AquaVantage® AV Z6000AV Series

AquaVantage Exposed Flushometer

Installation, Operation, Maintenance, and Parts Manual

Patented and Patents Pending



Z6000AV



Z6003AV

AquaVantage® Exposed Closet/Urinal Systems

Z6000AV
Z6000AV-HET
Z6001AV
Z6003AV
Z6003AV-ULF
Z6010AV
Z6014AV
✓ **Z6017AV**
Z6096AV
Z6099AV

LIMITED WARRANTY

All goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of three years from the date of purchase. Decorative finishes warranted for one year. We will replace at no cost goods that prove defective provided we are notified in writing of such defect and the goods are returned to us prepaid at Sanford, NC, with evidence that they have been properly maintained and used in accordance with instructions. We shall not be responsible for any labor charges or any loss, injury or damages whatsoever, including incidental or consequential damages. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in connection therewith. Where permitted by law, the implied warranty of merchantability is expressly excluded. If the products sold hereunder are “consumer products,” the implied warranty of merchantability is limited to a period of three years and shall be limited solely to the replacement of the defective goods. All weights stated in our catalogs and lists are approximate and are not guaranteed.

AquaVantage® Rough-In, Product Specification, Models, and Options

ENGINEERING SPECIFICATION: ZURN AquaVantage® 'AV' Exposed Closet Flush Valve – Exposed, quiet diaphragm type, chrome-plated flushometer valve with a polished exterior. Complete with Zurn's AquaVantage TPE, chloramine resistant, dual seal diaphragm with a clog resistant, triple filtered by-pass. The valve is ADA compliant with a non-hold-open and no-leak handle feature, high back pressure vacuum breaker, one-piece hex coupling nut, adjustable tailpiece, spud coupling, and flange for spud connection. Control stop has internal siphon-guard protection, vandal-resistant stop cap, sweat solder kit, and a cast wall flange with setscrew. Internal seals are made of chloramine resistant materials.

MODELS

Z6000AV – 1-1/2" Water Closet Valve with top spud connection

Z6010AV – 1-1/2" Water Closet Valve with back spud connection

Z6001AV – 1-1/4" Urinal Valve with top spud connection

Z6003AV – 3/4" Urinal Valve with top spud connection

FLOWS

-WS1 Low Consumption
1.0 Gal. for Urinal, 1.6 Gal. for Water Closet

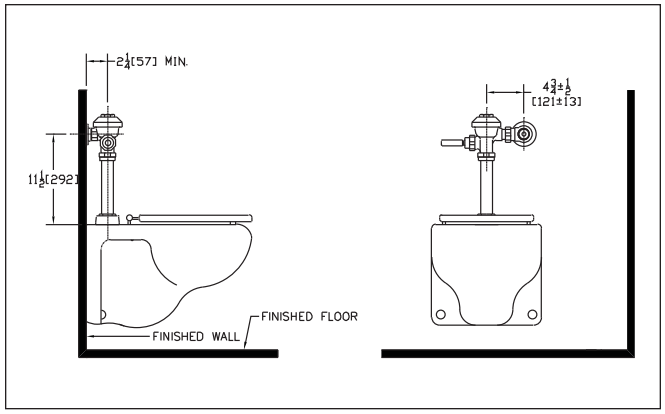
-FF Full Flow
3.0 Gal. for Urinal, 4.5 Gal. for Water Closet

-HET High Efficiency
1.28 Gal. for Water Closet

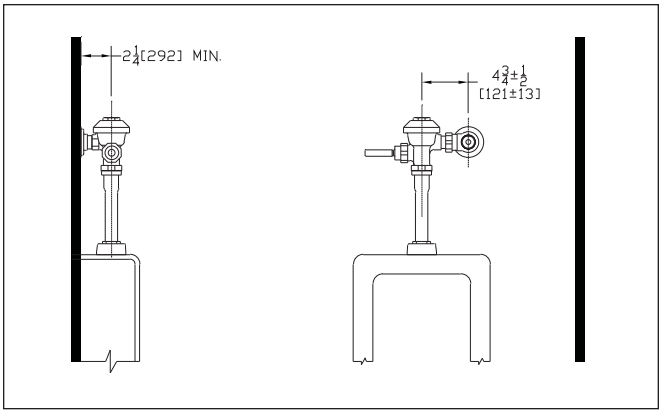
-ULF Ultra Low Flow
0.125 Gal. for Urinal

OPTIONS

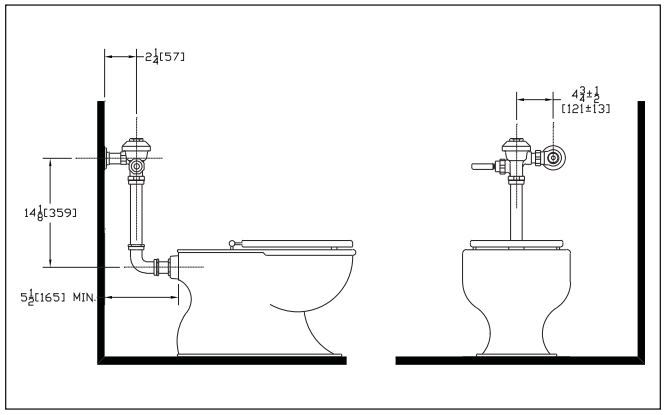
_____ **-BG** BioCare ADA Handle
_____ **-H** Handle on Front of Flush Valve
_____ **-L** 1" [25] Metal Push Button
_____ **-L3** 3" [76] Metal Push Button
_____ **-YJ** Split Ring Pipe Support
_____ **-YK** Solid Ring Pipe Support
_____ **-YO** Bumper on Stop Valve
_____ **-1** 16" Rough-In
_____ **-2** 24" Rough-In
_____ Other



Models: Z6000AV, Z6000AV-1, Z6000AV-2, Z6000AV-3,
-WS1 (Water Saver) 1.6 Gal. Low Consumption
-HET (High Efficiency Toilet) 1.28 Gal.



Models: Z6001AV (1-1/4" Urinal Flush Valve)
Z6003AV (3/4" Urinal Flush Valve)
-WS1 (Water Saver) 1.0 Gal. Low Consumption
-ULF (Ultra Low Flow) 0.125 Gal.



Models: Z6010AV, Z6010AV-1, Z6010AV-2
-WS1 (Water Saver) 1.6 Gal. Low Consumption
-HET (High Efficiency Toilet) 1.28 Gal.

Sweat Solder Adaptor Installation Instructions

Important:

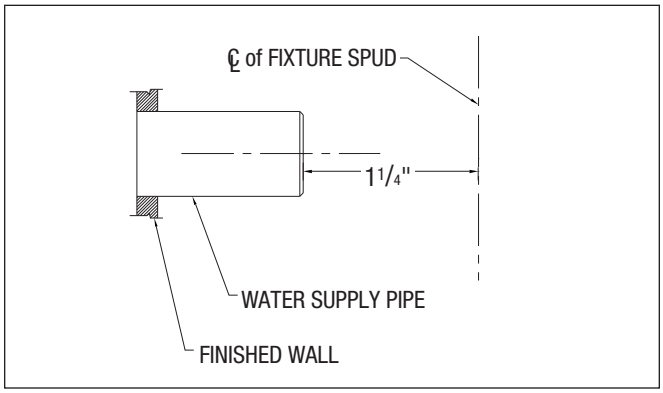
- *All plumbing is to be installed according to state and local codes and regulations.*
- *Water supply lines need to allow proper water flow for each fixture.*
- *Flush all lines of any **debris** before making connections.*
- *Do not use pipe sealant or plumbing grease on any fitting other than the control stop inlet.*

The AquaVantage® valve is designed to operate under various water pressures with recommended range between 10 and 100 psi (69 to 689 kPa). Each Zurn valve is tested for proper performance at the factory before being shipped. Consult the product pages of the catalog for available flow options.

Most low consumption fixtures (1.6 gallon) require a minimum of 25 psi running pressure through the valve to obtain proper evacuation. When installing your quality Zurn valve it is recommended that to protect the polished finish you do not use a toothed wrench. This will cause gouges and scratches on your valve.

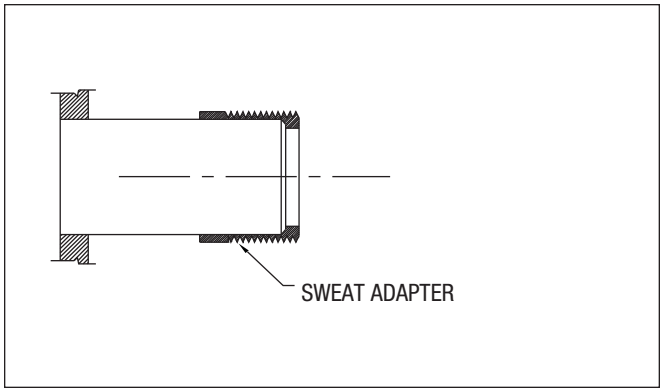
STEP NO. 1

Measure distance from finished wall to centerline of fixture spud; cut water supply pipe 1-1/4" shorter than this measurement. Chamfer O.D. and I.D.



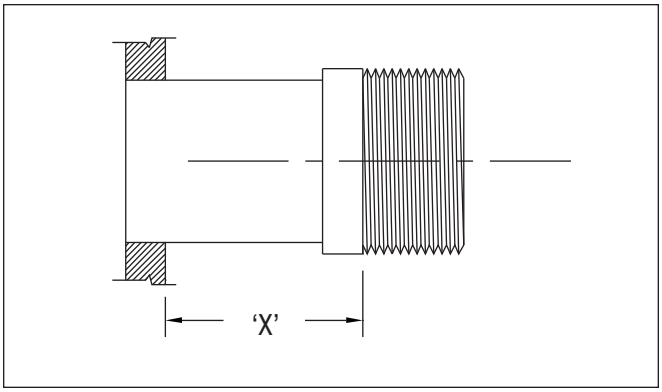
STEP NO. 2

Slide threaded adapter onto supply pipe until shoulder stops on end of pipe. Then sweat-solder the adapter to water supply pipe.



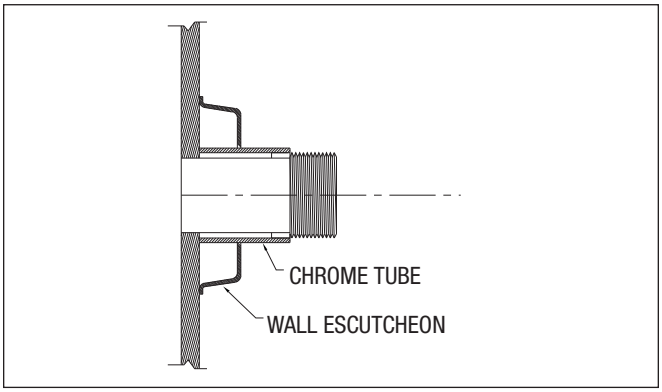
STEP NO. 3

Measure from finished wall to first thread of adapter for length of chrome tube. Cut chrome tube this length ‘x’.



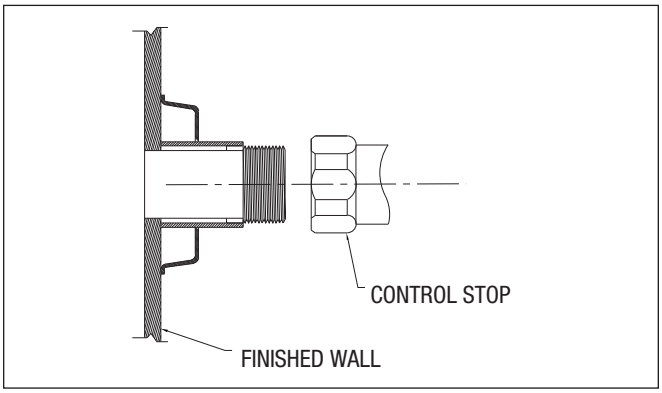
STEP NO. 4

Slide wall escutcheon over chrome tube and slide both chrome tube and wall escutcheon over supply pipe pushing the wall escutcheon all the way to the wall.

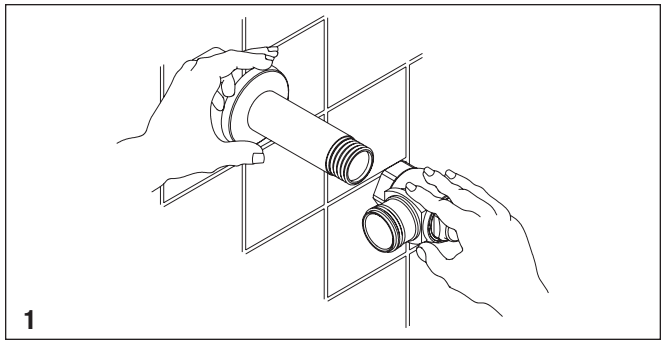


STEP NO. 5

Screw control stop onto water supply water adaptor.

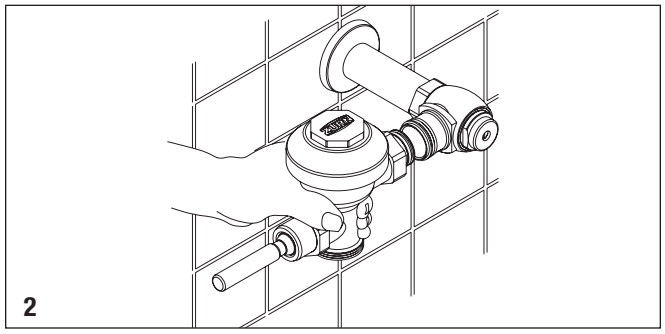


1. Install stop valve assembly using proper size supply escutcheon and sweat solder adapter kit if applicable (see 1). Thread sealing compounds should be used on male NPT threads only.



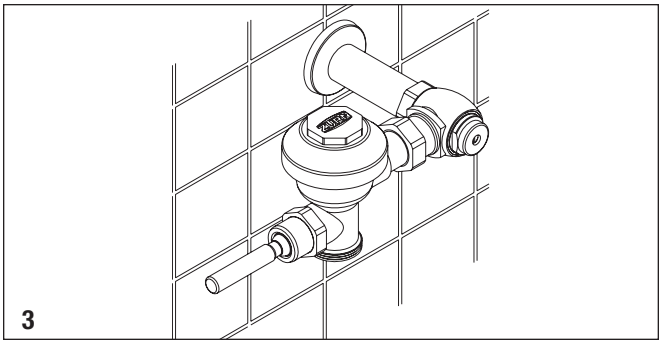
1

2. Prior to inserting the flush valve tailpiece into the stop valve, be certain that the O-ring seal is located in O-ring seal groove at the end of the tailpiece and the locking nut and locking snap ring are located as shown below (see 2). Care should be taken not to damage the O-ring when inserting the tailpiece into the stop valve. If lubrication is needed, wetting the O-ring with water will be sufficient.



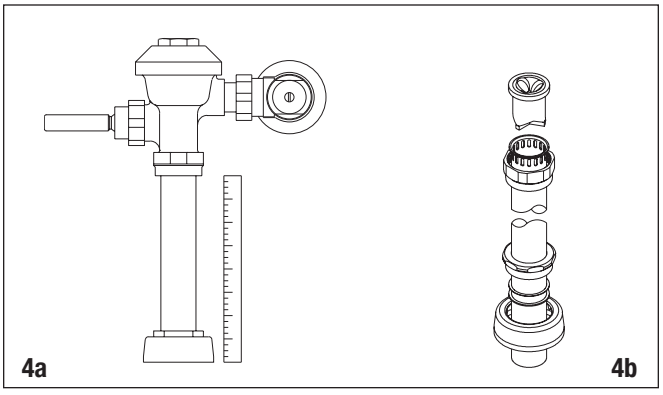
2

3. Insert the flush valve tailpiece into the stop valve and hand tighten the lock nut to the stop valve. Plumb the entire unit (see 3).



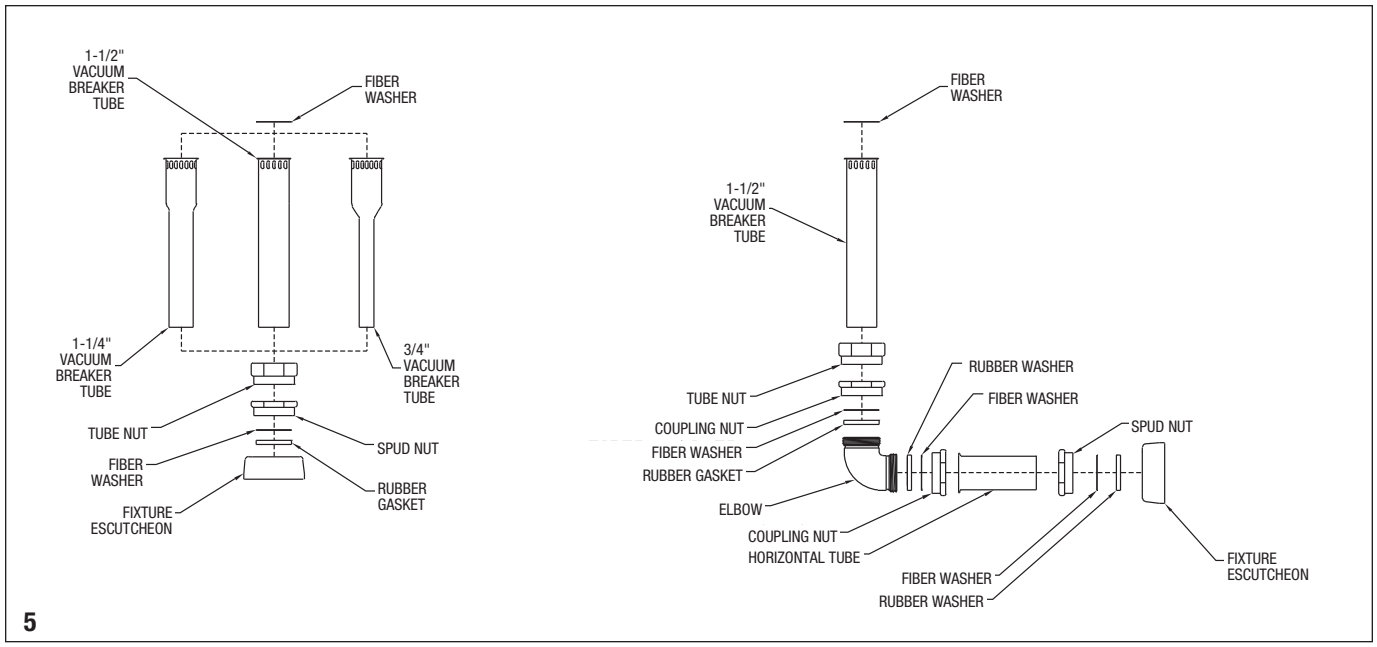
3

4. Determine the length of vacuum breaker tube required to join the flush valve and fixture spud. Cut the vacuum breaker tube, if required, to this length (see 4a). Assemble the vacuum breaker tube assembly and spud nut assembly to the flush valve and fixture spud.



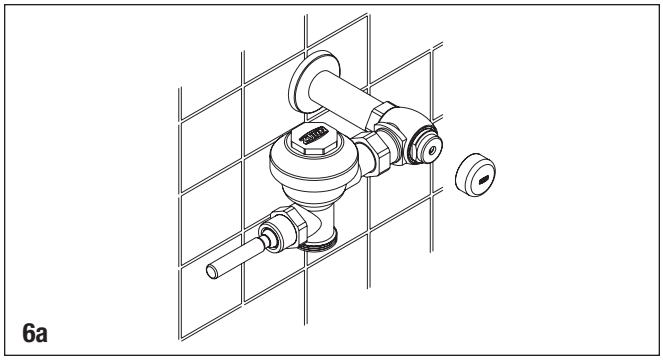
4a 4b

5. Hand tighten spud nut and vacuum breaker tube nut to fixture and flush valve. Adjust the valve assembly for plumb. Tighten fixture spud nut, vacuum breaker tube nut, and lock nut with a wrench.



5

6. When all flush valves are connected to the fixtures and water pressure is available, it is recommended that the supply piping be flushed to remove dirt, pipe chips, etc., from system. Before the water is turned on, be sure all stop valves to the flush valves are closed off tight. The stop valves can be opened and closed by using the adjusting screw located at the center of the stop valve cap, behind the stop cap cover screw if already installed (see 6a). Stop valve adjustments can only be made by using the adjusting screw. **It is not necessary to remove the stop valve cap when making adjustments. If for any reason it becomes necessary to remove the stop valve cap, be certain the water is shut off at the main supply valve.**



6a

Use the following procedure to flush out the supply piping:

A. Remove the main valve body cover.

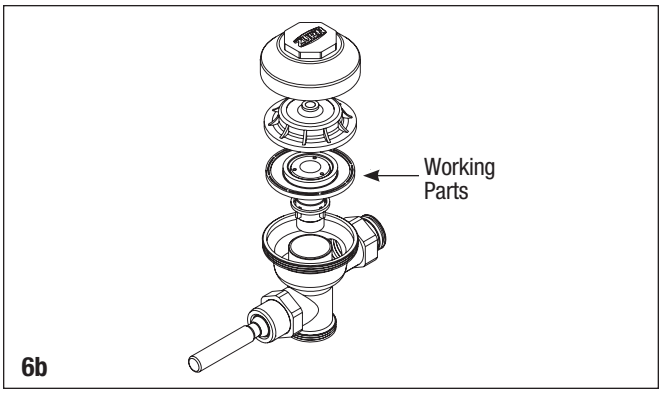
B. Remove the working parts from the flush valve (shown in 6b).

C. Replace the main valve body cover and plastic cover without reinstalling the working parts.

D. Open the stop valve by using the stop adjusting screw and flush out all debris from pipe and connections.

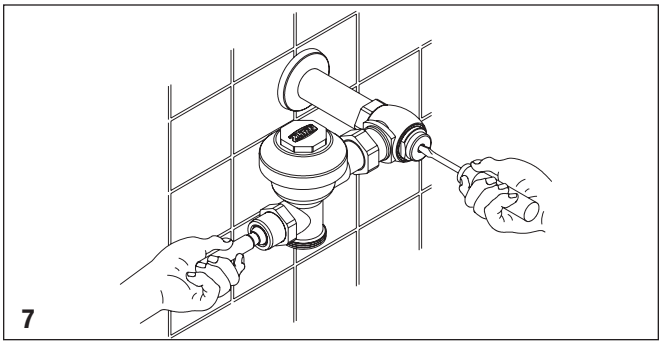
E. Shut stop, open cover, replace the working parts, replace and tighten the cover.

This procedure should also be followed when the system has been drained for some time, as occurs in athletic fields, recreation parks, etc.



6b

7. The AquaVantage® flush valves are preset for fixture volume as marked on the valve cartons. The valve does not require regulation for variation in water pressure within its operating range. To set the flush valve for proper operation, open the stop valve completely by using the adjusting screw and flush the AquaVantage several times. Gradually adjust the stop valve, using the adjusting screw, so that the rate of water flow into the fixture is not excessive, yet is sufficient enough to adequately evacuate the waste. The final setting for urinals should be such that the fixture will not overflow when the valve is actuated twenty times in succession. The stop cap cover screw should be secured after final adjustments have been made.

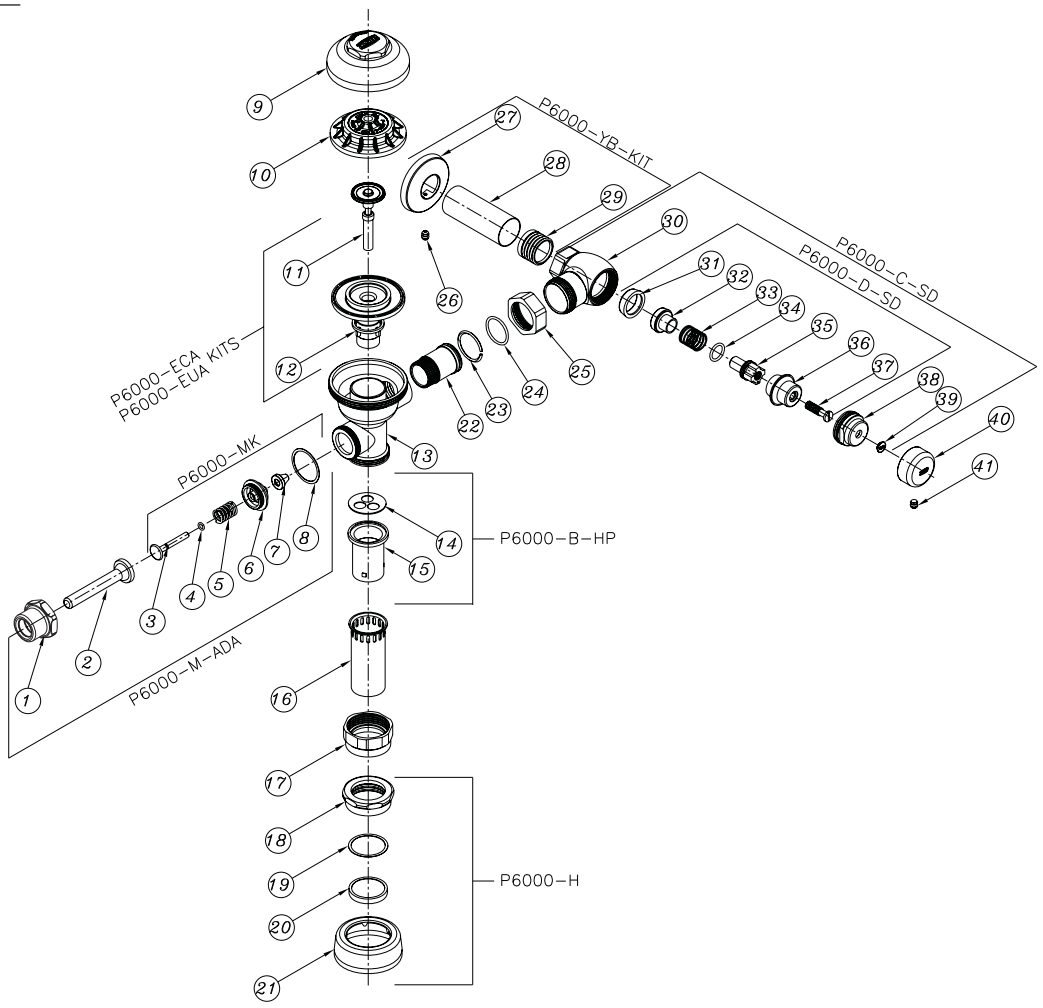


7

AquaVantage® Repair Kits

Part Identification

1. Handle Sleeve and Insert
2. Low Force/ADA Compliant Handle
3. Actuator Rod
4. Handle O-Ring
5. Handle Spring
6. Handle Retainer
7. Handle Seal
8. Gasket
9. Valve Body Cover
10. Plastic Cover
11. Trip Mechanism
12. Diaphragm Repair Kit
13. Valve Body
14. Vacuum Breaker Insert
15. Vacuum Breaker Duckbill
16. Vacuum Breaker Tube
17. Vacuum Breaker Tube Nut
18. Spud Nut
19. Spud Friction Washer
20. Spud Sleeve
21. Spud Escutcheon
22. Tailpiece
23. Snap Ring
24. Tailpiece O-Ring
25. Locking Nut
26. Setscrew for Cast Wall Flange
27. Cast Wall Escutcheon
28. Supply Cover Tube
29. Sweat Solder Adapter
30. Stop Body
31. Piston Seal
32. Piston
33. Stop Spring
34. Guide O-Ring
35. Piston Guide
36. Guide Holder
37. Adjusting Screw
38. Stop Cap
39. Snap Cap Screw Cover
40. Vandal-Resistant Control Stop Cover
41. Setscrew for Control Stop Cover



Covers and Repair Kits	Product No.
Outside Cover - CP – Item 9	P6000-LL
Inside Cover – Item 10	P6000-L
High Efficiency Toilet Closet Kit – 1.28 gal. flush	P6000-ECA-HET
Ultra Low Flow Urinal Kit – 0.125 gal. flush	P6000-EUA-ULF
Low Consumption Closet Kit – 1.6 gal. flush	P6000-ECA-WS1
Water Saving Closet Kit – 3.5 gal. flush	P6000-ECA-WS
Full Flow Closet Kit – 4.5 gal. flush	P6000-ECA-FF
Low Consumption Urinal Kit – 1.0 gal. flush	P6000-EUA-WS1
Water Saving Urinal Kit – 1.5 gal. flush	P6000-EUA-WS
Full Flow Urinal Kit – 3.0 gal. flush	P6000-EUA-FF
Repair Parts – Inside Parts	**Product No.**
Urinal Relief Valve – Item 11	P6000-EU13
Closet Relief Valve – Item 11	P6000-EC13
AquaVantage Rebuild Kits	**Product No.**
Closet and Urinal Rebuild Kits Include Items 3-8, 11, 12, 14, 15, 24 (Specify flow rate)	P6000-ECA-__-RK
Handle Assembly and Repair Kits	**Product No.**
ADA Handle Assembly (Side) Includes Items 1-8	P6000-M-ADA
Handle Repair Kit (Side) Includes Items 3-8	P6000-MK
Handle Seal Includes Item 7	P6000-M9
Handle Gasket Includes Item 8	P6000-M10
Repair Kit for Front Operation – Exposed Includes Items 3-8	P6000-MHK
Handle Assembly (Front) Includes Items 1-8	P6000-MH

Control Stop Repair Kit and Parts	Product No.
Control Stop Repair Kit for 1" and 3⁄4", Includes Items 31-37	P6000-D-SD
Seal Seat for 1" and 3⁄4", Includes Item 31	P6000-D42
VP Control Stop Replacement for 1" and 3⁄4", Includes Items 30-39	P6000-C-SD
Sweat Solder Connection with Cast Wall Flange, Includes Items 26-29	P6000-YB
Adjustable Tailpieces	**Product No.**
Adjustable Tailpiece for Standard Flush Valve, Includes Items 22-24	P6000-J1
Tailpiece Coupling Assembly, Includes Items 23-25	P6000-K
Tailpiece Locking Ring, Includes Item 23	P6000-C30
Tailpiece O-Ring, Includes Item 24	P6000-C31
Coupling Nut, Includes Item 25	P6000-C32
Flush Connections and Spud Coupling Kits	**Product No.**
Flush Tube Assembly for Flush Valves, Includes Items 14-16. Specify diameter and length.	P6000-A-HP
Vacuum Breaker Repair Kit, Includes Items 14-15	P6000-B-HP
Spud Coupling Assembly, Includes Items 18-21. Specify size.	P6000-H

AquaVantage® Trouble Shooting Guide

Problem	Cause*	Corrective Action*
Valve will not operate.	1.) Stop valve is closed. 2.) Supply valve is closed.	1.) Open stop valve. 2.) Open supply valve.
Insufficient volume of water to adequately siphon fixture.	1.) Stop valve is not open enough. 2.) Urinal trip mechanism installed in wrong kit, urinal for closet. 3.) Insufficient volume or pressure at supply.	1.) Open stop valve for desired volume of water. 2.) Replace urinal part with proper closet valve part. 3.) If gauges are not available to measure supply pressure or volume of water at the valve, completely remove the working parts and open the stop valve to allow water to pass through the empty valve. If the supply is adequate to siphon the fixture, the guide ring (#17) may be removed from the guide assembly to provide additional flow. Should this prove unsatisfactory, steps should be taken to increase the pressure and/or supply.
Flush valve shuts off too quickly.	1.) Damaged or punctured diaphragm.	1.) Install new P6000-EUA or P6000-ECA replacement kit to remedy the problem (#12 and #13).
Valve is short flushing.	1.) Cylinder guide assembly and diaphragm assembly are not tight. 2.) Enlarged bypass orifice. 3.) Urinal trip mechanism (blue #13) in closet flush valves.	1.) Screw the two assemblies hand tight. 2.) Install the new P6000-ECA, P6000-EUA replacement kit to remedy the problem. 3.) Install closet trip mechanism (white #13).
Valve is flushing too long or not shutting off.	1.) Trip mechanism not seating properly due to foreign material between trip mechanism and retainer disc. 2.) By-pass orifice is plugged or partially plugged. 3.) Line pressure is not adequate to force trip mechanism to seal. 4.) Cracked cover.	1.) Disassemble parts and rinse thoroughly. 2.) Examine by-pass orifice and clean if necessary being certain not to enlarge orifice opening. 3.) Pressure is inadequate or has dropped below minimum operating range. Steps should be taken to increase the line pressure. 4.) Replace cover with new one (#11 - P6000-L).
Water splashes out of fixture.	1.) Supply volume is more than is necessary. 2.) Lime accumulation on vortex or spreader holes of fixture.	1.) Adjust downward on control stop. 2.) Remove the lime build up.
Flush is not considered quiet.	1.) Control stop may not be adjusted for quiet operation. 2.) Fixture may be contributing to noise. 3.) Piping system may be source of noise.	1.) Adjust the control stop for quiet operation keeping in mind the fixture evacuation requirements. 2.) Check noise created by fixture by placing a cover over the bowl opening to separate valve noise from bowl noise. If it is determined the fixture is too noisy, consult with fixture manufacturer. 3.) High pressure in the system can sometimes be controlled by the stop valve. Other sources of noise may be the absence of air chambers and shock arrestors, loose pipes, improper size pipes, etc. In these cases the building engineer should be consulted.
Handle assembly leaking.	1.) Handle assembly is not tight.	1.) Tighten handle assembly.
Water drips from chrome cap.	1.) P6000-L inside plastic cap is cracked.	1.) Replace P6000-L plastic cap.

Care of Chrome-Plated Surfaces

The suggested cleaning of chrome-plated surfaces is simply to clean them with soap and water then dry. Commercial cleaning compounds are never recommended.

Seasonal Use

Valves used in installations subject to shutdown because of cold and freezing conditions should be maintained in the following manner. After the main supply has been shut off and the water drained from the system, remove the stop valve cap and stop valve internals to allow the water to drain from the flush valve itself.

*See previous page for numerical references.



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