

ENGINEERING COMMUNIQUÉ

JAY R. SMITH MFG. CO.® ♦ FEBRUARY, 2015 ♦ VOLUME 5-ISSUE 2



McPlumber: We take the pain out of your drains.

From: **THE SMITH ENGINEERING GROUP**

**SUBJECT: QUAD CLOSE TRAP SEAL DEVICE / STINK STOPPER -
FIGURE NUMBER 2692**

Technical Bulletin TB-12-01 was issued on June 27, 2012. A copy of the updated bulletin is attached. All statements and other data in the bulletin remain valid. This bulletin is attached along with a current submittal drawing and a copy of The Myths and Facts of Sewer Gases and Drains.

It is recommended to read the 'Myths' paper as it explains and clarifies some of the recent questions we have received.

The ASSE 1072 National Standard for Barrier Type Trap Seal Protection Devices is an extreme stringent and rigorous standard to meet and the Quad Close passed all requirements. This standard states in paragraph 1.0 General/1.1 Application:

This standard establishes physical requirements, performance requirements, and test procedures for barrier type floor drain trap seal protection devices. These devices are designed to help protect the floor drain trap seal of floor drains that comply with ANSI/ASME A112.6.3 by minimizing evaporation. **The purpose of this device is to minimize the evaporation of the trap seal for the floor drain.**

Recently, some have confused the function of this device. The main purpose is to minimize evaporation as stated in the preceding paragraph. This device shall be used in conjunction with a p-trap. Most areas still require a trap primer in new installations. If in doubt, the installer must check and confirm with his local inspector or code authority.

Whether used in new or retrofit applications, it is prudent for the p-trap to be cleaned. If installed in a dry p-trap, the Quad Close should be installed and water poured into the trap to prime the p-trap. **We emphasize, the main purpose is to protect the trap seal!** The device should not be installed during initial construction as concrete and other debris are discharged through the floor drain, which may damage the Quad Close. This is applicable to all of these types of devices on the market.

The Quad Close is uniquely engineered with the quad design. The very slightest backpressure closes (squeezes) the quad and creates a tight seal. As mentioned in Myth No. 1, fact 3; the Quad Close closes between 0.004 and 0.007 pounds per square inch and remains closed to well over 10” (inches) of head pressure until a reverse pressure occurs opening the valve and allowing water to enter the drain.

A comparison reference is attached.





JAY R. SMITH MFG. CO.[®]

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Technical Bulletin: TB-12-01 (Reissued 18 February, 2015)

27 June, 2012 (Updated 18 February, 2015)

Subject: Figure Number 2692

- ◆ JAY R. SMITH MFG. CO. "Figure No. 2692 QUAD CLOSE Trap Seal Device"
- ◆ IAPMO Listed: File No. 7479 (Fully Listed)
- ◆ ASSE Listed: Standard 1072 – Barrier Type Trap Seal Protection Device (Fully Compliant) – Record No. 1435 – Floor Designation AF-GW, rated for all floor types including grease laden floors.

The two major plumbing codes (IAPMO-UPC and ICC-IPC) both will reference the ASSE Standard 1072 as a recognized and accepted standard in their next release (2015). This combined with having the product tested by an approved third party testing laboratory with successful test results and subsequent certification to the national standard, no additional product certifications are necessary.

Competition: (As of 18 February, 2015)

Rectorseal/Sure Seal.....	◆ IAPMO Listed: File No. C-4165 (Classified Listing Only)
	◆ ASSE Listed: Standard 1072-Record No. 1409
Pro Set Trap Guard:.....	◆ IAPMO Listed: No
	◆ ASSE Listed: No
Mifab.....	◆ IAPMO Listed: File No. 8472
	◆ ASSE Listed: Standard 1072-Record No. 1558
Jones Stephens:	◆ IAPMO Listed: No
	◆ ASSE Listed: No
Liquidbreaker:	◆ IAPMO Listed: No
	◆ ASSE Listed: No

Note: See attached IAPMO & ASSE Listings. Statements may be made such as conform to, certified to, meets the requirements of; but if they are not shown on these two listings, they are not listed with either of these organizations.

Some Features & Benefits:

- ✓ 100% SAFE & EFFECTIVE!
- ✓ Prevents odors by eliminating the emission of offensive sewer gases from entering the living/work environments.
- ✓ Fully tested and certified to all requirements of ASSE Standard 1072 (Barrier Type Trap Seal Protection Device).
- ✓ Reduces the frequency needed for the periodic admission of water into the floor drain trap to maintain a trap seal.
- ✓ Fast & simple to install, easily removed for inspection, cleaning (rodding) or replacement. No special tools are needed.
- ✓ Designed to fit the inside diameters of 2, 3 and 4" ABS, PVC & cast iron pipe and the inside

- diameter of Smith's adjustable threaded strainer heads.
- ✓ Ideally suited for retrofitting/repairing of existing floor, shower or similar applications which has no existing trap primer protection or where current protection has failed.
 - ✓ No flow restrictions.
 - ✓ Weather tested for 250 continuous hours per ASTM G154 and ASTM D412 and with no cracking, checking, blistering or surface pitting occurring after the 250 hours of UV exposure.
 - ✓ Passed the water absorption test per ASTM D471 when submerged in water with no significant weight gain after 48 hours.
 - ✓ Passed the ozone resistance test in accordance with ASTM D1149.
 - ✓ Passed the chemical resistance tests per ASTM D543.

After reviewing the multiple check marks, it is obvious the QUAD CLOSE Trap Seal Device has passed numerous tests under rigorous test qualifications. This is a quality product that works!

Attached is a document titled 'The Myths and Facts of Sewer Gases and Drains' composed by Anthony Stanaland, Senior R&D/Design Engineer. Also, attached is a submittal drawing indicating both the IAPMO and IAPMO Listing Numbers.

SMITH ENGINEERING

JAY R. SMITH MFG. CO.

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G



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MEMBER OF:



LOCATION

DRAWING NUMBER
s2692SIZE
ASCALE:
NONEDATE:
5-20-08APPROVED BY:
JMCHECKED BY:
CLDRAWN BY:
RN

2692

FIGURE
NUMBER

WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA

DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

QUAD CLOSE® TRAP SEAL

FUNCTION: The Quad Close Trap Seal forms a barrier to minimize the evaporation of the trap seal of a floor drain. The Quad Close Trap Seal will open to allow drainage and close when there is no flow. It is for use in floor drain outlets or the adjustable strainer throats.

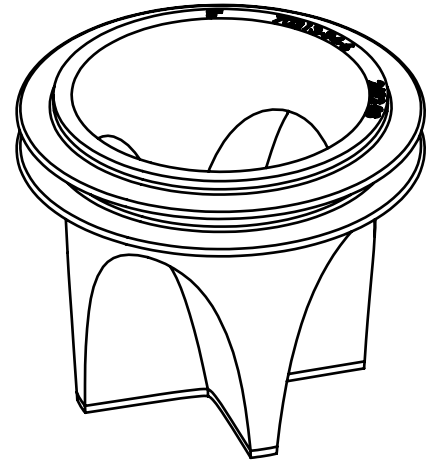
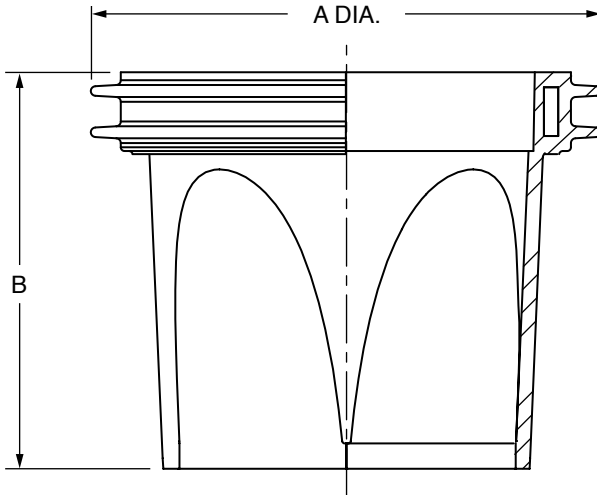


	FIG. NO.	A (Pipe Size)	B	IAPMO LISTED ①	ASSE LISTED ①	GPM FLOW RATE ③
<input type="checkbox"/>	2692-0150	01.5(38)	2.09(53)	—	—	6.0 (22.7 L/M)
<input type="checkbox"/>	2692-02	02(50)	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	12.0 (45.4 L/M)
<input type="checkbox"/>	2692-03	03(75)	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	34.0 (128.7 L/M)
<input type="checkbox"/>	2692-0350 ②	0350(89) ②	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	51.0 (193.06 L/M)
<input type="checkbox"/>	2692-04	04(100)	2.66(68)	FILE # 7479	REC.#1435 AF-GW ⑤	73.0 (276.4 L/M)
<input type="checkbox"/>	2692-06	06(150)	3.66(93)	—	—	215.0 (814.0 L/M)

INSTALLATION: The 01.5(38), 02(50), 03(75), 04(100) & 06(150) Quad Close Trap Seal sizes install in the drain outlet. To install, simply insert the Quad Close Trap Seal in the drain outlet or ② throat of strainer until the top of it is flush with top of drain outlet or strainer throat. See reverse side of submittal for illustration.

NOTES:

- ① Tested by The IAPMO R&T Product Certification Agency to ASSE Standard #1072, Barrier Type Floor Drain Trap Seal Protection Devices. All sections of the Standard was successfully passed.
- ② The 0350 (89) Quad Close Trap seal size installs in the throat of Smith adjustable strainers. See reverse side of submittal for illustration.
- ③ Required flow rates per ASSE Standard #1072, Section I. All sizes meets or exceeds these flow rates.
- ④ Do not use in applications where the room/space has an atmospheric pressure less than the ambient pressure of the exterior of the room/space or building.
- ⑤ AF-GW represents floor designation/rated for all floor types per ASSE 1072, Section II.
- ⑥ Copies of the listing certificates and/or ASSE 1072 Test Report available upon request.

NOTE: Dimensions shown in parentheses are in millimeters.

Patent No. 8,844,572

REV.	DATE	DESCRIPTION	BY	CKD. BY	WEIGHT POUNDS	VOLUME CUBIC FEET	FIGURE NUMBER 2692
		H G F E					
		8-26-14 7-30-14 5-22-14 11-6-12					
		Revised Table Added L/M Revised Table, Notes Removed▲	TBW TBW TBW TBW	JM JM JM CL			

D



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MEMBER OF:



LOCATION

DRAWING NUMBER
s2692 BS

SIZE
A

SCALE:
NONE

DATE:
5-20-08

APPROVED BY:
JM

CHECKED BY:
CL

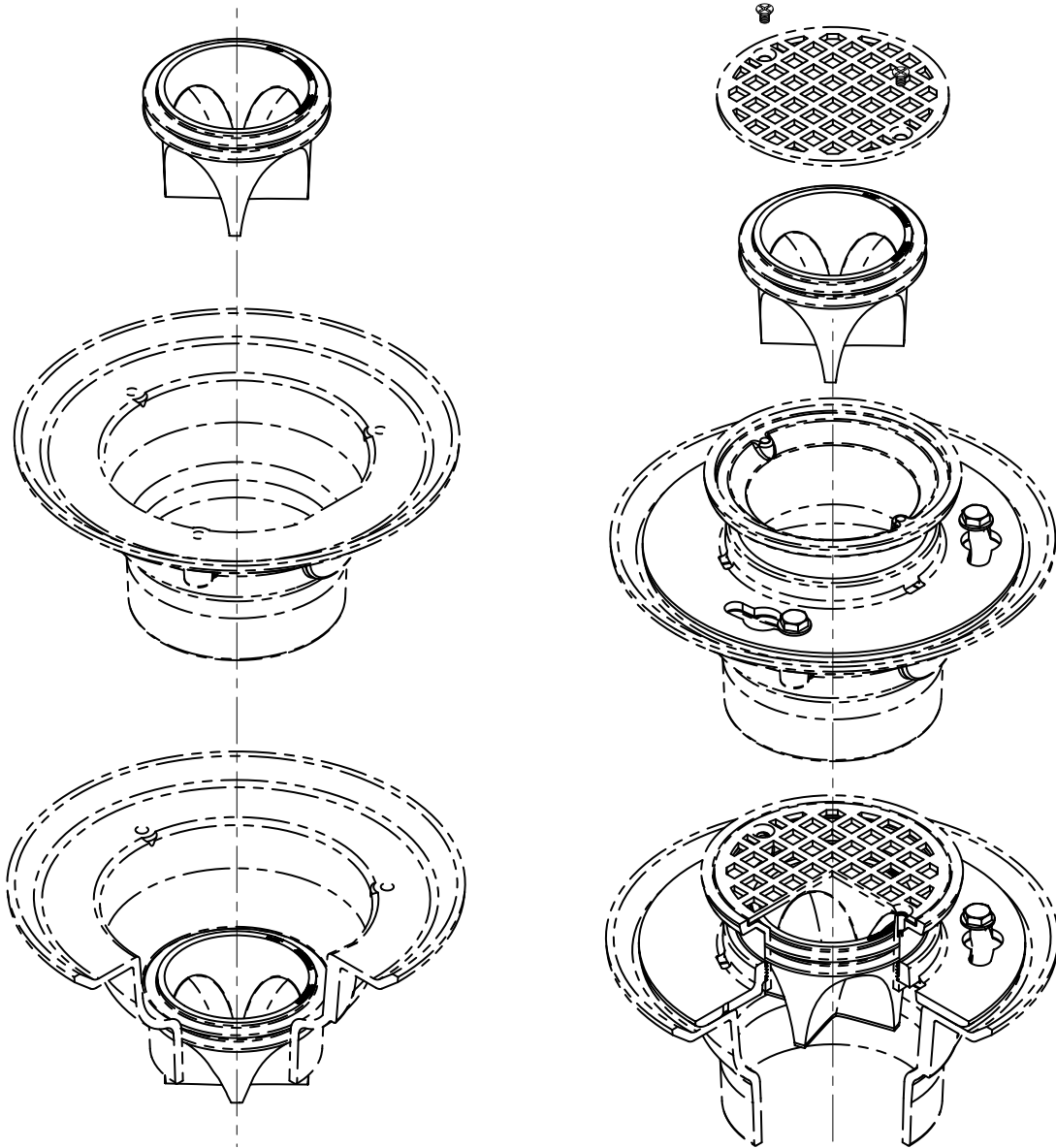
DRAWN BY:
RN

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DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

QUAD CLOSE® TRAP SEAL

Installation Illustrations



Installation in Drain
Body Outlet

0150(38), 02(50), 03(75), 04(100) & 06(150) Sizes

Installation in Strainer
Throat ©

0350(89) Size

INSTALLATION: The 0150(38), 02(50), 03(75), 04(100) & 06(150) Quad Close Trap Seal sizes install in the drain outlet. The 0350(89) Quad Close Trap Seal size installs in the throat of adjustable strainers. To install simply insert the Quad Close Trap Seal in the drain outlet or throat of strainer until the top of it is flush with top of drain outlet or strainer throat.

2692 BS

FIGURE NUMBER

D	8-26-14	Revised Installation	TBW	JM	WEIGHT POUNDS	VOLUME CUBIC FEET	FIGURE NUMBER 2692 BS
C	4-24-12	Rev. Title, Installation	TBW	CL			
B	4-2-12	Added Note	TBW	DP			
A	2-10-10	Revised Drawing	RN	BW			
REV.	DATE	DESCRIPTION	BY	CKD. BY			

PRODUCT LISTINGS

ENTER ALL OR PART OF A STANDARD, MANUFACTURER, OR MODEL:

Standard
 Listee/Company
 Model

SEARCH RESULTS:

1072-2007: Barrier Type Floor Drain Trap Seal Protection Devices							
Listee / Company	Model	Size	Orientation	Type	Description	Issue Date	Amended Date(s)
Jay R. Smith Mfg. Co.	2692-02	2"				6/20/2012	
Jay R. Smith Mfg. Co.	2692-03	3"				6/20/2012	6/27/2012
Jay R. Smith Mfg. Co.	2692-035	3 1/2"				6/20/2012	
Jay R. Smith Mfg. Co.	2692-04	4"				6/20/2012	6/27/2012
MIFAB, Inc.	MI-GARD-2	2"				12/31/2013	
MIFAB, Inc.	MI-GARD-35	3.5"				1/23/2014	
MIFAB, Inc.	MI-GARD-4	4"				12/31/2013	
MIFAB, Inc.	MI-GARED-3	3"				1/23/2014	
RectorSeal	SureSeal® SS2009V					4/12/2011	5/1/2014
RectorSeal	SureSeal® SS3009V					4/12/2011	5/1/2014
RectorSeal	SureSeal® SS3509V					4/12/2011	5/1/2014
RectorSeal	SureSeal® SS4009V					4/12/2011	5/1/2014

[Download the Seal Authorizations Booklet](#)



ANSI Accredited Program
PRODUCT CERTIFICATION
#1105

- [View Low Lead Plumbing Listing](#)
- [View LADWP Listing](#)
- [View WaterSense Listing](#)
- [View Listee Names](#)
- [View Listees by Products](#)
- [View File Numbers](#)

Select search category:

- File Number
- Listee Name
- Standard
- Product Description
- Listed Model / Additional Company

Enter File Number, Listee Name, Product Description, Standard, or Listed Model

- Exact Text
- All Keywords
- Any Keywords

Your **Standard** search for "1072" has returned the following listees.

7479	JAY R. SMITH MFG. CO.	Floor Drain Trap Seal Protection Devices
8472	MIFAB, INC.	Floor Drain Trap Seal Protection Devices
C-4165	SURE SEAL, INC.	Floor Drain Trap Seal Protection Devices





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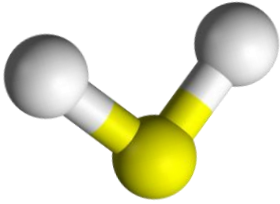
FLOOR DRAIN TRAP SEAL PROTECTION DEVICES TO SMITH COMPARISON

SMITH QUAD SEAL™	SURE SEAL	PROVENT TRAP GUARD®	MI-GARD	JONES STEPHENS
2692-02	SS 2009		MI-GARD-2	P24001
2692-03	SS 3000		MI-GARD-3	P24002
2692-035	SS 3509		MI-GARD-3.5	P24003
2692-04	SS 4009		MI-GARD-4	P24004
2692-0150				
2692-02		SG22P		
2692-02		SG22IP		
2692-02		TG22P		
2692-02		TG22IP		
2692-02		TG22G		
2692-02		TG22SC		
2692-03		TG33IP		
2692-03		TG33G		
2692-03		TG33P		
2692-03		TG33SC		
2692-03		TG34G		
2692-04		TG34IP		
2692-06		TG36IP		
2692-035		TG3H		
2692-04		TG35HM		
2692-04		TG34HW		
2692-04		TG34SC		
2692-04		TG33Zurn		
2692-04		TG33Wade		
2692-04		TG34TP		

This comparison guide is for the convenience of our customers only and does not imply that the competitive items are exactly comparable to Jay R. Smith Mfg. Co. products in quality, approvals, or features.



THE MYTHS AND FACTS OF SEWER GASES AND DRAINS

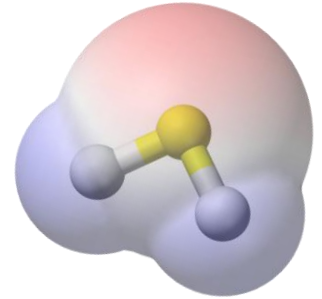


Fact: The main odorous component of sewer gas is **Hydrogen Sulfide**.

Fact: Hydrogen Sulfide Gas is **heavier** than air.

Fact: **Air** at sea level weights 0.0749136 lb. per cubic foot.

Fact: **Hydrogen Sulfide** weights 0.0850893 lb. per cubic foot.



Myth No. 1: Sewer gases rise up out of the drain pipes, much like steam, thru small openings of a drain trap seal device.

Fact No. 1: Hydrogen Sulfide gas will collect under a layer of air the same as water will collect underneath a layer of oil. An outer force is needed to move or agitate the lower layer (Hydrogen Sulfide Gas) thus mixing it with the upper layer (Air).

Fact No. 2: The only way sewer gas can be expelled out of a drain would be if it were pushed out by atmospheric pressure differential and/or turbulence.

Example 1: Wind blowing into a vent stack pipe, creating a higher pressure in the drain pipe than inside the room the drain is connected to, will push the heavier hydrogen sulfide gas out of the drain, agitating and mixing the gas with the air inside a room.

Example 2: An air conditioner or ceiling exhaust fan can pull air from a room, reducing the air pressure in the room thus allowing sewer gases to be pulled from a drain.

Example 3: Sewer gases forming inside a septic tank increasing the gas pressure inside the tank will push the sewer gases up and out of the floor drain.

Example 4: Water backing up from flooding or from a clogged drain pipe will push the sewer gas thru a drain, into a room.

Fact No. 3: The Quad Close check valve will close between 0.004 and 0.007 pounds per sq. inch and remain closed to well over 10.00" of head pressure until a reverse pressure occurs, opening the valve and allowing air and/or water to enter the drain. This will prevent sewer gases from escaping or being expelled from a floor drain pipe. The pressure needed to close the Quad Close valve is a fraction of the weight of (1) cubic foot of air.

(Approximately 0.07788 to 0.0807 lbs. Per Cubic Foot)

Fact No. 4: The Quad Close check valve is a pressure amplifier or intensifier much like a diaphragm type valve. Designed after the human heart valve, the large surface area beneath the Quad Close is a "diaphragm" that sums up the ultra-low drain pressure, closing the valve and concentrating this pressure evenly along the valves sealing surfaces. **See Fig. No. 1:**

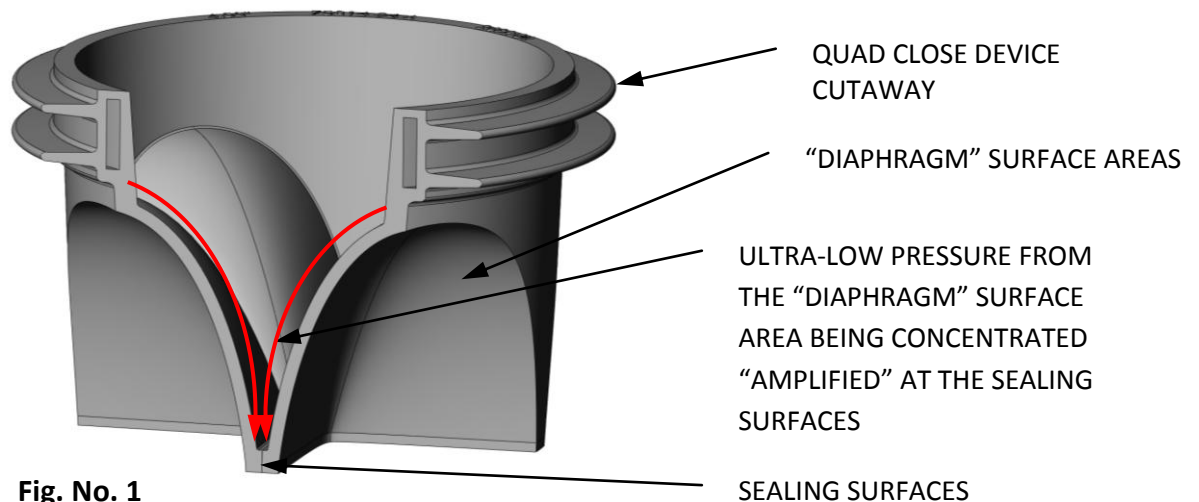


Fig. No. 1

Myth No. 2: If you can see light thru a trap sealing device then sewer gases can get thru.

Fact No. 1: The fact that light can or cannot be seen thru a trap seal device has nothing to do with whether or not the device will stop sewer gases. Light requires a straight line path of travel thru the device to be seen. Gas will travel thru openings between curved surfaces even if the device appears closed. This can be demonstrated by placing the trap seal device onto a surface of water. Producing an ultra-small pressure differential, the device will close and float. Any opening thru the valve that does not close, will allow water to come thru thus sinking the valve. Consequently gas will make it thru the device easier since it has considerably less overall pressure on the device than water, for closing the device. **See Fig. No. 2:**

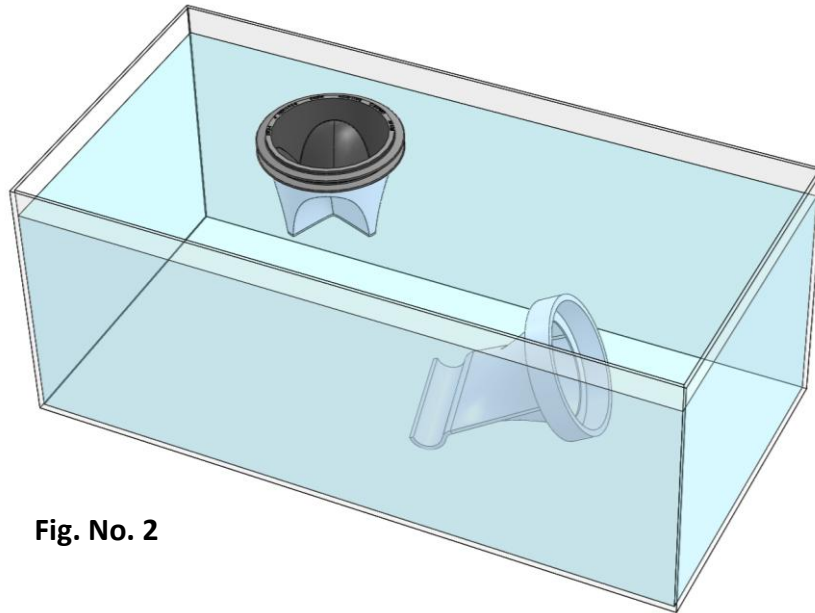


Fig. No. 2

Fact No. 2: Check valves, with ultra-low closing pressures need this “even gas pressure” differential to close them. Uneven mechanical spring type forces on a check valve can leave some sealing areas warped and open. This will allow sewer gases to get thru even the smallest openings around the valves sealing surfaces that are not sealed by the gas pressure, but instead, held open by uneven mechanical forces.

Fact No. 3: Gas pressure is spread evenly over the surface underneath the Quad Close valve producing smooth even pressure along the positive sealing surfaces. This closing action can be seen thru the top of the Quad Close valve. This takes the guess work out of trying to “see” if a trap seal device is operating properly by watching the Quad Close valve “Sealing Surfaces” open or close due to changing pressures within a drainage system.

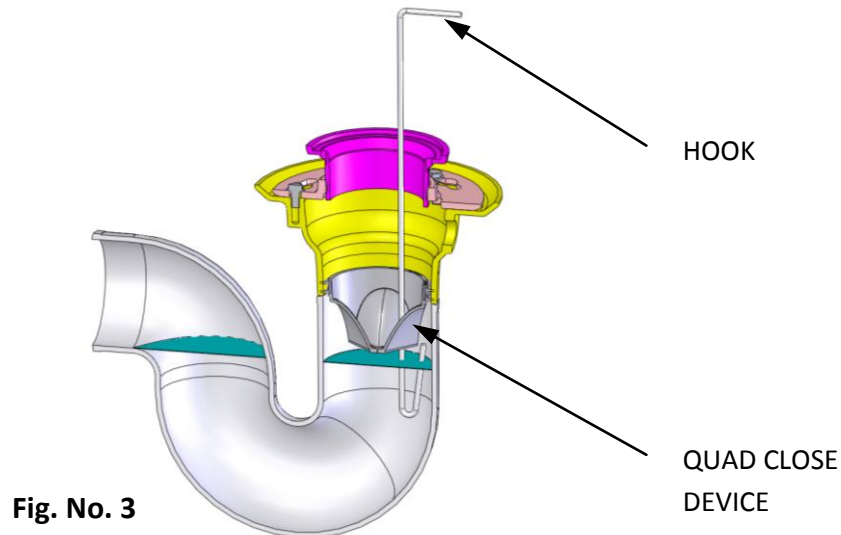
Myth No. 3: A metal drain snake can be used thru a rubber drain trap seal device without eventually destroying the rubber parts of the device.

Fact No. 1: A metal drain snake used thru a rubber drain trap seal device will eventually destroy the rubber parts of the device. A plastic pipe inserted into a trap seal device, to allow a metal drain snake thru, will stretch the valve seal to a point where it will not close. Removal of the trap seal would be best.

Fact No. 2: The Quad Close can be easily removed with a hook or by hand to allow cleaning of the drain.

See Fig. No. 3:

Fact No. 3: The Quad Close can be easily removed for cleaning of the trap seal device itself as well.



Myth No. 4: A trap seal device can be used in place of a trap primer.

Fact No. 1: A trap seal device does not provide water to a drain. Eventually the water in a P-Trap will evaporate out of the outlet side of the pipe and water will need to be placed into the drain, manually or with a trap primer, filling the P-Trap.

Fact No. 2: The use of the Quad Close will enhance the use of a trap primer by greatly reducing the amount of water used to replace the evaporated water in the P-Trap, due to reduction of evaporation.

Fact No. 3: Using a trap seal device in a drain with a P-trap that has no water in it is the same as replacing the P-trap with a trap seal device. A P-Trap with no water in it is just a curved piece of pipe that will allow sewer gases to pass under differential pressure. Using a trap seal device in place of a P-Trap will probably never be allowed by code and should not be.

Myth No. 5: The ASSE-1072 Standard was written for the back flow prevention of water and sewer gases thru a trap seal type device.

Fact No. 1: The ASSE-1072 Standard was written for the reduction of evaporation of water from a P-Trap.

Fact No. 2: The Smith Quad Close far exceeds the requirement of the ASSE-1072 Standard adding smoke testing, over 10.00" of head backflow prevention and greatly exceeds the ASSE-1072 requirement for evaporation reduction.

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