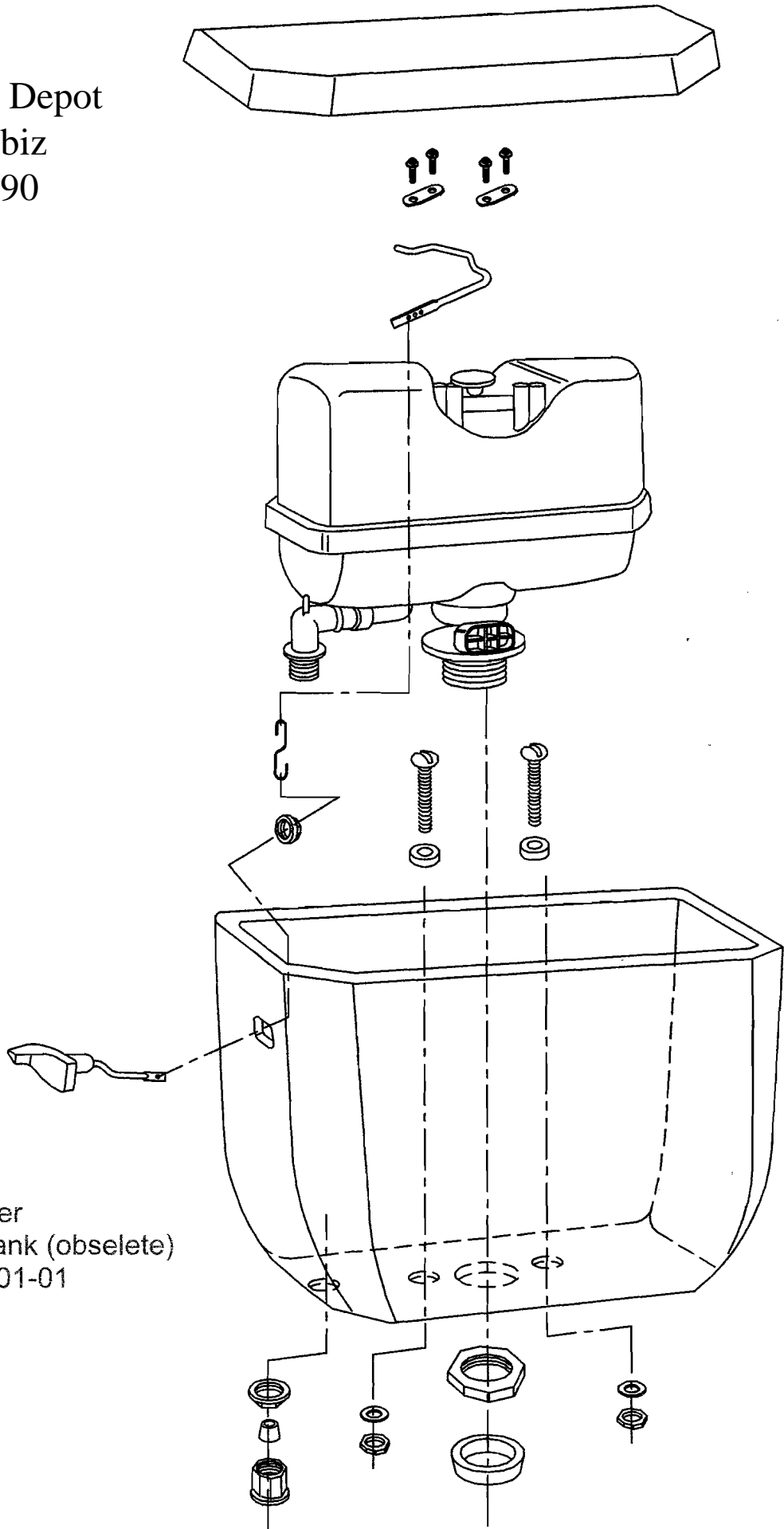


Plumbing Parts Depot

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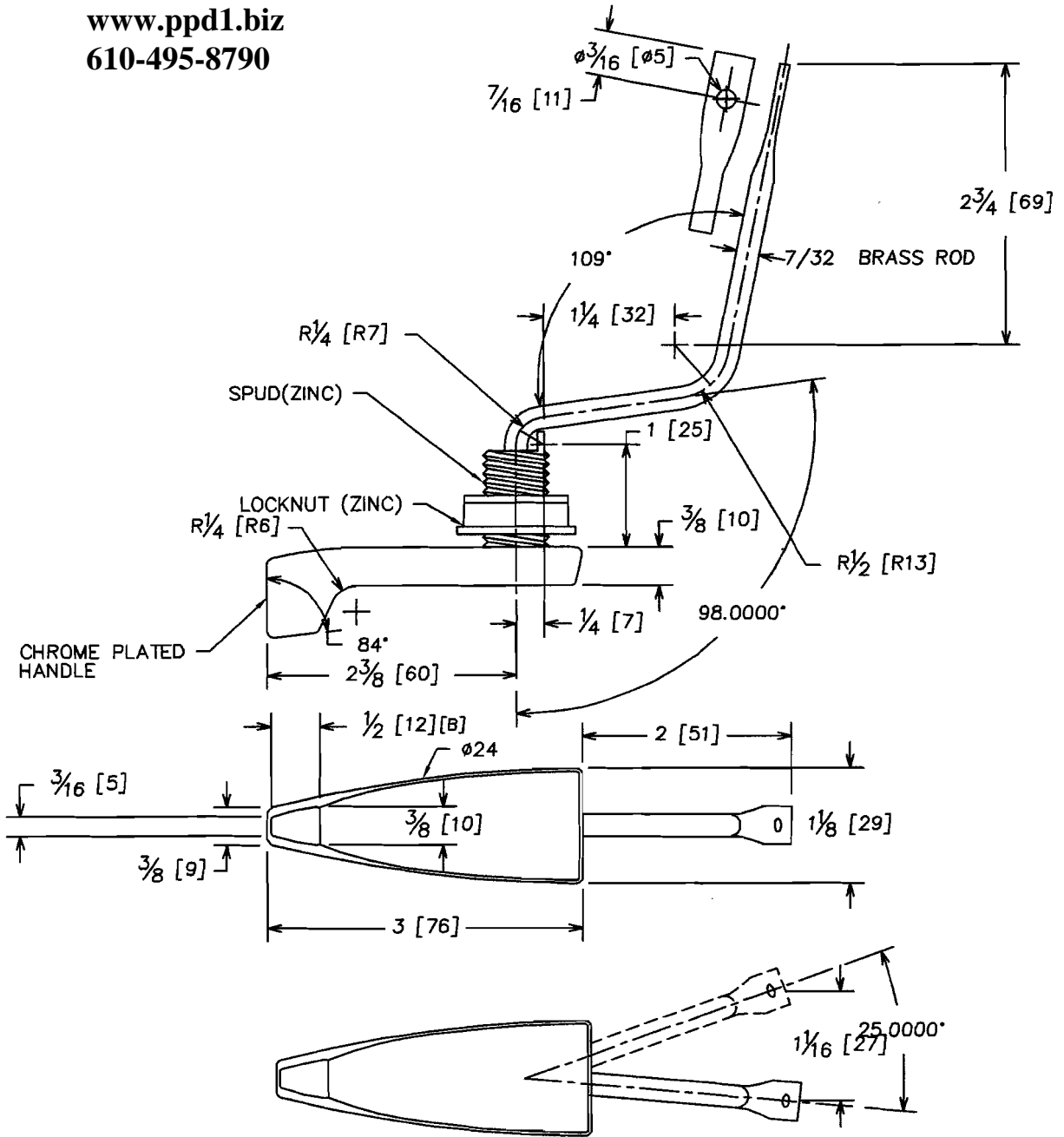
610-495-8790



3612 Economiser
12" Rough-in Tank (obsolete)
05-01-99 to 10-01-01

LETTER
CHANGE

Plumbing Parts Depot
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610-495-8790



- 06-17-00 (D) CHANGED SPUD AND NUT FROM POLYPROPYLENE TO ZINC
- 06-17-99 (C) ADDED 3-612 TO DRAWING DESCRIPTION OLD NO FA-11215
- 10-09-96 (B) DIMENSION CHANGED FROM 1" TO $\frac{1}{2}$ "

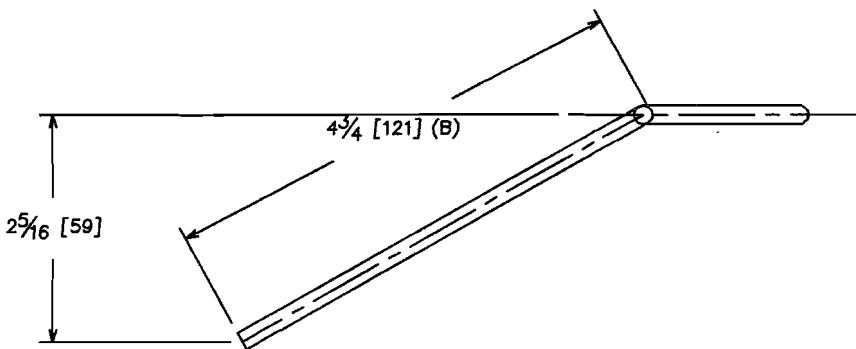
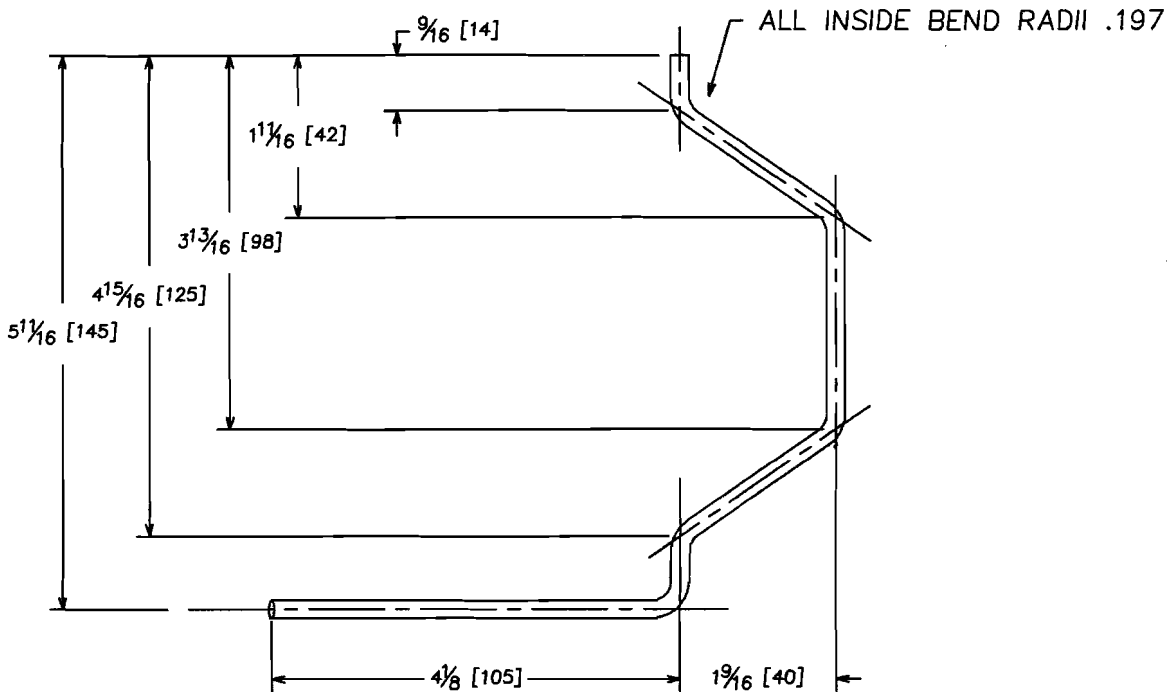
DRAWN Jerry Murray	CHECKED	NOTED	APPROVED
3612, 3616 AND 3617 ECONOMISER TRIP LEVER RIGHT AND LEFT HAND PLAN, FRONT AND LIFT BEAM TRAVEL VIEW			DRAWING NO. P030384
SCALE NTS DATE 01-23-95			Revision No. A
			CRANE PLUMBING CORP.

Plumbing Parts Depot

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610-495-8790

LETTER
CHANGE



(B)

REDEFINED
DIMENSION

DRAWN

Jerry Murray

CHECKED

NOTED

APPROVED

(A)

PRELIMINARY

SAE 302 STAINLESS 1/4 HARD WIRE
TRIP ROD FOR THE 3612, 4442 TANK

DRAWING NO.

P030178

Revision No.

B

SCALE NTS

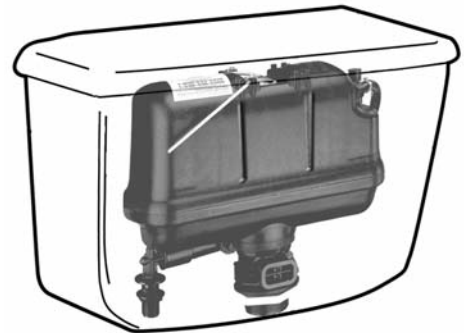
DATE 07-23-01

CRANE PLUMBING
CORP.

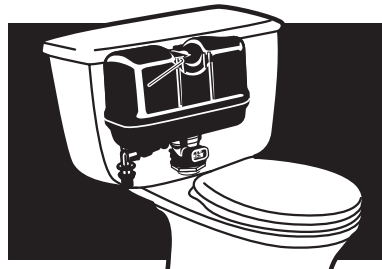
FLUSHMATE[®] **FLUSHOMETER - TANK SYSTEM**



503



504



FLUSHMATE[®]

A Division of Sloan Valve Company
30075 Research Drive • New Hudson, MI 48165
800-533-3460 • 248-446-5300
<http://www.flushmate.com>

FLUSHMATE® 503 AND 504 SERIES



FLUSHMATE® 503

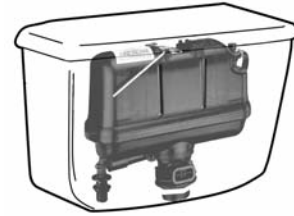
Function: Less than 1.6 gpf/6.0 Lpf

Installation Requirements: min. 20 psi static water pressure*

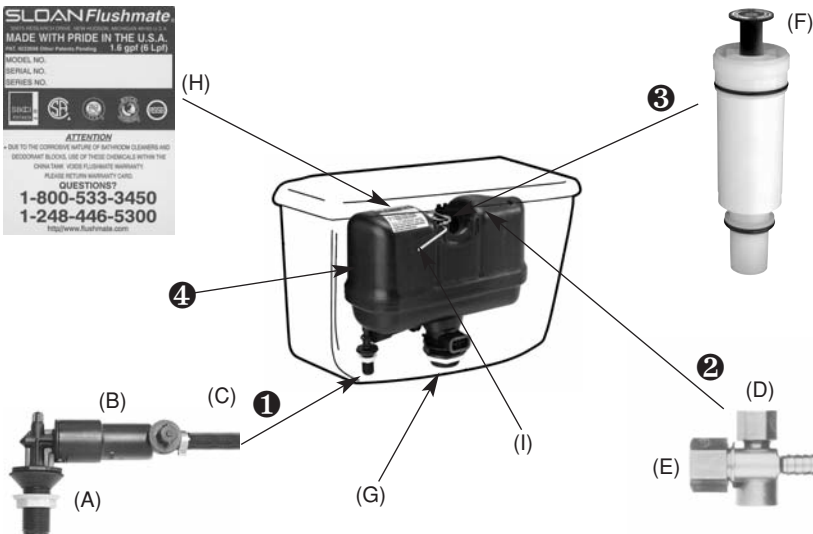
FLUSHMATE® 504

Function: Less than 1.0 gpf/3.8 Lpf

Installation Requirements: min. 25 psi static water pressure*



*max. 125 psi



List of Components for 503 and 504 Series:

1. Lower Supply Group w/Hose BL100504-3

- (A) Supply Shank
- (B) Pressure Regulator w/Back Check
- (C) Relief Valve

2. Upper Supply Group BU100505

- (D) Air Inducer
- (E) Vacuum Breaker

3. Flush Valve Cartridge Assembly C-100500

- (F) Actuator w/setscrew

4. FLUSHMATE® Tank

- (G) Discharge Extension w/Drain
- (H) Name Plate w/Serial Number
- (I) Flush Rod

INSTALLATION

Please follow the toilet manufacturer's installations instruction for installing the fixture. Note that the toilet requires a minimum water supply line pressure of 20 psi for a 1.6 gpf and 25 psi for a 1 gpf fixture. Before attaching, you should always flush the water supply lines.

After completing the installation, you are required to adjust the Cartridge Actuator (F). To adjust, make sure the water is turned on and the vessel is completely charged. The Actuator needs to be set at the proper clearance, 1/8" from either the Flush Rod or push button. To make this adjustment, hold the Actuator while loosening the Phillips setscrew in the center of the Actuator, and rotate the Actuator up (counterclockwise) or down (clockwise) until the proper clearance is obtained. See Figure 1 for clearance required for flush-handle fixture. Tighten setscrew after adjusting the Actuator.

Additional notes:

- Should your toilet continuously run-on after installing, refer to section #1 under Troubleshooting.
- You may be required to initially flush the toilet a few times to properly charge the system.
- Should your fixture develop a leak between the tank and bowl, please refer to the fixture manufacturer's installation instructions.

PLEASE READ THE ENTIRE MANUAL BEFORE ATTEMPTING TO MAKE ANY ADJUSTMENTS OR REPAIRS.

WARNING:

- When replacing components on the *FLUSHMATE*[®] Flushometer-Tank System, make certain that the water supply valve is turned off and the toilet has been flushed to relieve pressure in the *FLUSHMATE*[®] tank.
- USE OF PETROLEUM-BASED LUBRICANTS OR CORROSIVE CLEANING PRODUCTS CONTAINING CHLORINE, SUCH AS HOUSEHOLD BLEACH, DROP-IN BLOCKS OR TABLETS, OR DISINFECTANTS, THAT ARE APPLIED INSIDE THE CHINA HOLDING TANK WILL VOID YOUR *FLUSHMATE*[®] WARRANTY. The exterior of the tank and the entire bowl can be cleaned following the manufacturer's recommendations or in the same fashion as any other toilet.
- *FLUSHMATE*[®] Flushometer-Tank Systems are designed to be used with a cold water supply only and use of a tempered or hot water supply will void your warranty.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

TROUBLESHOOTING

A) Condition: *Water runs and will not shut off*

A run-on condition may be caused by insufficient water pressure, an improperly adjusted Flush Valve Cartridge, or a clogged inlet screen. Refer to "Installation Requirements" for recommended minimum pressure. (See "Points to Remember" for a simple method to determine whether your water pressure is adequate). Check water pressure, marginal pressure can cause any of these conditions. If sufficient water pressure has been verified and the toilet continues to run-on, the following steps may be required:

1. Make sure the water supply valve is fully open.
2. Check the Actuator adjustment. The Flush Rod (I) or push button should not interfere with the Actuator. The proper clearance should be approximately 1/8" when the push button or flush-handle is stationary. On push button type fixtures, loosen the setscrew on the Actuator (see F on the component list) and rotate the Actuator up (counterclockwise) or down (clockwise) until the proper clearance is obtained. For flush-handle fixtures, observe the clearance. (See Figure 1) If necessary, adjust the Actuator to allow for proper clearance. When proper clearance is obtained, tighten the setscrew.
3. Check Inlet Screen
 - a. Turn off the water supply valve.
 - b. Flush the toilet to relieve the pressure.
 - c. Disconnect the water supply line from the Supply Shank (A). (See Figure 6)
 - d. Examine the inlet screen and remove anything that may be blocking the flow of water into the *FLUSHMATE*[®] tank. The inlet screen can be removed by inserting a small pointed object (such as a large paperclip or the blade of a penknife) into the lower Supply Shank and working the inlet screen loose. (See Figures 7a, 7b, 7c) Reinstall the inlet screen by pushing it upward into the Supply Shank with your fingertip. (See Figure 7d)
 - e. Reattach water supply line and fully open water supply valve. Test setup by flushing toilet.
4. Remove, examine, and reinstall the Flush Valve Cartridge (3).
 - a. Turn off the water supply valve and flush the toilet to relieve the pressure.
 - b. On flush-handle fixtures, disengage the Flush Rod from the handle linkage and flip it away from the Flush Valve Cartridge. It is not necessary to loosen the retainer clips. (See Figure 3) Remove the Flush Valve Cartridge using the handles of a pair of pliers. (See Figure 2). Turn the Flush Valve Cartridge counterclockwise until you can lift it out of the *FLUSHMATE*[®] tank.



Figure 6



Figure 7a



Figure 7b



Figure 7c



Figure 7d



Figure 8



Figure 9

- c. Examine the exposed O-rings on the Flush Valve Cartridge for obstruction or damage. If the O-rings are damaged, the Flush Valve Cartridge should be replaced. Clean any debris from the O-ring before re-installing. (See Figure 4)
- d. Insert the Flush Valve Cartridge into the *FLUSHMATE*® tank and thread it clockwise into place until one (1) black thread (on the *FLUSHMATE*® tank) is showing above the Flush Valve Cartridge. (See Figure 5) Fully open the water supply valve and continue to thread the Flush Valve Cartridge clockwise, 1/4 turn at a time, pausing briefly between each 1/4 turn, until the water stops running into the toilet bowl and the *FLUSHMATE*® tank pressurizes.
- e. Test setup by flushing toilet. Reinstall Flush Rod and handle linkage.

B) Condition: Weak, incomplete, sluggish, or no flush

Inadequate water pressure, an improperly adjusted Flush Valve Cartridge, a clogged inlet screen, or insufficient air draw may cause a weak, sluggish, or no flush condition.

1. Make sure that the water supply valve is fully open.
2. Check for proper actuation adjustment, see Condition A-2, “Water runs and will not shut off.”
3. Turn off the water supply valve.
4. Flush the toilet to relieve the pressure.
5. Disconnect the water supply line from the Supply Shank (A). (See Figure 6)
 - a. Examine the inlet screen and remove anything that may be blocking the flow of water into the *FLUSHMATE*® tank. The inlet screen can be removed by inserting a pointed object (such as a large paperclip or the blade of a penknife) into the lower Supply Shank and working the inlet screen loose. (See Figures 7a, 7b, 7c) The inlet screen easily snaps back into position by pushing it upward into the Supply Shank with your fingertip. (See Figure 7d)
6. Examine the Air Inducer (D) for obstruction or damage. (See Figure 8)
 - a. Make sure the water supply valve is turned off and the toilet has been flushed to relieve the pressure.
 - b. Remove the Air Inducer Cap. (See Figure 9)
 - c. Remove the Duckbill Valve from the Air Inducer Cap. (See Figure 10) The flat “lips” of Duckbill Valve should open fully when the square sides are squeezed together. (See Figure 11) Rinse any obstruction or mineral deposits from the Duckbill Valve. If the Duckbill Valve is damaged, it must be replaced.
 - d. Insert the Duckbill Valve into the Air Inducer housing. (See Figure 12)
 - e. Put the Air Inducer Cap back on, and tighten finger-tight only. (See Figure 13)
 - f. Reconnect the water supply line and fully open water supply valve.
7. Check Air Inducer for sufficient air draw. Place a small amount of water (two to three drops) over the hole on top of the Air Inducer Cap (See Figure 14) and flush the toilet. If the Air Inducer is working properly, the water will be drawn in. (See Figure 15)
8. Check the Flush Valve Cartridge for leaks. Pour a small amount of water into the Cartridge housing area. (See Figure 16) If bubbles are coming from the center or the edge of the Flush Valve Cartridge, it should be replaced.



Figure 10



Figure 11



Figure 12



Figure 13



Figure 14



Figure 15



Figure 16

Condition: *Vacuum Breaker Leaking*

If the Vacuum Breaker (E) is leaking, it is likely that the water pressure is insufficient or that there is insufficient flow due to a plugged inlet screen in the lower Supply Shank. The recommended static pressure for the 503 Series is between 20 psi and 125 psi and for the 504 Series between 25 and 125 psi.

Note:

If the trouble-shooting steps listed in this manual do not resolve your problem, contact *FLUSHMATE*® Consumer Services at 800-533-3460 or email info@flushmate.com. Please be prepared to provide the serial number and date of installation of your *FLUSHMATE*® system.

WINTERIZING

1. Turn off the water supply valve and flush the toilet to relieve the pressure.
2. Place a bucket under the lower Supply Shank (A) and disconnect the water supply line, allowing the water to drain into the bucket.
3. Push down on the Actuator and pull it up momentarily to allow air into the vessel.
4. Follow the fixture manufacturer's instructions for winterizing the bowl.
5. Do not put antifreeze or any other chemical agents in the china holding tank or in the *FLUSHMATE*® Tank.

POINTS TO REMEMBER

- When replacing components on the *FLUSHMATE*® Flushometer-Tank System, make certain that the water supply valve is turned off and the toilet has been flushed to relieve pressure in the *FLUSHMATE*® tank.
- **USE OF PETROLEUM-BASED LUBRICANTS OR CORROSIVE CLEANING PRODUCTS CONTAINING CHLORINE, SUCH AS HOUSEHOLD BLEACH, DROP-IN BLOCKS OR TABLETS, OR DISINFECTANTS THAT ARE APPLIED INSIDE THE CHINA HOLDING TANK WILL VOID YOUR *FLUSHMATE*® WARRANTY.**
- *FLUSHMATE*® Flushometer-Tank Systems are designed to be used with cold water.
- The Flush Valve Cartridge can be removed by inserting the handles of a pair of pliers into the top of the Flush Valve Cartridge and turning counterclockwise.
- A small amount of water may be present in the bottom of the china holding tank. The potential for odor can be eliminated by adding a cup of white vinegar to the china holding tank. The white vinegar will act as natural disinfectant.
- Your water pressure is adequate if your water supply line will yield one or more gallons of water within thirty (30) seconds.
- Replacement parts are readily available by contacting Consumer Services at 800-533-3460 or by visiting the "Where to Buy" section of our website, www.flushmate.com, or purchase online at www.eflushmate.com.

If you would like additional information or require technical assistance, please contact *FLUSHMATE*® Consumer Services at 800-533-3460, or visit our website, www.flushmate.com. For faster service, please be prepared to provide the serial number and date of installation of your *FLUSHMATE*® system.

ATTENTION OWNER
THESE ARE THE TERMS OF YOUR WARRANTY

Effective August 15, 2004, Sloan *FLUSHMATE*[®] (the “Company”) warrants the *FLUSHMATE*[®] (flushometer tank) operating system (the “unit”) to be free of defects in material and workmanship for a period of ten (10) years from the date of installation on original components and includes a lifetime limited warranty on the *FLUSHMATE*[®] tank. The Company promises to replace any part of this product that proves, upon our inspection and within ten (10) years from date of installation, to be defective in material or workmanship. All labor and transportation costs or charges incidental to warranty service are to be borne by the purchaser-user.

This warranty is subject to the following:

Specific Conditions to Warranty

1. A warranty registration card has been fully completed and mailed by the purchaser (the “user”) to the Company within thirty (30) days of the date of installation. Product may also be registered online at www.flushmate.com or by calling 800-533-3460.
2. The unit has been subject to proper installation, operation and maintenance as outlined in the installation instructions that were supplied with the unit. Note carefully that this warranty is voided if the unit is installed and operated subject to water supply line pressures greater than 125 psi (static) or less than 20 psi (static) for the Series 503 or less than 25 psi (static) for the Series 504.
3. Service and repairs may only be performed by authorized representatives of the Company or by others upon specific approval by the Company. Unauthorized repairs or alterations shall specifically void the warranty.
4. USE OF PETROLEUM-BASED LUBRICANTS OR CORROSIVE CLEANING PRODUCTS CONTAINING CHLORINE, SUCH AS HOUSEHOLD BLEACH, DROP-IN BLOCKS OR TABLETS, OR DISINFECTANTS THAT ARE APPLIED INSIDE THE CHINA HOLDING TANK WILL VOID YOUR *FLUSHMATE*[®] WARRANTY.
5. Proof of purchase is required.
6. *FLUSHMATE*[®] systems manufactured prior to August 15, 2004 have a shorter warranty period based on the serial number. Call *FLUSHMATE*[®] to verify.

Exclusions

IN NO EVENT SHALL THE COMPANY BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, FOR DAMAGES RESULTING FROM IMPROPER INSTALLATION, OR FOR DAMAGES CAUSED BY NEGLIGENCE, ABUSE OR ALTERATION. THE USE OF GENERIC, “KNOCK-OFF” REPLACEMENT PARTS WILL VOID OWNERS WARRANTY. ALL IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE LIMITED TO A PERIOD OF TEN (10) YEARS FROM DATE OF INSTALLATION.

Some states do not allow limitations on the duration of an implied warranty and some states do not allow exclusions or limitations regarding incidental or consequential damages so the above limitations may not apply to you. This warranty gives you specific legal rights and you may have other rights, which vary from state to state.

No person is authorized to change, add to, or create any warranty or obligation other than that set forth herein.

To obtain warranty service, contact Consumer Services toll free (USA & CANADA) 800-533-3460 or write to us at:

FLUSHMATE[®]
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30075 Research Drive • New Hudson, MI 48165
800-533-3460 • 248-446-5300
<http://www.flushmate.com>

Installation Date _____

Serial Number _____