

MDX DEBRIS REMOVAL SYSTEM MANUAL



"We make pool care automatic."

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MDX Debris Removal System Manual



DEBRIS **REMOVAL** SYSTEM

Notice to Installers:

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

U.S. Patent No.: 6,810,537

Model: MDX Series 004-XXX-XXXX-YY 2 1/2" / 004-XXX-XXXX-YY 75mm

Listed by IAPMO Research & Testing, Inc. File No. SP-4370

ASME/ANSI A112.19.8M—1987

IMPORTANT NOTICES: PLEASE READ



WARNING

KNOWN DROWNING HAZARD.

DO NOT GO NEAR THE SUCTION FITTINGS OR DRAINS OF YOUR POOL OR SPA. YOUR HAIR OR BODY MAY BECOME TRAPPED CAUSING PERMANENT INJURY OR DROWNING.

DO NOT ENTER THE POOL OR SPA IF SUCTION FITTINGS OR DRAIN COVERS ARE LOOSE, BROKEN, OR MISSING.



WARNING

RISK OF SEVERE INJURY OR DROWNING IF SUCTION SYSTEMS ARE NOT INSTALLED PROPERLY!



NOTICE TO OWNER:

READ, FOLLOW, AND SAVE THESE SAFETY INSTRUCTIONS.

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.

The MDX Debris Removal System is only available to certified contractors for the same reason certified electricians are required to connect filtration pumps to public utilities; both require proper training and certification to assure no hidden hazards are built into the project.

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

- 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, skimmers, gutters, negative edge features and many more products and piping designs known to professionals.
- Install ASME/ANSI A112.19.8M listed drains, suction covers and debris removal systems. 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. NOTE: 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.

- **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.

MDX DEBRIS REMOVAL SYSTEM DESIGN

System Design:

NOTICE:

The MDX Debris Removal System requires the proper installation of all anti-entrapment features including a second suction outlet with a listed suction outlet fitting and one of the four vacuum breaker installation methods on the following pages.

These MDX instructions provide four design methods to choose from. Your local codes may require additional safety measures. Paramount Pool & Spa Systems and its representatives cannot recommend or endorse installation methods other than those provided in these MDX instructions.

NOTICE — Maximum Pump Size:

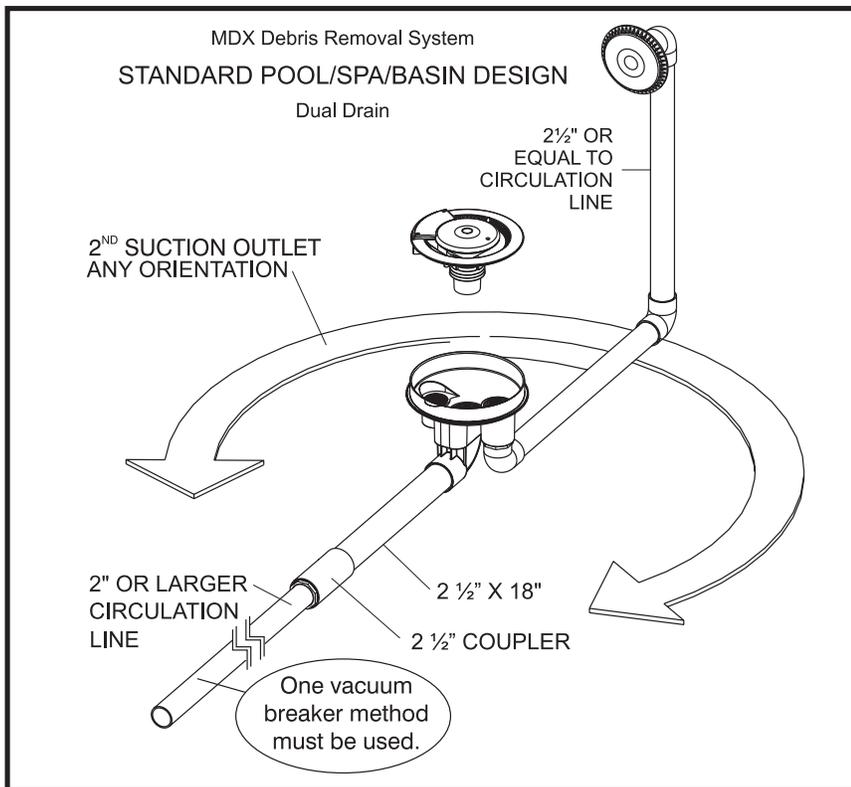
MDX is rated for a maximum of 90 GPM. While system flow rate will vary with pump size and the Total Head Loss for a given system, virtually any modern pump is capable of exceeding this limit, therefore it is the responsibility of the system designer to make sure it is not possible to exceed 90 GPM.

MDX DEBRIS REMOVAL SYSTEM INSTALLATION

NOTICE:

18 inches of 2½" pipe is required to be connected to the center outlet of the MDX Debris Removal System. After the 18 inches of 2½" pipe you may reduce to a smaller pipe size, although it is not recommended. **Use of 2½" pipe throughout the suction side of the system is strongly encouraged for optimum performance.** For your convenience, Paramount Pool &

Spa Systems includes the 18 inches of 2½" pipe plus coupler with the MDX Debris Removal System. To order separately, please see page 8 for the part number.



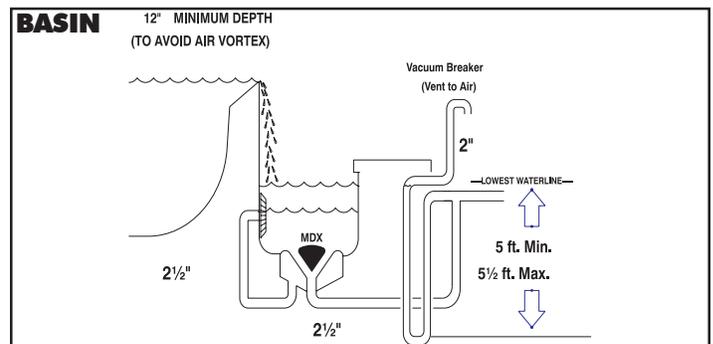
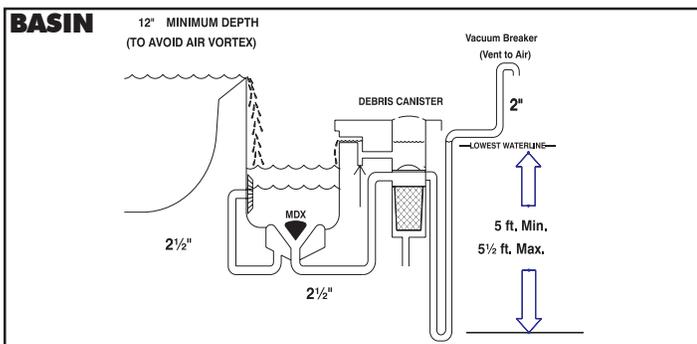
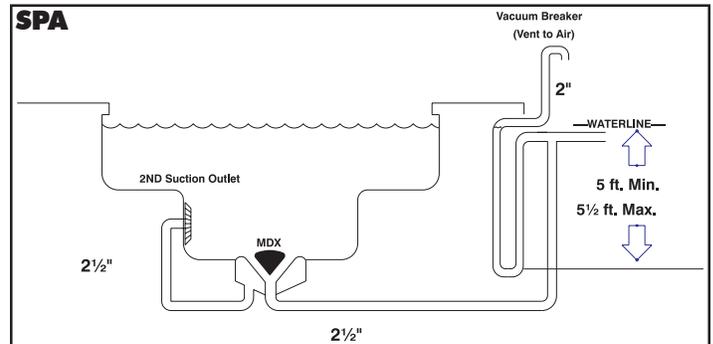
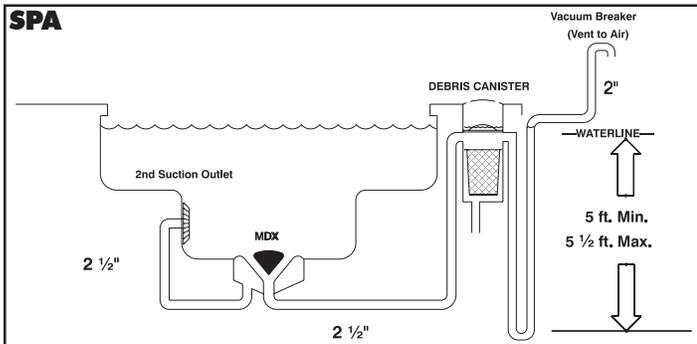
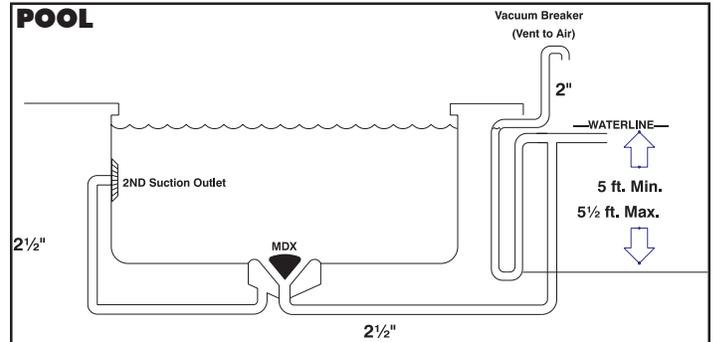
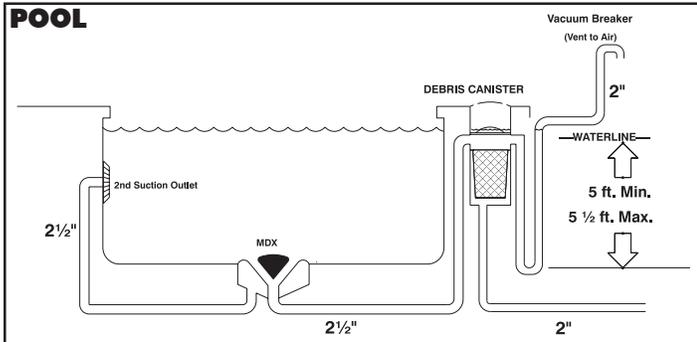
Design Flow Rate = 90 GPM
Maximum GPM = 90
Velocity at 90 GPM = 1.386 FPS

MDX DEBRIS REMOVAL SYSTEM INSTALLATION

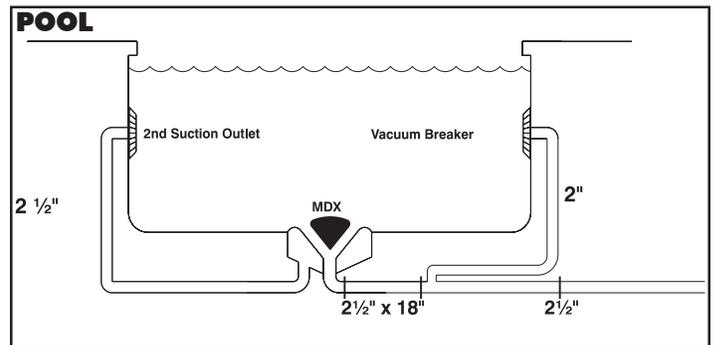
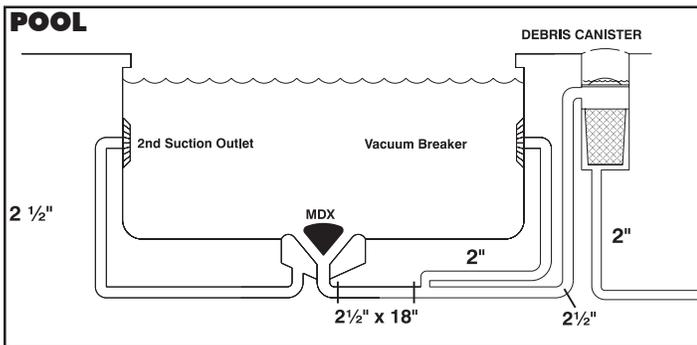
WITH CANISTER

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Vacuum Breaker Method 1: (Recommended for best debris removal performance.)



Vacuum Breaker Method 2:

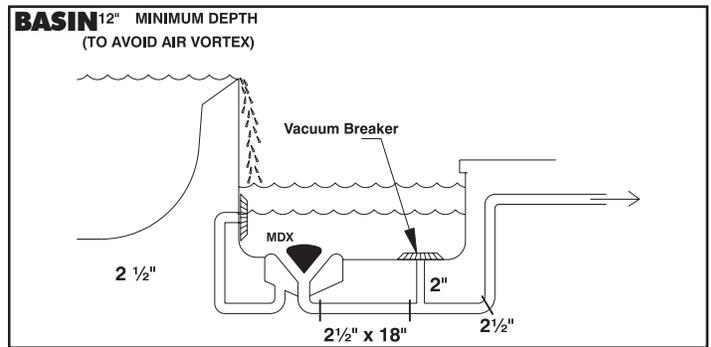
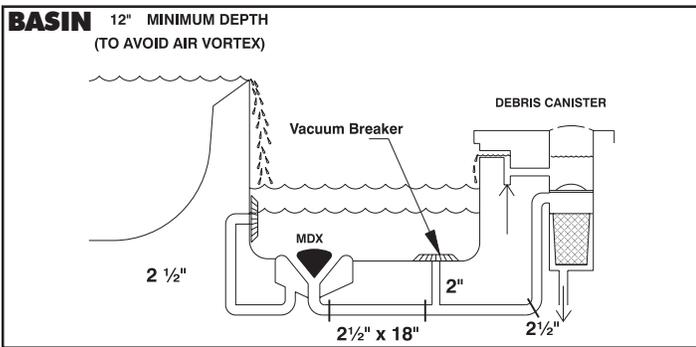
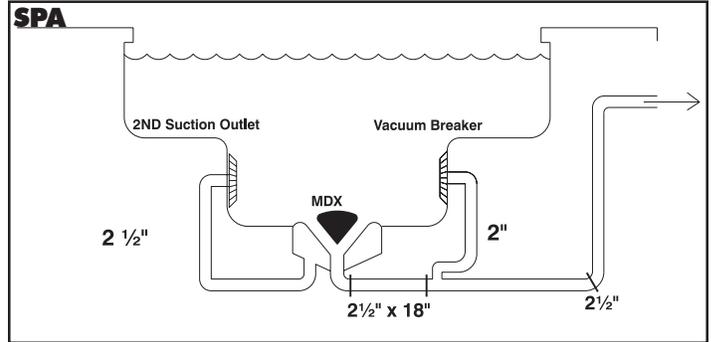
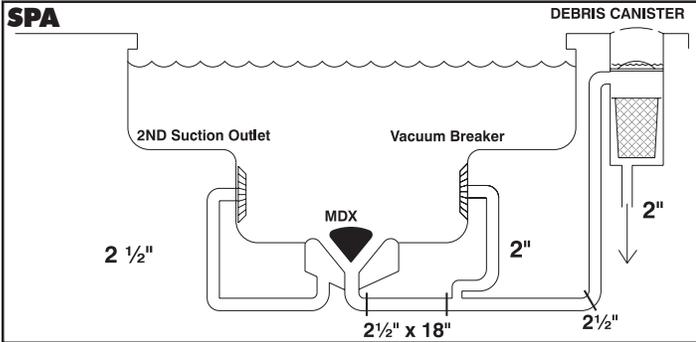


MDX DEBRIS REMOVAL SYSTEM INSTALLATION

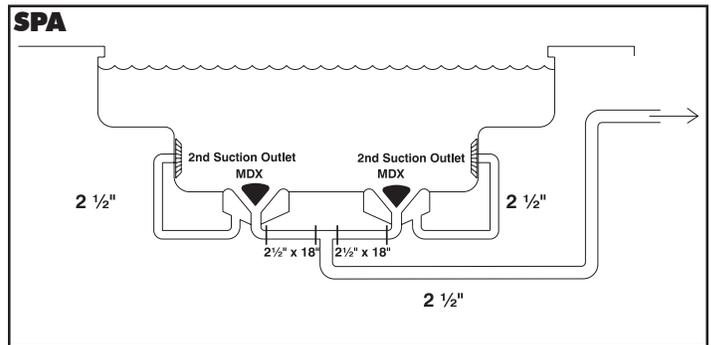
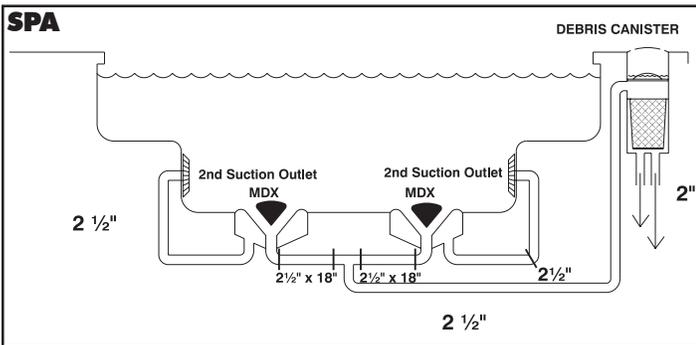
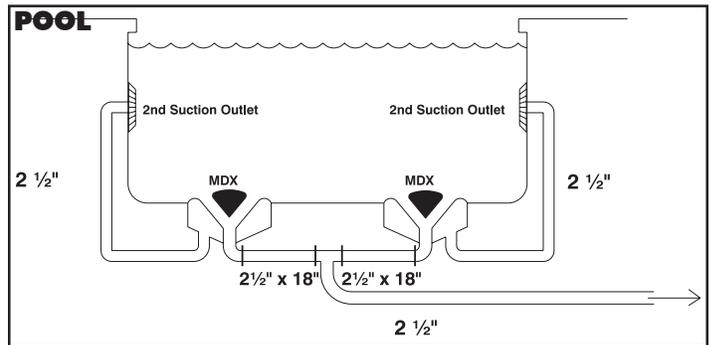
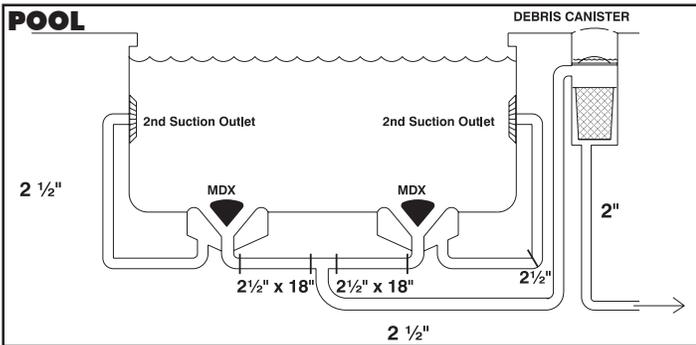
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Vacuum Breaker Method 2 (Continued):



Vacuum Breaker Method 3:

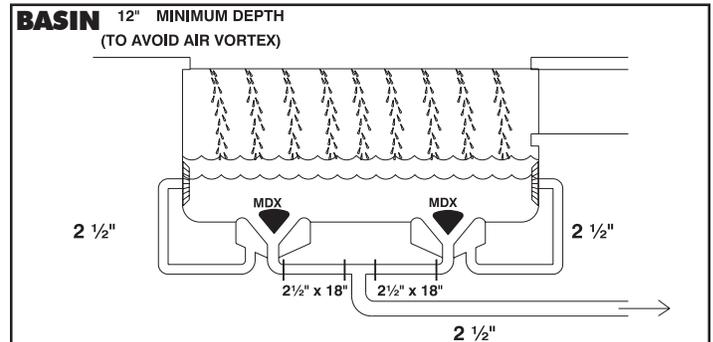
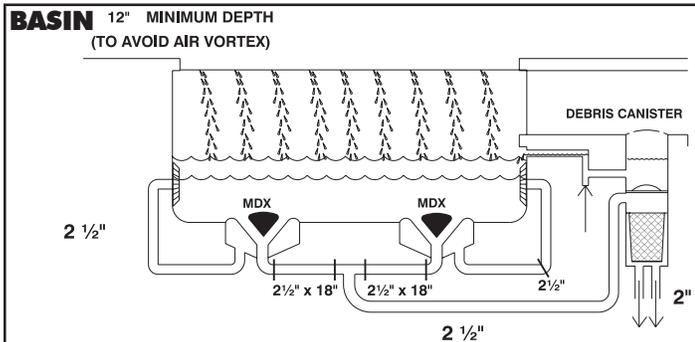


MDX PLUMBING (CONTINUED)

WITH CANISTER

WITHOUT CANISTER

Vacuum Breaker Method 3 (Continued):



Vacuum Breaker Method 4:

Suction vacuum release device, mechanical, or electromechanical, venting or non-venting, may be used provided it is tested and listed by a nationally recognized testing laboratory in accordance with ANSI/ASME A112.19.17 - *Manufactured SVRS for Residential and Commercial Swimming Pool*.

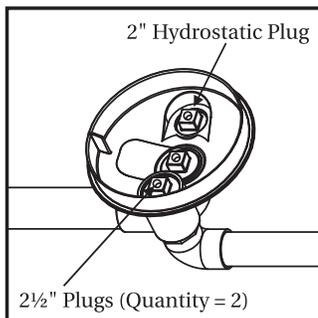
Plumbing:

- 1 Position the MDX Sump 1" below the finished depth of the pool, spa or basin. (Fig. 1)
- 2 Position the REQUIRED 2nd Suction Outlet on a sidewall of the pool, spa or basin. Method: the 2nd Suction Outlet may be positioned on the floor a MINIMUM of three (3) feet away from any other Suction Outlet.

HYDROSTATIC FITTING: The hydrostatic port inside the MDX Sump is equivalent to a 2" Threaded Female Adapter and a 2" Slip Fitting Outside the MDX Sump. For non-hydrostatic installations, install the 2" plug provided. Sump Elevation = 1" Below interior finish.

MDX PRESSURE TESTING

With Pressure Plugs



Notice:

Release pressure on the system before removing plugs

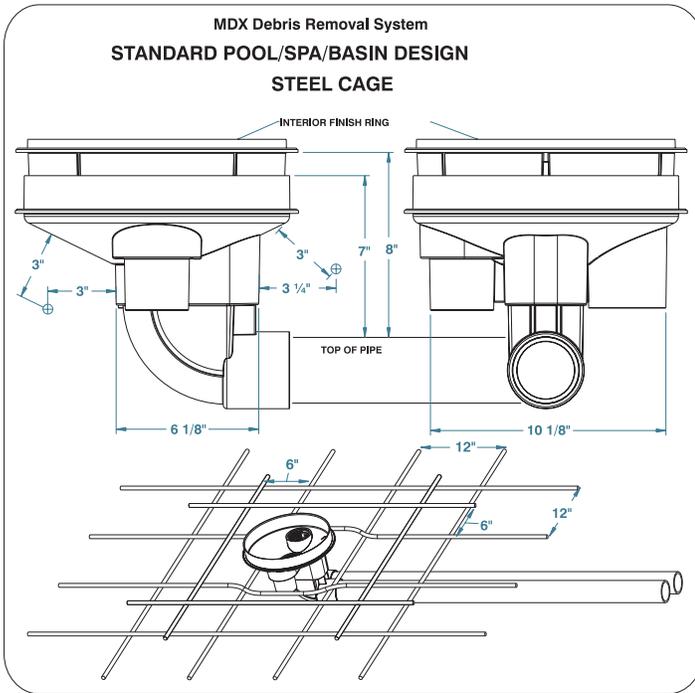
Pressure Test:

- 1 Install a plug (included) into both 2 1/2" ports of the MDX Debris Removal System Sump
- 2 Install a pressure stack to both lines at a location away from the MDX Debris Removal System Sump
- 3 Pressure should remain on the system through construction until interior cleanup

MDX WINTERIZATION

To winterize MDX, blow out and air lock the vacuum line and second suction outlet. Then, blow out and air lock the main line.

STEEL & CONCRETE INSTRUCTIONS



Keep rebar 3" away from MDX sump.

- 1** To allow the sump to be fully encased in concrete, clear dirt to completely expose the sweep elbow. **(Fig. 1)**
- 2** Pack concrete around and under sump **(Fig. 1)** to ensure seal and strength of shell
- 3** Angle shell down to MDX sump. **(Fig. 1)**
- 4** Make cut-out around MDX sump. **(Fig. 2)**

Concrete Ring Installation:

The Concrete Ring MUST be attached to Paramount's Drain Sump prior to finishing the interior surface of the pool, spa, or basin.

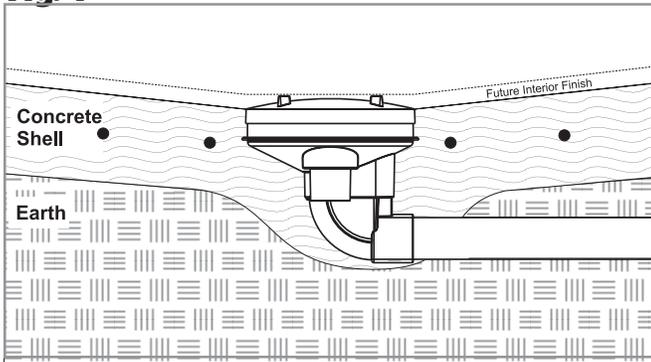
- 1** Align the Concrete Ring Keyway with the Sump Alignment Key. **(Fig. 3)**
- 2** Adjust the elevation and the angle of the Concrete Ring to align it with the *finished* interior surface of the pool, spa, or basin.
- 3** Use a sealing compound compatible with the interior surface to lock the Concrete Ring in place and to provide a water-tight seal.

* Sealing compound example: Topping Mix Cement, hydraulic cement, and Thoro Acryl®60 by ChemRex® or equivalent.

Assemble the drain PRIOR TO ADDING WATER (see illustration on page 8 for reference):

- 1** Install the Funnel Assembly (No. 3) into the Concrete Ring (No. 2) by pressing the flexible Funnel Adapter inside the center 2½" female threaded fitting. Press down and hold the Funnel Assembly to install screws.

Fig. 1



2 Install the two (2) large screw (No. 5) in the Support (No. 8) with screwdriver security T25.

3 Install the two (2) medium screws (No. 6) in the Funnel Assembly (No.3), tightening them until the Funnel Assembly (No. 3) contacts the interior finish of the pool, spa, or basin with screwdriver security T25.

4 Place the Anti-vortex Cover (No. 4) on the Funnel Assembly (No. 3) and install the three (3) small screws (No. 7) with Phillips screwdriver.

Fig. 2

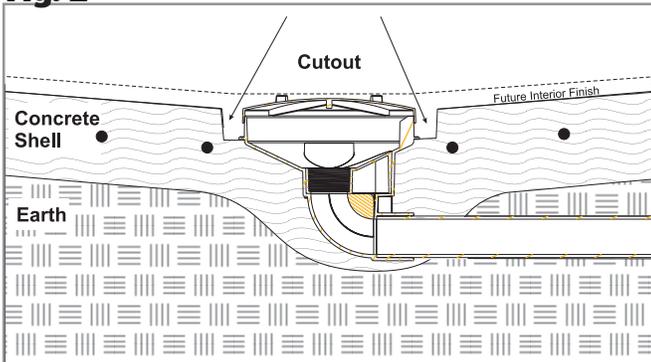
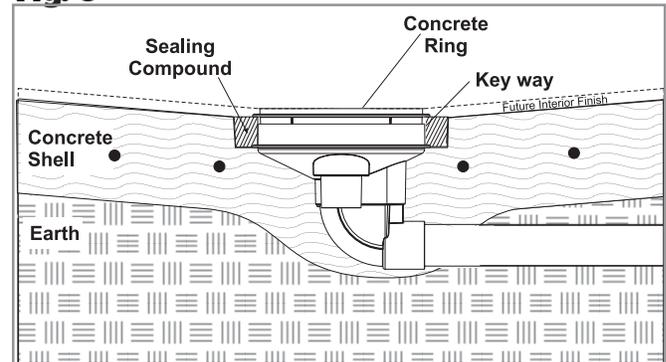
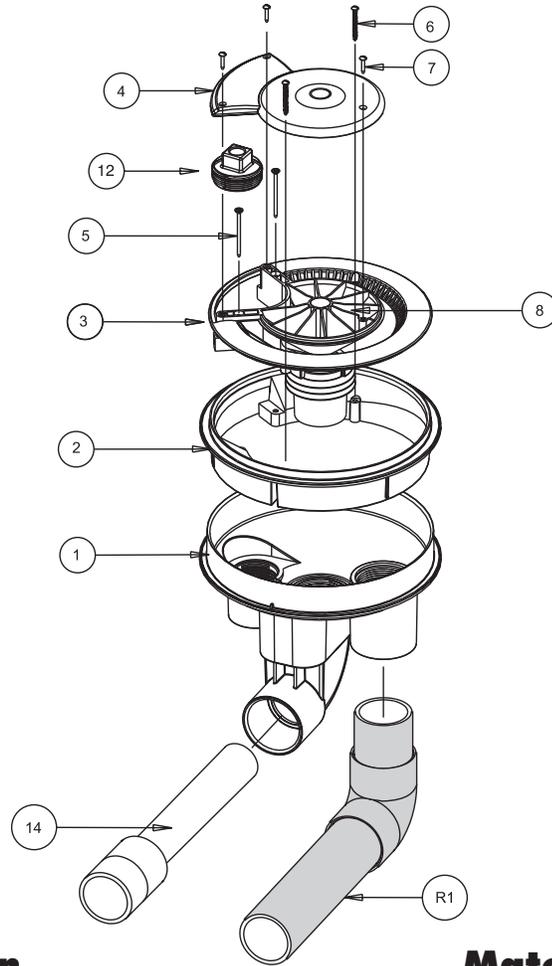
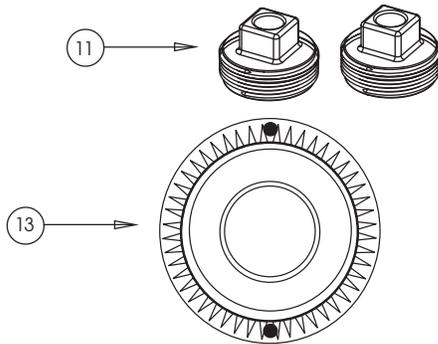
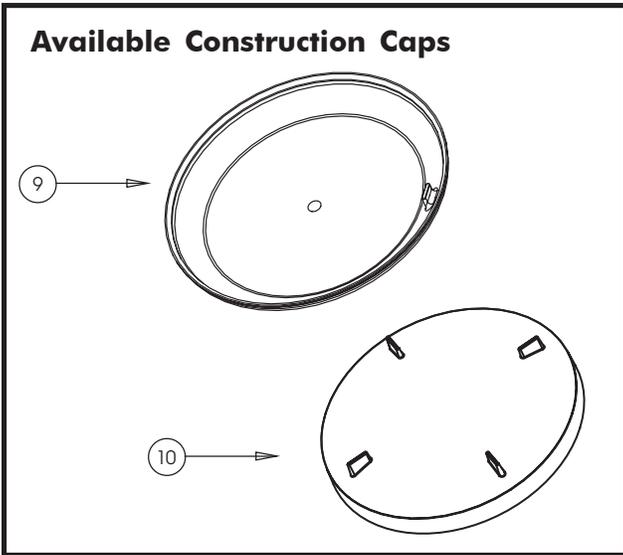


Fig. 3





Item	Part Number	Description	Material
1	005-202-2011-00	Sump Assembly - 2 1/2" (3 pk)	PVC - 1
2	005-202-2043-00	Concrete Leveling Ring	
3	005-202-2070-XX	Funnel Assembly (XX = Color Code)	
4	005-252-2080-XX	Anti Vortex Cover (XX = Color Code)	
5	005-202-0834-00	Screw: No. 12-2 5/8" Countersink Security Head (12 pk)	316-SS
6	005-202-0822-00	Screw: No. 10-1 7/8" Security Head (12 pk)	316-SS
7	005-202-0826-00	Screw: No. 10-7/8" Phillips Head (12 pk)	316-SS
8	N/A	Support	
*9	005-202-1154-00	Plaster Cap	
*10	005-202-1148-00	Sump Construction Cap	
11	005-202-1608-00	Plug Pressure Test 2 1/2" (4 pk)	
12	005-252-1605-00	Plug 2" (6 pk)	
13	005-252-2210-XX	Drain AV Slotted (XX = Color Code)	
14	006-202-6180-00	Sump Adaptor Kit Required to Reduce Pipe Size	PVC, SCH. 40
*R1	N/A	REQUIRED CONNECTION TO A 2nd Suction Outlet 2 1/2" pipe	PVC, SCH. 40
*N/A	004-252-5476-00	Plug Wrench	

* Not part of MDX