The information contained in this document is subject to change without notice.

AQUS®

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AQUS®

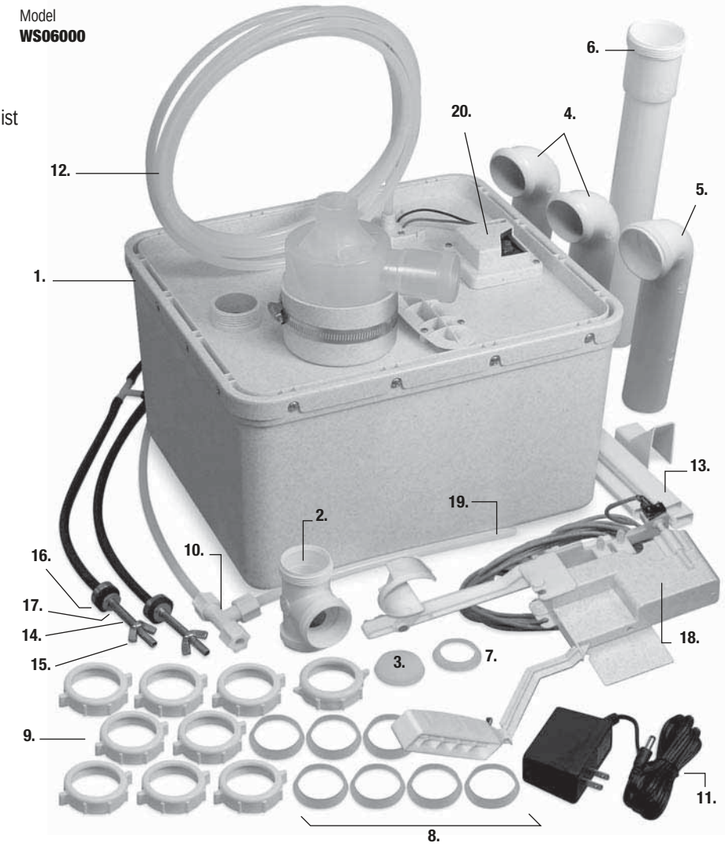
AQUS®

AQUS® Greywater System Installation

The AQUS® Greywater System is designed to recycle sink water as an alternative means for flushing toilets. It operates with select two-piece, gravity-fed toilets. WaterSaver Technologies can supply a list of compatible toilet models.

The system prevents cross-contamination of the fresh water system and does not interfere with backflow prevention. The following instructions will serve as a guide when installing the AQUS® Greywater System. As always, good safety practices and care are recommended during installation. If further assistance is required, please contact WaterSaver Technologies.

Model
WS06000



PARTS LIST

Vanity Tank/Toilet Tank Parts

Item #	Part No.	Description
1		Vanity Tank
2		Baffle Tee
3		1 1/2" Plug Disc
4		Wall Tube/Beveled
5		Waste Arm/Socket
6		Extension Tube/Socket Connection
7		1 1/2" x 1/4" Slip Joint Washer
8		1 1/2" Slip Joint Washer
9		1 1/2" Slip Nut
10		Toilet Tank Supply Tube Harness
11		12 Volt Transformer with 4-ft. cord
12		3/8" Polyethylene Tube (12 feet)
13		Wall Molding and Inside Corner Trim Piece
14		Hollow Stainless-Steel Tank Bolt
15		Stainless-Steel Tank Bolt Nut
16		Rubber Tank Bolt Washer
17		Stainless-Steel Tank Bolt Washer

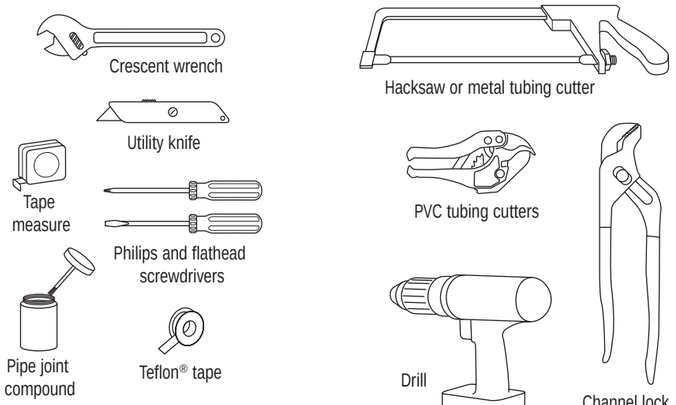
Toilet Tank/Fill Control Unit Parts

Item #	Part No.	Description
18		Assembled Fill Control Unit with Switch
19		Fill Control Unit Supply Tubes (1 set)
20		Fill Control Module (Timer)

Refer to the AQUS® Greywater System Maintenance Guide for additional Troubleshooting and Repair Part information.

If further assistance is required, call the WaterSaver Technologies 502-741-1859.

WHAT YOU WILL NEED...



PRIOR TO INSTALLATION

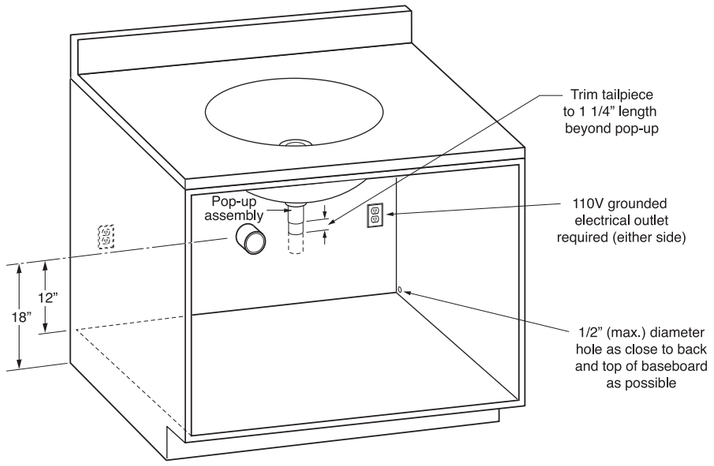
Prepare the lavatory vanity before installing the AQUS® Greywater System.

Engage a certified electrician to install a 110-volt electrical outlet inside the vanity.

Disconnect existing plumbing components between sink pop-up and wall drain.

Drill one hole in the side of the vanity for discharge hose and Fill Control Unit electrical wire. Drill the 1/2" maximum hole as close to back wall and baseboard as possible to allow for proper coverage or tubing and wiring with provided wall channel pieces.

Trim the threaded tailpiece to allow 1 1/4" to extend beyond the pop-up assembly (see illustration). Use Teflon tape or pipe joint compound on threaded portion of tailpiece before repositioning onto pop-up assembly.



TROUBLESHOOTING GUIDE

1. CONNECTIONS INSIDE VANITY WILL NOT FIT.

a. Wall drain is either not 18" off finished floor and/ or wall drain is not 12" off wall cabinet shelf.

b. If wall drain is too low, either cut opening in vanity floor to recess reservoir or use shallow P-Trap or alternative PVC parts.

c. If wall drain is too high, shim the tank higher.

2. FILL CONTROL UNIT WILL NOT RAISE FILL VALVE TO OFF POSITION.

Check for obstructions. See page #6. IMPORTANT NOTE – IN DETAIL.

3. PUMP IS NOISY.

Under normal operation, the sound is no louder than an icemaker or electric shaver. If the reservoir is dry, the pump labors as it sends air to toilet.

To check if pump is failing, turn water on in sink for 2-3 minutes. Flush toilet. Has noise level reduced?
YES Continue normal operations.
NO Possible pump failure.

4. PUMP RUNS TOO LONG, TOO SHORT OR INTERMITTENTLY.

This indicates a circuit board timer failure. Call for service.

5. PUMP RUNS TOO LONG OR TOO SHORT FOR TOILET SIZE.

Pump timer is preset for 1.6 gpf toilets. Pump timer on top of reservoir may be adjusted to increase/decrease length of pumping. Adjust timer clockwise to increase pump run time. Reverse process to reduce run time. Move timer in 1/4 turn increments.

6. TOILET BOWL WATER IS DISCOLORED OR CONTAINS BUBBLES.

Colored liquids, such as coffee or cola, poured down sink will transfer to bowl. To clear, rinse water down drain and flush toilet. Heavy usage of hand soaps/detergents can result in bubbles. Flush a few times to dilute soaps.

7. REUSED WATER IS NOT FILLING TANK.

a. If system is unplugged, replug into wall outlet.
b. If switch on Fill Control Unit has failed, call for service.
c. If pump isn't running; flush toilet several times to allow pump to prime, or call for service.
d. If hose is clogged, call for service.
DO NOT *pour drain unclogging products down sink. These products may damage system.*

8. TOILET WILL NOT FLUSH.

a. Fresh water supply is off. Turn on supply.

b. Fill Control Unit is out of alignment and is interfering with proper toilet operation. Remove toilet tank lid, flush toilet and observe operation.

9. TOILET TANK IS SLOW TO REFILL.

Pump is intended to provide effective reused water supply at a distance of less than 25 feet with a 4-foot head pressure. As distance exceeds 15 feet, fill takes longer.

10. WATER IS BACKING UP INTO THE SINK.

There's a clog in P-trap or waste line downstream from vanity tank. ***DO NOT*** pour unclogging products down drain. These products may damage system. Call plumber to clear obstruction.

11. THERE'S AN UNPLEASANT ODOR.

Chlorine tables have dissolved and reservoir has grown odor-causing bacteria.

a. Turn water on in sink and pour a capful of chlorine bleach down drain to shock odor.

b. Replace tablets.

LIMITED WARRANTY

WaterSaver Technologies warrants the AQUS Greywater System to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which it is intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of 1 year from date of purchase.

During this period, WaterSaver Technologies will at its option, repair or replace any part or parts which prove to be thus defective if returned to WaterSaver Technologies, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase WaterSaver Technologies products directly from WaterSaver Technologies for purpose of resale. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

IMPORTANT NOTE—IN DETAIL

There are three (3) elements that are essential to the proper operation of your AQUS system's FCU in the toilet tank. They are: 1) The see-saw movement of the FCU as it operates the electrical switch, 2) The vertical force required to lift the Fluidmaster fill valve float to the OFF position, and 3) The removal of any interference that may inhibit the FCU's proper operation.

1. Movement of FCU. The see-saw movement of the FCU is designed to swing freely as the forces of the fill valve float and water weight act upon it. As the FCU rocks back and forth, the electrical switch is pressed, which engages the submersible pump. Proper engagement with the switch can be accomplished by adjusting the Actuator up or down, as necessary.

2. Force required to lift the fill valve float. The weight from the reused water in the FCU reservoir cup is sufficient to raise the fill valve float, if properly installed. Once the submersible pump starts, it takes a few seconds to completely fill the FCU cup. Once it is full, the water weight of the cup on the right side will raise the FCU foot on the left side and turn off the fresh water. If the FCU foot hangs too far below the fill valve float, then the see-saw effect of the FCU foot may not have enough travel to raise the float and turn off the fresh water. You can adjust the entire FCU vertically using the thumb latch on the FCU mount.

Adjusting it (normally upward) will place the FCU foot directly below the float, which is the proper setting. Additionally, you can increase the amount of force applied to the float by moving the FCU away (to the right) from the float.

3. Removal of interferences. The FCU is designed to swing freely across a wide arc. Anything that interferes with this movement can affect the performance of your system. The following are some possible interferences:

a.) *Fluidmaster protrusions are in the way.* The Fluidmaster 400A has two protrusions on the bottom of the float. Depending upon the placement of the FCU foot, the protrusions can interfere with the foot and not allow the float to be completely raised. If this happens, move FCU such that the protrusions slide smoothly over the FCU foot.

b.) *Overflow tube is in the way.* If the overflow tube is positioned facing 12 o'clock, it may cause interference with the FCU arm. Rotating the overflow tube to any position between 10 o'clock and 11 o'clock can avoid this interference.

EXPLANATION AND TIME SEQUENCES OF FCU OPERATION

The following Explanation and Time Sequences of FCU Operation is designed to provide you with a complete understanding of how your AQUS system works. This will assist you in the installation, adjustment and on-going operation of your system.

The following time sequences should be read as estimates only and may vary depending on the size, shape and type of toilet tank.

Sequence of Events Assuming FULL Vanity Tank

0 seconds	Toilet is flushed
2 seconds	Fluidmaster drops turning ON fresh water
3-5 seconds	FCU switch tripped. First electrical relay engaged. Submersible pump sends reused water to toilet.
8-12 seconds	FCU cup is filled with reused water and becomes counterweight, raising Fluidmaster. Fresh water is turned OFF. At the same time, FCU arm trips electrical switch. Second electrical relay engaged.
12-70 seconds	Second electrical relay keeps reused water flowing. Fresh water is held OFF until toilet is full.

Sequence of Events Assuming EMPTY Vanity Tank

0 seconds	Toilet is flushed
2 seconds	Fluidmaster drops turning ON fresh water
3-5 seconds	FCU switch tripped. First electrical relay engaged. Submersible pump ATTEMPTS to send reused water to toilet.
8-12 seconds	FCU cup does NOT act as counterweight, raising Fluidmaster. Fresh water is not turned OFF. Electrical system times out and resets.
12-70 seconds	Fresh water continues to fill toilet until full.

Sequence of Events Assuming PARTIALLY FULL Vanity Tank

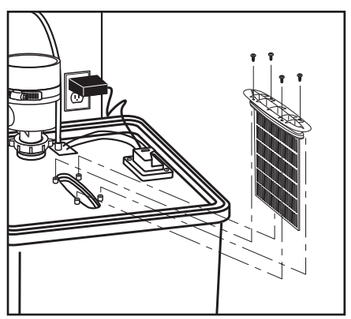
0 seconds	Toilet is flushed
2 seconds	Fluidmaster drops turning ON fresh water
3-5 seconds	FCU switch tripped. First electrical relay engaged. Submersible pump sends reused water to toilet.
8-12 seconds	FCU cup is filled with reused water and becomes counterweight, raising Fluidmaster. Fresh water is turned OFF. At the same time, FCU arm trips electrical switch. Second electrical relay engaged.
12-70 seconds	Second electrical relay keeps reused water flowing until vanity tank is dry. Pump remains running. Once reused water flow stops, FCU cup/counterweight drains. Fluidmaster drops and turns fresh water ON. Fresh water completes toilet fill.

MAINTENANCE REQUIREMENTS

The AQUS requires annual maintenance.

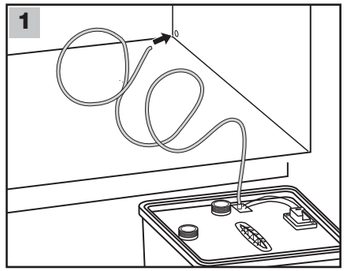
Replace Cleansing Tablets
The semi-clear tablet dispenser allows the user to visualize the need to replace the cleansing tablets annually. Replacement tablets may be purchased from WaterSaver Technologies and its representatives. Remove tablet dispenser lid, insert three (3) tablets and resecure the dispenser lid.

Clean Filter Screen
The filter screen should be removed, rinsed and reinstalled annually. The screen is secured in place with four (4) #6 Philips head screws. Remove the screws and pull screen straight up from vanity tank lid. After screen has been rinsed of any residue, reinstall with the four (4) #6 Philips head screws.

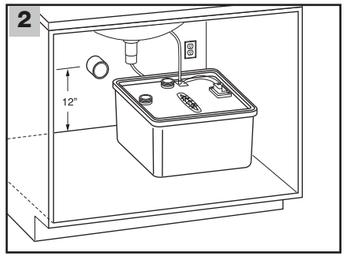


INSTALLATION

VANITY TANK AND TANK DRAIN INSTALLATION

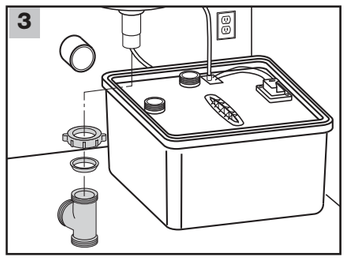


Insert free end of Discharge Tubing through 1/2" hole in vanity cabinet at back. Pull tubing from outside while sliding Vanity Tank into vanity cabinet.



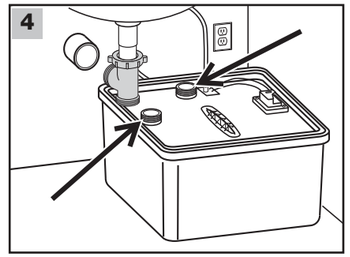
Position Vanity Tank in cabinet leaving adequate room for drain connections.

REMINDER: The center line of lavatory sink drain outlet should be minimum of 12" above the vanity shelf.

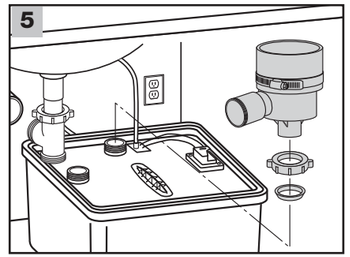


Install Baffle Tee onto 1 1/4" threaded tailpiece using 1 1/2" Slip Joint Nut, and 1 1/2" x 1 1/4" Slip Joint Washer.

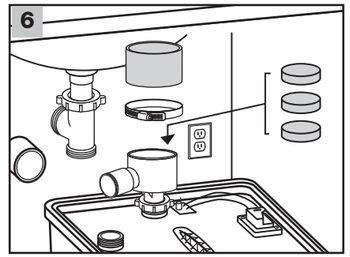
IMPORTANT: Do not tighten drain connections completely until all drain fittings are in proper position.



Select one of two threaded openings on Vanity Tank for Tablet Dispenser. Select position that allows for waste arm connection from bottom of Baffle Tee to the Tablet Dispenser inlet.

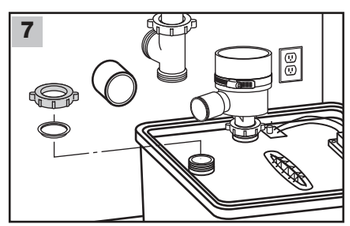


Secure Tablet Dispenser onto the 1 1/2" threaded opening using a 1 1/2" Slip Joint Nut and Slip Joint Washer.

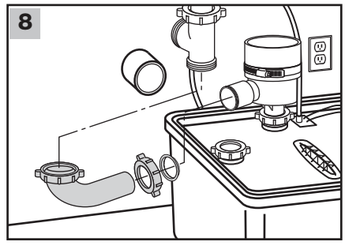


Remove Tablet Dispenser lid and insert three cleansing tablets. Replace lid.

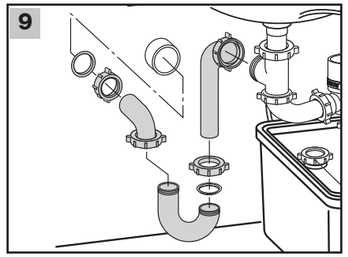
WARNING: Read the handling instructions on Tablet package before opening.



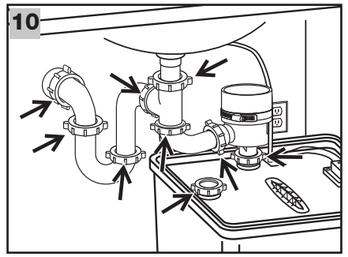
Cap unused 1 1/2" threaded Vanity Tank opening with 1 1/2" Plug Disc and 1 1/2" Slip Joint Nut.



Install waste arm to bottom of Baffle Tee and Tablet Dispenser inlet using 1 1/2" Slip Joint Nut and Slip Joint Washer. Adjust position of Vanity Tank for proper fit.

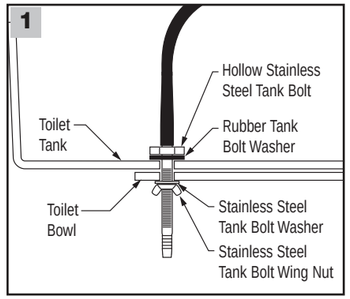


Connect P-Trap to the wall drain and Baffle Tee side outlet. Additional provided fittings allow for alternative drain connections.



Tighten all drain fitting joints.

TANK BOLT REPLACEMENT



Turn off water supply to Toilet Tank. Flush toilet and hold down handle to remove as much water as possible. Remove remainder of water from tank with a sponge or towel.

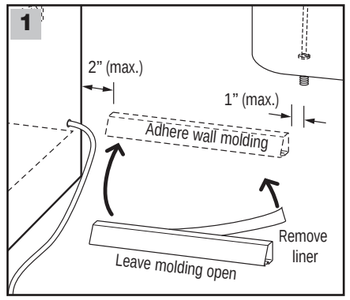
Loosen nuts that secure Tank Bolts to toilet tank. Remove and replace one Tank Bolt at a time to allow Toilet Tank to remain stable.

Install Rubber Washer as shown.

After both Tank Bolts are in place, tighten the Wing Nuts, making sure the Toilet Tank is secure.

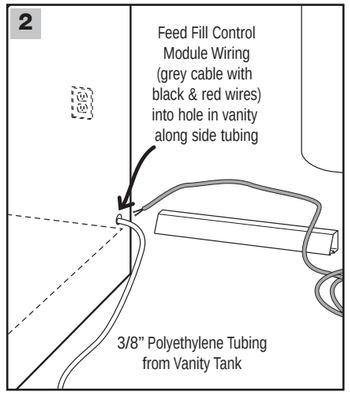
WARNING: Do not over tighten Tank Bolts. Breakage or chipping of vitreous china can occur.

3/8" POLYETHYLENE TUBE/FILL CONTROL MODULE WIRE INSTALLATION

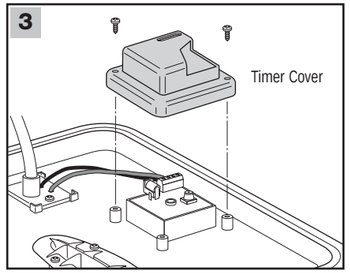


Attach wall molding from side of the vanity to about 1" short of reaching the Toilet Tank Bolt (bolt closest to vanity cabinet.)

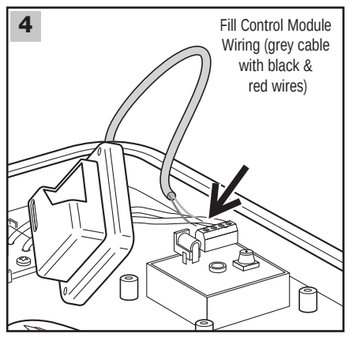
Note: Leave molding open until 3/8" Polyethylene Tubing and electrical line for Fill Control Unit are in place.



Feed Fill Control Module wiring (grey cable with red & white wires) into same hole in side of vanity that Polyethylene tubing from Vanity Tank is coming through.



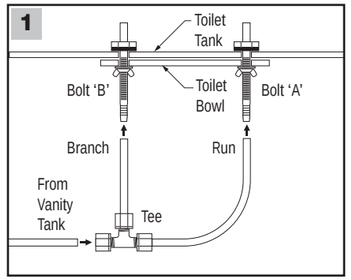
Remove Timer cover if necessary to allow access to Fill Control Module (timer) terminals for attaching wires from Fill Control Unit.



Connect red and black wires to terminals on Fill Control Module (timer) on Vanity Tank.

Note: Connect the Red wire to one open terminal and the Black wire to the other. Wires can be connected to either open terminal.

3/8" POLYETHYLENE TUBE HARNESS INSTALLATION



Push Polyethylene Tube BRANCH end into the new stainless-steel Tank Bolt (bolt closest to vanity). Excess tubing may be trimmed for proper length.

Push Polyethylene Tube RUN end onto the second stainless-steel Tank Bolt.

Insert the Polyethylene Tube end from vanity tank into the Tee fitting. Excess tubing may be trimmed for proper length or pulled back into vanity.

FILL CONTROL UNIT (FCU) INSTALLATION

To set the Fluidmaster to its proper position to accept the Fill Control Unit (FCU), complete the following steps.

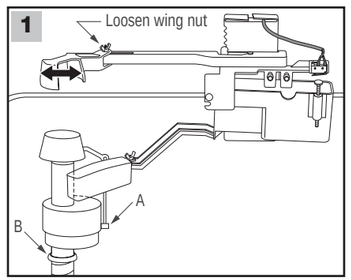
Dial Fine Adjustment Stem (A) to its lowest position by turning stem counterclockwise.

To set water level, raise/lower Fluidmaster to desired height by lifting Locking Ring (B) and raising/lowering float mechanism.

Rotate Fine Adjustment Stem (A) so that it points toward front of toilet tank. This will put the Fluidmaster protrusions on the bottom of float into the correct position.

Lower Locking Ring (B) to lock Fluidmaster into position.

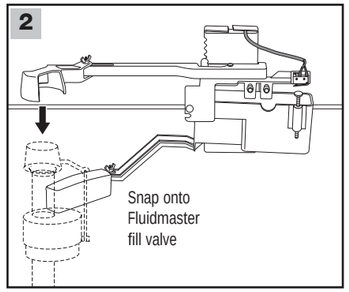
The FCU is delivered fully assembled.



Fill the toilet with fresh water.

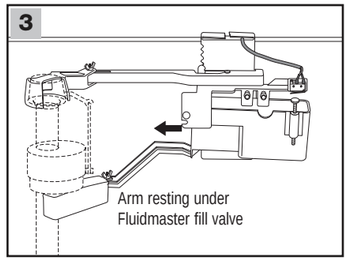
Position the FCU inside Toilet Tank. Loosen the wing nut on the Fluidmaster Mounting Bracket, such that the part moves freely.

Snap the Fluidmaster Mounting Bracket on the

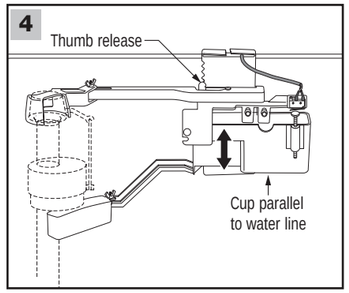


Fluidmaster fill valve.

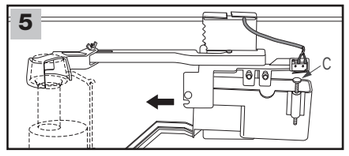
Slide the FCU horizontally such that the foot of the



FCU is resting under the Fluidmaster fill valve.

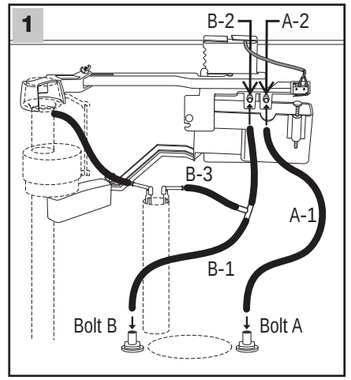


Raise or lower the FCU using the thumb release such that the FCU foot is immediately below the Fluidmaster float of the fill valve and the FCU cup is parallel to the water line (neutral position).



When the toilet is full and FCU is in the neutral position, the switch should be "open". When you flush the toilet, check for proper engagement of the switch by the Actuator (C). Adjust Actuator up or down as necessary to engage switch.

FILL CONTROL UNIT (FCU) SUPPLY TUBE INSTALLATION



Connect FCU Supply Tube (A-1) to the stainless steel Tank Bolt (A)

Connect FCU Supply Tube (B-1) to the stainless steel Tank Bolt (B)

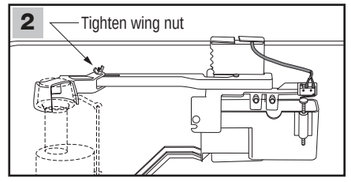
Connect Supply Tube (A-1) to the FCU supply inlet (A-2).

Connect Supply Tube (B-1) to the FCU supply inlet (B-2).

Connect Supply Tube (B-3) to overflow tube.

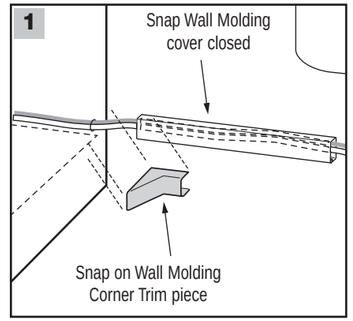
Be sure the tubes do not interfere with moving parts inside the toilet tank such as, toilet tank flush handle, tank flapper, or Fill Control Unit actuating arm. The tubes may be trimmed as necessary to avoid interference with moving parts.

IMPORTANT: Both tubes attached to the overflow tube must always be attached with a holding clip to maintain an air gap.



Tighten wing nut to secure FCU to Fluidmaster

FINISH RUNNING TUBING AND GREY CABLE THROUGH WALL MOLDING



Tuck 3/8" Polyethylene Tubing and Fill Control Module wiring (grey cable) into Wall Molding channel. Pull tubing and/or wiring into vanity as required to take up slack.

Install Corner Trim at the vanity end of wall channel to complete installation of Wall Molding.

FINAL ADJUSTMENTS

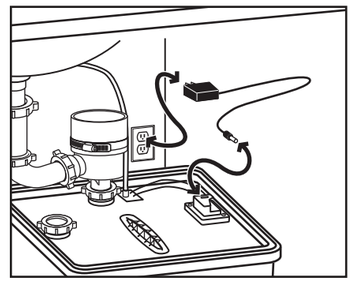
Check FCU for any interference inside tank. The FCU should easily swing (lifting and lowering Fluidmaster) through a full range of motion without hanging. Depending upon size and shape of tank, interference may occur at:

a. FCU arm with Fluidmaster fine adjustment stem

b. FCU arm rubs back of toilet tank

c. FCU mount does not hang perpendicular to back of toilet tank, resulting in improper swing of FCU arm

d. FCU foot interferes with overflow tube or Fluidmaster stem, rotate FCU foot as necessary



a. Turn on lavatory faucet. Check all connections for leaks.

b. When system is full of greywater, plug 12 volt Transformer into wall outlet and Fill Control Module (see illustration above).

c. Flush toilet to check operation.

d. Make any necessary adjustments to allow smooth operation of FCU.