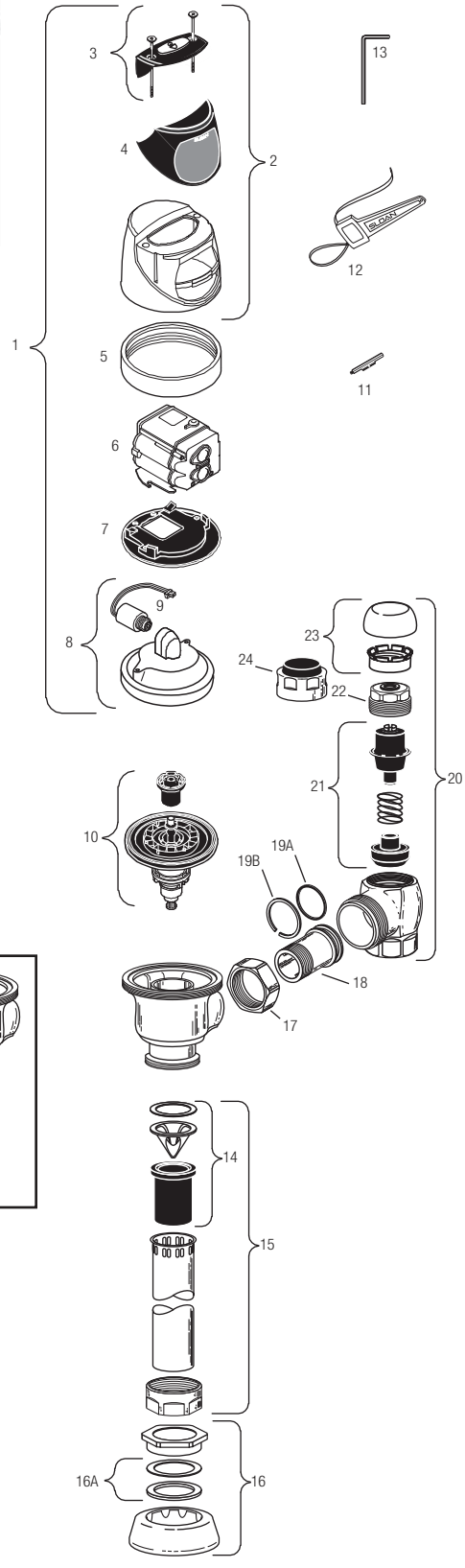
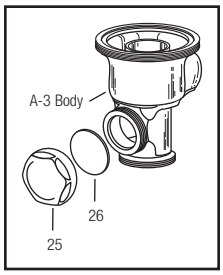
G2 Optima Plus® Flushometer







Earlier model with EBV-36-A body

For use with Sloan's G2 Optima Plus® flushometer introduced May, 2003.

For older Optima Plus® flushometers (produced from 1992 – 2003) and Regal Pro® Optima Plus® flushometers see pages 66 thru 71.

SENSOR MODULE COMPONENT PARTS

Item No.	Code No.	Part No.	Description
1.	**0325160**	EBV-138-A	G2 Cover/Ring/Sensor Assembly – Water Closet
	0325161	EBV-139-A	G2 Cover/Ring/Sensor Assembly – Urinal
	0325166	EBV-149-A	G2 Cover/Ring/Sensor Assembly – Water Closet w/Zurn Ring
	0325167	EBV-150-A	G2 Cover/Ring/Sensor Assembly – Urinal w/Zurn Ring
2.	**0325168**	EBV-142-A	Cover Assembly
3.	**0325172**	EBV-130-A	Override Button Assembly includes screws & hex wrench
	0325170	EBV-132-A	Screws (2) and Allen Wrench Only
4.	**0325169**	EBV-131	Lens Window Cover
5.	**0325804**	EBV-14	Locking Ring CP
	0325210	EBV-168	Locking Ring CP
	3325524	EBV-31-A	Locking Ring – for Zurn Valves
6.	**3325450**	EBV-129-A-C	G2 Electronic Module – Water Closet
	3325451	EBV-129-A-U	G2 Electronic Module – Urinal
7.	**0325171**	EBV-134	Cover Rest Plate
8.	**3325456**	EBV-145-A	Inside Cover Assembly (includes solenoid EBV-136-A)
	3325089	EBV-1010-A	Inside Cover Assembly (excludes solenoid)
9.	**3325453**	EBV-136-A	Solenoid (For G2 Modules only)*
10.	**SEE CHART NEXT PAGE**		Flex Tube Diaphragm Kit

* Refer to Page 58 for instructions regarding solenoid replacement.

ACCESSORIES

11.	**0325107**	EBV-91	Trimpot Adjustment Screwdriver
12.	**0305823**	EBV-22	Strap Wrench
13.	**0325170**	EBV-132-A	Allen Wrench

VALVE COMPONENT PARTS

14.	**3323182**	V-651-A	Vacuum Breaker Repair Kit
15.	**0393004**	V-600-AA	3/4" x 9" CP Vacuum Breaker
	0393006	V-600-AA	1-1/4" x 9" CP Vacuum Breaker
	3393007	V-600-AA	1-1/2" x 9" CP Vacuum Breaker
16.	**0306125**	F-5-AW	3/4" CP Spud Coupling
	0306140	F-5-AU	1-1/4" CP Spud Coupling
	0306146	F-5-AT	1-1/2" CP Spud Coupling
16A.	**SEE SLIP JOINT GASKETS AND RINGS TABLE ON NEXT PAGE**		
17.	**0308676**	H-550	CP Stop Coupling
18.	**0308801**	H-551-A	CP Adjustable Tailpiece 2-1/16" long
19A.	**5308696**	H-553	O-ring – 24 per package
19B.	**5308381**	H-552	Locking ring – 12 per package
20.	**3308386**	H-700-A	1" Screwdriver Bak-Chek® Stop CP – complete
	3308384	H-700-A	3/4" Screwdriver Bak-Chek® Stop CP – complete
21.	**3308853**	H-541-A	Control Stop Repair Kit †
	3308856	H-543-A	Control Stop Repair Kit ‡ 3/4" H-540/H-600 only
22.	**0308612**	H-622	CP Bonnet †
	0308843	H-577	CP Bonnet ‡ – **OBSOLETE**
23.	**3308772**	H-1010-A	Vandal Resistant Control Stop Cap Assembly †
	3308790	H-1009-A	Vandal Resistant Control Stop Cap Assembly ‡
24.	**3325816**	EBV-1019-A	3/4" Decorative Stop Cap
	3308866	H-574	1" Decorative Stop Cap
25.	**3325814**	EBV-1017-A	Handle Cap — Metal
26.	**0311042**	K-46	Blind Nut Gasket

† For use with 1" and 3/4" H-700-A and 1" H-600-A Bak-Chek® screwdriver control stop
‡ For use with H-600-A 3/4" screwdriver Bak-Chek® control stops

G2 Optima Plus® Flushometer

Sloan introduced its Optima Plus® battery powered sensor flushometer in 1992, revolutionizing the flushing of water closets and urinals. In both new construction and retrofit applications, the use of the Optima Plus has become the standard method for many facilities to improve restroom hygiene and ensure handicap accessibility compliance.

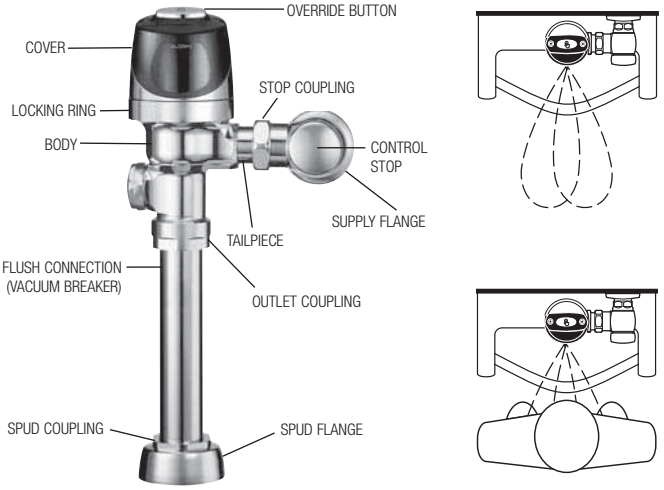
In May, 2003 Sloan introduced the G2 Optima Plus.

The G2 Optima Plus builds on the success of the original product and offers many technological advancements to further improve on performance and reliability expected of sensor activated plumbing. In addition to a new aesthetic design, the G2 Optima Plus features a new state-of-the-art electronic and optical package and a unique solenoid operator that keeps the moving components of the solenoid completely isolated from the water supply. This ensures long life and low maintenance regardless of local water condition.

The G2 Optima Plus replaces the original Optima Plus product, which was phased out of production in mid-2003.

The Sloan G2 Optima Plus automatic battery powered flushometer relies on an infrared sensor to detect a user and activate a flushing cycle. No physical contact with the flushometer surface is necessary, assuring sanitary protection. G2 Optima Plus flushometers are ADA compliant devices.

The flushometer is triggered by means of an active infrared sensor. The Optima Plus sensor emits a continuous invisible light beam. When a user enters the beam's effective range, the beam is reflected into the Optima Plus scanner window. The user is now detected. After the user moves out of the effective range of the sensor, a signal is sent to the flushometer solenoid and, after appropriate arming and/or flush delays, the flush cycle is initiated.



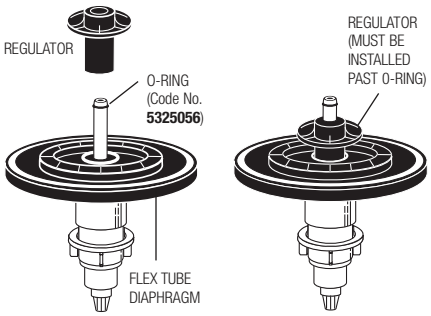
ITEM 10. FLEX TUBE DIAPHRAGM KIT

Code No.	Part No.	Description	Regulator Color *
3325090	EBV-1025-A	Urinal-0.25 gpf/1.0 Lpf	GREEN
3325003	EBV-1023-A	Urinal-0.5 gpf/1.9 Lpf†‡	GREEN
3325000	EBV-1022-A	Urinal-1.0 gpf/3.8 Lpf	GREEN
3325000	EBV-1022-A	Urinal-1.5 gpf/5.7 Lpf †	BLACK
3325001	EBV-1020-A	Urinal-3.5 gpf/13.2 Lpf †	WHITE
3325031	EBV-1024-A	Closet-1.28 gpf/4.8 Lpf	GREEN
3325001	EBV-1020-A	Closet-1.6 gpf/6.0 Lpf †	GREEN
3325014	EBV-1021-A	Closet-2.4 gpf/9.0 Lpf	BLUE
3325001	EBV-1020-A	Closet-3.5 gpf/13.2 Lpf	WHITE
3325001	EBV-1020-A	Closet-4.5 gpf/17.0 Lpf §	WHITE

† EBV-1020-A and EBV-1022-A are supplied with multiple regulators.
‡ A 0.5 gpf (1.9 Lpf) urinal kit can be converted to a 1.0 gpf (3.8 Lpf) by cutting and removing the smooth A-164 flow ring from the guide.
§ For a 4.5 gpf (17 Lpf) water closet flush use EBV-1020-A with the white regulator, and cut and remove the A-164 flow ring from the guide.
* Color of regulator to be used with flex tube diaphragm to obtain the listed flush volume.

O-RING

Code No.	Part No.	Description
5325056	EBV-83	O-ring – 6 per package



REGULATORS

The flush volume of the flex tube diaphragm kit is controlled by the regulator. Regulators are identified by color. Some flex tube diaphragm kits are supplied with multiple regulators. The installer must make sure the proper regulator is used when installing the flex tube diaphragm kit.

REGULATOR (SOLD 6 PER PACKAGE)

Code No.	Part No.	Description	Regulator Color
5325122	EBV-95	Urinal-0.25 gpf/1.0 Lpf	GREEN
5325122	EBV-95	Urinal-0.5 gpf/1.9 Lpf	GREEN
5325122	EBV-95	Urinal-1.0 gpf/3.8 Lpf	GREEN
5325129	EBV-102-2	Urinal-1.5 gpf/5.7 Lpf	BLACK
5325130	EBV-102-1	Urinal-3.5 gpf/13.2 Lpf	WHITE
5325122	EBV-95	Closet-1.28 gpf/4.8 Lpf	GREEN
5325122	EBV-95	Closet-1.6 gpf/6.0 Lpf	GREEN
5325130	EBV-102-1	Closet-3.5 gpf/13.2 Lpf	WHITE
5325128	EBV-101	Closet-2.4 gpf/9.0 Lpf	BLUE

EBV-1020-A and EBV-1022-A are supplied with multiple flush volume regulators.
The installer must use the correct regulator when installing the kit.

ITEM 16A. SLIP JOINT GASKETS AND RINGS

Size	Code No.	Part No.	Description
1-1/2"	**5306058**	F-3	Red Friction Ring
	5322001	VBF-5	Black Slip Joint Gasket
	0319086/5319086	S-30	Flexible Seat
	0319079	S-21	Rigid Seat (rubber over brass)
1-1/2" x 1-1/4"	**0396062**	F-105	Slip Joint Gasket – Rigid
1-1/4"	**5306057**	F-3	Red Friction Ring
	5322176	VBF-5	Black Slip Joint Gasket
	0307052/5307052	G-21	Rigid Seat (rubber over brass)
1"	**5306056**	F-3	Red Friction Ring
	5306115	F-5	Black Slip Joint Gasket
3/4"	**5306055**	F-3	Red Friction Ring
	5306113	F-5	Black Slip Joint Gasket

G2 Optima Plus® Flushometer

SOLENOID REPLACEMENT



Code No.	Part No.	Description
3325453	EBV-136-A	Solenoid operator

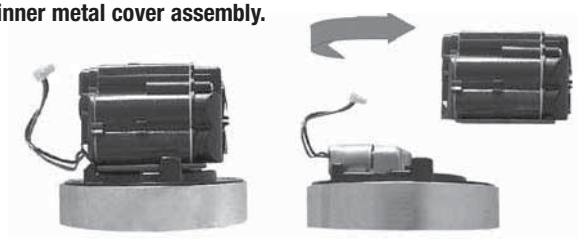
For G2 Optima Plus® modules (identified by a blue module).

1. Turn off water and relieve pressure by loosening Tailpiece coupling and re-tighten. Loosen and remove top screws along with the outer cover assembly.

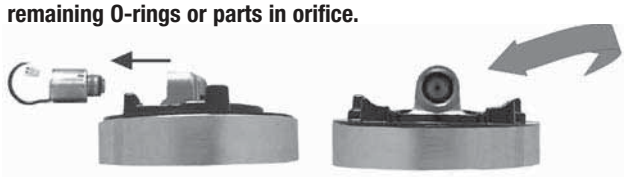




2. Disconnect wire clip from battery door and remove module from inner metal cover assembly.



3. Remove Solenoid by turning counter clockwise. Remove any remaining O-rings or parts in orifice.



Back View

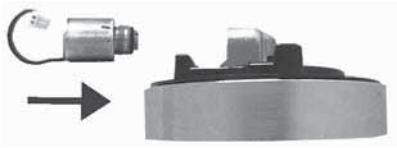
4. Remove black plastic Housing from the threaded end of new Isolated Operator by unscrewing (counterclockwise). It is normal to find fluid inside this housing.



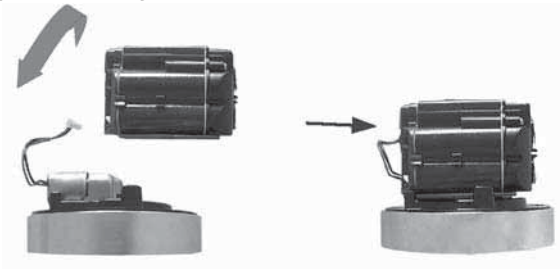


Front View

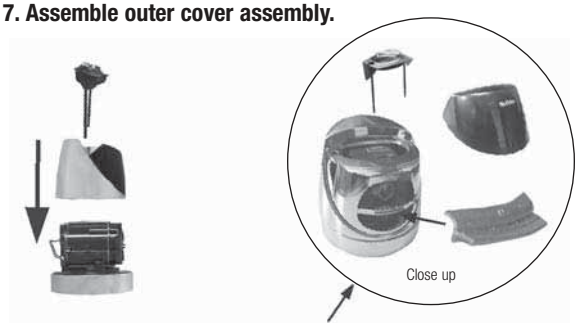
5. Make sure all O-rings (2) are installed on the grey End cap of the new Isolated Operator. Install Isolated Operator by threading it (clockwise) into the Housing. Tighten with fingers beyond just snug.



6. Mount module on inner cover assembly. Reconnect the plastic clip on the battery door.



7. Assemble outer cover assembly.



Note. Verify that rubber insert is installed

8. Turn on water at control stop. Installation complete.



G2 Optima Plus® Flushometer

BATTERY REPLACEMENT

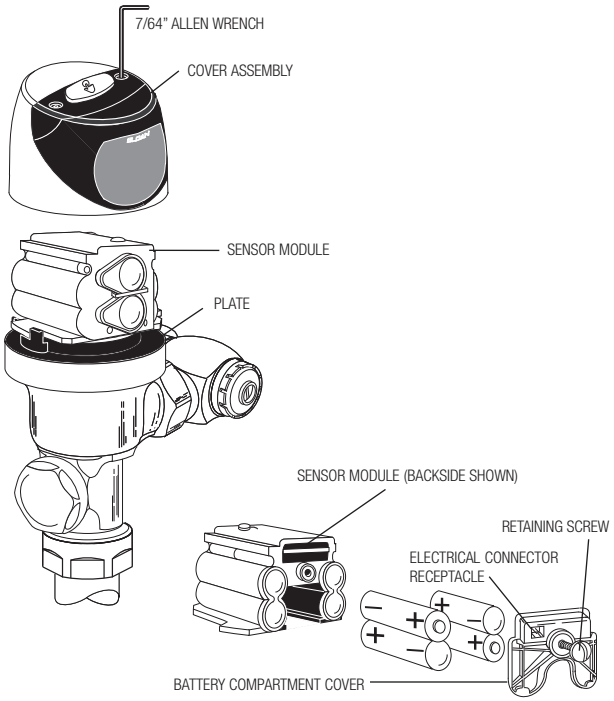
When G2 Optima Plus® has approximately 4,000 flushes left, the same red light that appears at start-up will flash four (4) times quickly whenever an object is detected. When this occurs, we recommend changing the batteries as follows:

When required, replace batteries with four (4) alkaline type AA batteries.

Note: Water does not have to be turned off to replace batteries.

Loosen the two (2) screws on top of unit. Remove the complete cover assembly. Lift the sensor module from its plate. Unplug the electrical connector from battery compartment cover. Loosen the retaining screw on battery compartment cover and remove battery compartment cover. Install four (4) alkaline type AA batteries exactly as illustrated at right.

Install battery compartment cover and secure with retaining screw. Make certain that battery compartment cover is fully compressed against gasket to provide a seal; Do not overtighten. Plug the electrical connector into the battery compartment cover. Reinstall the sensor module onto the plate. Reinstall the complete cover assembly onto the plate. Tighten the two (2) screws on top of the unit.



RANGE ADJUSTMENT (ADJUST ONLY IF NECESSARY)

The G2 Optima Plus has a factory set sensing range:

Water closet models – 22" to 42" (559 mm to 1067 mm)

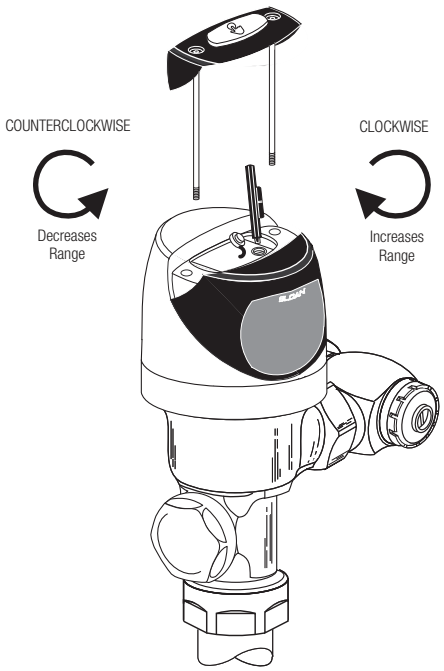
Urinal models – 15" to 30" (381 mm to 762 mm)

The Factory setting should be satisfactory for most installations.

If the range is too short (i.e., not picking up users) or too long (i.e., picking up opposite wall or stall door) the range can be adjusted.

Note: Water does not have to be turned off to adjust range.

Loosen the two screws on top of the unit. Remove the override button. Remove the rubber plug from top of electronic sensor module to uncover the potentiometer.



RANGE ADJUSTMENT PROCEDURE

For the first ten (10) minutes of operation, a visible red light flashes in the sensing window of the G2 Optima Plus flushometer when a user is detected. This visible red light feature can be reactivated after ten (10) minutes by opening and closing the battery compartment door or holding the override button for (1) minute.

Check the range by stepping toward the unit until the red light flashes, indicating the sensor's detection of a user. Adjust the range potentiometer screw located on top of the sensor module a few degrees CLOCKWISE to increase the range or a few degrees COUNTERCLOCKWISE to decrease the range. Repeat this adjustment until the desired range is achieved.

Always determine the sensing range with metal cover and lens window on top of the unit.

Important: Adjust in small increments only! Range potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-rotate.

When range adjustment is satisfactory, replace the rubber plug. Reinstall override button and tighten the two screws on top of the unit.

G2 Optima Plus® Flushometer

TROUBLESHOOTING AND MAINTAINING THE SLOAN G2 OPTIMA PLUS® FLUSHOMETER

IMPORTANT: *This product contains mechanical and/or electrical components that are subject to normal wear. These components should be checked on a regular basis and replaced as needed to maintain the valve's performance.*

Never open Control Stop to where the flow from the valve exceeds the flow capability of the fixture. In the event of a valve failure, the fixture must be able to accommodate a continuous flow from the valve.

ATTENTION INSTALLERS: *With the exception of the control stop inlet, DO NOT USE pipe sealant or plumbing grease on any valve component or coupling! To protect the chrome or special finish of Sloan flushometers, DO NOT USE toothed tools to install or service these valves. Use our A-50 Super-Wrench™ or other smooth-jawed wrench to secure couplings. Regulations for low consumption fixtures (1.6 gpf/6.0 Lpf closets and 1.0 gpf/3.8 Lpf urinals) prohibit use of higher flush volumes.*

1. **Sensor flashes continuously only when user steps within range.**
   - A. Unit in start-up mode; no problem. This feature is active for the first ten (10) minutes of operation.
2. **Valve does not flush; sensor not picking up user.**
   - A. Range too short; increase the range.
3. **Valve does not flush; sensor picking up opposite wall or surface, or only flushes when someone walks by. Red light flashes continuously for first 10 minutes even with no one in front of the sensor.**
   - A. Range too long; shorten range.
4. **Valve does not flush even after adjustment.**
   - A. Range adjustment potentiometer set at full "max" or full "min" setting. Readjust potentiometer away from full "max" or "min" setting.
   - B. Batteries completely used up; replace batteries.
   - C. Problem with electronic sensor module; replace electronic sensor module.
5. **Unit flashes 4 quick times when user steps within range.**
   - A. Batteries low; replace batteries.
6. **Valve does not shut off.**
   - A. By-pass orifice in diaphragm is clogged with dirt or debris, or by-pass is clogged by an invisible gelatinous film due to "over-treated" water. Remove flex tube diaphragm and wash under running water.

     Note: *Size of orifice in the by-pass is of utmost importance for the proper metering of water by the valve.* ***DO NOT ENLARGE OR DAMAGE THIS ORIFICE.*** *Replace flex tube diaphragm if cleaning does not correct the problem.*
   - B. Dirt or debris fouling stem or flex tube diaphragm. Remove flex tube diaphragm and wash under running water.
   - C. O-ring on stem of flex tube diaphragm is damaged or worn. Replace O-ring if necessary.
   - D. Problem with solenoid. If cleaning does not correct problem, replace with new solenoid operator.
7. **Not enough water to fixture.**
   - A. Wrong flush volume regulator installed in flex tube diaphragm kit. Install the correct regulator.
   - B. Wrong Optima Plus® model installed; i.e., 1.0 gpf urinal installed on 3.5 gpf closet fixture. Replace with proper Optima Plus model.
   - C. Enlarged by-pass in diaphragm. Replace flex tube diaphragm.
   - D. Control stop not adjusted properly. Readjust control stop.
   - E. Inadequate volume or pressure at supply. Increase water pressure or supply (flow) to valve. Consult factory for assistance.
8. **Too much water to fixture.**
   - A. Wrong flush volume regulator installed in flex tube diaphragm kit. Install the correct regulator.
   - B. Control stop not adjusted properly. Readjust control stop.
   - C. Wrong Optima Plus model installed; i.e., 3 gpf model installed on 1.0 or 1.5 gpf urinal fixture.
   - D. Dirt in diaphragm by-pass. Clean under running water or replace flex tube diaphragm.

   Note: The EBV-46-A beam deflector is no longer required or available for the G2 Optima Plus.

CARE AND CLEANING INSTRUCTIONS

DO NOT use abrasive or chemical cleaners to clean the G2 Optima Plus, they may dull the luster and attack the plastic cover and the chrome finish of the flushometer. Use **ONLY** mild soap and water, then wipe dry with clean cloth or towel. While cleaning the bathroom tile, the Optima Plus should be protected from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating.

When assistance is required, please contact Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614).