

# Model HF Series Marine Toilets

## Installation, Operation, and Maintenance

**Installation:** Fasten the HF toilet base to the floor with 1/4" or larger stainless steel bolts and flat washers.

**Plumbing Connections:** Connect 3/4" ID hose to the inlet fitting on the pump (the fitting that points diagonally downward). The inlet line must not be shared with the water supply or drain for any other accessory.

To the pump discharge connect 1-1/2" ID hose that is intended for use with raw sewage.

Double clamp both hose connections to assure efficient pumping and leak-free operation.

**Vented Loops:** The proper use of vacuum breakers (Vented Loops) is essential for safe efficient operation. Use a 1-1/2" Vented Loop (GROCO HVL-1500) between the HF toilet and the holding tank, treatment system,

or overboard discharge seacock. The Vented Loop should be 12" or higher above the outside waterline. The relation between the outside waterline and the internal toilet plumbing will change with vessel movement, especially with sailboat installations.

**Overboard Discharge:** It is illegal to discharge untreated waste directly overboard. Consult local regulations governing overboard discharge. Restrictions will vary with geographic location.

**Operation:** To flush open the valve (vertical) on the right side of the pump. This allows raw water to be drawn into the toilet pump. Pump the T-Handle up and down until the waste is removed.

Apply additional pump strokes to allow the vented loop and connected plumbing lines to be flushed clear.



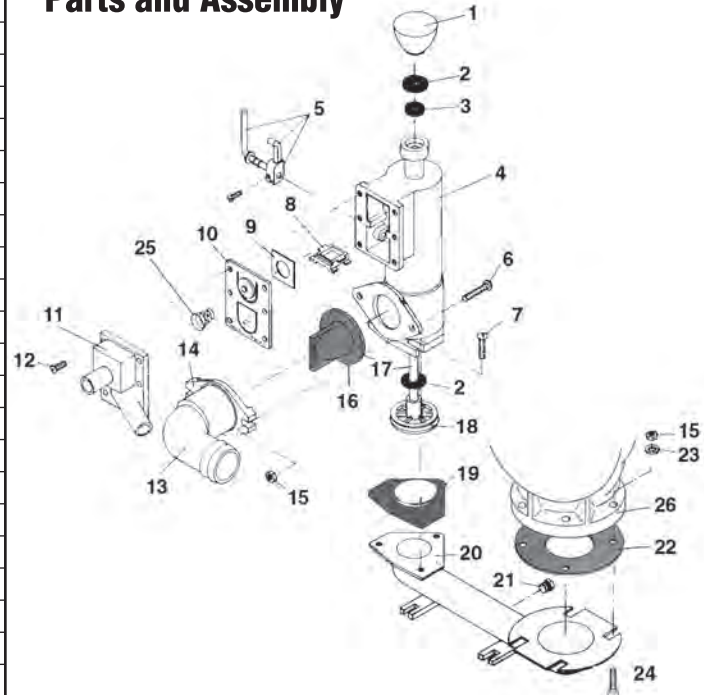
Close the valve handle (horizontal) when flushing is complete. You will hear the valve "click" closed.

**Warning:** Failure to close the valve could flood the toilet.

**Dry Bowl Feature:** Flushing liquid waste can be accomplished without opening the valve. With the valve closed (horizontal) pump the T-Handle until the liquid is flushed clear

Item	Part Number	Description	Qty	HF Regular Kit	HF Master Kit
1	HT-1085	T-Handle	1		
2	RG-3037-A	Washer	2		
3	037-075-8	Seal	1	x	x
4	HF-C	Cylinder	1		
5	HF-20	Cam Assembly	1		
6	1420X114HS	Screw	2		
7	1420X34RB	Screw	3		
8	HF-28	Bridge	1		
9	HC-5	Check Plate	1	x	x
10	HF-1	Gasket & Spring	1	x	x
11	HC-2-A	Valve Cover	1		
12	1032X58HS	Screw	6		
13	HA-1	Discharge, 90-degree	1		
14	HA-11	Discharge Bracket	1		
15	1420HS	Hex Nut	6		
16	H-27-A	Joker Valve	1	x	x
17	HF-21	Shaft	1		
18	HF-10	Piston & Ring Assembly	1		x
19	HE-8	Gasket	1	x	x
20	HF-22-B	Base, bronze	1		
21	1827HB	Drain Plug	1		
22	H-6	Gasket	1		x
23	16S	Washer	4		
24	1420X2HB	Bolts	4		
25	HF-26	Spring	1		
26	4967	Bowl	1		

### Parts and Assembly



## **Model HF-B Marine Toilet (100-0001-00) Assembly Instructions**

### **Tools Required:**

\*Flat-blade screwdriver

\*1-1/4" Socket Wrench or Adjustable Wrench that will adjust to at least 1-1/4"

### **Step-1: Attach Pump to Base**

Place the bronze base on your work surface with the drain plug facing you. Place triangular HE-8 gasket (plastic weight up) onto triangular pad on base. Place pump assembly onto base with valve on the right and hose connections facing away from you, and fasten to base with (3) 1/4-20 x 3/4 Round Head Slotted Screws.

### **Step-2: Install Bowl Spud**

Place bowl upside-down on a flat surface, and insert the spud assembly into the hole in the back of the bowl.

While holding the spud against the back of the bowl, tighten the hex nut by as much as possible by hand. Then use a 1-1/4" socket or an adjustable wrench to tighten the hex nut, which expands the rubber washer to seal against the inside of the hole in the bowl. **DO NOT OVERTIGHTEN THE HEX NUT - THE CERAMIC BOWL MAY CRACK.**

### **Step-3: Install the Bowl**

Place the bowl on the base with the bowl spud facing away from you. Insert (4) 1/4-20 x 2" stainless steel hex bolts through the base and the bowl (from the bottom up). Load a plastic flat washer and a hex nut onto each bowl and hand-tighten only. Screw the gray PVC 90-degree elbow onto the bowl spud by hand so that it points toward the pump. Hand-tight is enough to seal this connection.

### **Step-4: Connect the Water Hose**

Install the clear water hose between the bowl elbow and the top connection that protrudes straight out from the back of the pump. Align the bowl on the base, and tighten the bowl fasteners. **DO NOT OVERTIGHTEN THE BOWL FASTENERS - THE CERAMIC BOWL MAY CRACK.**

### **Step-5: Install the Seat & Cover**

Install the seat and cover with the plastic mount hardware that is included.

Tools needed :

Flat blade screwdriver

5/16 nut driver or socket wrench

7/16 wrenches (2)

1. Close inlet and discharge seacocks.
2. Disconnect the inlet water hose, the pump-to-bowl hose and the discharge fitting from the pump.
3. Remove the three screws from the pump base and remove pump.(Three round head, flat blade screws)
4. Make a note of the orientation of the flapper gasket (HE-8).
5. Remove the cover from the rear of the pump. (Six screws,5/16 nut driver)
6. Remove the gasket and spring (HF-1) and Check Plate ( HC-5).
7. Inspect the Cam assy (HF-20) for wear, cracks and function. Check the finger for cracks at the joint. Rotate the handle to the "Dry" position. Press on the back of the finger to check for "Spongy" feel. If spongy, remove, inspect and replace as needed.
8. Install Bridge (HF-28) into center of chamber to support the gasket. Note: Some cylinders will have this already installed and can be left in place.
9. Install new HC-5 in upper chamber, flush with cylinder. This part must remain in position for a good seal to the gasket.
10. Install the new HF-1 gasket with the weighted part down, facing the pump cylinder. Note: Screw pattern only allows this to be installed one way!
11. Install the spring to the gasket flap. The small end of the spring attaches by friction to the center of the flap.
12. Polish the sealing surface of the cover with a fine grit emery paper to ensure a smooth surface. Clean any grit/debris from the cover before installing.
13. Insert and start the six screws holding the cover in place. When all six are started, snug them down to ensure a good seal. Do not over tighten the screws as this will distort the gasket and not allow the pump to prime.
14. Test the unit by rotating the selector handle to the full travel several times. This will set and break-in the gasket.
15. Install a temporary hose to the water inlet fitting, place opposite end into a bucket of water and test the prime function. The unit should draw water after 2-3 pumps. If not, check and repeat steps 7-12. Remove temporary hose when finished.
16. Install the joker valve (H-27-A) with the 'slit' parallel to the pump cylinder, (see the exploded parts view).
17. Install the Discharge elbow over the joker valve and secure the two bolts. Do not over tighten.
18. Place the new HE-8 gasket onto the base. The weight must face up. Mount the pump to the base with the three screws from step-3. Do not over tighten these screws or the cylinder may crack.
19. Re-install the pump-to-bowl hose, the water inlet hose and secure all hose clamps that may have been loosened.
20. Open both inlet and discharge seacocks.
21. Test for proper operation.