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 of 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 recommended.

Delany recommends that a Pre-installation meeting be held between the electrician 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 installation:

- 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.
  - 3-Gang electrical box (4” x 6” x 3.5” or 102mm x 153mm x 89mm) for urinal sensor.
  - 2-Gang electrical box (4” x 4” x 3.5” or 102mm x 102mm x 89mm) for the transformer.
  - Electrical wire to transformer box (120 VAC, 2 amp service) behind the wall.

TOOLS REQUIRED FOR FLUSH VALVE INSTALLATION:

A) Straight Blade Screwdriver
B) 12-Point 1 ½” Socket Wrench #748 (For main valve seat removal)
C) Flat-jawed Adjustable Pipe Wrench.
   (Recommended: E110 by Rigid)

WARNING: Never use any tool with teeth
Installation for 24V Transformer

Install Transformer (138T Transformer) on a 2-Gang Electrical Box in a convenient location.

- Note: One Delany transformer can operate up to ten (8) Sensor-Flush equipped flush valves. Run 18-gauge wire from transformer to flush valve(s). Wire not supplied.
- Note: DO NOT supply power to the transformer until the installation of the flush valves is complete.

Sensor/Solenoid Box Locations

- Note: Exposed closet models use two (2) electrical boxes, while the concealed closets and exposed/concealed urinals use only one (1).
  Please refer to rough-in locations. Electrical Box Locations is CRITICAL: Failure to properly position the electrical boxes to the plumbing rough-in will result in improper installation and WILL 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 template is packaged with all 1302/1351 models. This template is provided in order to aid in lining up the critical location of the electrical boxes. Please refer to the rough-in drawings for the installation of the electrical boxes.
- Note: The use of RACO #696 for 2-gang box and RACO #697 for 3-gang box or equivalent is recommended.
- Note: The use of RACO Plaster Ring #768

Install Plaster Ring so screw holes are left on right side of box.
Break tiles to allow screw holes in plaster to show

1302 ROUGH-IN DRAWING

1351 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.

![Fig 1](image1)

**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 tight with E-110 Wrench.

![Fig 2](image2)
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 of 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 “CL” Critical Level Line marked on the Flush Connection must be a MINIMUM of 6” above the top of the Fixture.
(A) Place sensor (5) in the left side of the 3-Gang box (19), that is positioned in wall.
(B) Place solenoid (6) next to the sensor with the fittings of the solenoid facing to right.
(C) Attach 2 yokes (16) to the gang box and make all wiring connections as per the wiring diagram on page 7.
(D) Attach the sensor (5) to the 3-gang wall plate (3).
(E) Take red tube (12) on solenoid (6) and guide it through the small hole (17) in the wall plate.
   Note: The wall plate of the 3-gang box (3) should be positioned with the 2 holes for the sensor (5) on
   the left and then the smaller of the 2 holes on right side of the plate will be on top. Please diagram below.
(F) Take both black tubes (11) on solenoid (6) and guide them through large hole (18) of the wall plate (3)
   for the 3-gang box.
(G) Screw wall plate (3) to the 3-gang box (19).
(H) Now put the red tube (12) through the small flange (7) and the covering tube (9) w/ the set screw
   on the valve side. Do not tighten the set screw yet.
(I) Do the same as above w/ the black tubes (11) through the larger flange (8) and the covering tube
   (10) w/ the set screw on the piston nut (15) side. Do not tighten screws yet.
(J) While holding the valve in one hand insert the red tube (12) into the red fitting on the valve body and
   then slide the covering tube (10 & 9) into the corresponding holes in the 3-gang plate.
(K) Now attach the valve to VB and control stop hand tight.
(L) Tighten the set screw on the small covering tube (9) to the red fitting on the valve and tighten the set
   screw on the large covering tube (10) to the piston nut (15).
(M) Slide the large flange (8) and the small flange (7) back against the wall plate and tighten the set screws.
   Now, tighten the nuts to the VB and control stop.

Exposed Urinal Assembly

When installing the tubing into the fittings
on the solenoid valve, they must be installed
in the order shown below.
(A) Place solenoid (6) inside the 2-Gang box (20), that is positioned in wall, the fittings facing to the right.
(B) Feed wires up to the 2-gang box for the sensor (21).
(C) Make all wiring connections as per the wiring diagram.
(D) Attach sensor (4) to wall plate (1).
(E) Attach wall plate to the 2-gang box for the sensor (21).
(F) Take red tube (12) on solenoid (6) and guide it through the small hole (17) in the wall plate (2) for the 2-Gang box of the solenoid (20).

Note: The wall plate (2) must be positioned with the smaller of the 2 holes on top and the larger hole underneath. Please diagram below.
(G) Take both black tubes (11) on solenoid (6) and guide them through large hole (18) of the wall plate (2) for the 2-gang box.
(H) Screw wall plate (2) to the 2-gang box.
(I) Now put the red tube (12) through the small flange (7) and the covering tube (9) w/ the set screw on the valve side. Do not tighten the set screw yet.
(J) Do the same as above w/ the black tubes (11) through the larger flange (8) and the covering tube (10) w/ the set screw on the piston nut (15) side. Do not tighten screws yet.
(K) While holding the valve in one hand insert the red tube (12) into the red fitting on the valve body and then slide the covering tube (10 & 9) into the corresponding holes in the gang plate.
(L) Now attach the valve to VB and control stop hand tight.
(M) Tighten the set screw on the small covering tube (9) to the red fitting on the valve and tighten the set screw on the large covering tube (10) to the piston nut (15).
(N) Slide the large flange (8) and the small flange (7) back against the wall plate and tighten the set screws. Now, tighten the nuts to the VB and control stop.

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Exposed Water Closet Assembly

<table>
<thead>
<tr>
<th>1</th>
<th>Sensor Wall Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Gang Box</td>
</tr>
<tr>
<td>4</td>
<td>Sensor</td>
</tr>
<tr>
<td>6</td>
<td>Solenoid Valve</td>
</tr>
<tr>
<td>7</td>
<td>Small Flange</td>
</tr>
<tr>
<td>8</td>
<td>Large Flange</td>
</tr>
<tr>
<td>9</td>
<td>Small Covering Tube</td>
</tr>
<tr>
<td>10</td>
<td>Large Covering Tube</td>
</tr>
<tr>
<td>11</td>
<td>Black Tubes</td>
</tr>
<tr>
<td>12</td>
<td>Red Tube</td>
</tr>
<tr>
<td>14</td>
<td>Black Fittings</td>
</tr>
<tr>
<td>15</td>
<td>Piston Nut</td>
</tr>
<tr>
<td>17</td>
<td>Small Hole</td>
</tr>
<tr>
<td>18</td>
<td>Large Hole</td>
</tr>
<tr>
<td>20</td>
<td>Gang Box</td>
</tr>
<tr>
<td>21</td>
<td>Gang Box</td>
</tr>
</tbody>
</table>
Transformer

Part No. 137T
50 VA
Primary Voltage 120V AC 50/60Hz
Overload Protection Provided
Class II Transformer

(1) Transformer Services up to 8 Flush Valves.
How to use Piston Nut Fitting

(A) To release tube from fitting, push plastic collar in and pull the tubes.
(B) To connect tube to fitting, push tube into fitting. Note: make sure you feel it go all the way 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.

Flush Supply Lines

Remove Diaphragm Assembly. (Fig 6)

Remove the Renewable Main Valve Seat using Delany #748, 12-point 1 ½” Socket Wrench. (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.
NOTE: IT IS RECOMMENDED THAT ALL ELECTRONIC CONNECTIONS BE TESTED WITH THE WATER SUPPLY OFF.

Sensor Test Procedure

(A) Turn the Control Stop open.
(B) Sit in a normal position in front of the sensor. In a Men’s Restroom, stand in front of the bowl.
(C) Withdraw or step away after 10 seconds.
(D) The solenoid valve will energize and you will hear a “click” sound. The flush valve should flush.

Note: The Range should be factory set at 18”. The Sensor Range Adjustment Screw should be adjusted. Using a Jeweler Screwdriver, clockwise turn will lengthen the range and a counter clockwise turn will shorten.

Note: If the valve does not flush, or only partially flushes, but you hear the solenoid “click”, please go to Trouble Shooting Chart.

Note: If the valve does not flush, and you did NOT hear the solenoid “click” the visual range is either too long and thus sensing an object behind you, or too short and it is not sensing you at all.

Setting The Valves for Minimum Flushing Noise

(A) Open the Control Stop to MAXIMUM open position. Note: The valve may run/flush for up to 10 seconds when the water is first turned on before shutting itself down.
(B) Activate (or flush) the flush valve by placing a hand in front of sensor 10 seconds and pulling it away.
(C) 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.
(D) Once adjustments to the Control Stop and the flow into the valve have been made, replace and tighten the cover cap.
Replacement Parts

Concealed Flush Valve

Service Procedures
HOW TO SERVICE VALVE
1. Shut off water at control stop. Remove cover assembly by turning counterclockwise, using Delay No. 746 cover wrench, standard 11/4" box wrench, or top flat jaw adjustable wrench. Inspect cover parts for possible replacement.
2. Place fingers on both sides of auxiliary valve seat holder and lift vertically to remove entire diaphragm operating assembly, except for main valve seat. Inspect for possible replacement of individual parts or entire assembly.
3. Inspect condition of main valve seat. If it is required, remove by turning counterclockwise with Delany No. 746 1 1/2" 12 point socket wrench. Makes replacement seat is inserted tightly.
4. If diaphragm with bypass is to be replaced as an individual part, hold diaphragm operating assembly in one hand and unhook the seat guide from the bottom of the other hand. The diaphragm will then slip off the No. 16 diaphragm bushing. Take care to install the new diaphragm with the pinhole of the bypass on the downstem. Also, take care to replace the seat guide bushing tight, if necessary. Good preventive maintenance calls for simultaneous replacement of No. 8 auxiliary valve seat washer, supplied in same kit as the replacement diaphragm.
5. To assemble valve, reverse all procedures above. After diaphragm operating assembly has been dropped into valve, run thumbs around edge of diaphragm to ensure it is tapped flat on shoulders at base of thrust for cover.

HOW TO SERVICE PISTON ASSEMBLY
1. Shut off water at control stop. Disassemble the valve from the control stop and vacuum breaker, remove cover tubes, 2148 & 2159, and disconnect nylon tubing from the platen nut, 2148 & 2150, on concealed valves from 2148 & 2150. The nylon tubes being removed by pulling inner release collar with finger and pulling out the tube with other hand. Remove platen nut, 2148, on concealed valves 2148 with flat jaw adjustable wrench, unscrew plate nut and remove assembly.
2. Pull out piston internal operating assembly, part 2147A for inspection and possible replacement of any parts showing wear.
3. To reassemble, slip piston sleeve 2145 in piston nut 2148, with bypass hole in bottom of piston nut. Place 2143A into piston sleeve 2145 and replace return spring 2141 onto end of 2143A. Screw piston nut onto flush valve body.

HOW TO SERVICE SOLENOID VALVE
1. Turn off electrical power supply.
2. Shut off water at control stop. Using tap flat jaw adjustable wrench, loosen No. 5A union nut. Loosen No. 425 union nut at vacuum breaker. Lift valve assembly clear of disconnection ports from the straight release fittings, No. 2150 and No. 2159. Remove plate from electrical connection box.
3. Remove retaining clip, if bonnet nut, at appropriate, Slip off plunger seat tube assembly. Remove mounting screw, plunger seat tube assembly, and bushing.
4. Inspect for possible replacement of individual parts or entire assemblies.
5. To reassemble valve, reverse all procedures above.

HOW TO SET RANGE ADJUSTMENT
CAUTION: Make adjustment carefully. Over adjustment can damage adjustment screw.
NOTE: Complete range of sensor is less than one full turn of the adjusting screw. The electronic sensor is factory pre-set for a "normal" range. If actual range varies or a different setting is desired, use the following procedure.
Using a small flat screwdriver, engage screwdriver slot, located in one of sensor, see fig. 1, rotate range adjustment screw, clockwise to increase range, and counterclockwise to decrease range.

HOW TO REGULATE LENGTH OF FLUSH
The length of flush and consequently the amount of water consumed per flush can be readily varied by the No. 4 regulating screw in the valve cover. Remove the No. 3 cover screw and engage No. 4 regulating screw with screwdriver. Turn clockwise to shorten the screw and flush length to raise the screw and increase flushing cycle. Water consumption requirements of different fixtures vary widely. The flexibility built into Delay No. 746 regulation permits proper flushing action without waste of water. If valve is equipped with non hold open feature, or equipped with a "solid cover", no regulation is possible by means of the No. 4 part. For such valves, regulation is achieved by substitution of different sized bypasses on trial and error basis.

HOW TO ADJUST TURN-TO-SILENCE STOP
If valve is equipped with Turn-to-Silence equipment, the stop should be checked for proper adjustment after the building has been put into service. Unless pressure at the valve changes radically, the setting is permanent.
To set for minimum flushing noise, open Turn-to-Silence wide by turning counterclockwise with screwdriver or wheel handle. Tighten the valve and note noise level. While noise is normal, begin to close stop and slowly Turn-to-Silence. Depending on actual pressure at the given fixture, there is one setting of the stop at which water noise will be reduced. If pressure is high, the stop may be closed. The gasket damper of the fixture must also be tightened. Adjustment of the No. 4 regulating screw in the valve cover may be helpful in this regard.

HOW TO CARE FOR CHROMIUM PLATING
Chromium finish on Delay material is of the highest quality obtainable. Each part is coated with a thick deposit of nickel, and finally chrome plate for lasting brilliance.
The Be of the chromate plate depends greatly on the amount and type of maintenance provided. All chrome parts should be washed with a liberal amount of clear water and wiped dry with a clean soft cloth at least once per week. Valves subjected to heavy traffic or exposure to weather will benefit from more frequent cleaning. Unless the fumes are harmful and will blacken and destroy chrome plate left uncleaned. Caution should be taken to ensure that no paste or powder cleaners are applied to chrome. Under no circumstances should lead or metal cleaners, most of which are acid solvents, be allowed to contact or splatter chrome plate. Such solutions can blacken and eat through chrome in a matter of hours.

Individual Parts Listing

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>2148</td>
<td>Piston valve body (includes two 212es in black)</td>
<td>R.B.</td>
</tr>
<tr>
<td>2149</td>
<td>Cover tube with set screw (for piston valve body)</td>
<td>C.P.</td>
</tr>
<tr>
<td>2150</td>
<td>Cover tube with set screw (for release fitting)</td>
<td></td>
</tr>
<tr>
<td>2152</td>
<td>Wall flange with set screw (for piston valve body cover tube)</td>
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</tr>
<tr>
<td>2153</td>
<td>Wall flange with set screw (for release fitting cover tube)</td>
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</tr>
<tr>
<td>2172</td>
<td>Wall plate for closest sensor flush valve (for flush valve)</td>
<td></td>
</tr>
<tr>
<td>2173</td>
<td>Wall plate for flush valve (for sensor)</td>
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</tr>
<tr>
<td>2174PB</td>
<td>Wall plate with override push button (for closest sensor flush valve (for sensor)</td>
<td></td>
</tr>
<tr>
<td>2180</td>
<td>Elbow release fitting (with blucher collar)</td>
<td></td>
</tr>
<tr>
<td>2181</td>
<td>Elbow release fitting (with red collar)</td>
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</tr>
<tr>
<td>2184</td>
<td>Filter for sensor</td>
<td></td>
</tr>
<tr>
<td>2187</td>
<td>Valve strap for 2173 wall plate</td>
<td></td>
</tr>
<tr>
<td>2188</td>
<td>Gland hub connector</td>
<td></td>
</tr>
<tr>
<td>F400A-ARA-SF-C</td>
<td>KwikFit valve body assembly (complete with 1350V-C-110V solenoid, 2144 and standard length No. 64 part)</td>
<td></td>
</tr>
<tr>
<td>F400A-ARA-SF-AP</td>
<td>KwikFit valve body assembly (complete with 2154A arm, and standard length No. 64 part)</td>
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<tr>
<td>F500-AR-HF</td>
<td>KwikFit valve body only</td>
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<tr>
<td>F500-ARA-HF</td>
<td>KwikFit valve body assembly (standard length No. 64 part)</td>
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</table>

Sensors

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1305F-110V</td>
<td>Sensor for urinal valve</td>
</tr>
<tr>
<td>1315F-110V</td>
<td>Sensor for closet valve</td>
</tr>
<tr>
<td>1305F-AP-110V</td>
<td>Sensor for urinal valve (for use with access panel)</td>
</tr>
<tr>
<td>1315F-AP-110V</td>
<td>Sensor for closet valve (for use with access panel)</td>
</tr>
</tbody>
</table>

Solenoids

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1355V-C-110N</td>
<td>Solenoid valve for exposed flush valve</td>
</tr>
<tr>
<td>1355V-C-110</td>
<td>Solenoid valve for concealed flush valve</td>
</tr>
<tr>
<td>1355V-C-AP-110</td>
<td>Solenoid valve for concealed flush valve (for use with access panel)</td>
</tr>
</tbody>
</table>

KwikFit Union Tallpieces
Special lengths available as follows:
64-1 | KwikFit union tallpieces, overall length (allows 5 1/2 to 6 1/2 inches). Complete with No. 64 and No. 69 parts.
64-2 | KwikFit union tallpieces, overall length (allows 6 5/8 to 7 1/2 inches). Complete with No. 69 and No. 60 parts.
64-3 | KwikFit union tallpieces, overall length (allows 7 1/2 to 8 inches). Complete with No. 60 and No. 69 parts.

* Above items available in 24 volt, and units -"S" to part number. Price remains the same.
# Specify actual length required.
**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.