

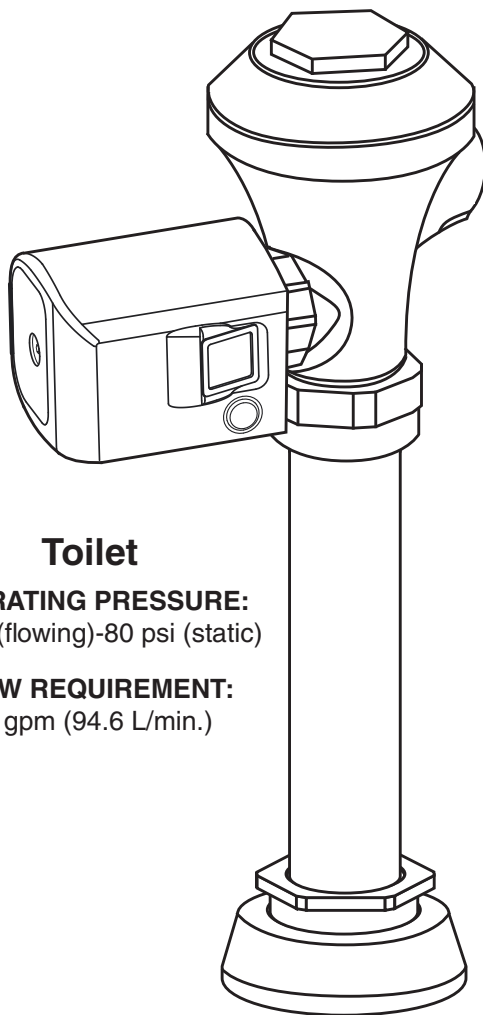
# Installation Instructions

## Ultima™ Sensor-Operated Flush Valve

With Side-Mount Operator,  
Diaphragm-Type

### MODEL NUMBERS

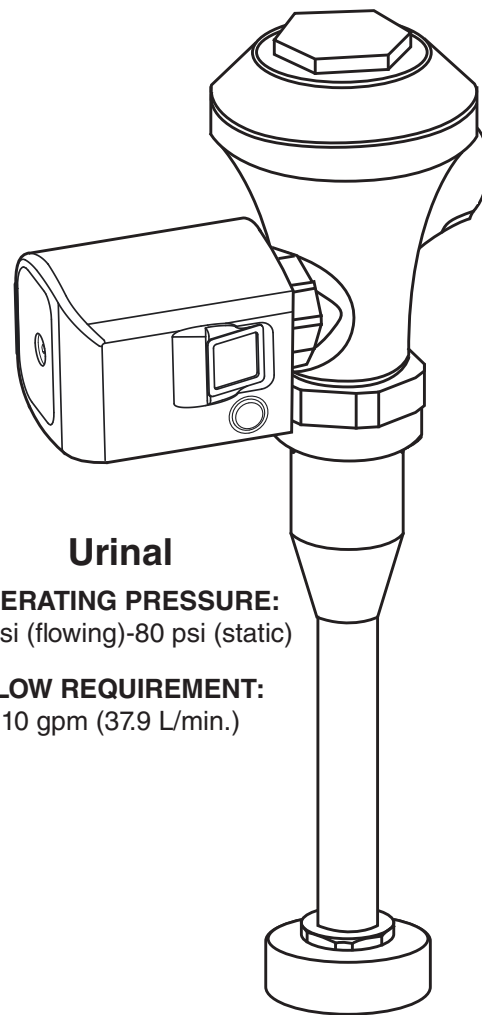
6145SM  
6147SM



### Toilet

**OPERATING PRESSURE:**  
25 psi (flowing)-80 psi (static)

**FLOW REQUIREMENT:**  
25 gpm (94.6 L/min.)



### Urinal

**OPERATING PRESSURE:**  
20 psi (flowing)-80 psi (static)

**FLOW REQUIREMENT:**  
10 gpm (37.9 L/min.)

#### Certified to comply with:

- ASSE 1037
- ANSI/ASME A112.19.2
- ADA Compliant

*American Standard*

**NOTE TO INSTALLER:** Please give this manual to the customer after installation.

To learn more about American Standard Products visit our website at: [www.americanstandard-us.com](http://www.americanstandard-us.com)  
or e-mail us at: [CRTTEAM@lixilamericas.com](mailto:CRTTEAM@lixilamericas.com)

For Parts, Service, Warranty or other Assistance,  
please call (844) CRT-TEAM / (844) 278-8326 (In Canada: 1-800-387-0369)  
(In Toronto Area only: 1-905-306-1093)

*American Standard*  
**CRT**  
Certified Response Technician

Thank you for selecting American Standard...the benchmark of fine quality for over 100 years. To ensure that your installation proceeds smoothly--please read these instructions carefully before you begin.

## UNPACKING

**All American Standard Products Are Water Tested At Our Factory. Some Residual Water May Remain In The Valve During Shipping**

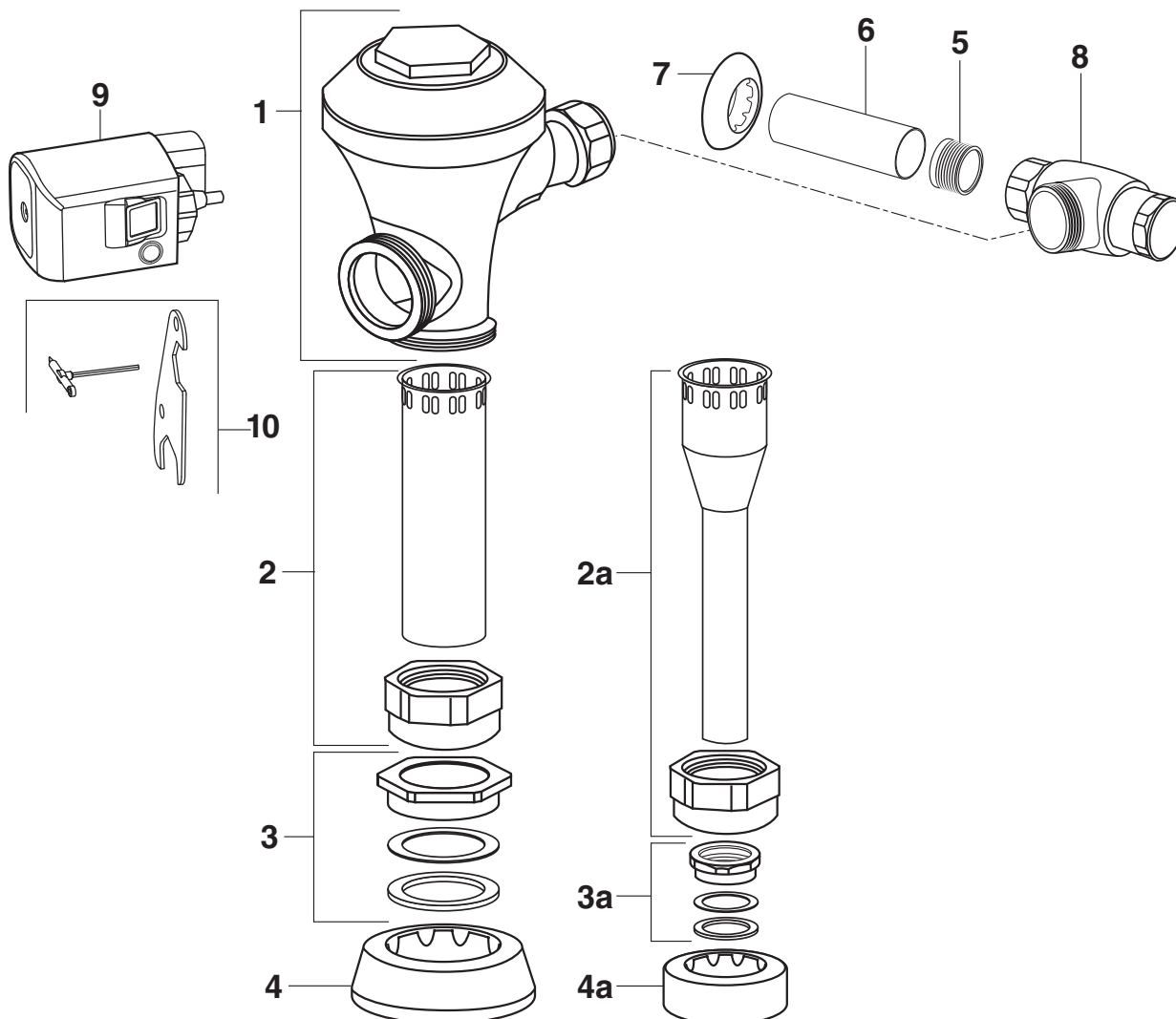
Remove the Flush Valve items from the carton. The illustration below shows all items after they have been removed from the carton. Some items may be packaged partially assembled to other items.

- |  |                         |
|--|-------------------------|
| 1. Flush Valve Assembly                      | 5. Sweat Solder Adapter |
| 2. Vacuum Breaker Assembly for Toilet        | 6. Cover Tube           |
| 2a. Vacuum Breaker Assembly for Urinal       | 7. Wall Escutcheon      |
| 3. Spud Coupling Nut and Washers for Toilet  | 8. Supply Stop          |
| 3a. Spud Coupling Nut and Washers for Urinal | 9. Side-Mount Operator  |
| 4. Spud Flange for Toilet                    | 10. Wrench Kit          |
| 4a. Spud Flange for Urinal                   |                         |

## CARE INSTRUCTIONS:

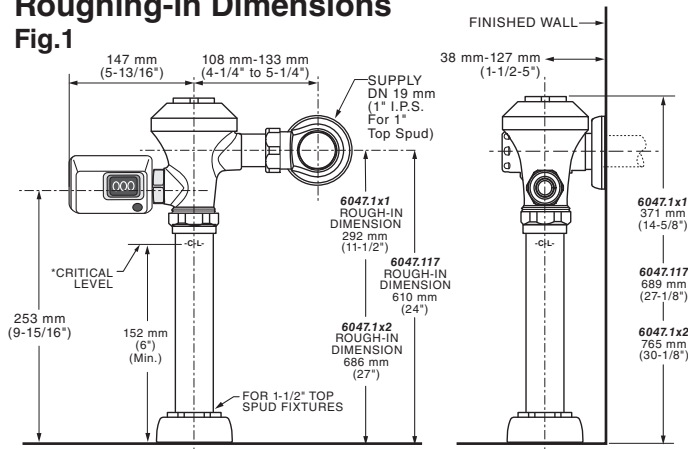
**DO: CLEAN WITH CLEAR WATER. DRY WITH A SOFT COTTON FLANNEL CLOTH.**

**DO NOT: DO NOT CLEAN THE PRODUCT WITH SOAPS, ACID, POLISH, ABRASIVES, HARSH CLEANERS, OR A CLOTH WITH A COARSE SURFACE.**



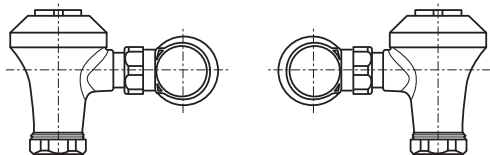
## Roughing-in Dimensions

Fig.1

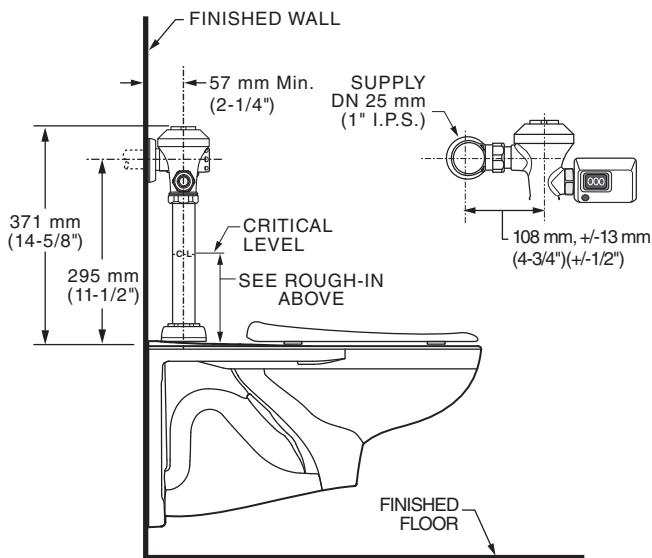


\*Note: The Critical Line (-C-L-) on Vacuum Breaker must typically be 6" (152mm) minimum above fixture. Consult Codes for details.

### Right or Left Hand Installation

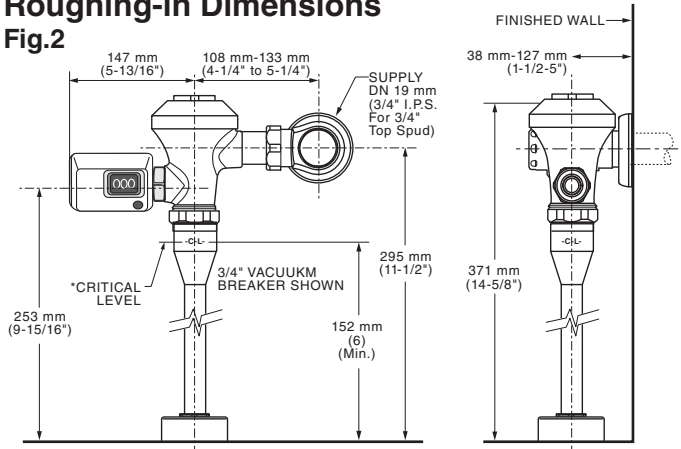


### TYPICAL WATER CLOSET INSTALLATION: AFWALL™ TOILET SHOWN



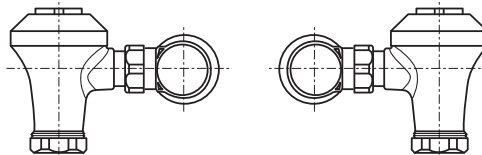
## Roughing-in Dimensions

Fig.2

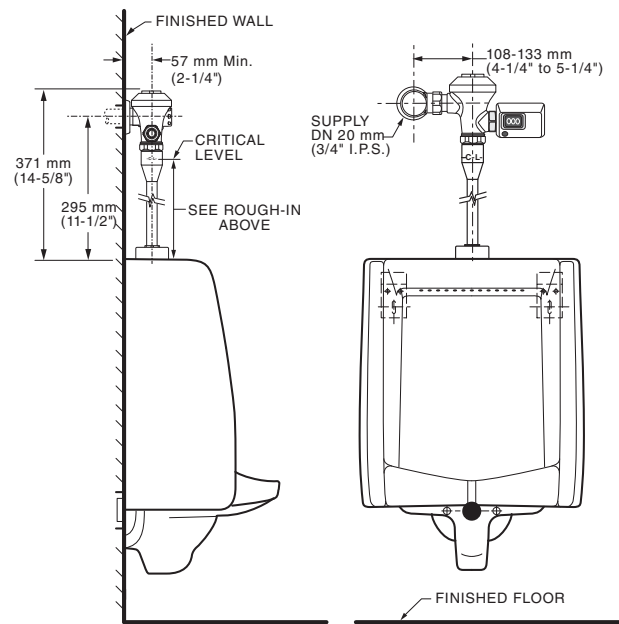


\*Note: The Critical Line (-C-L-) on Vacuum Breaker must typically be 6" (152mm) minimum above fixture. Consult Codes for details.

### Right or Left Hand Installation



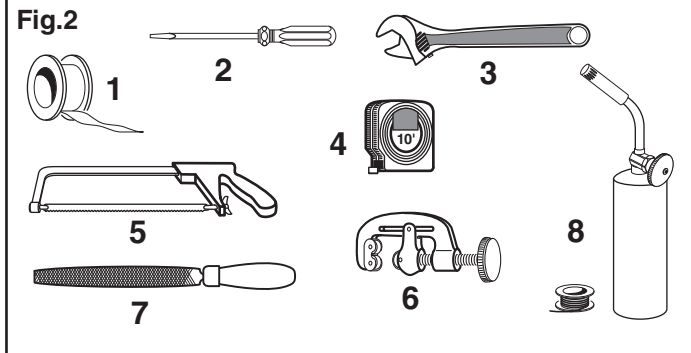
### TYPICAL URINAL INSTALLATION: WASHBROOK URINAL SHOWN



## RECOMMENDED TOOLS; Fig. 2

1. Teflon Tape
2. Flat Blade Screwdriver (For adjusting Supply Stop)
3. Adjustable Wrench
4. Tape Measure
5. Hacksaw
6. Tubing Cutter
7. File
8. For Sweat Connection; Solder and Torch

Fig.2



# FLUSH VALVE INSTALLATION

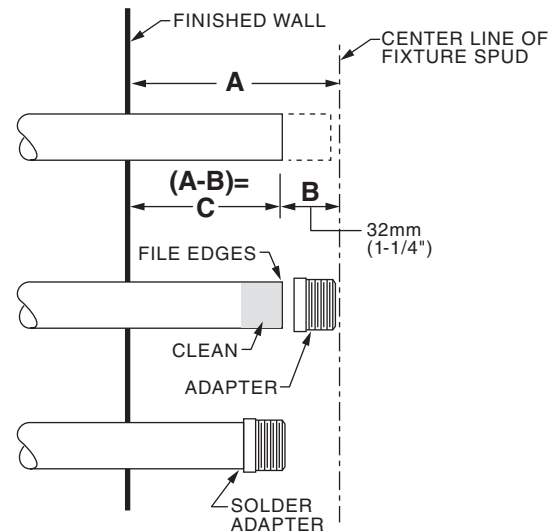
## 1 INSTALL SWEAT ADAPTER; Fig. 3

**CAUTION** Turn water supplies off before beginning

**Note:** *Install Optional Sweat Adapter (Supplied) for copper pipe supply line.*

1. Measure the distance (A) from the finished wall to the center of the inlet spud on the fixture.
2. Cut the supply pipe 1-1/4" (A-B=C) shorter than the measurement taken in Step 1. File any rough edges off the end of the supply pipe.
3. Clean the end of the supply pipe. Push the threaded Adapter until it is seated against the internal stop. Sweat the Adapter to the pipe.

Fig. 3



## 2 INSTALL COVER TUBE, WALL ESCUTCHEON and STOP VALVE; Fig. 4

1. Measure from finished wall to first thread of Adapter or threaded supply pipe (dimension "X"). Cut COVER TUBE (1) to length (X). Apply Teflon Tape to the threaded end of the Adapter or supply pipe.
2. Push WALL ESCUTCHEON (2) onto the COVER TUBE (1). Slide both onto the SUPPLY PIPE (3).
3. Push the COVER TUBE (1) in to expose the threads of the supply pipe. With a wrench thread the STOP VALVE (4) onto the SUPPLY PIPE (3). Align and tighten.
4. Pull COVER TUBE (1) against STOP VALVE (4) and push WALL ESCUTCHEON (2) against finished wall.

Fig. 4

Fig. 4a

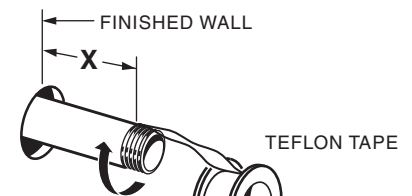


Fig. 4b

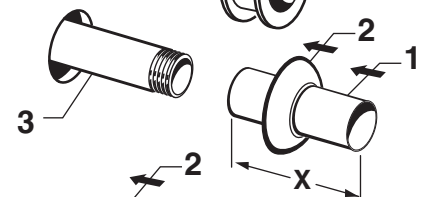
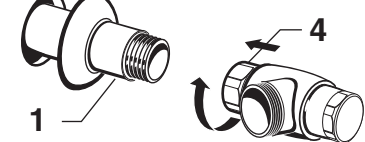


Fig. 4c

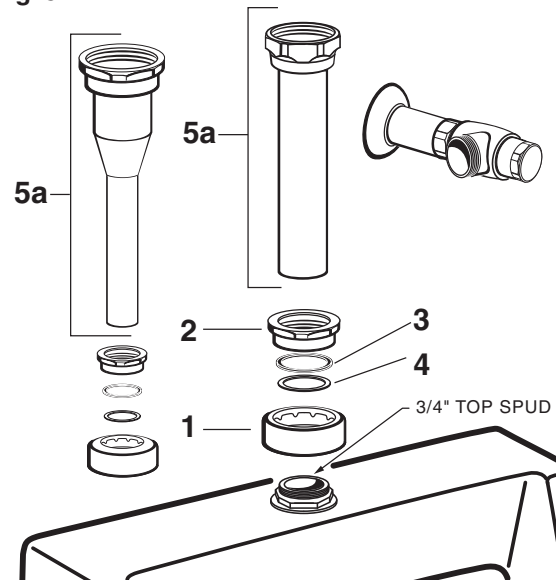


## 3 INSTALL VACUUM BREAKER TUBE; Fig. 5

1. Place the SPUD FLANGE (1) over the spud on the Fixture.
2. Place FRICTION WASHER (3) and SEAL WASHER (4) inside SPUD COUPLING NUT (2) and thread onto Spud. Do not tighten fully.
3. Insert the VACUUM BREAKER TUBE (5) or (5a) into the SPUD COUPLING NUT (2) and push it down.

**Note:** *If cutting VACUUM BREAKER TUBE (5) to size, note that Critical Line (C/L) on Vacuum Breaker must typically be 6" (152mm) above fixture. Consult Code for details.*

Fig. 5



## 4 INSTALL FLUSH VALVE; Fig. 6a & 6b

1. As shown in Fig. 6a, insert the side INLET FLANGE (1) on the FLUSH VALVE (2) into the SUPPLY STOP (3). Lubricate the INLET FLANGE O-RING (4) with water if necessary. Lightly tighten COUPLING NUT (5). **Fig. 6a.**

**Important: Do not use lubricants (other than water) or any type of thread sealing paste or tape.**

2. Align the FLUSH VALVE (2) (**Fig. 6b**) directly above the VERTICAL TUBE (7) and VACUUM BREAKER COUPLING NUT (6).

**Note: There is a  $\pm 13\text{mm}$ , ( $\pm 1/2$ ) tolerance for the 121mm (4-3/4") dimension. Fig. 6b.**

3. Pull the VACUUM BREAKER COUPLING NUT (6) up to meet the threaded FLUSH VALVE CONNECTION (8) and hand tighten. Align all components of the flush valve assembly. **Fig. 6b.**
4. Lightly tighten the COUPLING NUT (5) connection first, then the VACUUM BREAKER COUPLING NUT (6) and finally the SPUD COUPLING NUT (9). Once aligned correctly, use a wrench to tighten couplings to make water tight connections. **Fig. 6b.**
5. After installing FLAT SEAL (10) into FLUSHING UNIT (11), install FLUSHING UNIT (11). **Fig. 6b.**

Fig. 6a

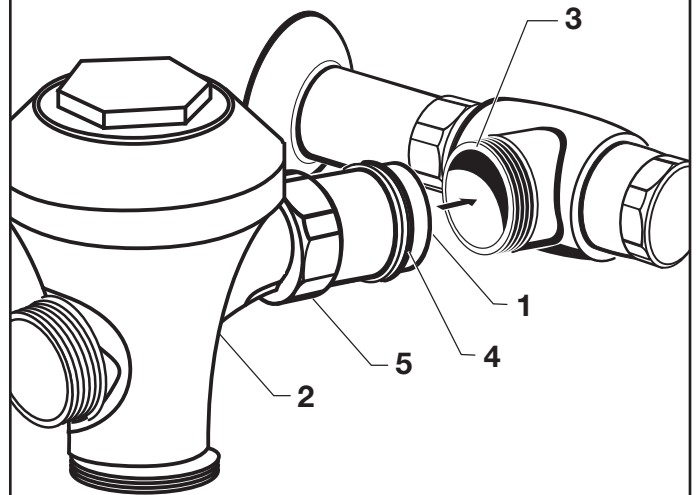
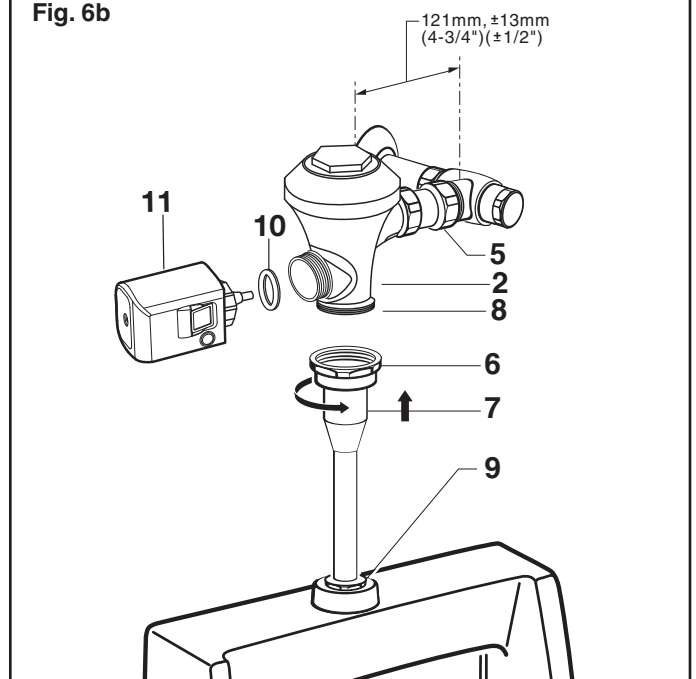


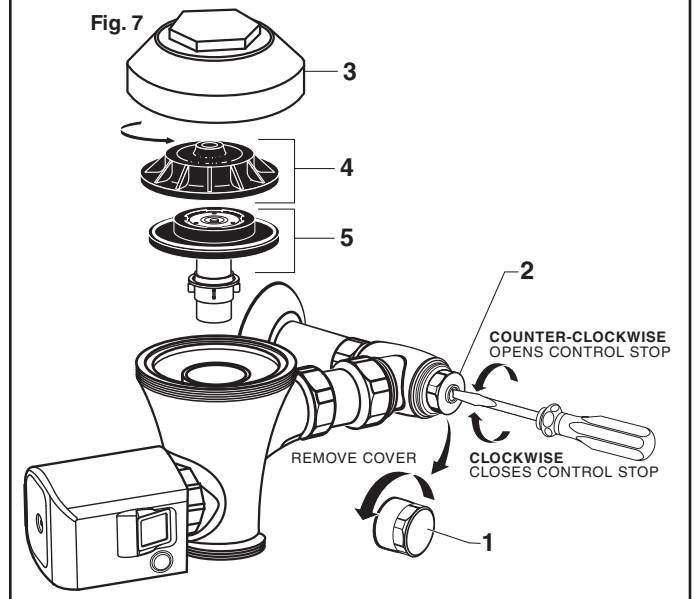
Fig. 6b



## 5 FLUSH OUT SUPPLY LINES; Fig. 7

1. Make sure supply stop is closed. Remove COVER (1) from SUPPLY STOP (2). With a flat blade screwdriver close CONTROL STOP (2).
2. Remove FLUSH VALVE CAP (3 & 4). Pull out DIAPHRAGM ASSEMBLY (5). Replace FLUSH VALVE CAP (3 & 4) and tighten.
3. With a flat blade screwdriver open SUPPLY STOP (2). to flush line of any debris or sediment.
4. Close SUPPLY STOP (2). Remove FLUSH VALVE CAP (3 & 4). Replace DIAPHRAGM ASSEMBLY (5). Replace FLUSH VALVE CAP (3 & 4) and tighten.

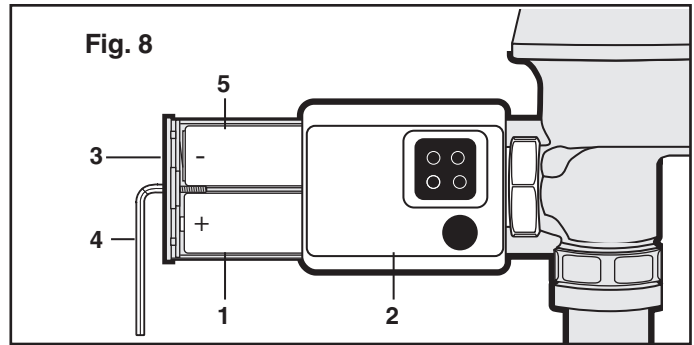
Fig. 7



## 6 ACTIVATION; Fig. 8

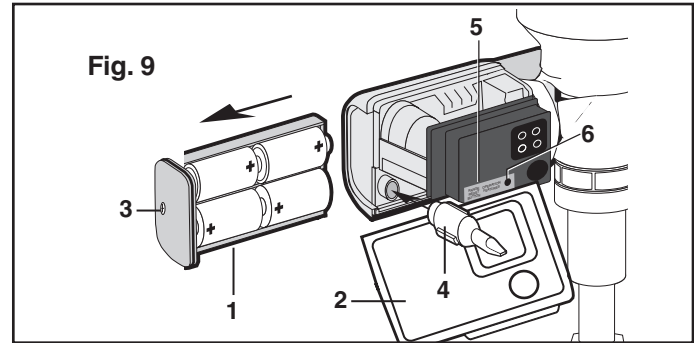
**Note:** Four (4) “C” Cell batteries are not factory installed inside the Flush unit.

1. Remove BATTERY TRAY (1) by loosening SCREW (3).
2. Load 4 “C” Alkaline BATTERIES (5) onto BATTERY TRAY (1).
3. Install battery tray into SIDE MOUNT OPERATOR (2) and tighten SCREW (3) using WRENCH (4) provided. (**Note:** last three turns of the wrench will activate the automatic flushing unit)



## 7 ADJUSTING SENSOR DISTANCE; Fig. 8 & 9

1. Remove BATTERY TRAY (1) by loosening SCREW (3). **Fig. 9**
2. Remove FRONT COVER (2) and remove SENSOR ADJUSTMENT TOOL (4). **Fig. 9**
3. Install BATTERY TRAY (1) and SCREW (3) back into the unit. **Fig. 9**
4. Press RANGE RESET BUTTON (5) (When object in view, it will flash green light for 7 minute rest period). **Fig. 9**
5. Stand at a desired distance and use the SENSOR ADJUSTMENT TOOL (4) to turn SENSOR ADJUSTMENT SCREW (6) all the way counter clockwise and then turn clockwise until green L.E.D begins to Flash. **Fig. 9**



## 8 ADJUSTING MODES OF OPERATION; Fig. 9 & 10

The FLUSH unit includes different modes of operation. Remove FRONT COVER (2) by loosening up SCREW (3) by using a wrench and removing BATTERY TRAY (1). Refer to the “Mode Adjustment Guide” for switch settings. The “Mode Adjustment Guide” can also be found on the inside of side cover for your convenience.

<b>24 Hour Flush On</b>	Allows the flush valve to automatically flush after 24 hour period of non-use to maintain the trap seal.
<b>Alarm Tone</b>	It beeps when the battery is running low. If you don't want it to beep, you can turn off this feature, with the toggle switches.

## 9 BATTERY REPLACEMENT; Fig. 8

1. Remove BATTERY TRAY (1) by loosening SCREW (3).
2. Replace 4 “C” Alkaline BATTERIES (2). (**Note:** Replace all 4 batteries at the same time for proper function)

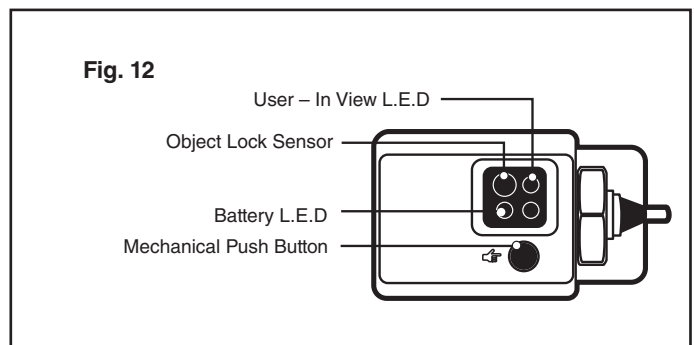
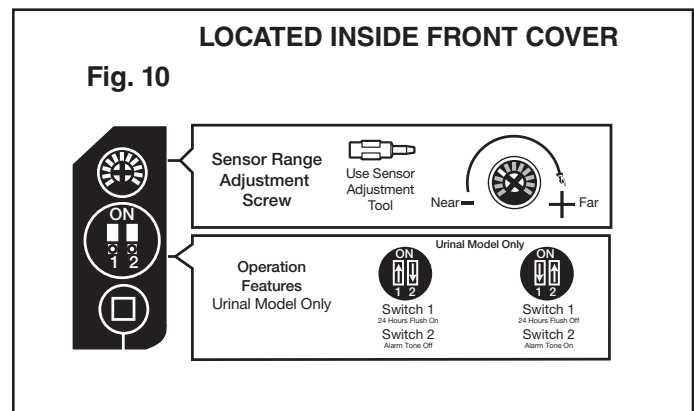
## 10 VISUAL INDICATOR GUIDE; Fig. 12

**User – In View L.E.D (1)** – 5 second after a user is in view a green light flashes 3 times.( during a startup sequence the green light flashes constantly for 7 minutes when a user is in view)

**Battery L.E.D (2)** – Yellow light flashes which indicates that the batteries all 4 “C” Alkaline batteries will need to be replaced.

**Object Lock Sensor (3)** – Detects user or object.

**Mechanical Push Button** – Allows manual activation of flush when needed and when batteries are drained.

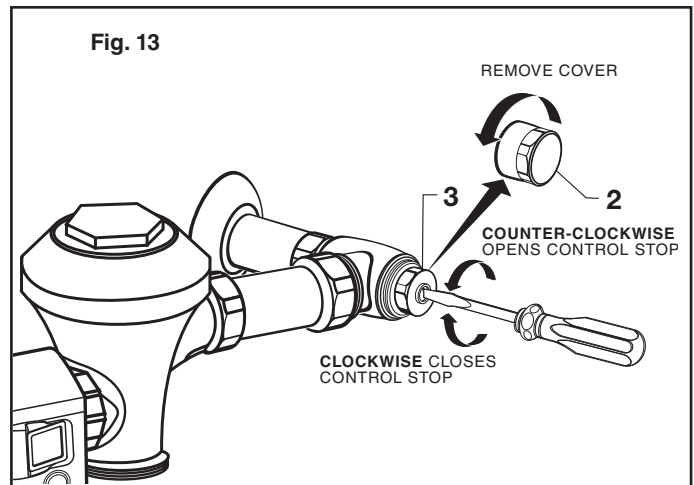




## 11 ADJUST SUPPLY STOP; Fig. 13

**IMPORTANT:** To avoid overflowing, the SUPPLY STOP (3) must never be opened to the point where the flow from the valve exceeds the flow capacity of the fixture. Valve is designed to provide stated flush volume with a 25 gpm flow rate for toilet and 10 gpm flow rate for urinal.

1. Remove COVER (2) from SUPPLY STOP (3). Turn on water supply 1/4 turn to 1/2 turn (CCW) and test for leaks. Note: Unit may flush for approximately 5 to 10 sec. when water is first turned on.
2. Push down on HANDLE (4) to initiate flush.
3. Adjust SUPPLY STOP (3) after each flush until the stated flush volume is achieved, no splashing occurs and the fixture is properly cleansed.
4. When adjustment is complete, reinstall COVER (2) and tighten to ensure vandal-resistance.

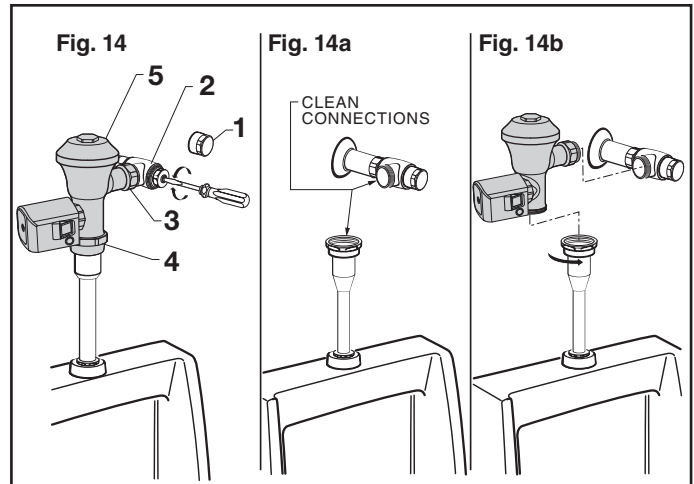


## 12 HOW TO RETROFIT OUR VALVE; Fig. 14

(Replaces Industry Standard Manual and Electronic Valves)

**Note:** In most Retrofits the wall escutcheon, supply stop, cover tube and vacuum breaker do not have to be replaced. If these items do need replacement they must be purchased separately or order the complete flush valve assembly from American Standard.

1. Remove COVER (1) from SUPPLY STOP (2) if installed. Fig. 14.
2. Turn water supply off. Fig. 14.
3. Unthread COUPLING NUT (3) and VACUUM BREAKER COUPLING NUT (4). Remove FLUSH VALVE (5). Fig. 14a.
4. Clean all threaded connections before installing the new flush valve. Fig. 14a.
5. Refer to Sections 4, 5 and 6 to complete the retrofit installation. Fig. 14b.



## 13 LEFT OR RIGHT HAND INSTALLATION; Fig. 15

1. The FLUSH VALVE can be installed either as a right or left hand installation.
2. Orientate the FLUSH VALVE as shown in Fig. 13 to desired position for a left or right hand installation.

