

Only for Pools  
with an existing  
MDX sump

# MDX<sup>2</sup>

ANTI-ENTRAPMENT DEBRIS DRAIN

## MDX<sup>2</sup> INSTALLATION MANUAL

(RETROFIT FIBERGLASS, VINYL &  
CONCRETE POOLS WITH MDX)

SUBMERGED SUCTION OUTLET  
FOR MULTIPLE DRAIN USE  
FOR USE ON FLOOR  
AS A REPLACEMENT FOR  
MDX DRAINS ONLY



Safety compliant according to the Virginia  
Graeme Baker Pool and Spa Safety Act  
ASME A112.19.8 - 2007 LISTED



U.S. Patent No.: 6,810,537, 7,089,607, 7,178,179

### Notice 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. Only for use in pools with an existing MDX or MDX Sump.

**WARNING:** MDX<sup>2</sup> 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.

MDX0805

004-027-8792-00

REV040109

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**  
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# 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. INSPECT SUCTION FITTING INCLUDING FASTENERS FOR DAMAGE ON TAMPERING BEFORE EACH USE OF THIS FACILITY.**



## **WARNING**

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



## **NOTICE TO OWNER:**

**READ, FOLLOW, AND KEEP THESE SAFETY INSTRUCTIONS FOR FUTURE REFERENCE.**



## **WARNING**

**THIS POOL MAY HAVE VENT TUBES AS A LAYER OF ANTI-ENTRAPMENT PROTECTION ON THE SUCTION OUTLETS! IF A VENT TUBE IS INSTALLED ON THIS SYSTEM ATTACH THE ENCLOSED WARNING LABELS TO THE VENT PIPE AND CONTROL PANEL AS INSTRUCTED ON PAGE 9 OF THIS MANUAL. IF THIS POOL HAS BEEN WINTERIZED THE VENT MUST BE INSPECTED WHEN STARTING THE POOL FOR THE SEASON. REMOVE THE PLUG FROM THE ATMOSPHERIC VENT PIPE BEFORE ENERGIZING THE POOL PUMP(S)! TEST THE VENT BY BLOCKING THE DRAIN. AIR SHOULD ENTER THE PIPE AND CAUSE THE PUMP TO CAVITATE RELEASING THE SUCTION ON THE DRAIN BLOCK.**



## **WARNING**

**ONLY TO BE USED AS A REPLACEMENT FOR AN MDX DRAIN AND MUST BE INSTALLED IN CONJUNCTION WITH AN MDX SUMP**

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<sup>2</sup> Anti-Entrapment Debris Drain 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<sup>2</sup>, skimmers, gutters, negative edge features and many more products and piping designs known to professionals.
- Install **ASME A112.19.8 - 2007** 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.

**WARNING:** MDX<sup>2</sup> 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.

For technical assistance call 1-800-621-5886 or contact your regional representative.

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# MDX<sup>2</sup> RETRO INSTALLATION MANUAL

## NOTICE – Maximum Pump Size:

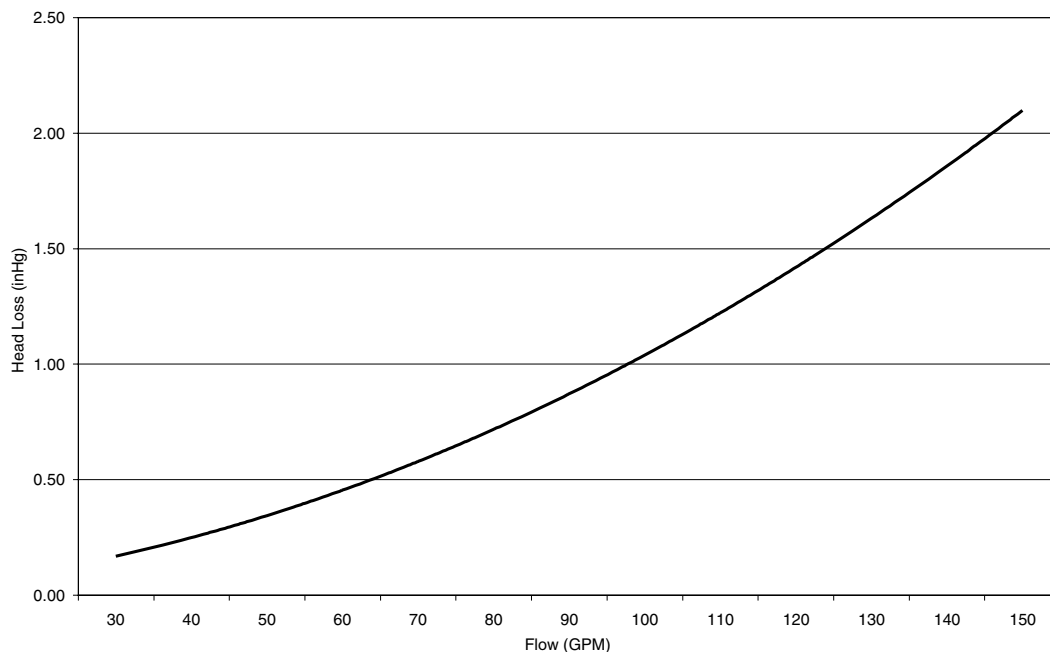
MDX<sup>2</sup> Retro is rated for a maximum of 90 GPM (340 LPM). While system flow rate will vary with pump size and the Total Head Loss for a given system, virtually any modern pump is capable of exceeding this limit, therefore it is the responsibility of the system designer to make sure it is not possible to exceed 90 GPM (340 LPM). In the event of one suction outlet being completely blocked, the remaining suction outlets serving that system shall have a flow rating capable of the full flow of the pump(s) for the specific suction system.

## Notice:

When replacing the MDX Cover and Funnel Assembly with the MDX<sup>2</sup> Retrofit cover **DO NOT** disable the secondary drains or the third layer of protection. The third layer of protection may be another submerged drain or a vent tube. If you do not have a third layer of protection on this system then you will need to add an SVRS or cut the floor of the pool and add a SDX drain teed into the main suction line 3' 10" minimum from the MDX. When replacing the MDX be sure to check all other submerged suction outlets in the pool for broken or missing covers, correct or missing screws and compliant covers. Be sure to replace these covers with a SDX or SDX retro covers to bring all suction outlets into compliance.

**DO NOT INSTALL THE MDX<sup>2</sup> RETRO UNLESS THERE IS AN MDX SUMP AVAILABLE TO ACCEPT THE MDX<sup>2</sup> RETRO.**

## FLOW HEAD LOSS CURVE



## HYDROSTAT PLUMBING WARNING

### Hydrostatic Fitting

The hydrostatic port inside the MDX<sup>2</sup> Sump is equivalent to a 2" Threaded Female Adapter and a 2" Slip Fitting Outside the MDX<sup>2</sup> Sump. Paramount recommends the use of the 2" thread plug provided. Do not use check valves here that are prone to sticking open causing the need to open the drain cover exposing a suction risk. This port is for the purpose of a hydrostat only. Do not install any suction equipment (pump) to this port

For technical assistance call 1-800-621-5886 or contact your regional representative.

# MDX<sup>2</sup> - CONCRETE DRAIN ASSEMBLY

## Concrete Drain Assembly (1pc concrete version):

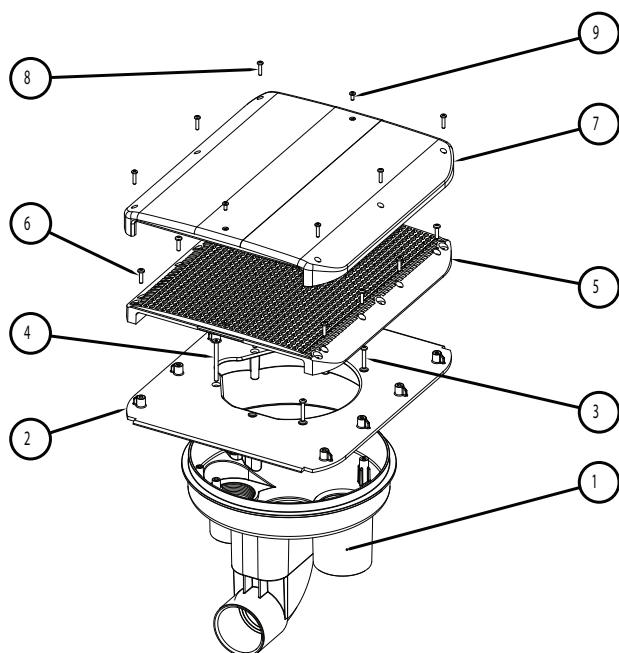
1. Install lower support (#2) onto sump (#1) with 4(four) security screws (#3 and #4) with screw driver security T25.
2. Install upper support (#5) onto lower support (#2) and secure with 8 (eight) security screws (#6).
3. Install the cover (#7) onto the upper support (#5) and secure with 6 (six) security screws (#8) and 2 (two) security screws (#9).

**Note: Anchor clips not used in Concrete 1 PC installation**

**004-202-2221-XX**

**MDX<sup>2</sup> RETRO FOR CONCRETE 1 PC**

**Replace within 05 installed years**



Item	Part Number	Description
*1	005-202-2018-00	Sump MDX Concrete - 2 1/2" (must be present in pool)
2	005-202-2064-00	Lower Support
3		Screw No. 10x 2 1/4" Security Head
4		Screw No. 12x 2 3/8" Security Head
5	005-202-2092-XX	Upper Support
6		Screw: No. 10X3/4" Security Head
7	005-252-2085-XX	MDX <sup>2</sup> Cover (XX=Color Code)
8		Screw: No. 10X3/4" Vinyl Security Head
9		Screw: No. 8X3/8" Security Head
10		Concrete anchors
11		screw 10 x 1 1/4" security head
	005-202-2213-00	Screw Pack MDX2 Retro (includes 3,4,6,8,9,10,11)

\* Not part of MDX<sup>2</sup> Retro

# MDX<sup>2</sup> - CONCRETE DRAIN ASSEMBLY

## Concrete Drain Assembly (with leveling ring):

### After draining the pool:

1. Position the Retro Lower Support (001-250-2064-00) over the existing sump as shown in figure 1 and attach with the screws (6) and anchor clips (3) provided by Paramount. (Fig. 1)
2. Using The Retro Lower Support as a template, drill (4) 1/4" holes in the concrete. The holes must be drilled at least 1 1/2" deep. (Fig. 2)
3. The holes should be clear of any debris left in the bottom.
4. Press in the concrete anchors 001-250-0520-00 supplied by Paramount. The concrete anchors must be pressed in its full length. (Fig. 3)
5. Install the (4) #10 x 1 1/4" screws 001-250-0821-00 provided by Paramount.(Fig. 4)
- 6 Install upper support (#9) onto lower support (#4) and secure with 8 (eight) security screws (#10).
- 7 Install the cover (#11) onto the upper support (#9) and secure with 6 (six) security screws (#13) and 2 (two) security screws (#12).

Fig. 1

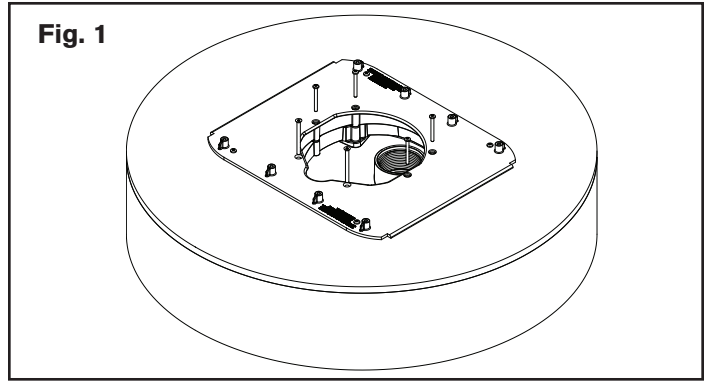


Fig. 2

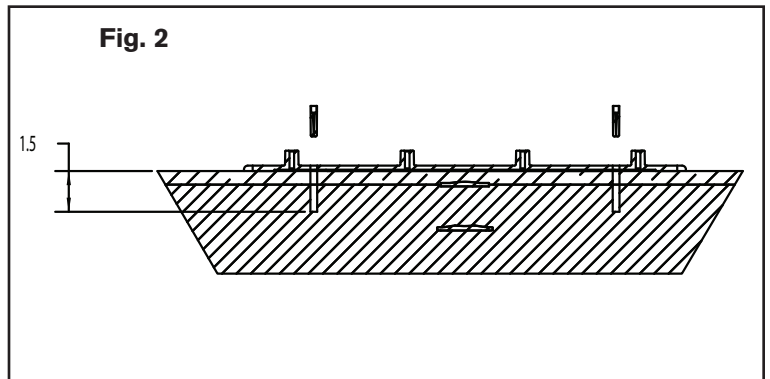


Fig. 3

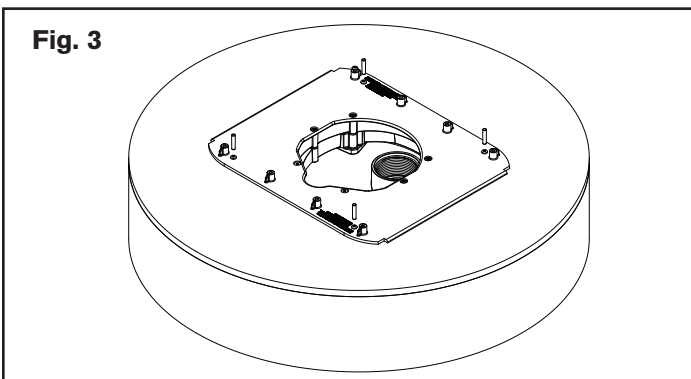
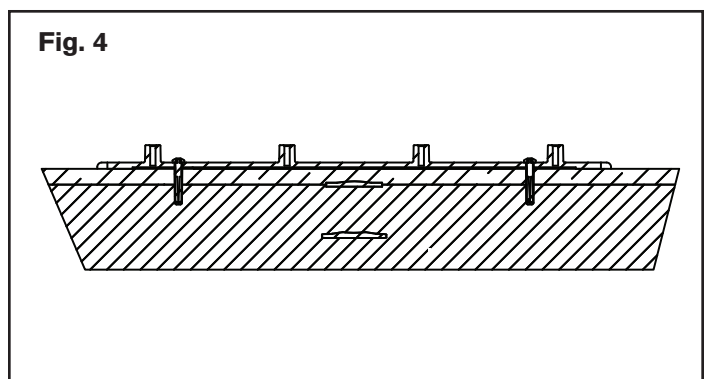
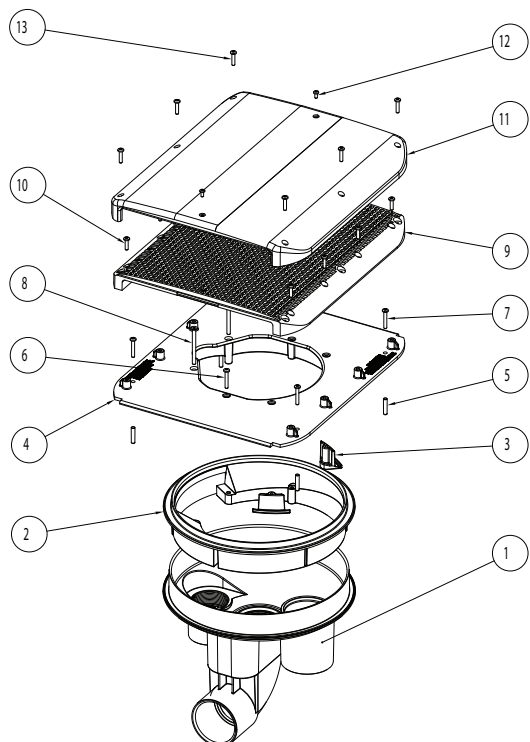


Fig. 4



Replace within 05 installed years



Item	Part Number	Description
*1	005-202-2018-00	Sump MDX Concrete - 2½" (must be present in the pool)
*2		Leveling Ring
3	005-252-2070-00	Clip Anchor MDX <sup>2</sup> Fiber Retro
4	005-202-2209-00	Lower Support
5		Concrete Anchors
6		Screw No. 10x 2 1/4" Security Head
7		Screw 10 x 1 1/4" Security Head
8		Screw No. 12x 2 3/8" Security Head
9	005-202-2207-00	Upper Support
10		Screw: No. 10X3/4" Security Head
11	005-252-2205-XX	MDX <sup>2</sup> Cover (XX=Color Code)
12		Screw: No. 8X3/8" Security Head
13		Screw: No. 10X3/4"
	005-202-2213-00	Screw Pack MDX <sup>2</sup> Retro (includes item #5,6,7,8,10,12,13,)

\* Not part of MDX<sup>2</sup> Retro

# MDX<sup>2</sup> - VINYL DRAIN ASSEMBLY

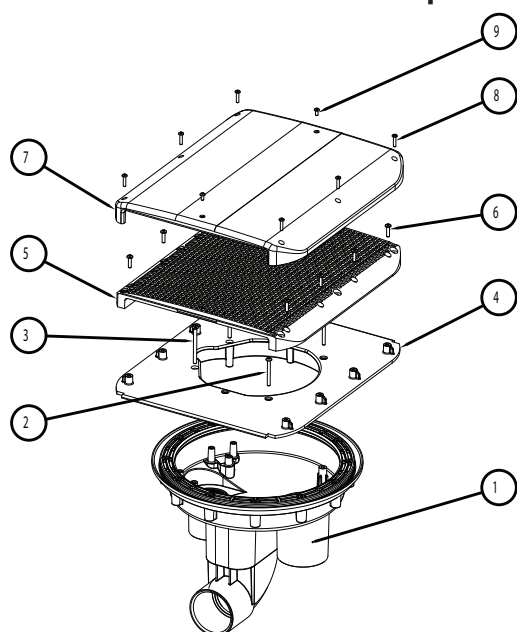
## Vinyl Drain Assembly:

1. Install lower support (#4) onto sump (#1) with 4 (four) security screws (#2 and #3) with screw driver security T25.
2. Install upper support (#5) onto lower support (#4) and secure with 8 (eight) security screws (#6).
3. Install the cover (#7) onto the upper support (#5) and secure with 6 (six) phillips screws (#8) and 2 (two) phillips screws (#9).

**Note: Anchor clips not used in Vinyl installation**

## 004-202-2221-XX MDX<sup>2</sup> RETRO FOR VINYL

**Replace within 05 installed years**



Item	Part Number	Description
*1	005-252-2014-00	Sump Assembly - 2 1/2" (must be present in the pool)
2		Screw: No. 10X2 1/4" Security Head
3		Screw: 12 x 2 3/8" Security Head
4	005-252-2209-00	Lower Support Vinyl/Fiber
5	005-252-2207-00	Upper Support (XX=Color Code)
6		Screw: No. 10X3/4" Security Head
7	005-252-2205-XX	MDX <sup>2</sup> Cover (XX=Color Code)
8		Screw: No. 8X3/4" Vinyl Security Head
9		Screw: No. 8X3/8" Security Head
*	005-252-0818-00	Screw: 12-14 x 1 1/2" Vinyl Sump
*	005-252-2044-00	Seal Ring
*	005-252-0010-00	Vinyl Gaskets (2 pk)
#	005-202-2211-00	Screw Pack MDX <sup>2</sup> Vinyl (includes item #s 2, 3, 6, 8, 9)

\* Not part of MDX<sup>2</sup> Retro

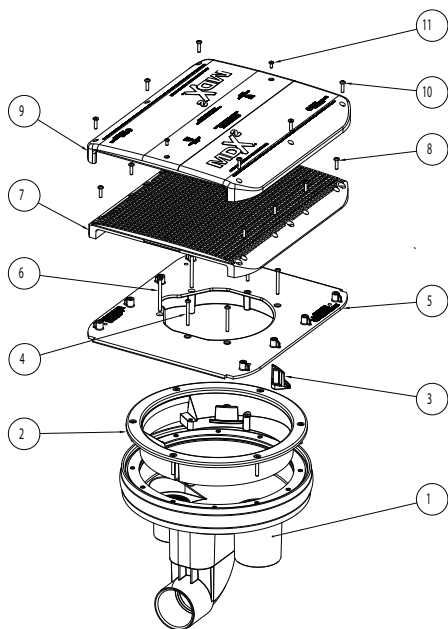
# MDX<sup>2</sup> - FIBERGLASS DRAIN ASSEMBLY

## Fiberglass Drain Assembly:

1. Install lower support (#5) onto sump (#1) with 6 (six) security screws (#6 and #4) and two anchor clips (#3) (#005-252-2070-00) with screw driver security T25.
2. Install upper support (#7) onto lower support (#5) and secure with 8 (eight) security screws (#8).
3. Install the cover (#9) onto the upper support (#7) and secure with 6 (six) phillips screws (#10) and 2 (two) phillips screws (#11).

## 004-202-2221-XX MDX<sup>2</sup> RETRO FOR FIBERGLASS

Replace within 05 installed years



Item	Part Number	Description
*1	005-252-2016-00	Sump Assembly - 2 1/2" (must be present in the pool)
*2	005-252-2046-00	Seal Ring
3	005-252-2070-00	Clip Anchor MDX <sup>2</sup> Fiber Retro
*4		Screw: No. 10X2 1/4" Security Head
5	005-252-2209-00	Lower Support
6		Screw: 12 x 2 3/8" Security Head
7	005-252-2207-00	Upper Support
8		Screw: No. 10X3/4" Security Head
9	005-252-2205-XX	MDX <sup>2</sup> Cover (XX=Color Code)
10		Screw: No. 10X3/4" Security Head
11		Screw: No. 8X3/8" Security Head
*	005-252-0818-00	Screw: 12-14 X 1 1/2" Vinyl/Fiberglass Sump (12 pk)
*	005-252-0816-00	Screw: 12-14 X 1" Vinyl/Fiberglass Sump (12 pk)
*		Mounting Ring
*	005-252-0010-00	Gasket (2pk)
	005-202-2212-00	Screw Pack MDX <sup>2</sup> Fiber (Includes item #s 2,6,8,10,11)

\* Not part of MDX<sup>2</sup> Retro



# MDX<sup>2</sup> VINYL WINTERIZATION

## WITH CANISTER

If vacuum relief suction outlets are located below freeze line skip steps 1 and 2.

1. Remove grate from second suction and install a 13-<sup>3</sup>/<sub>4</sub> blow through plug and blow line to achieve airlock.
2. If 3rd suction line is installed remove grate, install a 13-<sup>3</sup>/<sub>4</sub> blow-through plug and blow line to achieve airlock.
3. Go to canister instructions step 1 - 4 below.
4. If vent tube is installed, install blow through plug and blow line to achieve airlock. Repeat vacuum out canister. Then complete canister step 5.

## WITHOUT CANISTER

If vacuum relief suction outlets are located below freeze line skip steps 1 and 2.

1. Remove grate from second suction and install a 13-<sup>3</sup>/<sub>4</sub> blow through plug and blow line to achieve airlock.
2. If 3rd suction line is installed remove grate, install a 13-<sup>3</sup>/<sub>4</sub> blow-through plug and blow line to achieve airlock.
3. If vent line is installed in main suction line, plug vent line and install blow through plug in pump inlet and blow line to achieve airlock.
4. Lastly, blow vent line to achieve airlock.

# PARAMOUNT CANISTER WINTERIZATION

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 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.

## VENT TUBE WARNING LABELS (Figures 8 and 9)

Included in each MDX<sup>2</sup> are two warning labels that need to be placed on the pool equipment if the pool is to be winterized and has a vent tube on any of the drains plumbed on the pool. Attach the smaller label to the vent pipe where it terminates to atmosphere. **(See Fig. 8)**

Attach the larger label to the control panel next to the controller for the pump with the vent tube plumbed to it. **(See Fig. 9)**

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

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

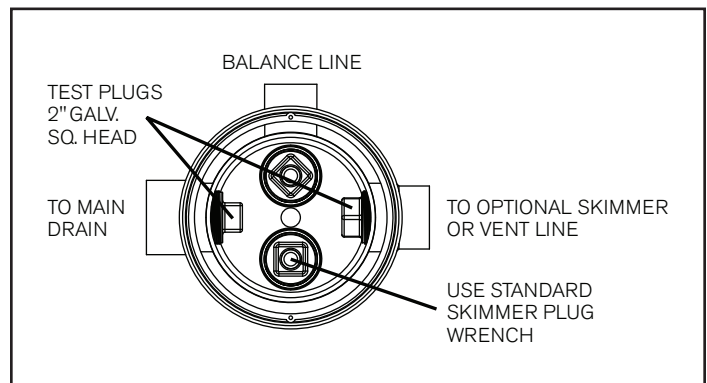


Fig. 8



### WARNING!

High Suction Atmospheric Vent

Do not operate pool pump(s) with this pipe plugged!

If necessary to plug vent to winterize the pool do not restart pool until plug is removed!

001-058815-00 REV0005

Fig. 9



### WARNING!

When starting pool after winterization, remove plug from atmospheric vent pipe before energizing pool pump(s)!

Test vent by blocking drain. Air should enter the pipe and cause the pump to cavitate releasing the suction on the drain block.

001-058815-00 REV0005

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# Notes

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