

ENGINEERING COMMUNIQUÉ

JAY R. SMITH MFG. CO.® ♦ DECEMBER, 2013 ♦ VOLUME 3-ISSUE 5



From:
THE SMITH ENGINEERING GROUP

SUBJECT: LEAD FREE PRODUCTS

The 'Reduction of Lead in Drinking Water Act' plumbing law is effective January 04, 2014. It specifically exempts non-potable services used exclusively for outdoor watering products. Hydrants are not intended for potable water use and are intended for outdoor services only such as irrigation, outdoor watering and so forth. Based on the interpretation of the statute's definition of outdoor watering products being used 'exclusively for non-potable services', hydrants and related products are exempt from the requirements of this law. This is stated on the website under [News/Lead Free Requirements/Jay R. Smith Mfg. Co. and the Lead- Free Law.](#)

Products that are affected by this law are trap primers (2699 Series) and piston type water hammer arresters (5200 Series, 5200-SC Series, JRS 520-T Series and JRS 520-SC Series). These products are lead free, tested and certified to meet the lead free requirements of NSF/ANSI 372, IAPMO File No. 8477. This certificate can be viewed on the website under [News/Lead Free Requirements/Lead Free Products.](#)

The 5005-5050 Series and the 5060 stainless steel water hammer arresters are lead free since they are constructed entirely of 304 stainless steel. Stainless steel is a natural lead free material.

Please find attached submittals for the 2699 trap.

MEMBER OF

MORRIS GROUP
INTERNATIONAL



QUAD CLOSE® – FIGURE NO. 2692

There has been another entry into the trap seal device arena. This unit will be reviewed in a separate bulletin. As a reminder, there are still only two units in the market place that are listed with IAPMO UPC and ASSE certified to meet the ASSE 1072 National Standard – Trap Seal Protection Devices.

Jay R. Smith - Quad Close®
✓ IAPMO: File No. 7479
✓ ASSE: Record No. 1435
Note: Passed all parts of the standard – full compliance.

Sure Seal - Floor Drain Trap Sealer
✓ IAPMO File No. C-4165
✓ ASSE Record No. 1409

Pro Set - Trap Guard
X IAPMO – None
X ASSE - None

Mifab - Mi-Gard
X IAPMO – None
X ASSE - None

The ASSE 1072 Standard has been submitted to both the IAPMO UPC and the ICC IPC national plumbing codes for inclusion in the 2015 editions.

INSTALLATION INSTRUCTIONS

Jay R. Smith Mfg. Co.® PISTON TYPE WATER HAMMER ARRESTER HYDROTROL JUNIOR

Maximum working pressure - Designed to keep residential, commercial, and industrial water lines @ 350 p.s.i. maximum working pressure during pressure surges following quick valve closure. Working TEMPERATURE RANGE - From 33° to 250° F.

INSTALLATION

The piston unit can be installed in new construction or renovation/remodel by threading into properly sized female I.P.S. fitting (wrench on hex). It can be installed at any angle to accommodate structural limitations, and should be placed as close to the shut-off valve as possible, one on each hot and cold line. The piston unit is seamless, factory charged and is maintenance free and does not require access panels. It cannot be charged in the field.

TYPICAL INSTALLATIONS

- Properly sized and placed (see tables below) the piston unit can be set in a multiple fixture branch for commercial/institutional/industrial/residential applications.
- As a tee configuration with stub outs in walls behind sinks, lavatories, and water closets.
- MIP Threaded model - Threaded into female I.P.S. connections in tub and shower valves.
- In supply lines of clothes washers and dishwashers (AA not recommended for these applications).
- Into cold inlet and hot outlet of water heater for general protection.

PISTON UNITS Comply with the following:
 ASSE/ANSI 1010 Water Hammer Arrester

NOTE: Systems exceeding 60 PSI(414 kPa) shall be installed with a pressure reducing valve upstream of the unit per ASSE Standard #1010.

Listed:



STD 1010



FILE NO. 4785

COMPLIES with LEAD PLUMBING LAW
"CERTIFIED by IAPMO R & T"
 FILE NO. 8477
 (NSF/ANSI 372)

| Fixture | Type of Supply Control | Weight in Fixture-Units | | | | | |
|----------------------|------------------------|-------------------------|-------|-------|---------|-------|-------|
| | | Public | | | Private | | |
| | | Total | C.W. | H.W. | Total | C.W. | H.W. |
| Water Closet | Flush Valve | 10 | 10 | - | 6 | 6 | - |
| Water Closet | Flush Tank | 5 | 5 | - | 3 | 3 | - |
| Pedestal Urinal | Flush Valve | 10 | 10 | - | - | - | - |
| Stall or Wall Urinal | Flush Valve | 5 | 5 | - | - | - | - |
| Stall or Wall Urinal | Flush Tank | 3 | 3 | - | - | - | - |
| Lavatory | Faucet | 2 | 1 1/2 | 1 1/2 | 1 | 1 | 1 |
| Bathtub | Faucet | 4 | 2 | 3 | 2 | 1 1/2 | 1 1/2 |
| Shower Head | Mixing Valve | 4 | 2 | 3 | 2 | 1 | 2 |
| Bathroom Group | Flush Valve Closet | - | - | - | 8 | 8 | 3 |
| Bathroom Group | Flush Tank Closet | - | - | - | 6 | 6 | 3 |
| Separate Shower | Mixing Valve | - | - | - | 2 | 1 | 2 |
| Service Sink | Faucet | 3 | 3 | 3 | - | - | - |
| Laundry Tubs (1-3) | Faucet | - | - | - | 3 | 3 | 3 |
| Combination Fixture | Faucet | - | - | - | 3 | 3 | 3 |

| Pipe Size | Sizing Symbol | Smith Fig. No. | Air Charge | Dimensions | | Fixture Unit Capacity |
|----------------|---------------|----------------|------------|------------|-----------|-----------------------|
| | | | | A | B (DIA) | |
| * 1/2 (13) IPS | AA | 5201 | 60 psig | 5.56(141) | .8750(22) | 1 to 3 |
| 1/2 (13) IPS | A | 5205 | 60 psig | 6.875(175) | 1.125(29) | 4 to 11 |
| 3/4 (19) IPS | B | 5210 | 60 psig | 8.69(221) | 1.38(35) | 12 to 32 |
| 1 (25) IPS | C | 5220 | 60 psig | 12.00(305) | 1.38(35) | 33 to 60 |
| 1-1/4(32) IPS | D | 5230 | 60 psig | 12.00(305) | 2.13(54) | 61 to 113 |
| 1-1/2(38) IPS | E | 5240 | 60 psig | 14.56(370) | 2.13(54) | 114 to 154 |
| 2 (50) IPS | F | 5250 | 60 psig | 16.38(416) | 2.13(54) | 155 to 330 |

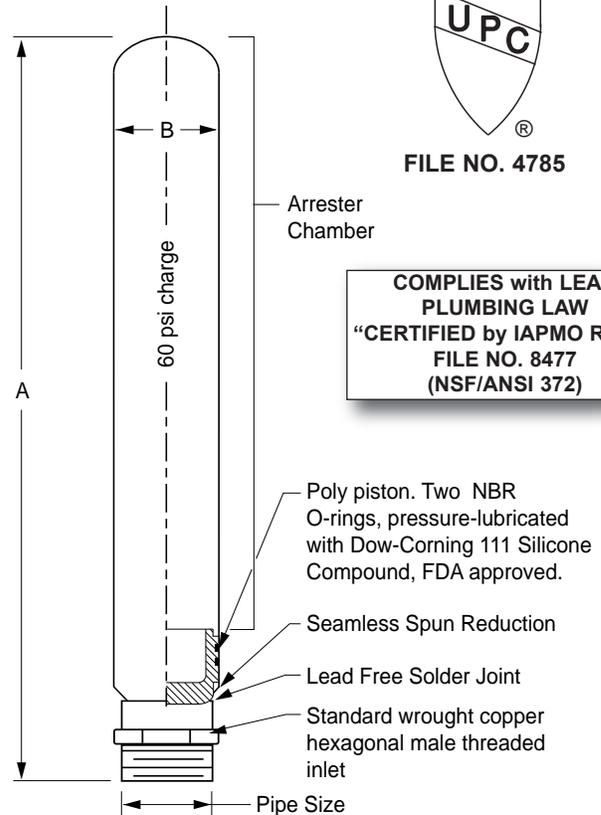
* For use in residential applications only.

ASSE/PDI WATER HAMMER ARRESTER SIZING CHART

| Length of Pipe | Nominal Pipe Diameter | | | | | | |
|----------------|--------------------------------------|----------|--------|------------|------------|--------|--|
| | For flow pressures up to 65 P.S.I.G. | | | | | | |
| | 1/2"(13) | 3/4"(19) | 1"(25) | 1 1/4"(32) | 1 1/2"(38) | 2"(51) | |
| 25'(7.62m) | A | A | B | C | D | E | |
| 50'(15.24m) | A | B | C | D | E | F | |
| 75'(22.86m) | B | C | D | AE | F | EF | |
| 100'(30.48m) | C | D | E | F | CF | FF | |
| 125'(38.10m) | C | D | F | AF | EF | EFF | |
| 150'(45.72m) | D | E | F | DF | FF | FFF | |

NOTE: Dimensions shown in parentheses are in millimeters.

IMPORTANT
 INSTALL USING WRENCH ON HEX ABOVE THREADS PROTECT PRESSURE CHAMBER FROM DENTING.



NOTE: The wetted surface of the product contacted by consumable water contributes less than one quarter of one percent of lead by weight.

DRAWING NUMBER: S5200 Series
 SIZE: A
 SCALE: NONE
 DATE: 4-28-92
 APPROVED BY: SJM
 CHECKED BY: JM
 DRAWN BY: EMB
 5200 SERIES
 DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE
 WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA

| | | | | | | | |
|------|----------|--|-----|---------|---------------|-------------------|-------------------------------------|
| H | 10-25-13 | Added File No. 8477 Note Rev. Table. Note, Added File No. Updated Logo | TBW | JM | WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 5200 SERIES |
| G | 6-20-13 | | TBW | BW | | | |
| F | 02/21/11 | | JJ | TW | | | |
| REV. | DATE | DESCRIPTION | BY | CKD. BY | | | |

J



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 TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com



MEMBER OF:



LOCATION

DRAWING NUMBER
S5200-SC Series

SIZE
A

SCALE:
NONE

DATE:
1-5-04

APPROVED BY:
SJM

CHECKED BY:
JM

DRAWN BY:
TBW

5200-SC SERIES

FIGURE NUMBER

WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

INSTALLATION INSTRUCTIONS

Jay R. Smith Mfg. Co. PISTON TYPE WATER HAMMER ARRESTER HYDROTROL JUNIOR

Maximum working pressure - Designed to keep residential, commercial, and industrial water lines @ 350 p.s.i. maximum working pressure during pressure surges following quick valve closure. Working TEMPERATURE RANGE - From 33° to 250° F.

INSTALLATION

The piston unit can be installed in new construction or renovation/remodel construction

It can be installed at any angle to accommodate structural limitations, and should be placed as close to the shut-off valve as possible, one on each hot and cold line. The piston unit is seamless, factory charged and is maintenance free and does not require access panels. It cannot be charged in the field.

TYPICAL INSTALLATIONS

- Properly sized and placed (see tables below) the piston unit can be set in a multiple fixture branch for commercial/institutional/industrial/residential applications.
- As a tee configuration with stub outs in walls behind sinks, lavatories, and water closets.
- In supply lines of clothes washers and dishwashers. (AA not recommended for these applications)
- Into cold inlet and hot outlet of water heater for general protection.

PISTON UNITS Comply with the following:
 ASSE/ANSI 1010 Water Hammer Arrester

NOTE: Systems exceeding 60 PSI(414 kPa) shall be installed with a pressure reducing valve upstream of the unit per ASSE Standard #1010.

Listed:



STD 1010



FILE NO. 4785

| Fixture | Type of Supply Control | Weight in Fixture-Units | | | | | |
|----------------------|------------------------|-------------------------|-------|-------|---------|-------|-------|
| | | Public | | | Private | | |
| | | Total | C.W. | H.W. | Total | C.W. | H.W. |
| Water Closet | Flush Valve | 10 | 10 | - | 6 | 6 | - |
| Water Closet | Flush Tank | 5 | 5 | - | 3 | 3 | - |
| Pedestal Urinal | Flush Valve | 10 | 10 | - | - | - | - |
| Stall or Wall Urinal | Flush Valve | 5 | 5 | - | - | - | - |
| Stall or Wall Urinal | Flush Tank | 3 | 3 | - | - | - | - |
| Lavatory | Faucet | 2 | 1 1/2 | 1 1/2 | 1 | 1 | 1 |
| Bathtub | Faucet | 4 | 2 | 3 | 2 | 1 1/2 | 1 1/2 |
| Shower Head | Mixing Valve | 4 | 2 | 3 | 2 | 1 | 2 |
| Bathroom Group | Flush Valve Closet | - | - | - | 8 | 8 | 3 |
| Bathroom Group | Flush Tank Closet | - | - | - | 6 | 6 | 3 |
| Separate Shower | Mixing Valve | - | - | - | 2 | 1 | 2 |
| Service Sink | Faucet | 3 | 3 | 3 | - | - | - |
| Laundry Tubs (1-3) | Faucet | - | - | - | 3 | 3 | 3 |
| Combination Fixture | Faucet | - | - | - | 3 | 3 | 3 |

| Pipe Size | Sizing Symbol | Smith Fig. No. | Air Charge | Dimensions | | Fixture Unit Capacity |
|---------------|---------------|----------------|------------|---------------|--------------|-----------------------|
| | | | | A | B (DIA) | |
| * 1/2(13) IPS | AA | 5201 | 60 psig | 5.62(1.43) | .875(22.22) | 1 to 3 |
| 1/2(13) IPS | A | 5205 | 60 psig | 6.56(167) | 1.125(28.58) | 4 to 11 |
| 3/4(19) IPS | B | 5210 | 60 psig | 10.81(274.5) | 1.38(34.92) | 12 to 32 |
| 1(25) IPS | C | 5220 | 60 psig | 14.03(356.4) | 1.38(34.92) | 33 to 60 |
| 1-1/4(32) IPS | D | 5230 | 60 psig | 13.53(343.7) | 2.13(54) | 61 to 113 |
| 1-1/2(38) IPS | E | 5240 | 60 psig | 13.25(336.6) | 2.63(66.68) | 114 to 154 |
| 2(50) IPS | F | 5250 | 60 psig | 14.122(358.7) | 2.63(66.68) | 155 to 330 |

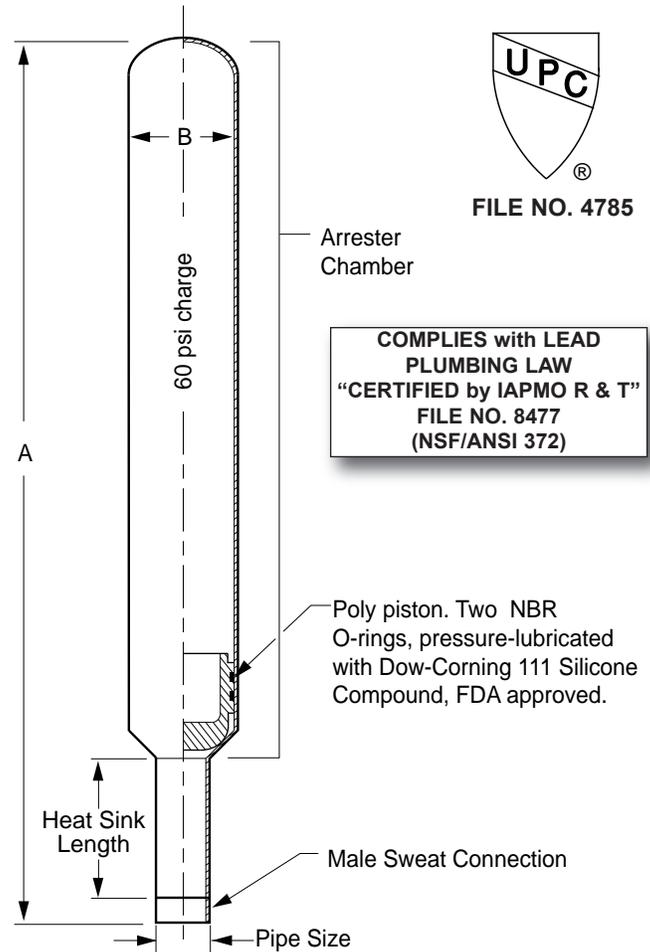
* For use in residential applications only.

ASSE/PDI WATER HAMMER ARRESTER SIZING CHART

| For flow pressures up to 65 P.S.I.G. | | | | | | | |
|--------------------------------------|-----------------------|----------|--------|------------|------------|--------|-----|
| Length of Pipe | Nominal Pipe Diameter | | | | | | |
| | 1/2"(13) | 3/4"(19) | 1"(25) | 1 1/4"(32) | 1 1/2"(38) | 2"(51) | |
| 25'(7.62m) | A | A | B | C | D | E | E |
| 50'(15.24m) | A | B | C | D | E | F | F |
| 75'(22.86m) | B | C | D | AE | F | EF | EF |
| 100'(30.48m) | C | D | E | F | CF | FF | FF |
| 125'(38.10m) | C | D | F | AF | EF | EFF | EFF |
| 150'(45.72m) | D | E | F | DF | FF | FFF | FFF |

NOTE: Dimensions shown in parentheses are in millimeters.

NOTE: The wetted surface of the product contacted by consumable water contributes less than one quarter of one percent of lead by weight.



COMPLIES with LEAD PLUMBING LAW
 "CERTIFIED by IAPMO R & T"
 FILE NO. 8477
 (NSF/ANSI 372)

| | | | | | | | |
|------|----------|----------------------------------|-----|---------|---------------|-------------------|--|
| J | 12-2-13 | Added File No. 8477 Note | TBW | JM | WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 5200-SC SERIES |
| H | 7-8-13 | Revised Table | TBW | CL | | | |
| G | 6-20-13 | Rev. Table. Note, Added File No. | TBW | BW | | | |
| F | 02/02/10 | Revised Notes | JJ | AM | | | |
| REV. | DATE | DESCRIPTION | BY | CKD. BY | | | |

TRAP PRIMERS

AUTOMATIC TRAP PRIMER

FUNCTION: Used where trapped drains are installed in locations used infrequently or other conditions might permit water seal to evaporate, allowing sewer gas or objectionable and contaminating odors to escape through drain. A trap primer is recommended to compensate for evaporation while providing a water seal in the trap at all times.

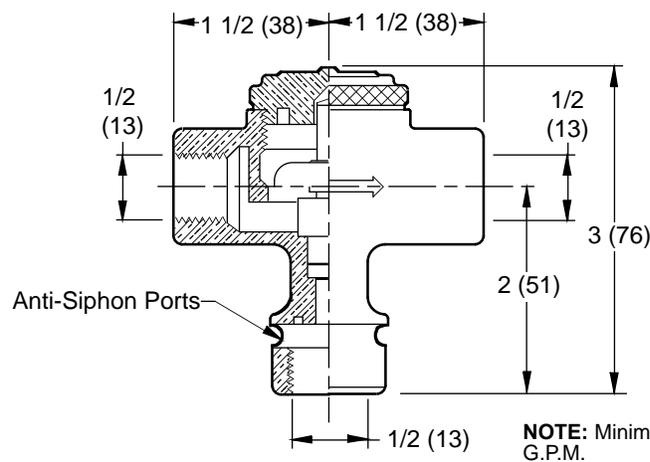


Fig. 2699
1/2" (13) NPT Female

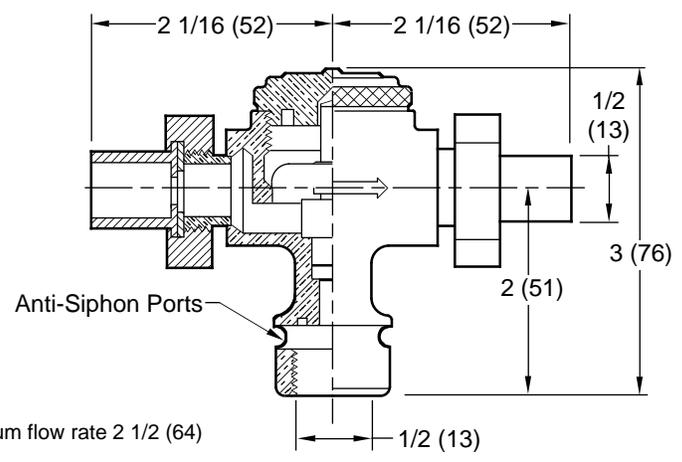


Fig. 2699-1
1/2" (13) Copper Sweat

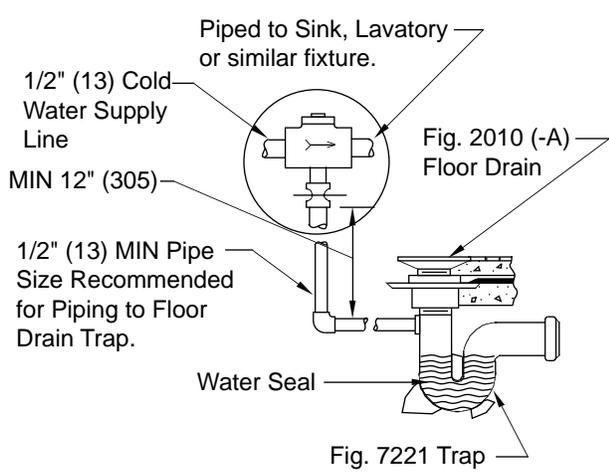
NOTE: Minimum flow rate 2 1/2 (64) G.P.M.

NOTE: Dimensions shown in parenthesis are in millimeters.

REGULARLY FURNISHED:
 Cast Bronze with 1/2" (13)
 Connection as indicated by Figure
 Number Selected.

OPTIONAL MATERIALS:
 Satin Finish Chrome Plated -CP

NOTE: MUST BE LOCATED IN AN ACCESSIBLE LOCATION.



APPLICATION, INSTALLATION AND OPERATING PRINCIPLE

The Smith Trap Seal Primer Valve, when properly installed in a cold water supply line, running to a frequently used fixture and connected to a floor drain trap, provides a constant seal of fresh water in the drain trap.

When water is drawn at the plumbing fixture the resulting flow activates the Trap Primer valve mechanism. A pulse of water is dispensed into the trap at the beginning and end of flow in the fixture supply line.

Air ports in the primer body prevent siphonage of trap water and backflow into the potable water supply line.

If the trap water seal is not constantly maintained, the water will evaporate from the trap, allowing sewer gas to escape into building from the sewer lines.

COMPLIES with LEAD PLUMBING LAW
"CERTIFIED by IAPMO R & T"
 FILE NO. 8477
 (NSF/ANSI 372)



DRAWING NUMBER **S2699**
 SIZE **A**
 SCALE: **NONE**
 DATE: **5-17-85**
 APPROVED BY: **TD**
 CHECKED BY: **TD**
 DRAWN BY: **PJ**
2699, 2699-1
 DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

| | | | | | | | |
|------|------|--|--------|----------|---------------|-------------------|----------------------|
| REV. | DATE | DESCRIPTION | BY | CKD. BY | WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER |
| | | | | | | | 2699, 2699-1 |
| | | Added File No. 8477 Note Updated Logo Changed Text | TBW JJ | JM TW CL | | | |

INSTRUCTIONS FOR INSTALLING 2699 WATER SAVING TRAP PRIMER

INSTALLATION

The 2699 Trap Primer should be connected to the cold line only. For effective priming it should never be connected to a dual hot and cold combination faucet unless the minimum flow on the cold demand exceeds the amount listed on the chart at various operating pressures. See Chart A. Do not install on a cold line serving a drinking fountain only.

These devices should be installed in the horizontal position, as shown, on the supply line leading to a frequently used fixture. Before installing 2699, be sure to flush out the line to remove dirt and scale which might lodge on the valve seat and disc. Device should be installed a minimum of 12" (305) above the trap and should be accessible for servicing. Maximum supply pressure 125 psi.

Note: For supply pressures below 20 psi consult factory.

Note: The Data & Instruction on this sheet is also appliable to fig. nos. 2699-NYC & 2699-1-NYC.

... HOW IT WORKS

Smith Fig. No. 2699 is a unique design which assures delivery of water to the trap to assure against evaporation of the water seal. Fig. No. 2699 operates by the water flow acting against the main reaction disc (1), which forces the reaction disc in the upward position and removes the trap disc (2) from the plastic trap seat (3). A spurt of water is then delivered to the trap. However, with increased flow, the main reaction disc continues to lift and seals off the closing ring (4) to stop flow to the trap. When the flow through the valve is stopped, the trap disc (2) is returned to the closed position, and in the process, delivers a spurt of water to the trap before closing off.

The importance of this design is that a complete flow cycle through the valve from open to close will actuate the primer twice with two definite pulses; once on opening and once on closing, thus providing a tremendous water savings over competitive modes.

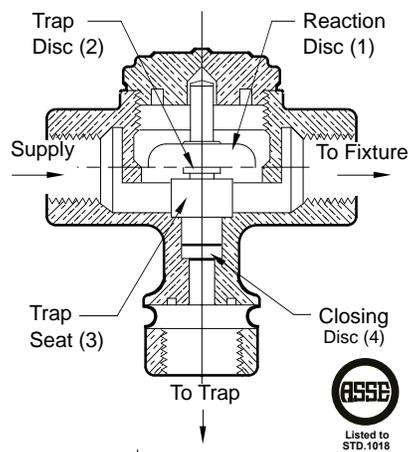
Fig. No. 2699 is furnished with 1/2"(13) NPT female inlet and outlet connections. Fig. No. 2699-1 is furnished with 1/2" (13) union sweat connections.

LIMITED WARRANTY: The Company warrants each product against defects in material and workmanship for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge. This shall constitute the exclusive remedy for breach of warranty, and the installation, damages or other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse air conditions, chemicals, or any other circumstances over which the Company has no control. This warranty shall be invalidated by and abuse, misuse, misapplication of improper installation of the product. THE COMPANY MAKES NO OTHER WARRANTIES EXPRESS OF IMPLIED EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY.

CHART A

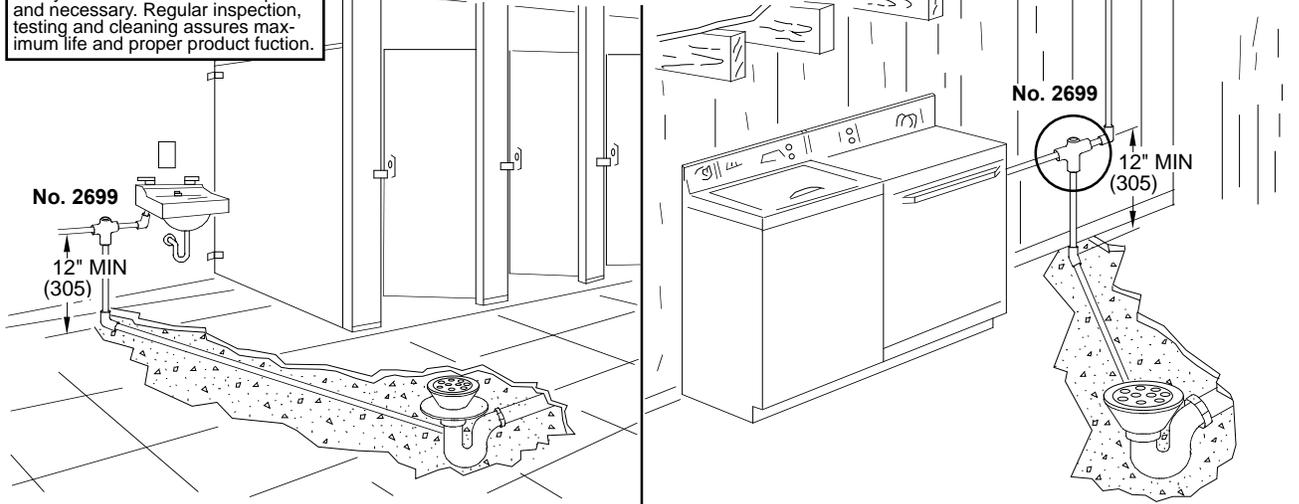
| | | | | | |
|----------------|-----|-----|-----|-----|-----|
| Inlet Pressure | 25 | 50 | 75 | 100 | 125 |
| *GPM | 1.1 | 1.6 | 2.0 | 2.3 | 2.4 |

*Minimum cold flow required for proper trap priming.



Annual inspection of all water system safety and control valves is required and necessary. Regular inspection, testing and cleaning assures maximum life and proper product function.

TYPICAL INSTALLATIONS



DRAWING NUMBER: S2699 INST
 SIZE: A
 SCALE: NONE
 DATE: 3-27-95
 APPROVED BY: BS
 CHECKED BY: WMS
 DRAWN BY: EMB
2699 INST
 DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

| | | | | |
|------|----------|-------------------------|----|---------|
| E | 01/20/11 | Updated Logo | JJ | TW |
| D | 04-17-03 | Modified Text | RN | CL |
| C | 07-19-01 | Added Notes & Dimension | SJ | MJ |
| REV. | DATE | DESCRIPTION | BY | CKD. BY |

WEIGHT POUNDS
VOLUME CUBIC FEET

FIGURE NUMBER
2699 INST