

Microflush Half Gallon Toilets

Model LF-229 12 Volt DC Operated



Installation/Service Manual P/N 24198



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24198.WPD
10/16/01

Installation

Refer to Rough-In Dimensions

Note: This toilet is a drop-thru unit. No horizontal waste line runs may be utilized. Contact the factory for specific application data.

Mounting Toilet

Note: Toilet seat must be installed before mounting toilet to wall.

Turn toilet upside-down and place enclosed Wax

Ring (P/N 27208) or optional Odor Shut-er, P/N 40052-3, onto the bottom mounting flange of the toilet hopper. Carefully turn toilet right-side up and place over the center of a standard floor discharge flange. Press toilet down firmly and evenly to form a seal between the wax ring and the floor flange. Mount the toilet to the floor with the two Closet Screws and install Bolt Caps over the closet screws (both provided).

Base of Vacuum Breaker must be mounted 6" above rim of toilet

Electrical Connection

See Rough-In Dimensions and Layout.

Connect 12 volt DC power source to the insulated .25" spade connector near the Timer and Thermal Circuit Breaker: red wire to positive (+), black wire to negative (-).

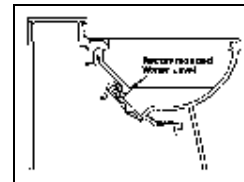
Water Connection

See Rough-In Dimensions.

Connect fresh water from an angle stop to the 1/2" threaded water supply connection installing Filter Screen (P/N 29146). Take care not to cross the threads. **Incoming water pressure must be between 20-50 psi, with a minimum flow rate of 2.5 GPM at the toilet. Ideal water pressure is 35 psi at the toilet.** Be sure water lines are free of debris before connecting water supply to toilet. Water supply to the toilet is to be 1/2" OD plumbed directly to the toilet. Do not install filter(s) in the toilet water supply line.

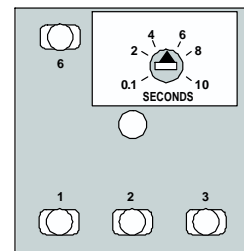
Water Level

The normal water level is factory pre-set to the top of the Flapper.



Water Level Adjustment

Locate the timer on the bracket under the china lid. Turn Timer adjustment knob clockwise to increase water level, and counterclockwise to decrease. Do not turn past stops.



Grfc:Timer

Seat Installation

Place the seat over the bowl opening, so that the mounting hinges on the seat align with the two holes in the bowl just behind the bowl opening. Insert the two seat mounting screws provided with the seat into the hinges' holes and mounting holes in the bowl, from the top. Install washers and mounting nuts provided with the seat, from underneath, and tighten firmly. Install screw head cover tabs or other hardware provided with the seat, per seat manufacturer's instructions.

Maintenance

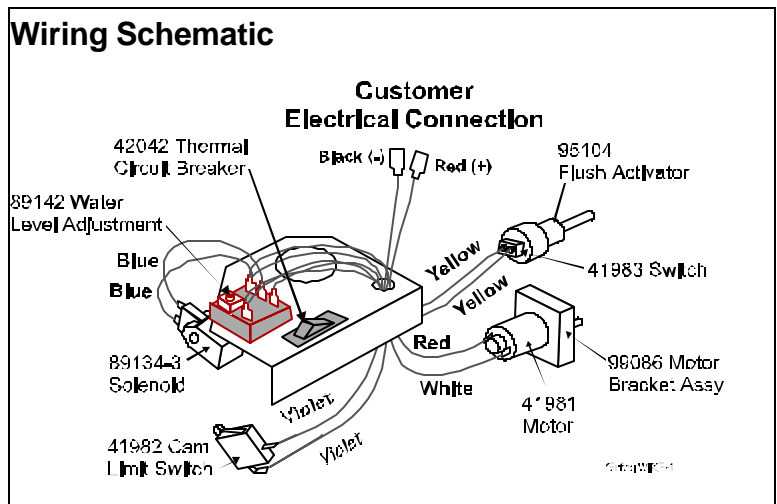
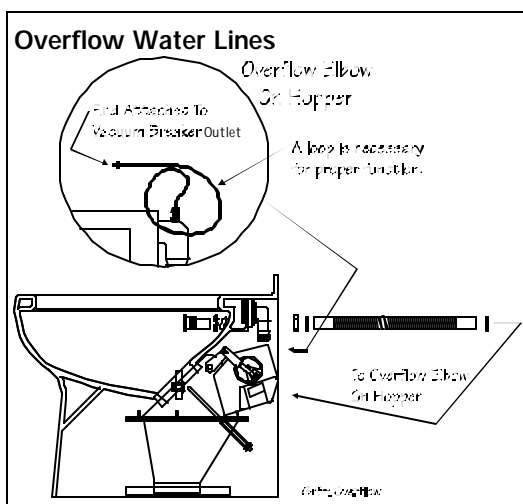
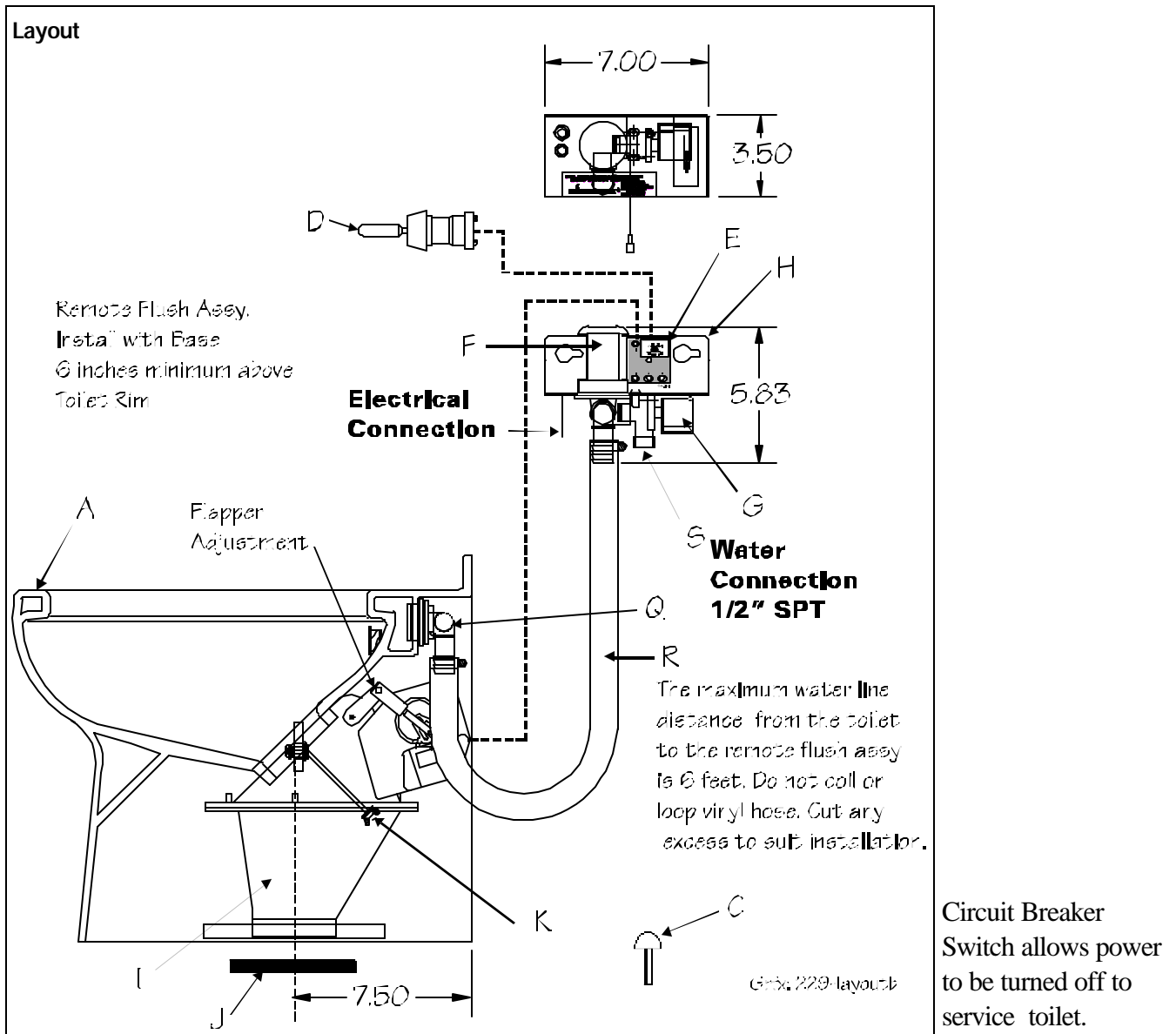
If the toilet is to be out of service for a period of time, spray 100% silicone on the flapper seal when the flapper is open to prevent it from becoming dry.

Winterizing

Shut OFF water to toilet. Flush toilet three times or until water no longer flows into the bowl. Unhook water supply at angle stop. Empty water in line into receptacle.

Ordering and Factory Assistance

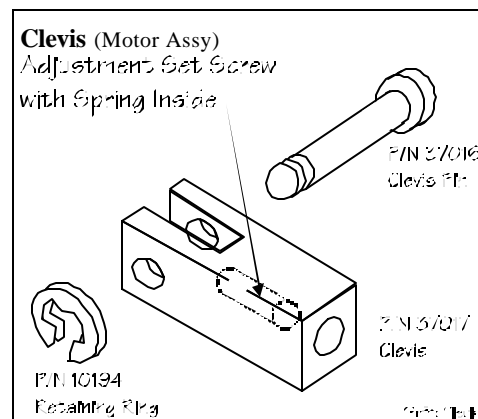
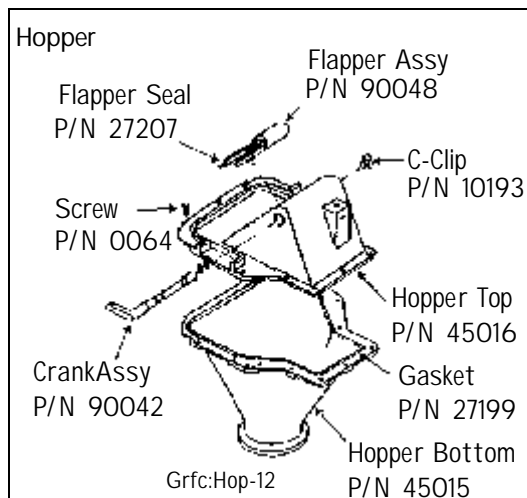
For assistance with procedures not covered in this manual, or to order spare or replacement parts, please call toll-free 800-358-8280, 8:00am-5:00pm PST, and ask for Commercial Products Division Customer Service.



PARTS CHART

	PART	P/N	
A	Bowl - state color	Call	
C	Mounting Bolts - state color	Call	
D	Flush Activator	Complete Assy	95104
		Switch	41983
		Mounting Nut, Chrome	00098
		O-Ring	27232
E	Timer Assembly <i>see Wiring Schematic</i>	Timer	89142 *
		Thermal Circuit Breaker Switch	42042
F	Vacuum Breaker Assembly	<i>see Vacuum Breaker Service</i>	33540
G	Solenoid Valve Assembly	<i>see Solenoid Valve Cleaning</i>	89134-3
H	Mounting Bracket		20134
I	Hopper Assembly <i>see Hopper drawing</i> <i>see Flapper Adjustment</i>	Hopper Assy without Motor	90056
		Hopper Assy with Motor Assy	90028-3
	Motor Assembly <i>see Flapper Adjustment</i> <i>see Clevis exploded view</i> <i>see Wiring Schematic</i>	Motor	41981
		Cam with Set Screw	91865 *
		Motor with Bracket Assy	99086
		Limit Switch	41982 *
J	Floor Seal	Wax Ring	27208
		Odor Shut-er	40052-3
K	Hopper Mounting Assembly (J-Bolts)		90899-3
Q	Spud Assy	Complete Assy	95155
		O-Ring	27224
R	Water Supply Tube	Complete Assy	34584
S	Water Filter Screen		92060
K I T S	Flapper Replacement Kit		90066-3 *
	Hopper Adapter Kit		24770-3
	Solenoid Valve Service Kit		40037 *
	Vacuum Breaker Service Kit		95037 *
	Silicone Lubricant		26856
	Master Service Kit		94175

* Items shown with asterisk are in Master Service Kit, P/N 94175.



Service Procedures

Before performing any service procedures, turn off water and electrical power to toilet.

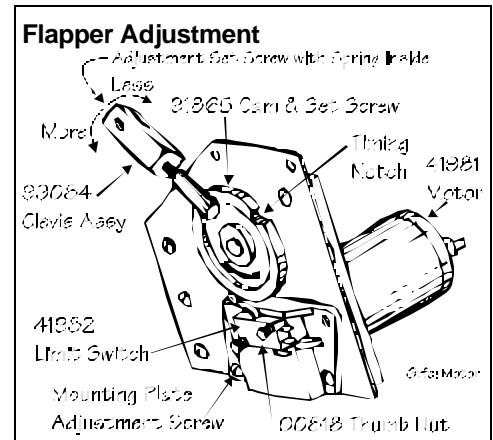
Flapper Adjustment

Flapper Replacement Kit, P/N 90066-3

- 1 Remove toilet from floor. Locate flapper operating linkage on the side of the hopper.
- 2 Remove the clevis pin retaining ring. Remove clevis pin.
- 3 Adjust as necessary by turning the 3/8" set screw inside the clevis as required, then replace the clevis pin and retaining ring. Turn clockwise to increase flapper seal tension, counterclockwise to decrease. Inspect the crank arm, clevis and clevis pin for wear; replace if required. Do not turn bolt more than three (3) complete turns.

To Change Flapper Gasket

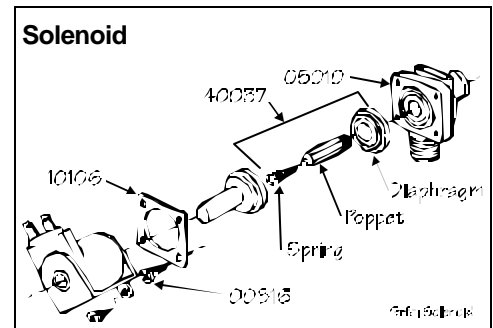
- 1 Turn water and air off.
- 2 Reach behind flapper to grasp gasket tails.
- 3 Pull tails out of slots to remove old gasket.
- 4 Installation is the reverse of removal.
- 5 Tails must be pulled all the way through to insure smooth surface.



Solenoid Valve Cleaning

Solenoid Service Kit, P/N 40037

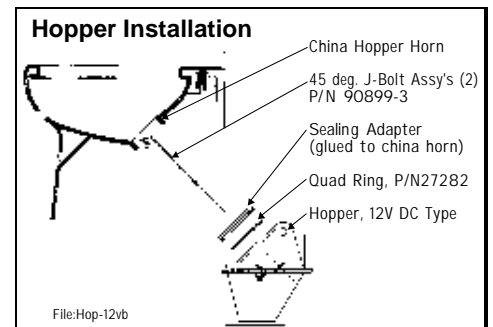
- 1 Disconnect the power by removing the two blue wires from the solenoid.
- 2 Disconnect the water supply line at china end.
- 3 Remove two screws securing the solenoid to the mounting bracket.
- 4 Pull solenoid away from the Vacuum Breaker.
- 5 Remove water supply tube.
- 6 Remove four (4) screws from Solenoid Valve Body and remove spring and diaphragm.
- 7 Clean holes in the diaphragm if clogged. Inspect solenoid for debris and clean. Reassemble in reverse order.



Hopper Removal and Resealing

Hopper Replacement Kit, P/N 24770-3

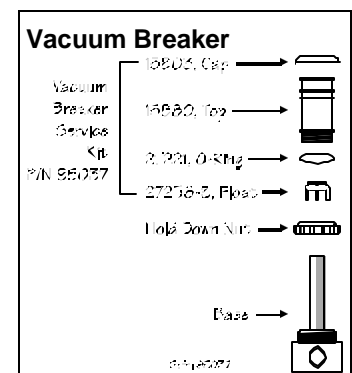
- 1 Remove toilet from the floor. Place toilet upside down on a sheet of cardboard or other padded material.
- 2 Remove J-bolts nuts from hopper sides - lift the hopper off.
- 3 Remove quad ring between hopper and seal adaptor. Check that the quad ring is not damaged, replace quad ring if necessary.
- 4 Reassemble in reverse order.



Vacuum Breaker Service

Vacuum Breaker Service Kit, P/N 95037

- 1 If water is visible at the top of the vacuum breaker during operation, apply some silicone lubricant to the underside of the white float and to the O-Ring located at the upper end of the body.
- 2 To disassemble the vacuum breaker, remove the snap-on cap and unscrew body from the bracket. The white float inside can now be removed.
- 3 No service procedures are required for the lower portion of the vacuum breaker.



Troubleshooting Guide

Problems	Cause	Remedy
Water drains from bowl	Nicks or obstructions on Flapper seat.	Replace Flapper, Service Kit P/N 90066-3
	Insufficient Flapper tension	See Flapper Adjustment
	Flapper seal worn or damaged.	Replace Flapper - Kit 90066-3
Water level too high.	Water level control out of adjustment.	Turn Level Adjustment 1/8 turn at a time to raise or lower water level; Clockwise to raise, Counterclockwise to lower.
	Fluctuating water pressure	Regulate water pressure.
	Timer malfunction.	Replace Timer - Reference Timer Drawing
Water continues to run.	Obstruction in water Solenoid Valve.	Remove and inspect Solenoid Valve - see Solenoid Valve Cleaning
Toilet continues to cycle after initial flush cycle is complete - or only partially cycles.	A cracked cam.	Replace Cam - reference Flapper Adjustment Drawing
	Defective Cam Switch; switch out of adjustment.	Adjust or replace Cam Switch - reference Flapper Adjustment Drawing
	Defective Timer	Disconnect either purple wire at limit switch. If toilet continues to cycle, the timer is defective. If the toilet stops cycling, the limit switch either is not adjusted properly or is faulty.
Water leaking on floor.	The hopper has been jarred loose from the bowl.	Reseal Hopper - see Hopper Removal/Reseal
	Defective wax ring at toilet to floor connection.	Replace the wax ring.
	Loose water supply connection at toilet.	Disconnect water line to toilet, add Teflon tape to threads, reconnect.
No water.	Water turned off.	Turn water on.
	Water inlet filter screen clogged.	Clean water inlet filter screen.
	No power to valve.	Check for DC power at Solenoid Valve during flush cycle.
	Defective Timer.	Check Timer operation - replace if necessary.
Toilet doesn't activate.	No power.	Restore power.
	Tripped Circuit Breaker.	Reset Circuit Breaker Switch. Determine cause of tripped breaker if possible before operating toilet.
	Disconnected wires.	Check all wiring connections.
Water is visible at Vacuum Breaker when flushed.	Insufficient lubrication; Worn vacuum breaker seal.	Service Vacuum Breaker, Kit P/N 95037.

If you have any questions or need assistance, call: (800) 358-8280.

Changes in Design

Continuing a policy of research and development, Microphor reserves the right of price, product, or design change without notice or obligation.