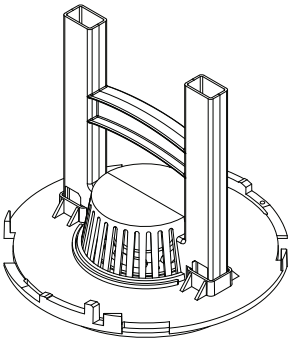


MVFUSE

MAGNETIC VACUUM RELEASE

SAFETY VACUUM RELEASE SYSTEM (SVRS)

FOR DEBRIS CANISTER APPLICATIONS

Owner's Manual & Instruction Guide

⚠ WARNING

To Installers:

Read and follow these instructions. Give these instructions to the facility owner to keep for future reference. Follow all codes and regulations that apply to the design, installation and use of suction outlet fittings and SVRS devices.

The drain system and MVFUSE must be installed in accordance with Paramount's written instruction manual, and in conformity with applicable Federal, State, Local and swimming pool industry building safety codes.

MADE IN USA BY PARAMOUNT

USPC®

Safety compliant according to the Virginia Graeme Baker Pool and Spa Safety Act ASME A112.19.17-2010 Listed

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

004-027-8840-00 R00 ECN1381 PUB11/28/17

295 East Corporate Place • Suite 100 • Chandler, AZ 85225

Toll Free: 1.800.621.5886 • Phone: 480.893.7607 • Fax: 480.753.3397

Paramount@1Paramount.com • www.1Paramount.com

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.

SUCTION ENTRAPMENT HAZARD:

⚠ DANGER

DEATH or SERIOUS INJURY will result if a drain cover or grate is not installed and used correctly.

- Pool and spa pumps produce high levels of suction and move high volumes of water, which can cause death or serious injury if a person comes in close proximity to pool or spa drains.
- Keep clear of pool and spa drains to avoid death or serious injury from suction.

⚠ DANGER

DEATH or **SERIOUS INJURY** will result from **hair entanglement or limb entrapment.**

- Keep clear of pool and spa drains.
- Hair sucked into pool or spa drains will tangle and knot trapping the swimmer underwater. Avoid placing your hair near a pool or spa drain.
- Avoid sitting on pool or spa drains because the suction can cause severe intestinal damage, evisceration, and/or disembowelment.

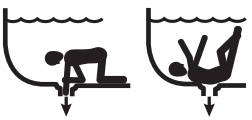
⚠ DANGER

DEATH or **SERIOUS INJURY** will result from pool or spa drain covers or grates that are improperly installed, missing, clogged, or broken.

- Inspect pool and spa before each use to ensure that drain covers and grates are properly in place and secured.
- Ensure that drain covers are not damaged, cracked, broken, loose, clogged, not properly secured, or missing because these conditions increase the chance of death or serious injury from entrapment.
- If a drain cover is discovered damaged, cracked, broken, loose, clogged, not properly secured, or missing, you should:
  - Close the pool or spa immediately; and,
  - Post a closure notice and keep the pool or spa closed until an appropriate ANSI/APSP -16-2011 certified drain cover is properly installed.

⚠ DANGER

DEATH or **SERIOUS INJURY** will result from contact with a damaged, loose, or missing drain cover.



- Do not allow limbs to contact or be inserted into a drain pipe with a damaged, loose, or missing drain cover. This could result in swelling of the limb and/or trapping a swimmer underwater.
- Avoid mechanical entrapment of jewelry, swimsuit, hair decorations, finger, toe, or knuckle in a drain pipe with damaged, loose, or missing drain cover. This may result in trapping a swimmer underwater.
- Do not allow body to come into contact with a drain pipe that has a damaged, loose, or missing drain cover. This may result in trapping a swimmer underwater.

MVFUSE INSTRUCTIONS & WARNINGS:

⚠ WARNING The MVFUSE is designed and intended to be used as an additional "layer of protection" to protect against a sudden entrapment event. The MVFUSE is not a stand alone device and should only be used in conjunction with an ASME a112.19.8 Listed suction fitting rated appropriately for the flow rate of the pump and plumbing system it is connected to.

In the incident of a sudden entrapment event all bathers should exit the pool and not be allowed to reenter until such time as the MVFUSE can be reset, the pump fully primed and the reason for the entrapment is determined and corrected!

The MVFUSE is designed to protect a fully primed pump and may not release vacuum during priming of the pump. No bathers should be allowed in the pool while the pumps are priming!

The MVFUSE is designed to protect against a completely blocked suction system and may not detect a partial blockage, limb or hair entrapment. The MVFUSE is not designed to protect against disembowelment. The only protection from these types of entrapment is a properly fastened and intact ASME a112.19.8 Listed suction cover.

This pool may have an MVFUSE SVRS system as a layer of anti-entrapment protection on the suction outlets! If an MVFUSE SVRS is installed on this system attach the enclosed warning labels to the control panel as instructed on page 10 of this manual. If this pool or spa has been winterized the MVFUSE SVRS must be inspected and tested when starting the pool for the season. Remove the winterizing plugs from the debris canister and install the MVFUSE SVRS before energizing the pump(s)! Test the MVFUSE SVRS by blocking the drain. Air should enter the pipe and cause the pump to cavitate releasing the suction on the drain block. The MVFUSE is not protecting the suction with the winterization plug in place!

The MVFUSE uses a strong magnetic device and care should be taken when handling the unit. To avoid close contact to items affected by magnetism.

SRVS DEVICES ARE TESTED WITH A SINGLE FUNCTIONING SUCTION OUTLET.

⚠ DANGER Suction can pose a serious hazard to swimmers just as electricity can be a hazard. Both are important for proper water filtration and both must be treated with respect. Suction safety begins with a professional design that includes a quality suction system installed by a certified contractor.

Certified builders will address the following issues when designing and installing proper filtration systems:

- Properly bond-grounded pumps, time clocks, switches and any other metal in or near water. This is required to address Electrical Shock Hazards.
- Design the suction piping so there are no single-point suction hazards; single point suction (one drain) is a leading cause of Body Suction Entrapment Hazards. Note: your certified builder has many effective options for addressing this hazard' they may include dual drain systems, like MDX, MDX2 and SDX, skimmers, gutters, and other products and piping designs known to professionals.
- Install only drains, suction covers and debris removal systems listed to the current published revision of the ASME A112.19.8. This is the **ONLY** approved option for preventing Hair Entrapment Hazards, the leading cause of suction related injuries.
- Design and install an effective circulation system (including optional cleaning systems), to direct filtered water to all areas and interior surfaces.

NOTICE Suction fittings can NOT clean or direct filtered water for proper sanitation; that can only be done on the pressure (return) side of the filtration system.

While suction injuries are extremely rare, drowning and diving injuries are far too common and there is little your certified builder can do to eliminate these hazards. You must educate yourself and your guests. Below are some important safety issues every swimmer must know and recognize.

⚠ WARNING
- **PREVENT DROWNING**: Watch children at all times, no swimming alone.
- **NO DIVING IN SHALLOW WATER**: You can be permanently injured.
- **PREVENT SUCTION ENTRAPMENT**: Inspect suction covers before swimming, keep swimmers away from suction fittings, protect long hair, don't swim with loose clothing or large and dangling jewelry.

READ AND FOLLOW SAFETY INSTRUCTION BEFORE INSTALLING MVFUSE.

Give these instructions to the facility owner to keep for future reference. Follow all codes and regulations that apply to the design, installation and use of suction outlet fittings and SVRS devices.

- SVRS devices shall only be installed in conjunction with an ASME A112.19.8 suction fitting, or a 12 in. x 12 in. (305 mm x 305 mm) drain grate or larger, or an approved channel drain system at each suction outlet or drain outlet.
- Check valves and hydrostatic valves shall not be used in suction systems protected by SVRS devices.

⚠ WARNING The presence of a hydrostatic valve in the suction piping has been shown to prolong the high vacuum present at the drain, even though the drain was protected by an SVRS device.

- All SVRS devices shall be factory set or field adjusted to site-specific hydraulic conditions. Once installed, the system shall be tested by simulating an entrapment event.
  - A test mat shall be used to cover the suction outlet to simulate an entrapment event. There shall be three simulated entrapment test conducted to verify proper adjustment and operation of the device.
  - One SRVS device shall be installed for each circulating pump plumbed directly to the suction outlet(s) without the use of valves that could isolate the SVRS device from the suction system.

SYSTEM DESIGN

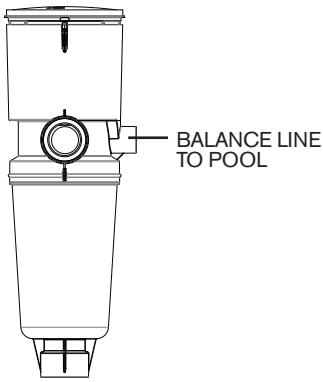
The MVFUSE is an SVRS device listed by IAPMO to conform to the specifications of ASME A112.19.17-2010. It is factory set for specific design criteria. For use in Paramount's in deck debris canister the unit is factory set at setting #4 (11.25 +/- .5 in Hg). If adjustment is needed see Test and Adjustment Procedure on page 7.

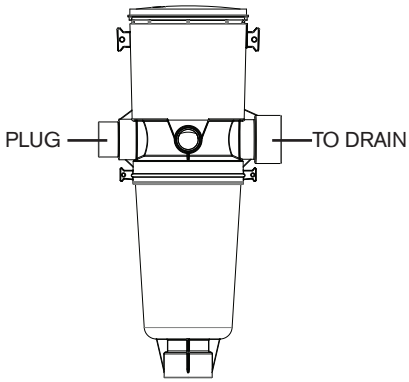
⚠ WARNING MVFUSE is a listed S.V.R.S. (Safety Vacuum Relief System) that is designed to break suction to prevent suction entrapment injuries and death. Removing, tampering with, modifying, and or changing the setting on the MVFUSE can result in serious injury or death. Please call your pool builder or 1.800.621.5886 for direction.

The following system design is important for nuisance free operation of factory set MVFUSE devices:

- The suction plumbing system should be designed to not exceed 6 feet per second.
- There should be dual ASME A112.19.8-2007 listed suction outlets a minimum of 3 feet apart at the suction inlet to the suction plumbing per one of the methods listed in ANSI/APSP-7 or other applicable building codes such as the IRC, IBC, Federal, State or Local which may be in force.
- The MVFUSE should be teed into the suction line as close to the drain as possible and mounted next to the pool in the deck.
- The balance line port on the side of the Debris Canister must be stubbed through the side of the pool or the pump will cavitate.

NOTICE Do not install MVFUSE on a canister with no balance line installed. It will cause the pump to cavitate!





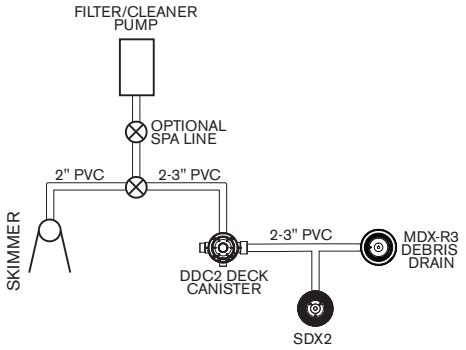
PLUMBING

NOTICE

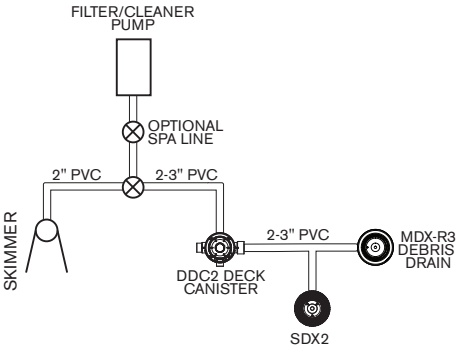
The 1 ½" canister balance line must be stubbed through the side of the pool or the pump will cavitate. This is a strong magnetic device, it should be kept away from anything that can be affected by magnets.

Both the canister and MVFUSE are packed together. Remove the MVFUSE and place in a safe area for installation during pool start up.

IN-DECK CANISTER REQUIREMENTS

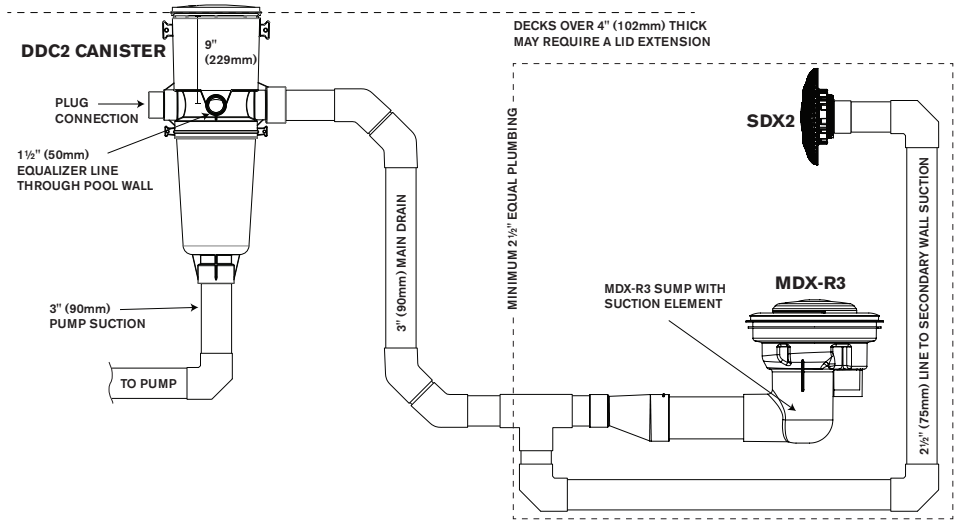


Single Pump System



Dual Pump System

In-Deck Debris Trap

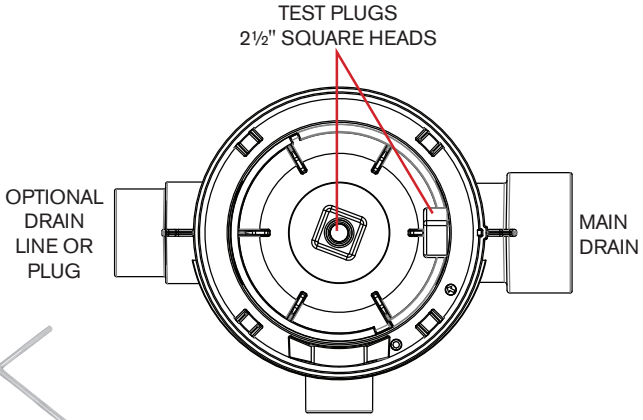


Pressure Test Detail

- Pressure should remain on the system through construction until interior cleanup.
- Use reversible ratchet to install test plugs, $1^{5}/_{8}$" or 12 pt. socket 2A406

NOTICE

Release pressure on the system before removing plugs



EXTRA LONG T-BAR HELPFUL
FOR INSTALLATION

PLASTER

Cut balance line stub flush with final interior finish of pool. A 1 ½" fitting may be used to finish end of pipe.

START UP

1. Remove all pressure test plugs.

2. Install fine mesh bag and basket.

3. Insert MVFUSE lid assemble into canister. Turn lid assembly clockwise until it clicks into place on the retention stops.

4. If the lid assembly is not held securely it will back out or bounce on startup causing the MVFUSE mechanism to open and cavitate the pump.

TESTING

⚠ WARNING

The MVFUSE must be tested at the initial startup of the pool after installation. The MVFUSE should be retested for proper operation once every month or every time the pool filter is cleaned.

MVFUSE is a listed S.V.R.S. (Safety Vacuum Relief System) that is designed to break suction to prevent suction entrapment injuries and death. Removing, tampering with, modifying, and or changing the setting on the MVFUSE can result in serious injury or death.

To test operation of the MVFUSE with a skimmer in the suction system.

1. Start the pump and ensure full prime then proceed to testing the MVFUSE.
2. If the pool has a skimmer attached to the pump open the skimmer valve all the way.
3. Turn off the pump.
4. Remove the MVFUSE from the canister and install a 2" threaded plug or rubber expansion plug into the drain line inside the canister.
5. Replace the MVFUSE into the canister, turn on the pump and close skimmer valve.
6. The MVFUSE should open within three seconds and allow air into the plumbing causing the pump to cavitate.
7. Turn off the pump, remove the MVFUSE and push the reset plunger on the bottom and replace the MVFUSE in the canister.
8. Open the skimmer valve and re-prime the pump. This test must be done three times to ensure proper operation of the MVFUSE.
9. Once you have determined the MVFUSE is functioning properly remove the plug from the canister and reset the skimmer valve.

Alternate MVFUSE test for plumbing system with no skimmer.

1. Start the pump and ensure full prime then proceed to testing the MVFUSE.
2. Block all drains on the plumbing system with a rubber or vinyl mat.
3. The MVFUSE should open within three seconds and allow air into the plumbing causing the pump to cavitate.
4. Turn off the pump, remove the MVFUSE and push the reset plunger on the bottom and replace the MVFUSE in the canister.
5. Remove the mat and re-prime the pump. This test must be done three times to ensure proper operation of the MVFUSE.
6. Once you have determined the MVFUSE is functioning properly remove all mats.

If the MVFUSE trips when the pump is started before the blockage is applied or the MVFUSE does not open and relieve suction when the valve is closed in step 7 or the mat is applied in alternate step 2, the setting is not correct for your suction system and the MVFUSE must be field adjusted. Please call your pool builder or 1.800.621.5886 for direction or for a trained technician in your area.

Troubleshooting: Resetting the MVFUSE after it has been triggered by a high vacuum condition. The MVFUSE is designed as a safety device and when a high vacuum is detected the magnet will be pulled open and air will be pulled into the suction line of the pump causing a release of the vacuum. If this happens, turn off the pump and check the drain for blockage. Once cleared remove the MVFUSE from the canister and push reset plunger on the bottom to an upward position to reset the magnet. Replace the MVFUSE in the canister and restart pump. The pump may need to be primed.

MVFUSE ADJUSTMENT

Sometimes improperly built plumbing systems may cause an elevated suction condition at the suction outlet. This can cause the MVFUSE to trip when the pump is started. This condition will require the MVFUSE to be adjusted to on-site field conditions.

Field Adjustment for Site Specific Conditions

- First clear all baskets and clean the filter. Make sure the pump is on its highest setting and the returns are wide open. This will ensure the maximum suction load at pump startup.
- Second test for the current static vacuum level.
    1. Turn off the pump, remove the MVFUSE.
    2. Install the plate with the vacuum gauge in the canister (Fig 1).
    3. Turn on the pump, read the vacuum gauge

Fig. 1

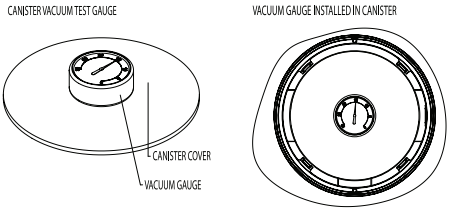
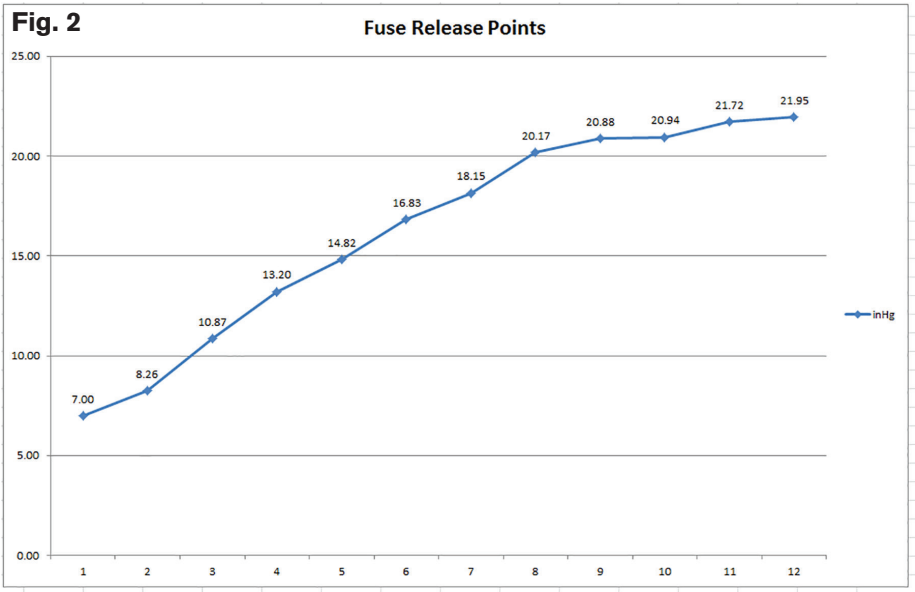


Fig. 2



- Match the reading from the vacuum gauge with the chart (Fig 2). The setting should be 5 inches above the reading to allow for startup surge. Note which setting this is from the chart below.
- Change the Setting Canister version
    1. Using a Phillips driver remove the two screws on the bottom of the unit. (Fig 3)

Fig. 3

2. Remove the handle. (Fig 4)

3. Look inside at the magnet housing hanging from a pin in a series of steps. (Fig 5) The highest step is the lightest or most sensitive setting shown in the picture. This setting will give the quickest response to an entrapment event. The 4th step down from the top is the factory setting. (Fig 6) **Warning! The closer to the lightest setting (highest step) the MVFUSE is set on the more protection you have.**

4. Grasp the top of the magnet assembly with the pliers and pull it out of the groove it sits in.(Fig 7)

5. Rotate the magnet assembly to the desired setting from the chart on the previous page.(Fig 8)

6. Roll the pliers off the part. If you try to pull them off the magnet assembly may come out of the housing assembly.(Fig 9)

7. Push the magnet assembly into the seat. (Fig 10)

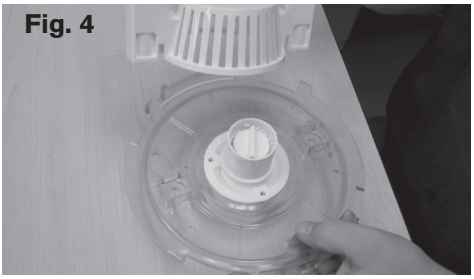
8. This will slightly increase the magnetic clamping.

9. Reassemble unit. The fuse assembly must be turned into the clear lid or the handle will not fit.

10. Install the MVFUSE in the canister.

11. Turn on the pump.

12. Rerun the startup test three times per the manual (page 7).



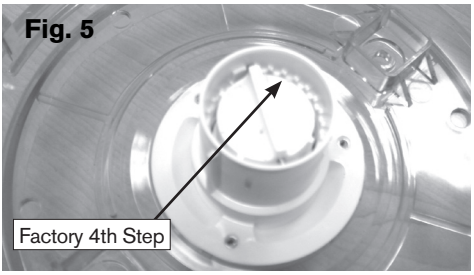
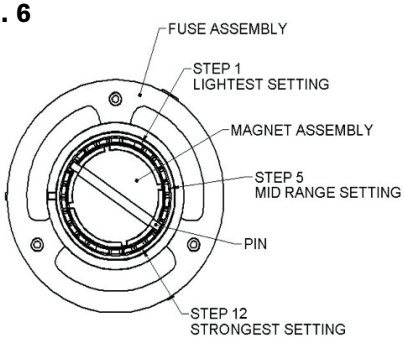
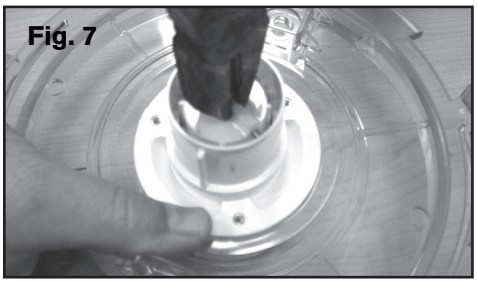
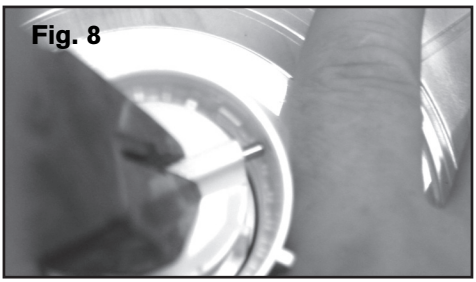
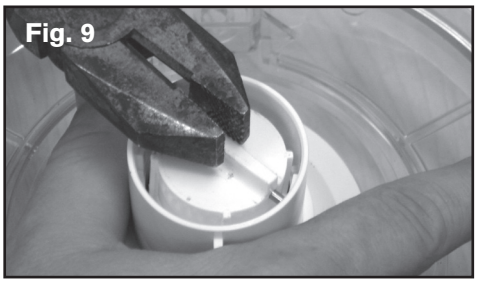


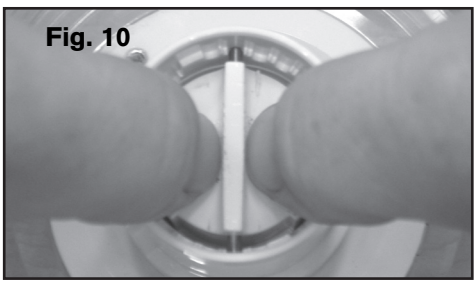
Fig. 6







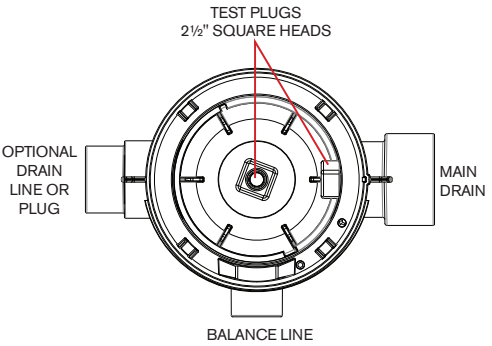




WINTERIZING INSTRUCTIONS

To winterize the MVFUSE Canister model

1. Remove MVFUSE 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 a wet/dry 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.

⚠ WARNING

When opening the pool after being winterized the MVFUSE must be checked for proper operation. Go to Test Section for instructions on page 7.

Additional questions should be forwarded to Paramount's corporate office at 800.621.5886.

NOTICE

MVFUSE Warning Label

Included in each MVFUSE is one warning label that needs to be placed on the pool equipment if the pool is to be winterized and has a MVFUSE on any of the drains plumbed on the pool.

Attach the label to the control panel next to the controller for the pump with the MVFUSE plumbed to it.

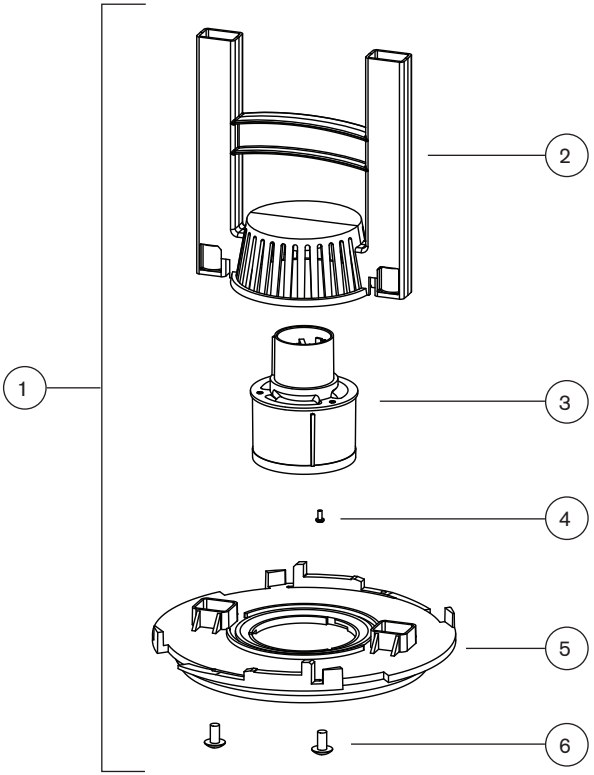
WARNING!

This pool is protected by an MVFUSE SVRS device. When starting pool after winterization, remove Plugs and reinstall MVFUSE into deck side canister before energizing pumps.

Test MVFUSE blocking drain three (3) times. Refer to manual for complete test instructions. Air should enter the pipe and cause the pump to cavitate releasing the suction on the drain block.

001-025-8250-00 REV11/09

MVFUSE PART #004-670-2000-00



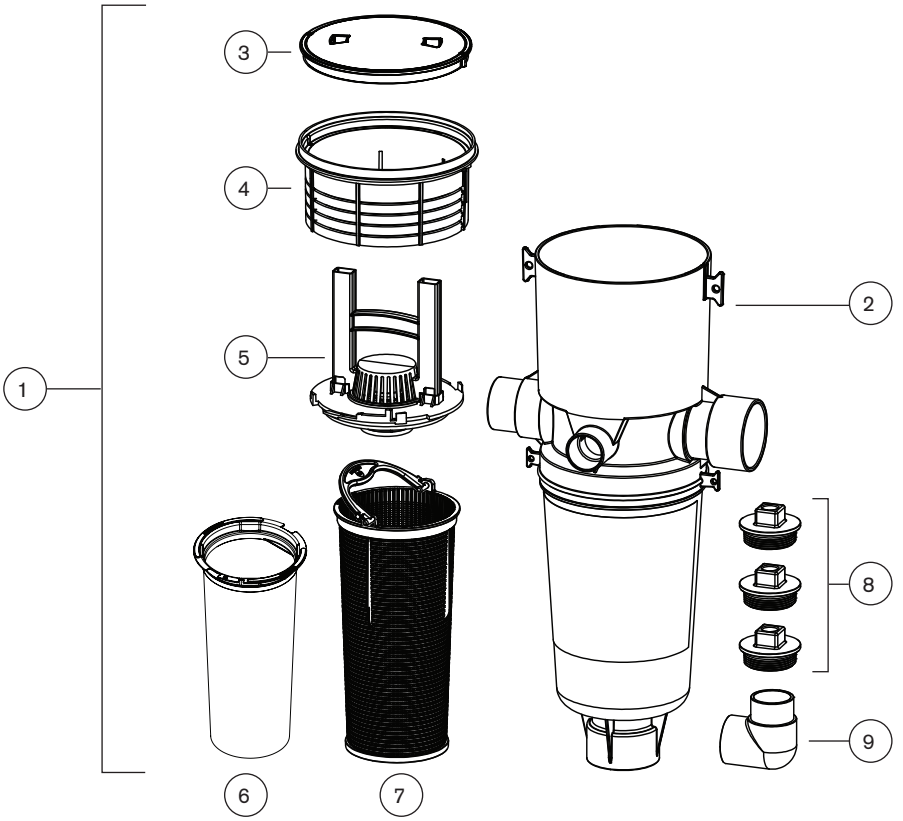
Item	Part Number	Description
1	004-670-2000-00	MVFUSE
2	*	MVFUSE Handle
3	*	MVFUSE Assembly
4	*	Screw 4-40 x 1/4 Mach #10 Torx Pn Hd 316 SS
5	*	MVFUSE Canister Lid
6	*	Screw 1/4-20 x 1/2 Mach Phil Truss Hd 316 SS

* Not Available Separately

WARNING: MVFuse 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.

WARNING MVFUSE is a listed S.V.R.S. (Safety Vacuum Relief System) that is designed to break suction to prevent suction entrapment injuries and death. Removing, tampering with, modifying, and or changing the setting on the MVFUSE can result in serious injury or death.

DDC2 CANISTER WITH MVFUSE PART #004-152-4730-XX



Item	Part Number	Description
1	004-152-4730-XX	DDC2 Canister with MVFuse
2	*	DDC2 Canister only
3	005-252-4572-XX	Deck Lid
4	005-252-4880-XX	Deck Ring
5	004-670-2000-00	MVFuse
6	004-152-4517-00	Fine Mesh Bag
7	005-152-2207-00	Debris Basket
8	*	Pressure Test Plugs
9	*	Street Ell

01 - White 07 - Beige 08 - Light Gray

* Not Available Separately