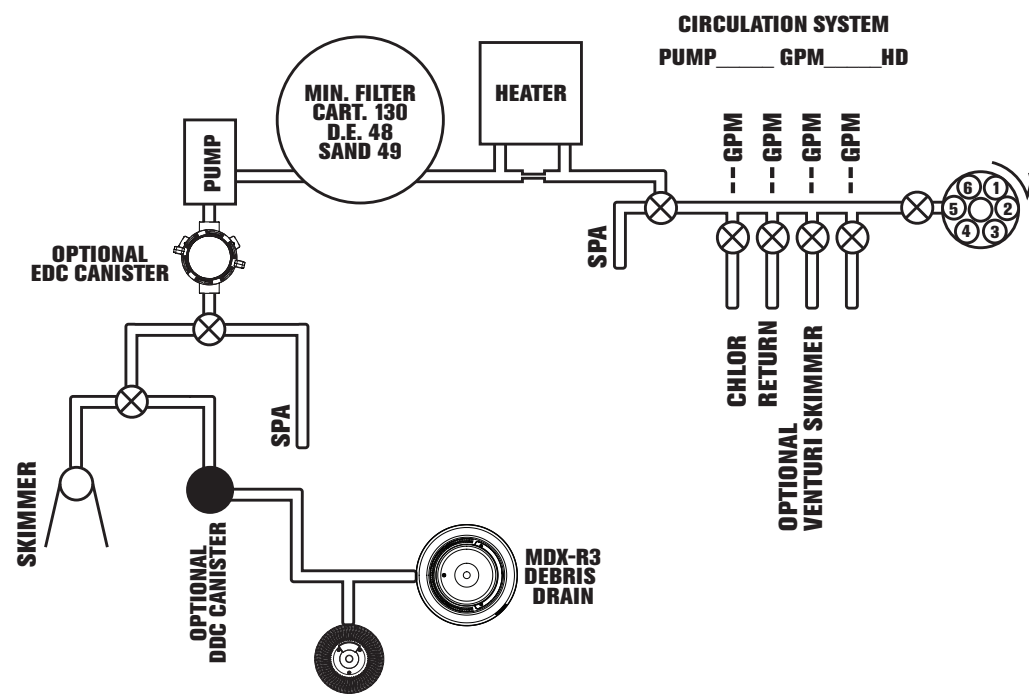
We have found that with an In-Floor system the best rule of thumb is "One skimmer and one main drain with a one pump system" or "One standard skimmer and a venturi skimmer for the second skimmer".

On pools over 500 sq. ft., we recommend the design include a two-pump system. Because of the energy savings, faster clean up and less stringent equipment requirements, multiple skimmers may be incorporated.

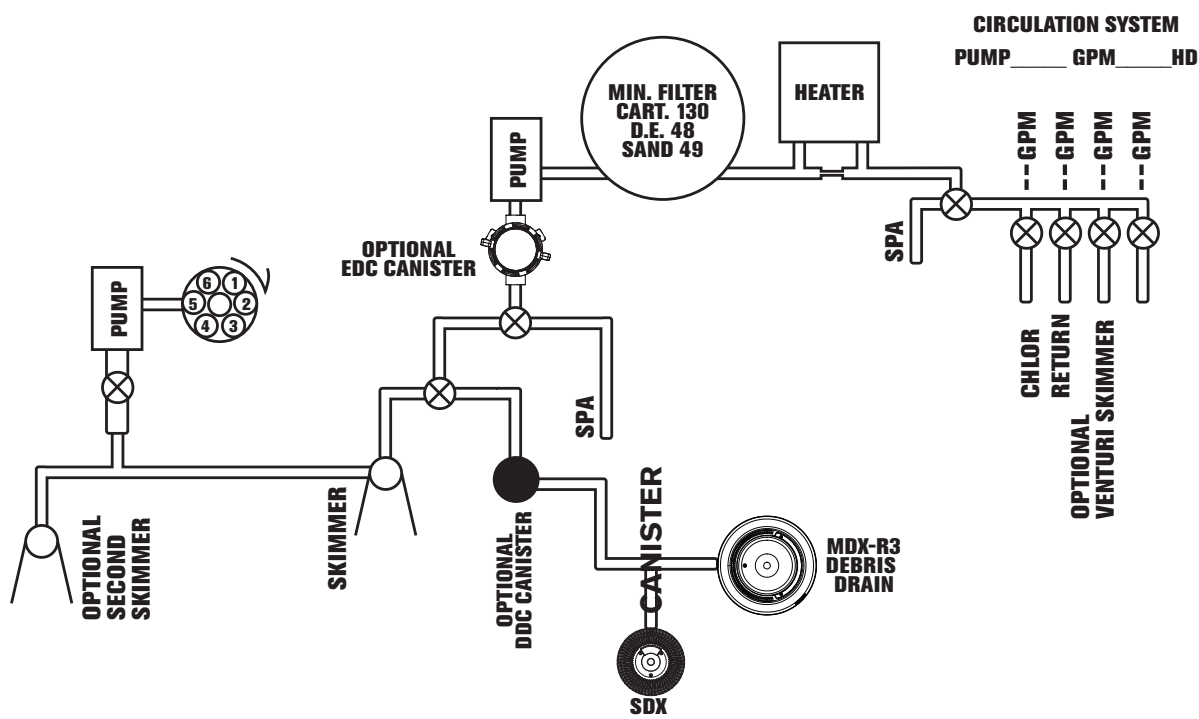
The second pump may be plumbed with the filter pump to share a single skimmer which, in effect, super-charges the skimmer. Alternatively, the second pump may be plumbed to a second skimmer. This design allows both skimmers to separately draw a minimum 35 GPM and the main drain to effectively operate as designed.

EQUIPMENT LAYOUT

Single Pump



Dual Pump



PLUMBING DETAIL

PLUMBING (FLOOR)

Install the SYSTEM with required feed lines from the water valve to banks of heads containing two or more nozzles each. The feed lines are 2" Schedule 40 PVC pipe. Paramount recommends that the lines enter at the center of length of pool. Excavate a niche to the bottom of the pool depth at that location. This large niche allows ample room for the feed lines. Generally, this will provide for the least amount of pipe. There are occasions when it may be advantageous to feed part of the lines in places other than the center. At each nozzle location, install a 2" elbow with 2" Schedule 40 PVC stubbed up 12" above the finished pool floor (except for steps and benches). Step and bench nozzles should be on a separate port. The number of nozzles per port in the floor should be constant whenever possible. All pipes should have a minimum of 2" of cover. Trenches should be backfilled and raked smooth. Paramount recommends soaking and tamping the ground after backfilling the trenches. It is imperative that the stub-up angle is 90 degrees to the finished floor angle. This must be verified and adjusted prior to placing gunite or concrete shell. Paramount recommends use of the primer and glue on all joints underground.

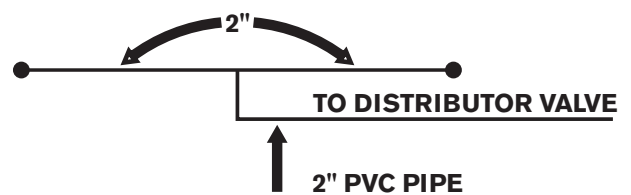
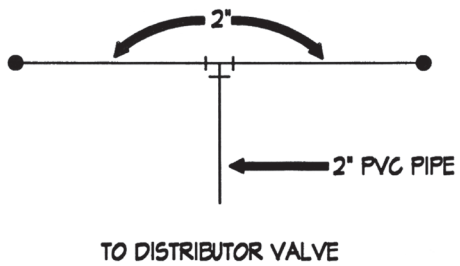
Cap all lines and pressure test to a minimum of 35 psi. Install the pressure-test stack at the equipment header or on one of the stub-up pipes in the pool floor. Pressure should remain on system throughout construction.



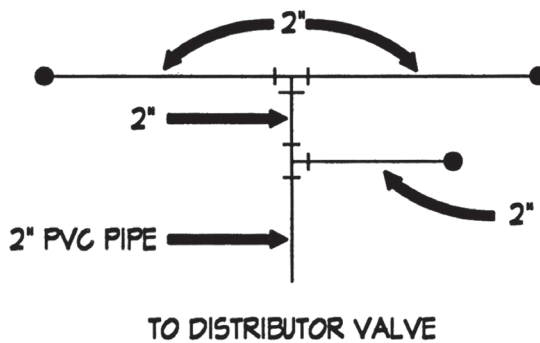
**Do not plumb nozzles in line,
all nozzles must be on a branch.**

**INCORRECT METHOD
OF PLUMBING**

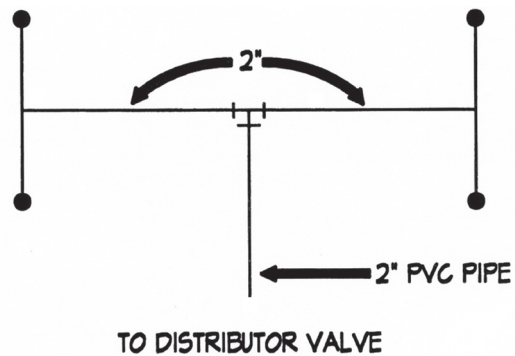
2 NOZZLES ON A LINE



3 NOZZLES



4 NOZZLES



PLUMBING WATER VALVE

GLUING INSTRUCTIONS

1. Remove Clamp
2. Lift off dome (save O-ring)
3. Remove pressure gauge and knob from inside valve housing assembly.
4. Primer valve base two times
5. Make sure pipes are glued all the way into the stop. Be careful not to allow glue to run into module area.*
6. The center port is the inlet to the valve and should be approximately 3" longer than the perimeter pipes.
7. Allow 24 hour before pressure testing.
8. Reposition o-ring in groove in the valve base.
9. Replace dome and V-Clamp and tighten until snug.
10. Thread the pressure gauge to the top of the dome.
11. Glue pipe all the way into the stop and allow at least 24 hours drying time before pressure test. To prevent glue build up to internal ribs always glue with the valve right side up.
12. Store the module assembly in a safe place and install after the pool has been started up.

NOTICE

DO NOT USE
TEFLON TAPE



WARNING

Pressurize with pool plumbing
(do not exceed 35 psi.)

NOTICE

* Pipes should be a minimum of 12" in length and should insure the valve be at least 6" above water level.

2" VALVE BASE PLUMBING GUIDE

NOTICE

ALL PIPE FITTINGS MUST
BE STAGGERED.

All plumbing should be 2".

The water valve must be set 6" above water level. A convenient location poolside will result in dramatic reduction in plumbing runs and decrease cost.

The center port of the bottom housing is the inlet to the valve. Cut all pipes square, this allows maximum gluing surface to the bottom housing. **USE PVC PRIMER AND PVC GLUE ON BOTTOM HOUSING AND ON PVC PIPES. (IPS WELDON P68 PRIMER and 711 GLUE or 705 GLUE or EQUIVALENT)**

If not all six (6) ports are required, use one of the ports twice to feed one return line. The common ports should not be plumbed next to each other, always skip a port when double firing. The pipes from the water valve should be connected together underground.

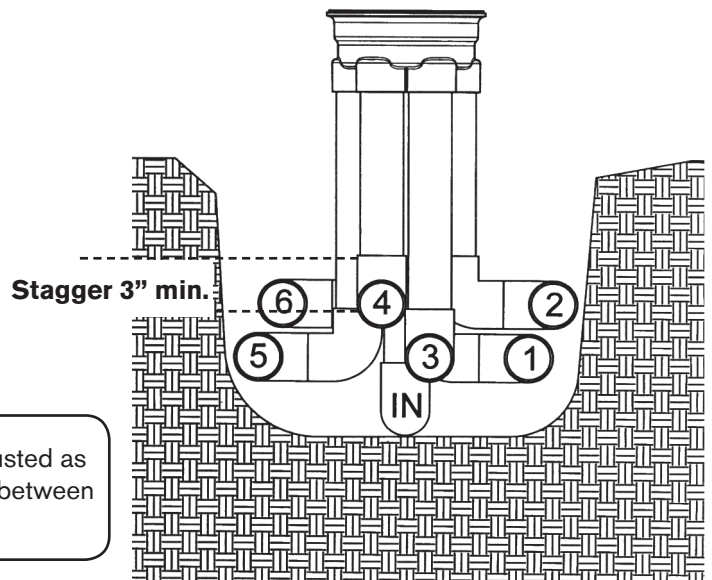
PARTS NEEDED FOR ASSEMBLY

OPTION ONE

- (3) 2"X12" PVC PIPE (port 2,4,6)
- (3) 2"X15" PVC PIPE (port 1,3,5)
- (1) 2"X18" PVC PIPE (port inlet)
- (4) 2"X2 1/4" PVC PIPE (port 1,2,5,6)
- (11) 2" SLIP 90° ELBOWS
- Optional: replace (4) 90° elbows and (4) 2"x2 1/4" pipes with (4) spigot 90° elbows
- Set in trench 15" deep X 19" wide

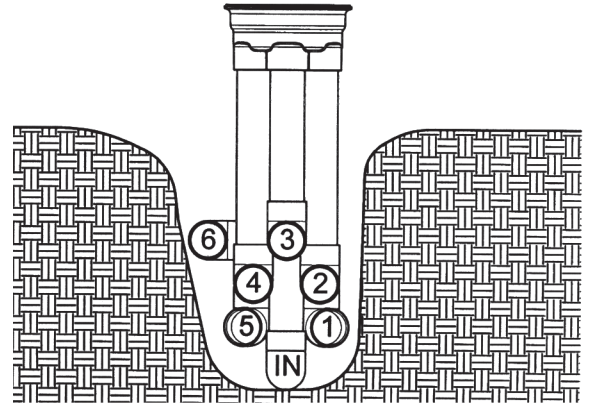
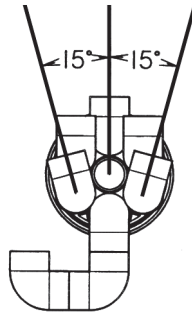
NOTICE

Height of riser pipes may be adjusted as long as the 3" height differential between fittings is maintained.



OPTION TWO

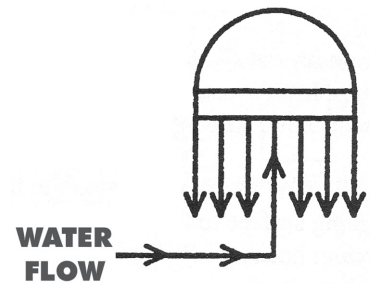
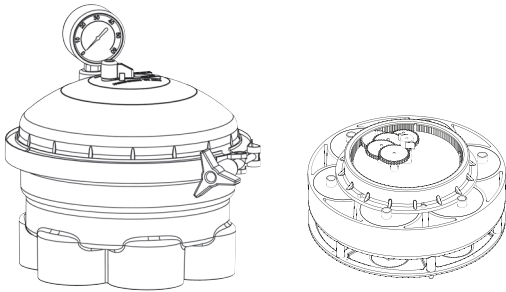
- (2) 2"X12" PVC PIPE (port 3,6)
- (2) 2"X15" PVC PIPE (port 2,4)
- (2) 2"X18" PVC PIPE (port 1,5)
- (1) 2"X21" PVC PIPE (port inlet)
- (2) 2"X2 1/4" PVC PIPE (port 6)
- (8) 2" SLIP 90° elbows
- Optional: replace (2) 90° elbows and (2) 2"x2 1/4" pipes with (2) spigot 90° elbows (port 6)
- Set in trench 19" deep X 12" wide



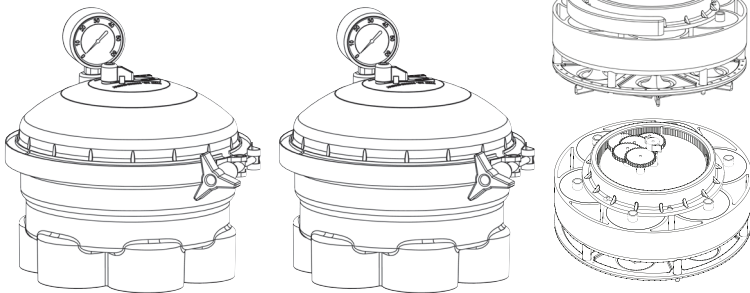
IMPORTANT: PORT 1 AND 5 MUST BE SET AT 15° OFF CENTERLINE IN ORDER TO CLEAR

VALVE CIRCUIT LAYOUT

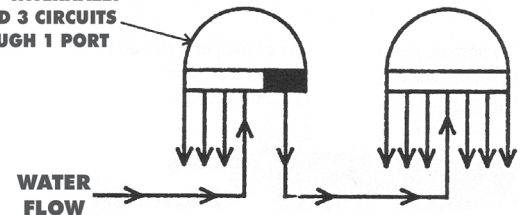
6 CIRCUIT 004-302-4184-03



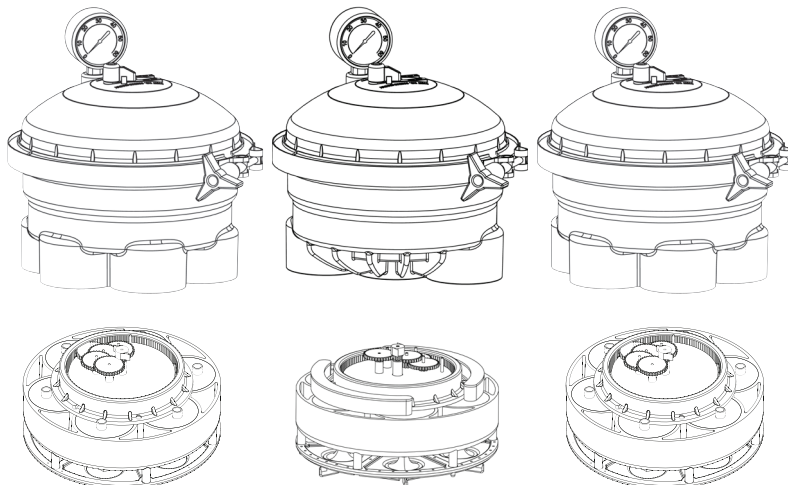
9 CIRCUIT 004-302-4190-03



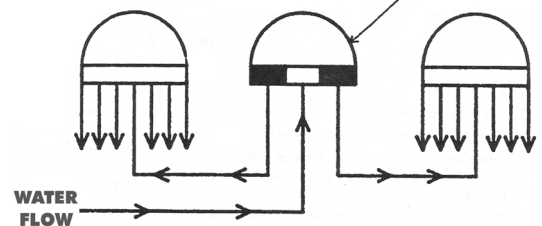
**3 + 1 PORT
SPECIAL VALVE
PORTED INTERNALLY
TO FEED 3 CIRCUITS
THROUGH 1 PORT**



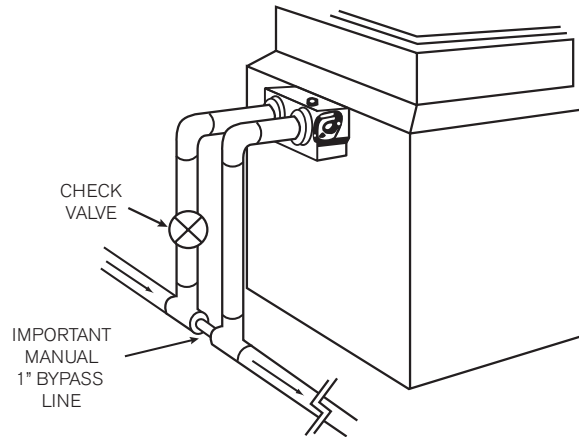
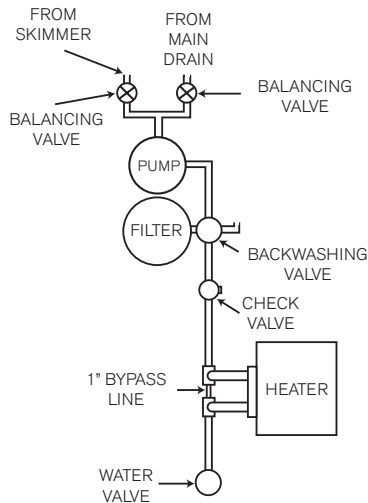
12 CIRCUIT 004-302-4194-03



**1 + 1 PORT
SPECIAL VALVE
PORTED INTERNALLY
TO FEED 3 CIRCUITS
THROUGH 1 PORT**



PLUMBING HEATERS



HEATERS

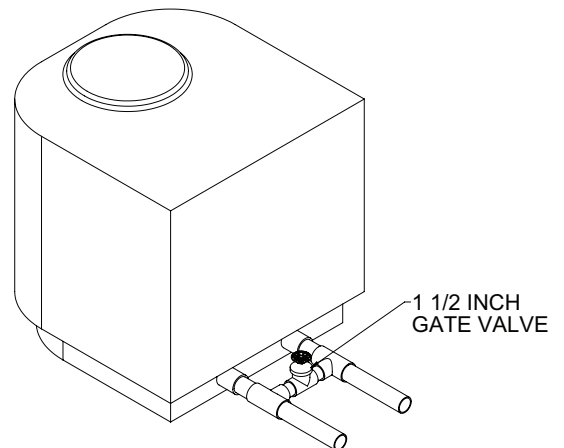
When installing a heater on the pool, a GATE VALVE BY-PASS TO PARTIALLY DIRECT WATER AROUND THE HEATER IS NECESSARY. This allows part of the water through the heater for heating but limits the head loss created when all the water is directed through the heater. THE IN-FLOOR SYSTEM WILL NOT FUNCTION PROPERLY WITHOUT THIS BY-PASS.

HEAT PUMP

Heat pumps must have a minimum by-pass of 1 1/2" with a gate valve for adjustment. The gate valve must be set with a temperature probe to factory specs for heat rise.

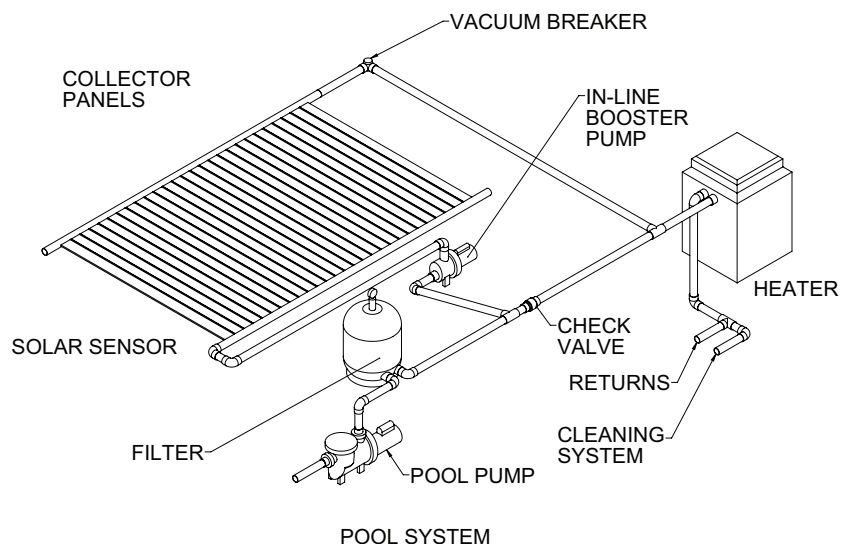
NOTE: MULTI-SPEED PUMPS AND HEATERS & HEAT PUMP

When plumbed with a bypass the heater or heat pump may not fire with pump running on the lowest speed.



SOLAR SYSTEMS

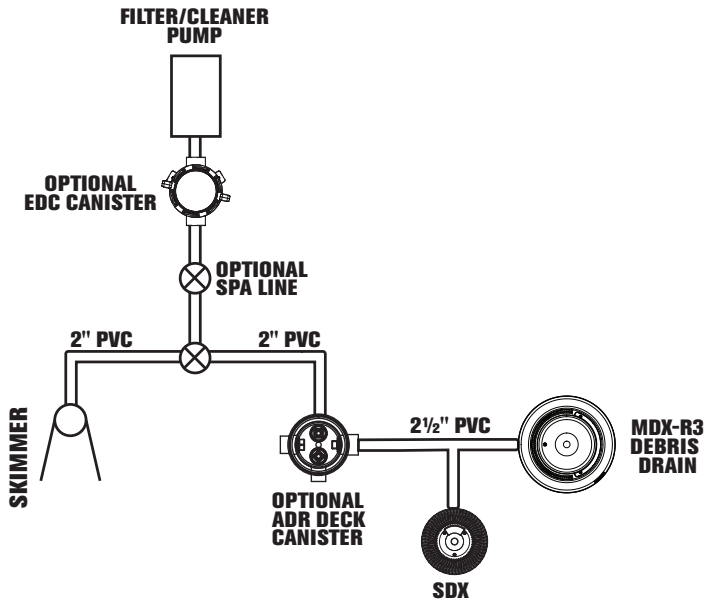
Paramount recommends solar systems be operated independently with a booster pump, separate suction, and returns, or as shown below with a secondary booster pump, and the in-floor system valve installed after the solar and heater pack.



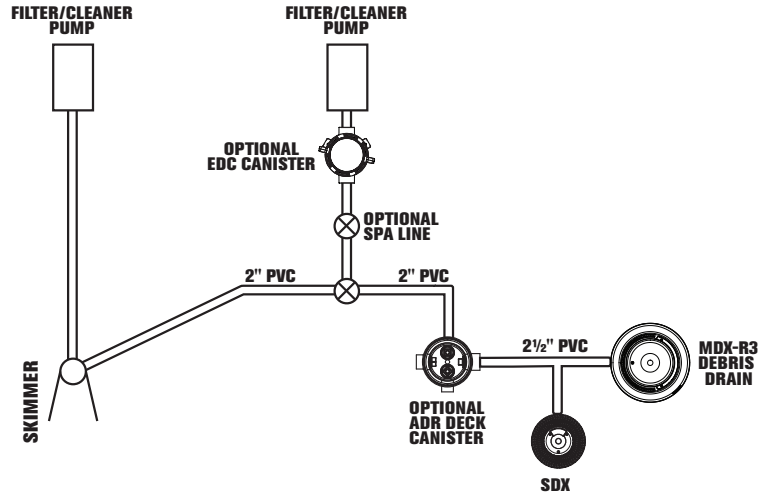
PLUMBING DEBRIS CANISTERS

PLUMBING FOR SINGLE / DUAL PUMP SYSTEMS

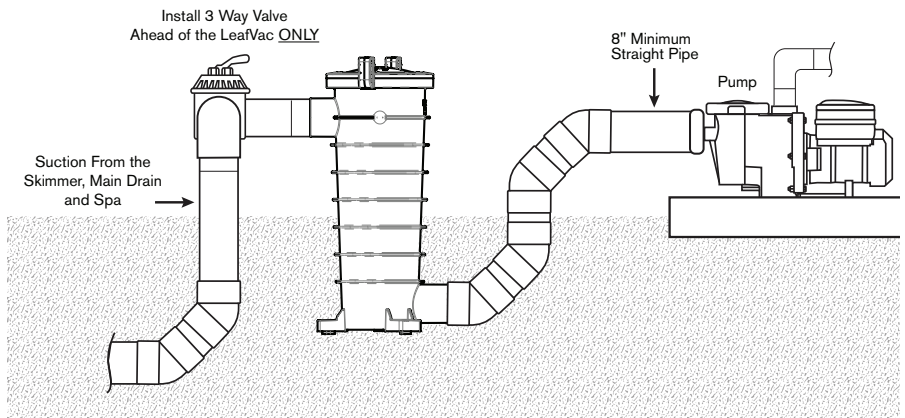
Single Pump System



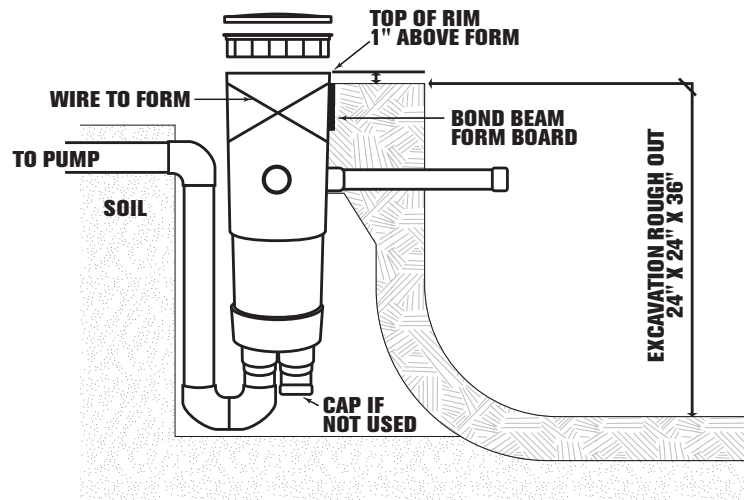
Dual Pump System



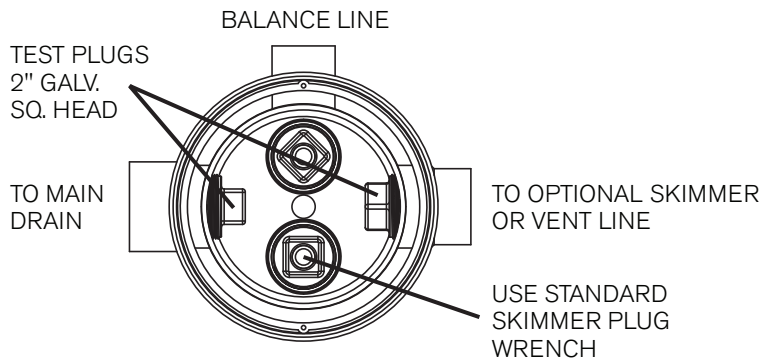
EQUIPMENT SIDE DEBRIS CANISTER PLUMBING



DECK SIDE DEBRIS CANISTER PLUMBING



PLUMBING PRESSURE TEST DECK SIDE CANISTER



Extra long T-Bar helpful for installation
18" x 5' with 1 5/8" 12 pt. socket

WARNING Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Release pressure on the system before removing plugs



POOL DRAIN SYSTEM

WARNING Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

The drain used must be installed in accordance with the manufacturer's written instruction manual, and in conformity with applicable Federal, State, Local and Swimming pool industry building and safety codes.

If you are using the Paramount MDX-R3 VGB Compliant Debris Drains consult the applicable manual for specific instruction on how to plumb.

DOWNLOAD INSTRUCTION MANUALS:

MDX-R3 Non Adjustable Concrete:

<http://www.1paramount.com/downloads/manuals/mdxinstall/010815MDXR3NonAdjustableConcrete.pdf>

MDX-R3 Adjustable Concrete:

<http://www.1paramount.com/downloads/manuals/mdxinstall/041615MDXR3AdjustableConcreteEngFr.pdf>

MDX² Concrete:

<http://www.1paramount.com/downloads/manuals/mdxinstall/MDX2RetroAllManualREV040109.pdf>

PLUMBING FOR SPA

RAISED SPAS

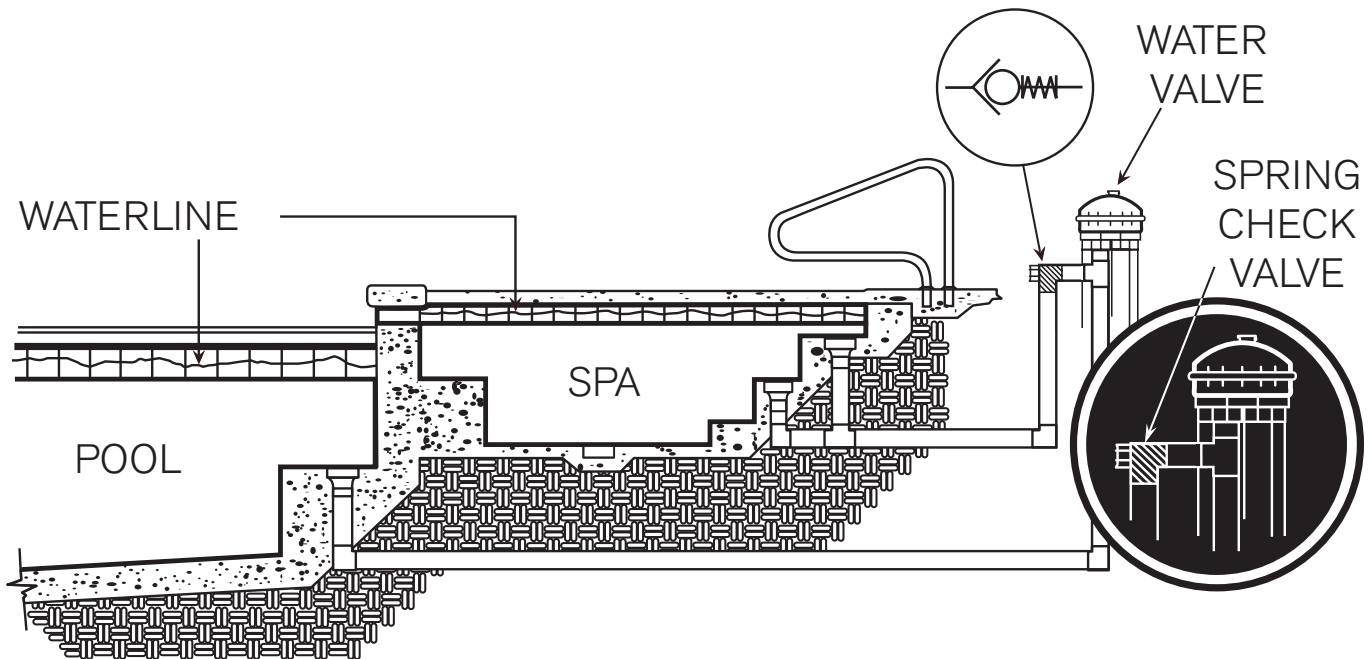
An in-line check valve is required in all raised spas. Plumb the check valve above ground for ease of future maintenance.

NOZZLE PLACEMENT - SPAS

Keep in mind that if cleaning nozzles in the spa are part of the cleaning cycle of the swimming pool, consideration must be given to the additional water being injected into the spa. This water must be removed via dam wall overflow, equalizer line, etc. When plumbing a spa, it is recommended the nozzles be on a separate port of their own.

NOTICE

Separate line with check valve required on raised water features or spas.

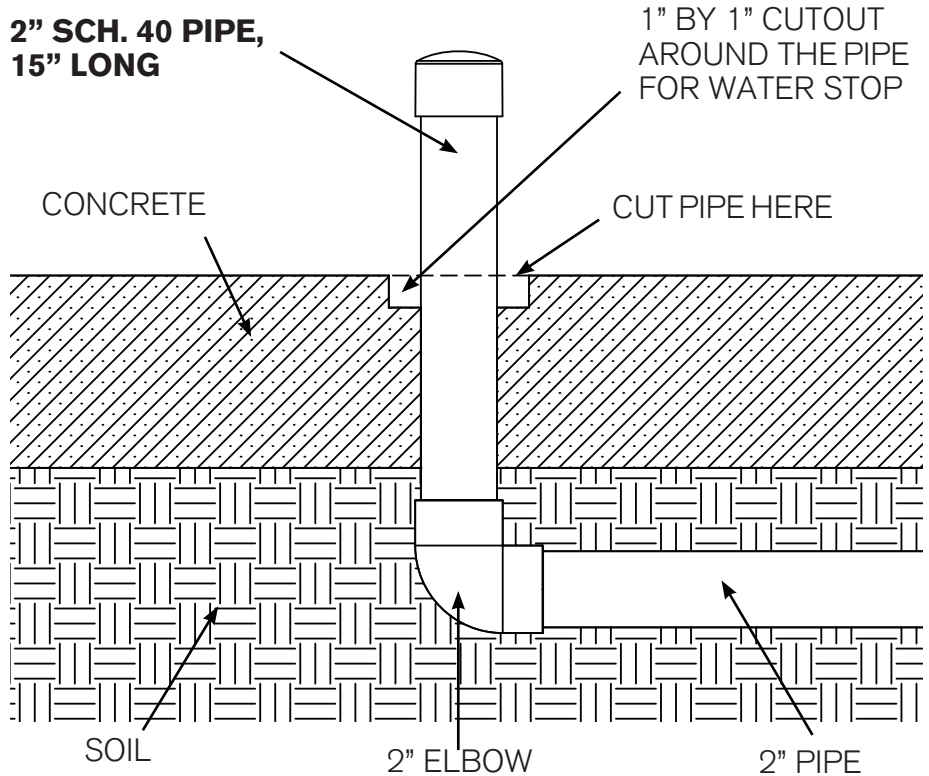


PLUMBING NOZZLE BODIES

NOTICE

All risers must be 90 degrees (perpendicular) to the finished floor

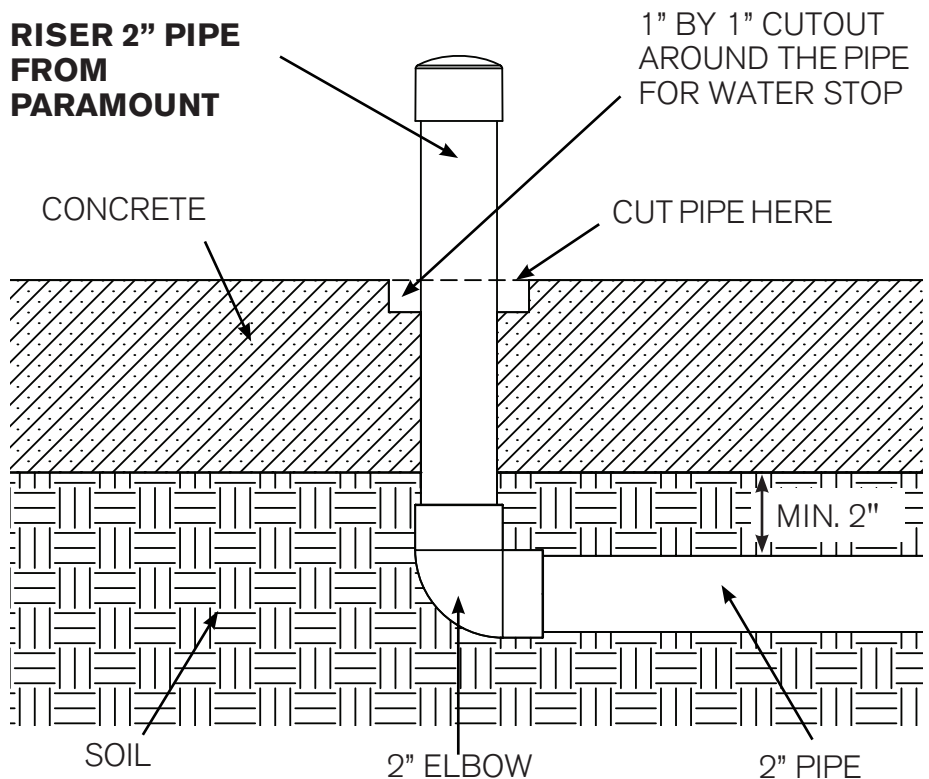
PLUMBING FOR RIBBED BODY



NOTICE

All risers must be 90 degrees (perpendicular) to the finished floor

PLUMBING FOR SMOOTH BODY

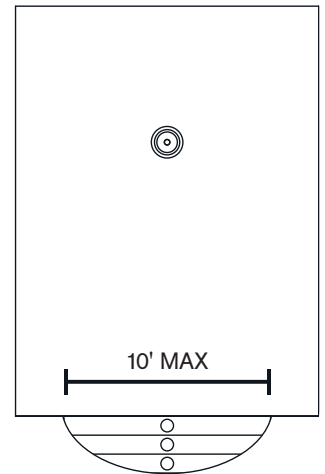
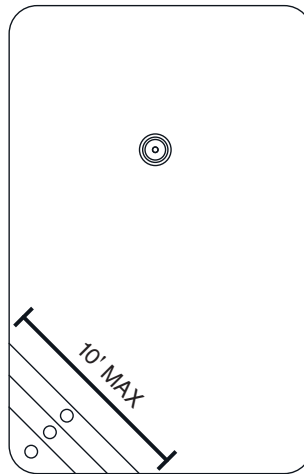
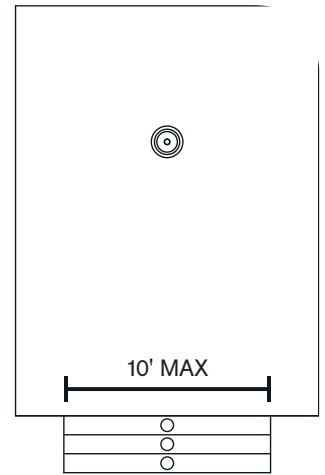
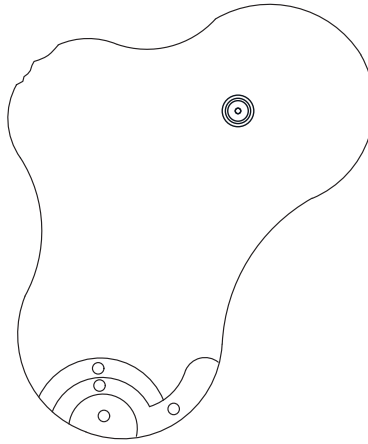


PLUMBING NOZZLE PLACEMENTS

NOZZLE PLACEMENT STEPS / BENCHES / SWIM-OUTS

1. Using a 5' radius, indicate location of step-cleaning nozzle.

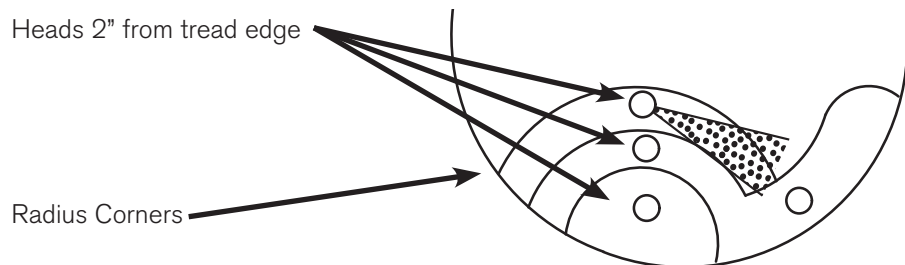
NOTE: Each nozzle will not clean more than 5' radius on steps or benches.



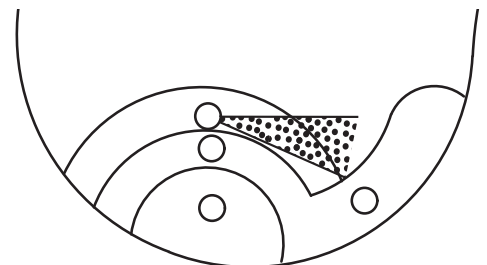
2. Nozzles should be pulled out as far as possible in order to reach corners.

3. Reversed radius* of step corners will help to eliminate dirty steps.

* This will also help with the floor cleaning where the bottom step meets the pool wall.



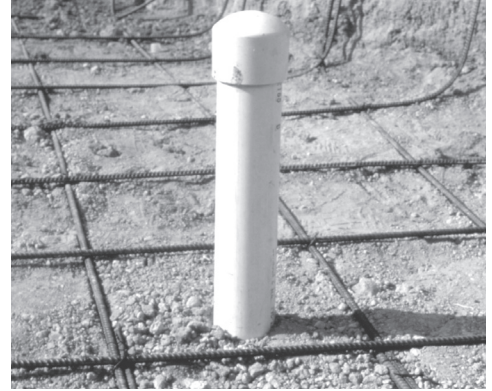
CORRECT



INCORRECT

STEEL DETAIL

Rebar must be kept away from 2" PVC riser. Rebar should be bent around any riser or pipe so that steel is minimum of 2" away from the pipe.



CONCRETE DETAIL

GUNITE OR SHOTCRETE PROCESS

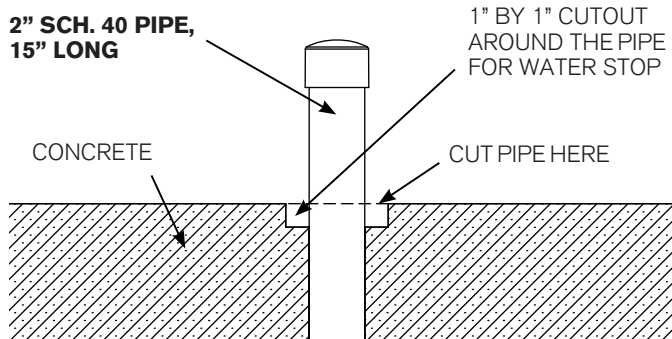
CONCRETE:

1. Make a cutout or opening approximately 1" deep and 1" bigger than the pipe.
2. This cutout will be filled with plaster and create a water stop.

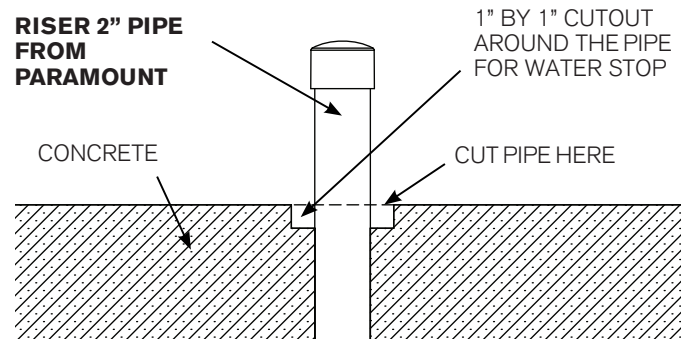
Verify the angle of the risers as it is imperative that the riser angle be 90 degrees from the finished floor angle. Check that the system did not lose pressure prior to shooting the pool and upon completion.



PLUMBING FOR RIBBED BODY



PLUMBING FOR SMOOTH BODY

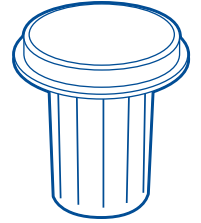


PREPLASTER DETAIL

RIBBED BODY INSTALLATION GUIDE

NOTICE

Heavy body glue is required.

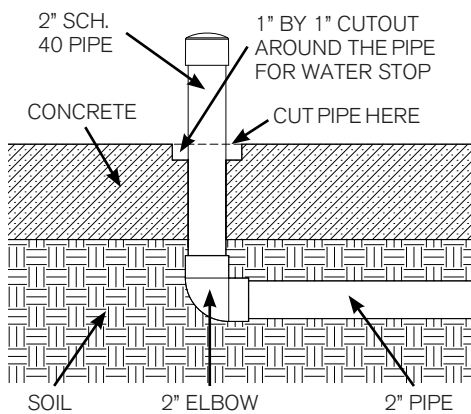


1



Make a cutout or opening approximately 1" deep and 1" bigger than the pipe.

This cutout will be filled with plaster to create a water stop.



2



Cut off riser pipes flush with concrete surface.

3



Remove cap. Prime the inside of the pipe.

NOTICE DO NOT PRIME THE BODY. DO NOT ROTATE THE BODY IN THE PIPE.

4

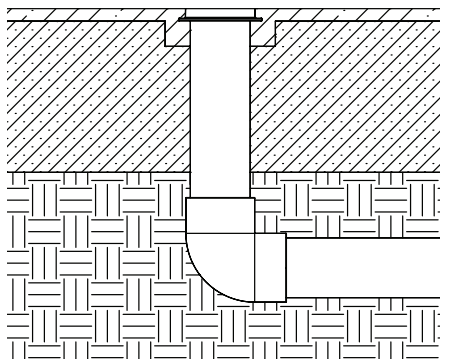


Glue the body into the pipe with a HEAVY BODY PVC SOLVENT CEMENT.

NOTICE (IPS WELD-ON 711 or equivalent) The glue must cover the full length of the body barrel and 3" deep inside the riser pipe. Push the body into the pipe until the shoulder hits the top edge of the pipe.

Let fumes vent for 30 minutes then replace all body caps.

5



PLASTERING THE POOL

Leave all plaster caps in place for removal at start up.

NOTICE

Optional, the plaster crew may remove the plaster caps as they finish.

The body does not come with the nozzle installed.

SMOOTH BODY INSTALLATION GUIDE

NOTICE

You can use regular PVC glue on smooth body

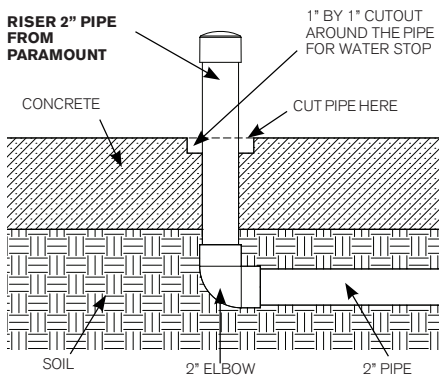


1



Make a cutout or opening approximately 1" deep and 1" bigger than the pipe.

This cutout will be filled with plaster or other finish coat to create a water stop.



2



Cut off riser pipes flush with concrete surface.

3



Remove cap. Prime the inside of the pipe.

NOTICE DO NOT PRIME THE BODY.

4

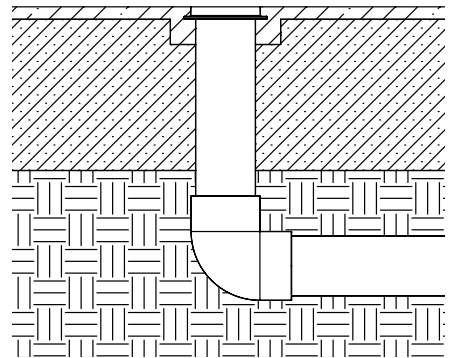


Glue the body into the pipe with a regular PVC glue.

NOTICE The glue must cover the full length of the body barrel and 3" deep inside the riser pipe. Push the body into the pipe until the shoulder hits the top edge of the pipe.

Let fumes vent for 30 minutes then replace all body caps.

5



PLASTERING THE POOL

Leave all plaster caps in place for removal at start up.

NOTICE

Optional, the plaster crew may remove the plaster caps as they finish.

The body does not come with the nozzle installed.

START UP - REMOVE PRESSURE TEST PLUGS, INSTALL BASKETS & LIDS



WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Turn off pump before installing valve. Do not stand over valve.

1. Remove all pressure test plugs.



2. Install all baskets and lids.



Valve Installation

Before installing the module, startup the pump and run without the module in place to clear any debris from the feed lines. After the module is installed and before installing the nozzles, run the water valve to clean out any debris in the cleaning circuits. If a circuit has more than one nozzle, alternate blocking off all but one nozzle on that circuit one at a time to clean out any debris. Use of the pause control will hold the valve on that port while doing this. The equipment needs to run for a minimum of ten minutes before installing the valve module.



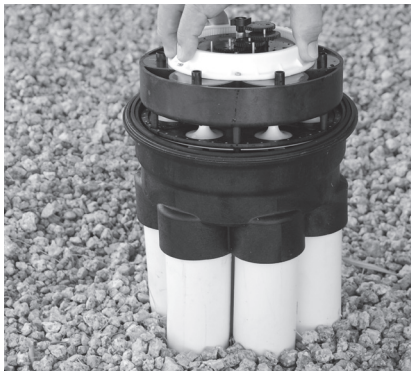
1. Turn off the pump



2. Remove clamp and dome



3. Clean and install base o-ring



4. Set module into base



5. Turn module slightly until it sits in place lined up with guide pins



7. Turn water valve to "RUN" position



7. Place dome over module. Secure dome and base with band clamp



8. While tightening band clamp, lightly tap clamp with a screwdriver or wrench

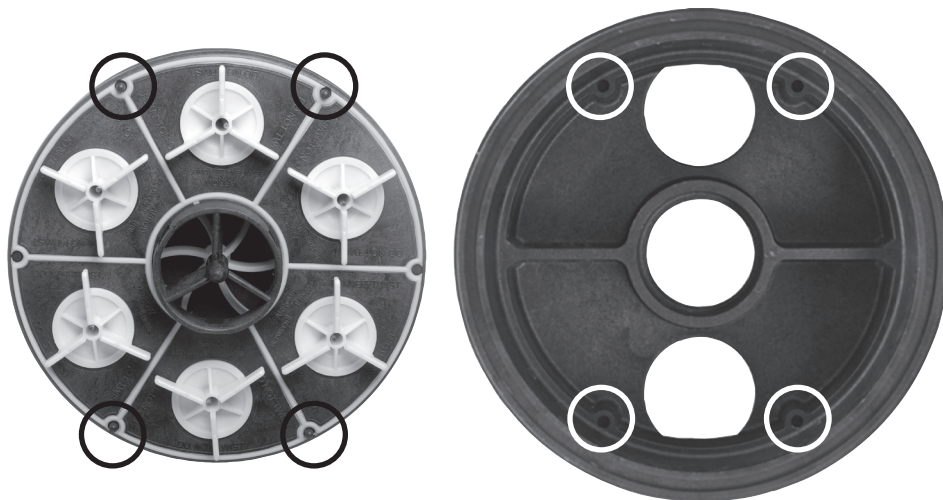


9. Inspect for leaks

PARAMOUNT MODULE ALIGNMENT GUIDE

FOR THE WATER VALVE TO FUNCTION PROPERLY IT IS IMPERATIVE THAT THE MODULE BE PLACED IN CORRECT ORIENTATION TO THE BASE. IF THE MODULE IS PLACED INCORRECTLY, MULTIPLE ZONES OF NOZZLES IN THE POOL WILL FIRE AT THE SAME TIME. TO ENSURE THIS IS DONE, PLEASE FOLLOW THESE INSTRUCTIONS.

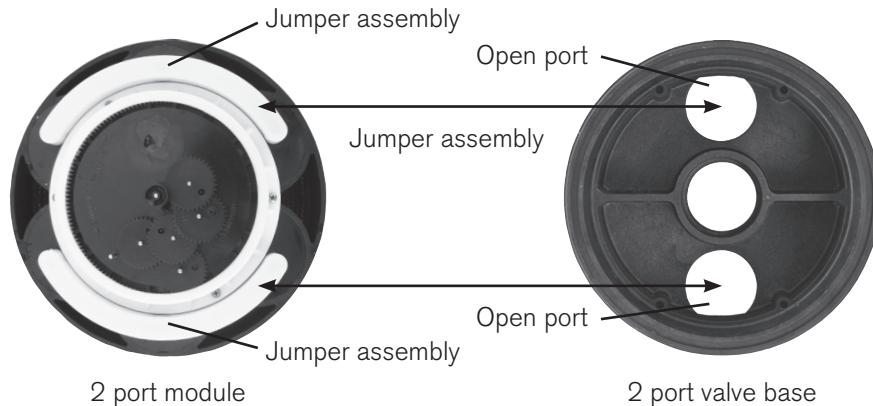
There are guide pins on the module that will line up with the holes in the valve body.



2 Port Module Alignment

1+1 module

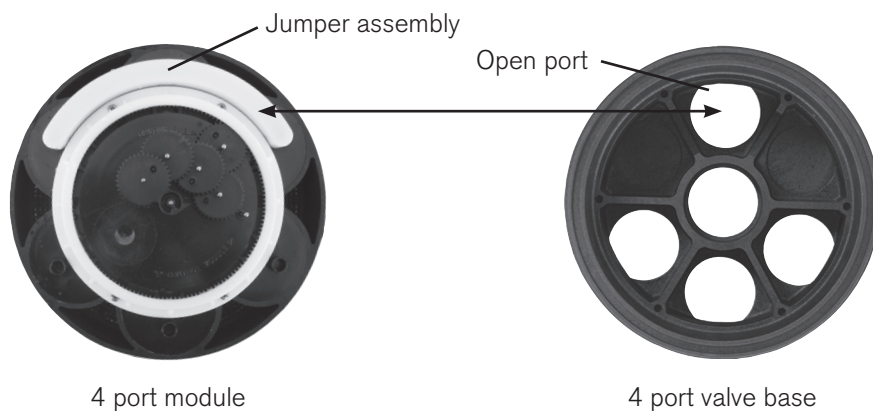
To correctly place the module in the base, the 2 white jumper assemblies must be centered over the 2 open ports in the base.



4 Port Module Alignment

3+1 module

To correctly place the module in the base, the white jumper assembly must be centered over the single open port in the base.



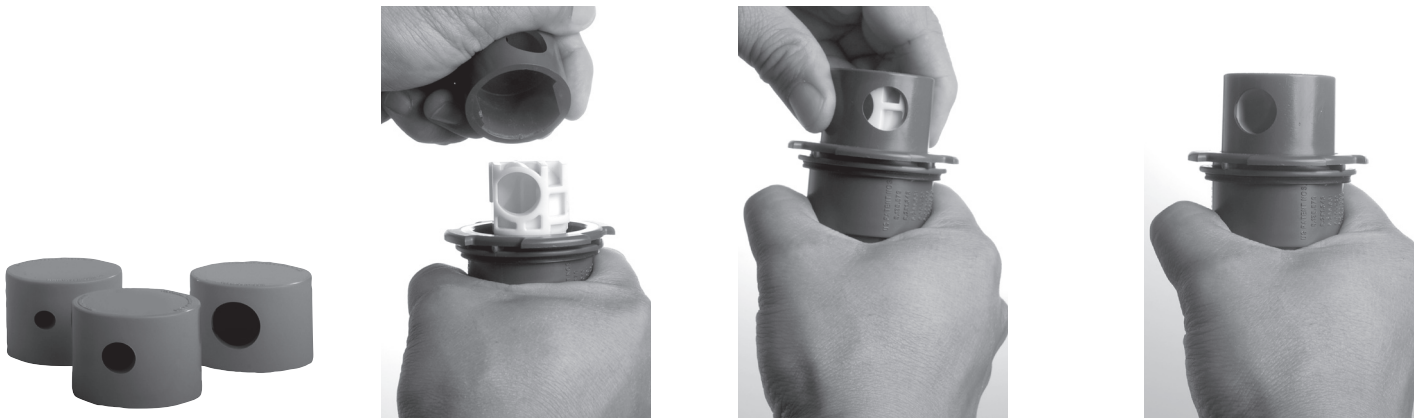
SYSTEM START UP

CLEANING NOZZLE INSTALLATION

Before installing nozzles flush all lines by:

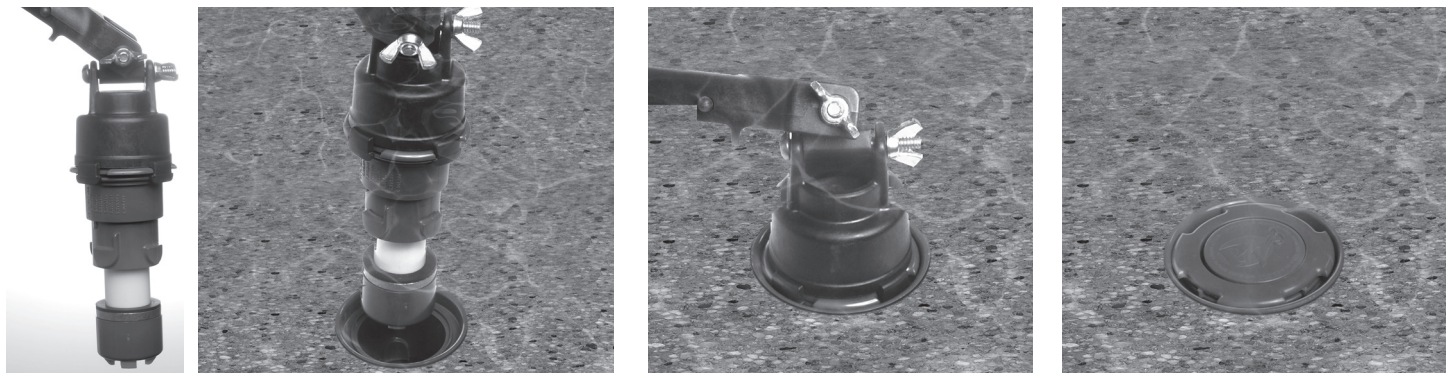
- a. Start pump, run for 10 minutes before installing the water valve module.
- b. Install the water valve module and let valve cycle to flush out any debris remaining in each line.

PVR NOZZLE WITH TWIST LOCK CAP



1. Select nozzle size from pool plan and using the nozzle tool to twist on caps.
2. Grip the nozzle tightly and place the cap on the nozzle. It will only go on and twist one way.
3. Turn cap clockwise until it snaps into place.
4. To remove the cap twist cap counter clockwise.

INSTALLING NOZZLE IN-FLOOR



1. Snap the nozzle onto the install tool (part #004-627-5452-00) by twisting. Start with nozzle closest to the valve and as red plaster caps blow out install nozzles.
2. Install nozzle in body by turning clockwise one-quarter turn.

WINTERIZING INSTRUCTIONS

WINTERIZATION PROCEDURE FOR IN-FLOOR SYSTEM

There are many methods to winterizing a pool and pool equipment. Different methods are used depending on regional conditions. It is the pool operator's responsibility to ensure all components of the pool and pool equipment are protected from the most severe freeze conditions in their specific area.

Winterizing a Paramount Pool & Spa Systems in-floor pool is the same as any pool with a main drain; it just has a few more lines to winterize. These procedures are to be used in addition to standard winterization methods normally used in your area.

To Do List:

- ☐ Store the Paramount valve module, canister inner lid and basket in a safe, dry place.
- ☐ Remove and store any "down-jets" located above the freeze line.
- ☐ Blowout and airlock all pool lines.
- ☐ Remove all water from the canister and replace with swimming pool anti-freeze and an empty jug, the same way you winterize skimmers.

The following steps are procedures recommended for proper winterization of all Paramount In-Floor Cleaning Systems. These procedures do not replace normal winterization procedures but are instead in addition to them.

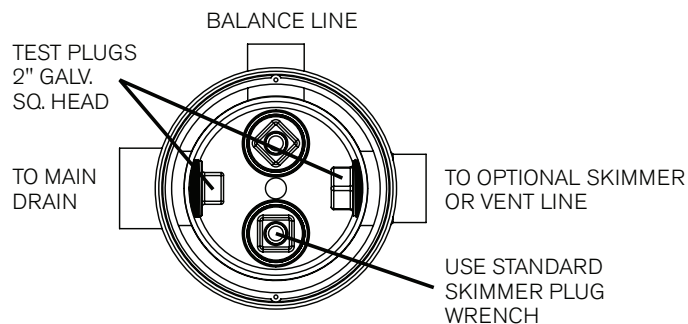
For drain winterization instructions consult manufacturer's instructions for that drain.

WINTERIZATION PROCEDURE FOR DECK SIDE DEBRIS CANISTER



1. Remove outer lid, inner lid and basket, clean and dry off, and store in same area as modules.
2. Install and secure regular winterization plug in equalizer line of canister to pool at poolside.
3. Install and secure Schrader plug or blow out plug from canister to main drain. Blow out and obtain air lock as previously described, if skimmer is tied into canister, repeat procedure to skimmer.
4. Bottom port of canister to pump may require an extended pipe for ease of blowing out. Install and blow out line from canister to pump. Install and secure plug in pump. Using shop vac, remove all water from within canister components.
5. Extension pipe can be removed and replaced with plug or Gizmo type container if Gizmo not used. Be sure to install device to absorb ice expansion in canister area. Failure to do this may result in potential ice freeze damage to canister.

Winterization anti-freeze is to be used as necessary or when required.



WINTERIZATION PROCEDURE FOR EQUIPMENT SIDE DEBRIS CANISTER

The EDC canister must be winterized in areas prone to freezing temperatures.

1. Remove the EDC canister lid and basket (and optional fine mesh bag).
2. Use a wet or dry vacuum to remove all the water from the EDC.
3. Replace the EDC lid and proceed with your normal winterizing process.

Consult your local pool professional for the best winterizing method.



WINTERIZATION PROCEEDURE FOR WATER VALVE

1. Turn off and drain out all pool equipment.
2. Remove valve lid or lids from valve(s). Remove module(s) from valve housing(s). Store module in dry clean area out of the winter elements for winter until re-installation in spring. (See Fig. 1, 2)
3. Remove any down jet or returns in pool (threaded or slip) including down jet body for a secure fit of winterizing plug. Store with module(s). (See Fig. 3)
4. From valves to pool, place a Schrader plug or blow out plug as recommended. Install and secure Schrader or blow out plugs in all parts of valve(s) (except center feed port of second and multiple valves when multiple valves are being used). Proceed to blow out lines through Schrader or blow out plugs to pool. (See Fig. 4)
5. While blowing out the in-floor nozzles, once a good amount of air has come through the nozzle, you have accomplished an air lock. (This procedure is similar to obtaining an air lock when blowing out the bottom drain in the pool.) Blow out center port of first valve back to filter equipment and plug.
6. While blowing out the down jets or any nozzle bodies above freeze zone. and while air is escaping through the in-wall hole, install and secure a regular winterizing plug. Repeat until all ports are blown out. (See Fig. 4)
7. In cases where multiple valves are in use, blow out the feeder port of the first valve into the center port of the second or multiple valve(s), install, and secure plug.
8. When necessary, pool winter anti-freeze solution should be poured into each line.
9. Valve housing(s) should be wiped clean and dry of water, reinstall top lid and secure.

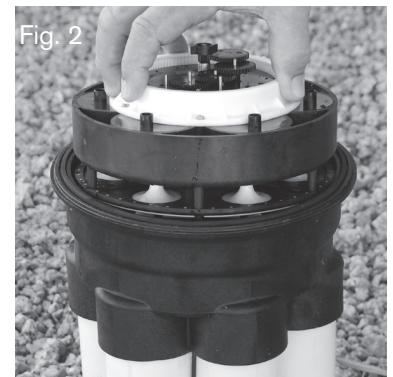


Fig. 3

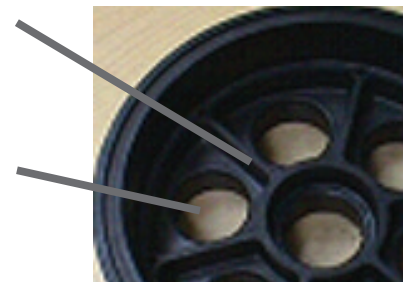


Fig. 4



#9

#6
#11



TROUBLESHOOTING

IN-FLOOR CLEANING SYSTEM TROUBLE SHOOTING

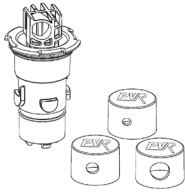
ISSUE	SOLUTION
The system doesn't clean like it has previously	<ul style="list-style-type: none"> • If the nozzles are turning on and off in groups, but don't clean as far as they once did, then the in-floor system isn't getting enough water to run effectively. A quick way to check this is by looking at the pressure gauge, it needs to be 20 PSI or above. • Service the filtration system, clean all baskets, and clean the filter? • Make sure auxiliary valves, spa jets, waterfalls, manual surface returns are not open when the pool is in it's cleaning mode.
Dirt collects around one nozzle. Nozzle stays up all the time	<p>When a Nozzle stays up, even when the pump is off, something is stuck in it. Try the following items one at a time until the problem is solved.</p> <ul style="list-style-type: none"> • Push the Nozzle down with a pool pole. • Remove the Nozzle, rinse to remove all debris. • Replace if damaged - Read Lifetime Limited Warranty. Nozzles are covered for life, if you are the original pool owner.
Nozzle pops up and down, but does not rotate	<ul style="list-style-type: none"> • When the nozzle is up, try pushing on it with a pool pole. This may dislodge debris. • Remove the Nozzle, rinse to remove all debris. • Replace if damaged - Read Lifetime Limited Warranty. Nozzles have a lifetime guarantee, if you are the original pool owner.
One set of nozzles stay up whenever the pump is on	<p>One set of Nozzles stays up all the time, even though the other sets cycle up and down. A part inside the Module has a problem.</p> <ul style="list-style-type: none"> • Debris is holding one piston open all the time. Remove the debris. • Piston diaphragm is broken - Replace Module.

<p>Clean area around one zone only</p>	<p>When one set of Nozzles comes on with the pump each day, but never rotates more than once a day, the Water Valve isn't cycling.</p> <ul style="list-style-type: none"> • "Pause" Mode may be active. Turn the Knob on top of the Water Valve to "RUN". • "Turbine" may be jammed with debris. "Open the Water Valve", remove the Module, and inspect Turbine. • Look for debris. • Does Turbine move freely? - If yes, the debris may be in the pipe out of sight. Turn on the pump for a few seconds to clear the line. • Does turning Turbine turn the Gears? - If not replace Module.
<p>All nozzles are floating when the pump is on</p>	<p>When all Nozzles are floating, or have water running through them all at the same time check the Module.</p> <ul style="list-style-type: none"> • Module is missing - replace Module • Module is damaged and all pistons are open. Replace module. • Module is not seated properly - remove Module, remove any debris found inside Base and on Module, reinstall Module.
<p>Nozzle comes out of floor body</p>	<ul style="list-style-type: none"> • Make sure O-Ring is in place and reinsert into floor body, turn clockwise 1/4 turn to seat • If nozzle continues to come out, retainer lock is worn. Read lifetime limited warranty, nozzles are covered for life if you are the original pool owner. Replace nozzle.

PRODUCT PART NUMBERS

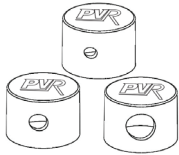
PVR BODIES & NOZZLES

PVR Nozzle



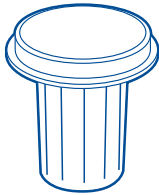
Item Number	Product Description
White 004-617-4000-01	PVR Nozzle with Nozzle Cap
Gray 004-617-4000-02	
Black 004-617-4000-03	
Lt. Blue 004-617-4000-06	
Beige 004-617-4000-07	
Lt. Gray 004-617-4000-08	

PVR Nozzle Caps



Item Number	Product Description
White 005-617-1000-01	PVR Nozzle Caps (3 Pieces - 1/4", 3/8", 5/8" - 1 Each)
Gray 005-617-1000-02	
Black 005-617-1000-03	
Lt. Blue 005-617-1000-06	
Beige 005-617-1000-07	
Lt. Gray 005-617-1000-08	

PVR Ribbed Body



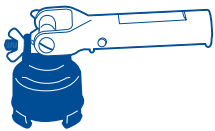
Item Number	Product Description
White 004-617-1000-01	PVR Ribbed Body with Cap
Gray 004-617-1000-02	
Black 004-617-1000-03	
Lt. Blue 004-617-1000-06	
Beige 004-617-1000-07	
Lt. Gray 004-617-1000-08	

PVR Smooth Body



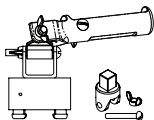
Item Number	Product Description
White 004-617-3000-01	PVR Smooth Body with Cap
Gray 004-617-3000-02	
Black 004-617-3000-03	
Lt. Blue 004-617-3000-06	*Requires the use of a riser #005-252-1520-00 or 005-252-1522-00
Beige 004-617-3000-07	
Lt. Gray 004-617-3000-08	

Small Nozzle Tool



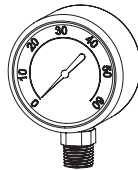
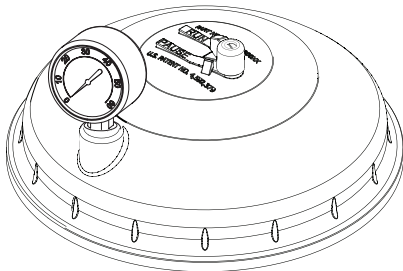
Item Number	Product Description
004-552-5452-00	Small Nozzle Tool, Plastic Handle

Small Nozzle Stainless Steel Service Tool with 1/2" Drive Adaptor



Item Number	Product Description
004-252-5443-00	Small Nozzle Stainless Steel Service Tool with 1/2" Drive Adaptor

WATER VALVE / MODULE

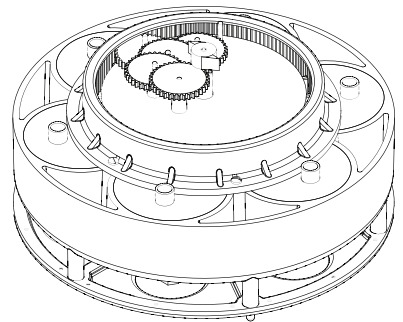


005-302-3590-00
Pressure Gauge

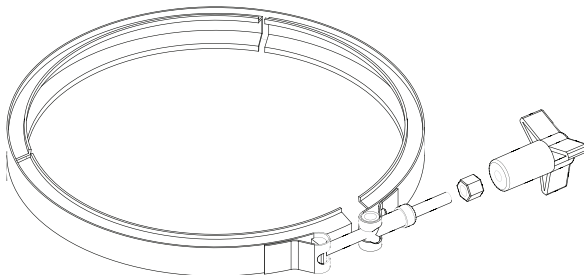
005-302-3502-00
Pause Assembly
Includes: Screw Knob, O-Ring & Pawl



005-302-4300-03
Top Dome Complete
Includes: Top, Gauge & Pause Assembly



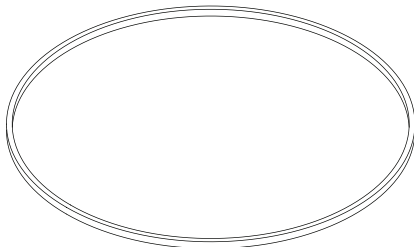
Modules:
004-302-4400-00 2 Port 4 Gear
004-302-4402-00 2 Port 5 Gear
004-302-4404-00 3 Port
004-302-4406-00 4 Port
004-302-4408-00 6 Port



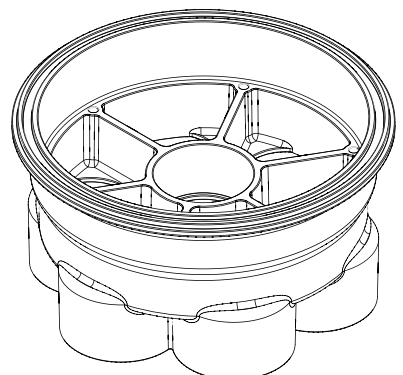
005-302-3570-00
Band Clamp (Complete)
Includes Knob & Nut

005-302-3600-00
Band Clamp Knob

005-302-0640-00
Band Clamp Nut



005-302-0100-00
Base O-Ring



Valve Base (US)*:
005-302-4002-03 2 Port Base 2" Black
005-302-4012-03 3 Port Base 2" Black
005-302-4018-03 4 Port Base 2" Black
005-302-4032-03 6 Port Base 2" Black

Valve Base (Metric):
005-302-4006-03 2 Port Base 63 mm Black
005-302-4019-03 3 Port Base 63 mm Black
005-302-4020-03 4 Port Base 63 mm Black
005-302-4033-03 6 Port Base 63 mm Black

*US 2" is equivalent to Australian 50 mm.