

INSTALLATION INSTRUCTIONS for EXPOSED TrueSense FLUSH VALVES



All Plumbing is to be installed in accordance with all applicable Codes and Regulations. Water Supply Lines must be sized to provide adequate flow rate (gpm/ gallons per minute) to all fixtures. Drawings should be reviewed for compliance with ADA Guide Lines. Particular attention should be paid to the sensor location and grab bar conflicts. To avoid damaging chrome during installation, only use a flat-jawed wrench to tighten all coupling nuts.

All electrical wiring should be installed in accordance with National & Local Codes and Regulations. Delany flush valves are designed to operate at water pressure between 20psi and 100psi. All plumbing fixtures requires at least 25psi with most requiring higher pressure. Meeting the minimum pressure requirements fo the fixture will automatically satisfy the minimum needs of the Delany valve installed. At pressures of 80psi and above, the use of a pressure reducing valve is in supply line is highly recommended.

Prior to Installation

Delany recommends that a Pre-installation meeting be held between the electrican and the plumbing contractor. The Delany Representative should organize this. At which the installation and location of the electrical boxes should be discussed in order to provide smooth communication on this critical point.

- Prior to installing the flush valve(s), the following items must be installed:
- Two (2) 2-Gang electrical box (4" x 4" x 3.5" or 102mm x 102mm x 89mm) for water closet sensor
- Two (2) 2-Gang electrical box (4" x 4" x 3.5" or 102mm x 102mm x 89mm) for urinal sensor
- Electrical receptical positioned with eighteen (16) feet so that a plug-in transformer can be installed.

TOOLS REQUIRED FOR FLUSH VALVE INSTALLATION:

- A) Straight Blade Screwdriver
- B) 12-Point 1 ¹/₂" Socket Wrench #748 (For main valve seat removal)
- C) Flat-jawed Adjustable Pipe Wrench. (Recommended: E110 by Rigid)

WARNING: Never use any tools with teeth

What's in the Boxes

For each fixture there are two (2) boxes.

The "TrueSense Valve" box will have the following: Flush Valve Control Stop Vacuum Breaker Flush Connection Tube Cowl Nut and Spud Nut Assembly Sweat Adaptor Kit & Covering Tube The "Electronic Parts" box contains: Sensor Wall Plate (w/ Sensor & Override Button) Wall Plate for behind valve (2 holes on plate) Plastic Wall Plate Mounting Brackets Eight (8) Wall Plate Retainer Screws (4 per Retainer) Soleniod Valve with Black and Red Tubes Two (2) Covering Tubes and Two (2) Flanges Sensor Wall Plate Template (water closet or urinal) 2 Allen Wrenches Instruction Sheet

Box #3 is the power supply box ("2324-3" & it contains: Inst 3-Way Splitter Wiring and Electrical box Instructions

Power Supply Options: Plug-in Transformer Hardwired Transformer or Battery Wire led labeled "D" to connect Sensor box and the Solenoid box

Note: One (1) Remote will be offered per job.

Installation of Conduits for Transformer Version





Installation for 9V Transformer (Plug-in or Hardwired)

Install Transformer(s) in a convenient location. Eighteen (18) feet of lead wire is provided.

Note: One Delany transformer can operate up to three (3) TrueSense equipped flush valves.

Sensor/Solenoid Box Locations

Note: Exposed closet and urinal models use two (2) electrical boxes.

Please refer to rough-in drawings on page 4 for locations. *Electrical Box Location for the Solenoid is CRITICAL. Failure to properly position the Solenoid electrical box may result in improper installation and could result in the improper performance. All tradesmen (i.e. plumbers, electricians, tile setters, etc.) who will be involved in the installation of a sensor activated flush valve must be familiar with the requirements of its installation or the manufacturer's warranty may be voided.*

- Note: A Rough-in Template is available on the website, www.delanyproducts.com/sensorflush.html In addition, all 1802/1851 models include the Template. This Template is mandatory in order to aid in lining up the critical location of the Solenoid electrical box.
- The critical deminsions are 1) having the C/L of the electrical box line up with the C/L of the fixtrue & 2) C/L of the Solenoid box NEEDS to be 7/8" below the C/L of Control Stop inlet.
- Please also refer to the rough-in drawings for the installation of the electrical boxes.



TrueSense Rough-in Template

Note: The use of RACO #696 for 2-gang box or equivalent is recommended. Note: The use of RACO Plaster Ring #768 (Only used if necessary)



Once the 2-gang boxes are located properly and installed, position Plaster Ring (if needed) with screw holes on the top and bottom of the box. Screw Plastic Mounting Bracket onto both 2-gang boxes.

Break tiles to allow screw holes in plaster to show.



UP1802 CLOSET ROUGH-IN DRAWING





If your installation includes a supply line with a threaded iron pipe, skip ahead to step 2.

1) Installation of Sweat Adapter: Fig 1

(Optional - Only Required for Supply Pipes without Male Threads)

- (A) Find Sweat Adapter Kit supplied in box.
- (B) Measure from the finished wall to the Center Line of the fixture spud.
- (C) Cut the Pipe 1 ¼" shorter than measured number.
- (D) Slide the Sweat Adapter until it it hits the sholder of the bushing and sweat solder to pipe.

NOTE: If an Iron Pipe Supply (IPS) is being used, stub out the Iron Pipe Nipple to the same measurement as used for the Sweat Adapter



2) Mount the Control Stop: Fig 2

(A) Measure distance from finished wall to edge of first (1st) thread on Supply Pipe or Adapter.

- (B) Cut Cover Tube to this Measurement.
- (C) Slide Cover Tube over Supply Pipe.
- (D) Slide the Wall Flange over Cover Tube and up against the wall.
- (E) Screw the Control Stop onto end of the pipe until hand tight with E-110 Wrench.



Fig 2

1) INSTALLING the VACUUM BREAKER & SPUD FLANGES: Fig 4

- (A) Put Rubber Sleeve into flanged end of Flush Connection
- (B) Slide Cowl Nut up Flush Connection Tube.
- (C) Slide Spud Nut, Spud Flange, & then Washer on to the bottom of Flush Connection Tube.
- (D) Place Flush Connection Tube into Fixture Spud opening and tighten the Cowl Nut onto the bottom of the valve outlet.

NOTE: TIGHTEN THE COWL NUT ONLY HAND TIGHT!

- (E) Cut flush connection 2" less than the measurement of the center line the supply inlet to the top of the fixture.
- (F) Making sure Flush Connection Tube is vertical, tighten Union Coupling Nut fully to Control Stop with flat-jawed Adjustable wrench.
- (G) Finally, tighten fully Spud Nut to Spud of the Fixture.
- Note: The "C/L" Critical Level Line marked on the Flush Connection must be a MINIMUM of 6" above the top of the Fixture.



Fig 4

Installation of Urinal Sensor & Solenoid

SlipFit Connection Valves

**** Refer to Figure on Page 7 ****

(1) Install Plastic Wall Plate Mounting Brackets onto the 2-gang boxes, flush to the finished face of wall.
(2) In Sensor box, find wires labeled "B" and "D" that the electrician has led into the box.

Connect Solenoid to the Sensor:

- (3) On the Sensor Wall Plate find the wire labeled "D". Connect this wire to the wire also labeled "D" located in the Sensor electrical box.
- (4) Find solenoid. Inside the Solenoid electrical box, find the wire labeled "D" and connect it to the wire also labeled "D" that is coming off solenoid.
- (5) Place solenoid inside the upper solenoid 2-Gang box, positioned so that the fittings are facing outwards.

Connect Sensor Wall Plate to Power & Solenoid:

- (6) Find wire "B" coming from the Sensor Wall Plate (#1) connect to wire also labeled "B" inside Sensor box. This Connects the Sensor to the Power (Wire "B". See Wire Diagragm on Page 9)
- (7) Connect wire "D from the Sensor Wall Plate to the wire labled "D" found in the Sensor box.
- (8) Now push all associated wires from the Sensor Wall Plate(s) into the lower 2-gang box and hook Sensor Wall Plate to Retainer and to secure you will use the set-screw located on underside of plate.
 - **** Note: Do Not Secure the Wall Plate at this time. ****

Preparing to Connect Valve:

 Measure the distance from the C/L of control stop to finished face of the wall. Note: The C/L of the CS varies from urinal fixture to fixture and can vary from as little as 2" to as great as 3-1/8th. This becomes important for the TrueSense when it comes determining whether the Large Covering Tube and Large Flange for use with the piston (with the black fitting) are needed.

Please use the following **Guide**:

2-3/4" - 3-1/8": use large covering tube + large flange

2-1/2" - 2-3/4": use large flange ONLY

2" - 2-1/2": use NOTHING

Based upon this guide, prepare for connecting the valve by grabbing the Small Covering Tube & the Small Flange and the Large Flange (or NOT) & Large Covering Tube (or NOT) from the Electrical Box. Place them on the top of the fixture on your righthand side. Note: Make sure all the set screws are not protruding inside. Slide the Small Flange on to the Small Covering Tube.

Connect the Valve to the Solenoid in 2-gang box:

(1) Find 2 Wall Plates for valve (#2172-TS & 2172-F) in the Electronic Parts Box.

- Note: One has a large offset opening and the other is thin with 2 holes for the red & black tubes. The 2nd plate will float over the other plate and thus the name, "floater" plate.
 - Note: There are 2 orientations to the wall plate with the large offset opening. The opening is oriented in such a way that a little there is extra room either up or down. The critical dimension is that the center line of the Stop is 7/8" above the CL of the electrical box. If these dimensions, as shown on the template, were followed, the correct alignment will be with the thin side on the top and the wide portion below. Start with this orientation and screw plate to the electrical box.
- (2) The floater plate has 2 orientations that are designed to match the opening on the wall plate. We have placed a sticker on one side that says "Back Side". With the wall plate in its' correct alignment, the correct position for the floater plate is to have that sticker face into the electrical box. It will also be in the snowman position with the small hole on top.
- (3) Next from the Valve Box, take the flush valve out and place that on the lefthand side of the fixture in front of you.
- (4) Take the Small Covering Tube in your left hand and guide the Red Tube from the solenoid through the small hole of the floater plate and then feed it through the Small Covering Tube w/ Flange.
- (5) Push the Covering Tube all the way down towards the solenoid as far as it will go.
- (6) Grab the Red Tube as close t0 where it is coming out of the Covering tube. While holding that, grab the flush valve and push the Red Tube all the way into the red fitting on the valve.
- (7) Push the Covering Tube all the way onto the fitting w/ the set screw turned to face you & tighten with the allen key to hold the tube in place.
- (8) Take the Large Flange (or Not) and on slide it onto the piston with the black fitting.
- (9) Grab Black Tube and guide it through the large hole of the floater plate and push it all the way into the black fitting.
- (10) Wet the o-ring on the flush valve tailpiece and then line up the valve loosely into the opening of the wall plate and with the flush valve tailpiece lined up into Control Stop.
- (11) Push/guide the tailpiece into the control stop throat until it is positioned over the Flush Connection.
- NOTE: Be careful as you do this because *if the box was misaligned*, it may be a tight fit and if you are careless you can easily damage the Red Fitting on Valve.
- (12) Tighten Cowl Nut from Flush Connection and Nut on Control Stop
- (13) Secure Wall Plates onto Mounting Brackets with allen wrench provided

Exposed Urinal Assembly



TrueSense Piston Assemblies			
Part No.	Description		
2143A	Piston Operating Stem		
2147A	Piston Internal Operating Assembly		
2154A	Piston Actuator Assembly Complete		

Individual Parts		
Part No.	Description	
133	Union Nut for Use w/ SlipFit Tailpiece	
130	SlipFit Tailpiece	
65	O-ring for SlipFit Tailpiece	
132	Clamping Ring for SlipFit Tailpiece	
F500A-AR	Left & w/ No. 2130 Part	
2129	Push-to-Connect Straight Fitting - Black	
2130	Push-to-Connect Straight Fitting - Red	
2133	Nylon Tubing - Black	
2134	Nylon Tubing - Red	
2140	Handle Pad Washer	
2141	Spring for Use w/ Piston Operating Stem Assembly	
2142-1	Rubber Piston Sleeve Washer	
2144	Cup Washer for Use w/ Piston Operating Stem	
2145	Sleeve for Use w/ Internal Piston Assembly	
2148-P	Piston Valve Body	
2149-L	Large Cover Tube for Handle Nut (6" Long)	
2150-L	Small Cover Tube for Handle Nut (7.5" Long)	
2152	Flange for Use Large Cover Tube	
2153	Flange for Use Small Cover Tube	
2180	Push-to-Connect Tube Fitting Swivel 90 Degree Elbow w/ Black Collar	
2181	Push-to-Connect Tube Fitting Swivel 90 Degree Elbow w/ Red Collar	
2301A	Wall Plate Assembly Complete w/ Sensor	
2311A	Wall Bracket w/ Screws	
2315	Wall Plate for Actuator Assembly	
2317A	Solenoid for TrueSense	

SLIPFIT CONNECTION

Installation of Sensor & Solenoid for SINGLE Water Closet

**** Refer to Wiring Diagram on Page 8 ****

- (1) Install Plastic Wall Plate Mounting Brackets (#2 & 6) onto the 2-gang boxes, flush to the finished face of wall.
- (2) Run transformer wire lead down through a conduit and into a hole at the top of sensor 2-gang box (#15).
- (3) Connecting the 3-way Splitter to Power: Find 3-way splitter (Part #2321) and connect the wires labeled "B" of 3-way splitter to the transformer wire lead (also labeled "B"). This will provide power to Sensor on Wall Plate.
- (4) Find wire labeled "D" of sensor 2-gang box (#15) & run it down through a conduit to the solenoid 2-gang box (#16).
- (5) Place solenoid (#3) inside lower solenoid 2-Gang box (#16), positioned so that the tubes are facing outwards.
- (6) **Connect Sensor to the Solenoid:** Connect wire "D" that was lead down from the sensor 2-gang box to wire also labeled "D" that is coming off solenoid (#3).
- (7) Hook Sensor Wall Plate Unit (#1) to Mounting Bracket (#2) & to secure you will use the set-screw located on underside of plate.

**** Note: Do Not Secure the Wall Plate at this time. ****

(8) **Connecting Soleniod in 2-gang box to Valve:** Take Wall Plate for valve (#7) and guide the Red Tube (#4) on solenoid (#3) through the small hole (#8).

Note: The Wall Plate (#7) must be positioned with the smaller of the 2 holes (#8) on top and the larger hole underneath. Please see the diagram below.

- (9) Take Black Tube (#5) on solenoid (#3) and guide it through large hole (#9) of the wall plate (#7)
- (10) Loosely hook Wall Plate (#7) on Mounting Bracket (#6).
- (11) Take small Covering Tube and slide the small Flange onto it.
- (12) Now pass the Red Tube (#4) through the small Covering Tube (# 12).

Note: the small set-screw on Covering Tube should on the valve side. Do Not tighten yet

- (13) Take large Flange and slide it onto the large Cover Tube.
- (14) Next pass the Black Tube (#6) through the larger Covering Tube (#13)
 - Note: the small set-screw on Covering Tube should be on the piston nut side. Do Not tighten yet
- (15) Pick up flush valve. Hold it in one hand and push the Red Tube (#4) all the way into Red Fitting on valve body.
- (16) Push Black Tube (#5) all the way into Black Fitting on the flush valve
- (17) Tighten all set-screws on Covering Tubes and Flanges at this point.
- (18) Push the flush valve tailpiece into Control Stop and position over Flush Connection
- (19) Secure Wall Plate (#1 & 7) onto Mounting Bracket (#2 & 6) & tighten Nut from Flush Connection & Nut on Control Stop







Note: It is not recommended to connect two (2) valves that are more than twenty-two (22) feet apart (or 6 extension cables connected together)

- (A) To release tube from fitting, push colored (black or red) plastic collar in and pull
- (B) To connect tube to fitting, push tube into fitting. Note: make sure you feel it go all the way to the home and give it a slight tug to be sure.
- Note: Make sure when cutting the tube that it is always square as a non-squared edge will leak



Fig 6

Flushing Supply Lines

Remove Diaphragm Assembly (Fig 6)



Remove the Renewable Main Valve Seat using Delany #748, 12-point 1 ¹/₂" Socket Wrench. (Fig 7)

Fig 7



NOTE: This is to provide maximum cleaning of the system that no other manufacturer provides.

- (A) Replace Diaphragm alone to seal cover as you flush lines for best seal, and replace cover.
- (B) Open Control Stop completely.
- (C) Once flushing is complete, close Control Stop.
- (D) Open Cover and replace Main Valve Seat and the Diaphragm Assembly.
- (E) Screw Cover back on tightly.

Power and Start-Up Mode

NOTE: IT IS RECOMMENDED THAT ALL ELECTRONIC CONNECTIONS BE TESTED WITH THE WATER SUPPLY OFF.

Sensor Test and Range Procedure

- Note: The range of the sensor is factory set for 23". This should then extend out to the inside of the front of the bowl. This is the recommended setting for a Women's Water Closet and for Men's Urinals. It is recommended that the optimum length for a Men's Water Closet be 30"- 31" (or about 5"- 6" beyond the front of the bowl)
- (1) Stand three (3) feet (or 36") away or further from the sensor.
- (2) Slowly approach sensor.
- (3) A red LED indicator light will blink once. This is indicating the current length of the sensor range.

Procedure to Shorten or Lengthen Sensor Range

- Point Remote at lower of two (2) sensor windows, roughly 6"- 8" away. Note: Remote must be in a direct line with the sensor window.
- (2) Hold down "Range" button for a full 1 2 seconds. The indicator light will begin to blink rapidly.
- (3) With Remote still in direct contact with sensor, press either the "-" sign to shorten the range or "+" sign to lengthen the range.
- (4) Repeat Sensor Range Test Procedure allowing valve to fully flush by being in front of it for at least eleven (11) seconds and waiting six (6) seconds for flush cycle to initiate.
- Note: If the indicator light stops blinking while changing the range, that means you are either at the shortest or the longest, depending of which direction you were changing the range.

Setting The Valves for Minimum Flushing Noise

- (1) Open the Control Stop to MAXIMUM open position. Note: The valve may run/flush for approximately 5 to 10 seconds when the water is first turned on before shutting itself down.
- (2) Activate the flush valve by standing or sitting for 10 seconds, or by pushing the override pushbutton.
- (3) While the water is running, slowly close the Control Stop. Depending on the inlet water pressure at any given fixture there is a setting at which the flush will be quieted. Also make sure that no splashing is occurring.
- (4) Once adjustments to the Control Stop and the flow into the valve have been made, replace and tighten the cover cap.



TrueSense Genuine Renewal Parts

for exposed water closet and urinal valves



	Part No.	Description
1	2301A	Sensor Wall Plate (w/Polarity converter, 2-Way Splitter & O-R Switch w/ set screw
2	2303	Set Screw for sensor & flush vlv. wall plates
4	2311A	Mounting Bracket for sensor & flush valve Wall Plates w/ screws
5	2317A	Solenoid Valve w/ fittings for exposed valves
6	2180	Push-to-Connect Angle Fitting (Blk Collar)
7	2181	Push-to-Connect Angle Fitting (Red Collar)
8	2133	Black nylon tubing
9	2134	Red nylon tubing
10	2314A	Flush VIv. Wall Platew/ set screws
11	2153A	Small Flange for covering tube w/ set screw
12	2152A	Large Flange for covering tube w/ set screw
13	2150A	Small Covering Tube for fitting w/ set screw
14	2149A	Large Covering Tube for fitting w/ set screw
15	2156-1	Piston Nut
16	2129	Push-to-Connect Straight Fitting (Blk Collar)
17	2130	Push-to-Connect Straight Fitting (Red Collar)



IMPORTANT NOTES: 1) State and Local mandated codes require that the static pressure in a given building not exceed 80 psi. It is also good plumbing practice to not exceed 80 psi in order to extend the life of all plumbing products installed. 2) In order to extend the life of the chrome finish on your flush valves never use harsh or abrasive chemicals to clean them. Use only mild soap and water applied with a soft cloth. 3) Do not use Pipe Dope or other sealants on any valve threads or couplings except for the Control Stop inlet threads. 4) Never open the Control Stop to a position where the water you are supplying is more than the Fixture can handle. A valve failure may cause the fixture to overflow.

Limited Warranty

Delany Products warrants all its products to be made of first class material, free from any defects. Each product will perform the service for which it is intended to in a thoroughly reliable and efficient manner as long as the product is properly installed and maintained for a period of one year from the date of purchase. During this said mentioned one year period Delany Products will either repair or replace any part or parts which are proven to be defective, only when the material is returned to Delany Products for inspection. This will be the only remedy available under this warranty policy. No claims will be allowed for labor, transportation or any other incidental costs. This warranty is only extended to the persons or organizations that purchased the material from a Delany Products distributor. For further assistance with any installation please call your local Delany Representative or Delany Products' Customer Service at 1-888-566-7784

