

**To Replace the Pump Diaphragm:**

- \* Always close the inlet seacock and the discharge seacock when working below the waterline.
- \* Remove the bowl and bowl gasket.
- \* Remove seven (7) screws holding top and bottom pump castings together, and remove the top casting.
- \* Remove the check ball (Item-17) and the screw (Item-18) that secures the diaphragm washer.

While the pump mechanism is exposed, check the tightness of the pump shaft key-ways by holding the bronze diaphragm yoke assembly (Item-21) down securely by hand and attempt to actuate the pump handle. Any movement of the handle indicates key-way wear; replacement of HT-6566 shaft (Item-36 through 38) is recommended at this time.

- \* Place the new diaphragm on the base casting, and place the check ball on the hole in the diaphragm; secure the diaphragm.
- \* Place the top casting on the diaphragm and start the seven screws. Tighten equally. Do not over-tighten as this will deform the diaphragm and may prevent proper operation.
- \* Replace bowl gasket and bowl. Take care not to over-tighten the bowl bolts.

**To Replace Shaft Seals and Bearings:**

- \* Always close the inlet seacock and the discharge seacock when working below the waterline.
- \* Remove the bowl and bowl gasket.
- \* Remove seven screws holding top and bottom pump castings together and remove the top casting.
- \* Remove the check ball and the screw that secures the diaphragm washer.
- \* Remove the inlet casting (Item-26) and gaskets (Items 27 and 28).
- \* Loosen cam set screw (Item-29) and withdraw foot-pedal (Item 34).
- \* Remove seal (Item-33) and bearing (Item-32) from the foot-pedal socket.
- \* Loosen the bolt (Item-23) that secures the diaphragm yoke assembly to the pump shaft; withdraw the pump-shaft (Items 36 through 38). Note that the 1/8" x 1/8" square key must remain in the key-way in Item-22 for re-assembly.
- \* Remove seal (Item-33) and plastic bearing (Item-32) from the outside, and plastic bearing (Item-32) from the inside of the operating socket.
- \* Insert one new plastic bearing from the inside and one from the outside into the operating arm socket.
- \* Insert one new rubber seal from the outside of the operating arm socket (the small hole of the rubber seal faces in).
- \* Grease the tip of the pump shaft and insert with a twisting motion. Take care to keep the 1/8" x 1/8" square key in place while the shaft is inserted into the diaphragm yoke. It may help to hold the key in place with the tip of a screwdriver. Tighten bolt #23.
- \* Insert one new plastic bearing and one new rubber seal from the outside of the foot-pedal socket (the small hole of the rubber seal faces in).
- \* Grease the tip of the foot-pedal shaft and insert with a twisting motion. Shaft (Item-34) passes through cam (Item-30). Note that the shaft has an indent for cam set screw (Item-29).
- \* Replace inlet gaskets and casting. The weighted rubber gasket goes against the base casting (hinge at the top and weight facing in), and the clear plastic gasket goes against the rubber gasket (hinge at the top). Tighten the four screws only enough to seal the gaskets. Over-tightening will prevent proper operation.

**To Replace Spring and Flap Gasket:**

- \* Always close the inlet seacock and the discharge seacock when working below the waterline.
- \* Remove the bowl and bowl gasket.
- \* Remove seven (7) screws holding top and bottom pump castings together, and remove the top casting.
- \* On the under side of the top pump casting is the spring assembly (Items-13 through 16) and flap gasket (Item-11 through 12). Remove the old parts.
- \* Remove the zinc packing nut on the spring assembly. Insert the screw through the copper washer in the gasket and into the threaded hole in the top casting. Assure that the spring "finger" passes through the "eye" of the plastic weight of the flap gasket. Tighten (do not over-tighten) the screw taking care to keep the flap centered over the large hole in the top casting.
- \* Place the top casting on the diaphragm and start the seven screws. Tighten equally. Do not over-tighten as this will deform the diaphragm and may prevent proper operation.
- \* Replace bowl gasket and bowl. Take care not to over-tighten the bowl bolts.

**TO REPLACE PUMP SHAFT AND FOOTPEDAL  
SEALS AND BEARINGS in EA.-EB TOILETS**

First, follow steps A-1, A-2, and A-3.

**We recommend installing a new pump shaft (HT-6566) when the diaphragm is replaced or every 5 years.**

- C-4 Remove inlet casting and gaskets. Loosen the cam set screw and withdraw the footpedal.
- C-5 Loosen hex bolt which holds "crank" casting around pump shaft. Withdraw pump shaft.
- C-6 Remove sleeve bearings (2) and rubber seal (1) from pump shaft hole, and sleeve bearing (1) and rubber seal (1) from footpedal hole.
- C-7 For pump shaft hole:
  - a) Two (2) gray sleeve bearings are required. Place one into shaft hole from inside of base casting, and place one into shaft hole from outside of base casting.
  - b) Grease inside of seal hole and press rubber seal into hole with taper facing inside of toilet.
  - c) Grease tip of pump shaft and work gently through seal and bearings with a constant twisting motion. Shaft should go through the "crank" casting with the keys in place. The tip of a screw driver will help keep the square key in place in the "crank". Tighten hex bolt.
- C-8 For footpedal hole:
  - a) Press one (1) gray sleeve bearing into the shaft hole from the outside of the base casting. Grease the inside of the seal hole and press the rubber seal into place with the taper facing the inside of the toilet.
  - b) Grease the tip of the footpedal and work gently through the seal and bearing with a twisting motion, and then through the cam casting. Note the indent in the footpedal. The cam set screw must be tightened securely into this indent.
- C-9 Replace the inlet gaskets with the hinge at the top and the weight facing the inside of the toilet. Replace inlet casting.  
Complete repairs by following step A-5 and then opening sea-cocks.

**GROSS MECHANICAL LABORATORIES, INC.  
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**TO REPLACE DIAPHRAGM & TOP WASHER  
in EA-EB TOILETS**

- A-1 Always close the inlet and discharge sea cocks when working below the waterline.
- A-2 Remove bowl and bowl gasket.
- A-3 Remove (7) screws holding top and bottom castings together. Remove top casting. Old diaphragm and washer are now exposed. Remove check ball, center screw, and diaphragm.
- A-4 Put new diaphragm and top washer in place and tighten as before. Place check ball over 1" hole in diaphragm, and replace top casting. Start the (7) screws, but before tightening, check to be sure that all holes line up properly and that the diaphragm is not being distorted. Tighten screws only enough to stop leaks.  
*Warning:* Overtightening screws may deform the diaphragm, thus reducing the toilet's efficiency and performance.
- A-5 Replace bowl gasket and bowl, tightening only enough to stop leaks. Overtightening could cause the bowl to crack.

**TO REPLACE HT-84-A SPRING ASSEMBLY & HT-26  
FLAP ASSEMBLY in EA-EB and K TOILETS**

- B-1 Remove old parts.
- B-2 Remove retaining nut on HT-84-A spring assembly, being careful not to change the assembled order of the parts.
- B-3 Start screw through HT-26 gasket, being sure the HT-84-A spring finger is through the eye of the plastic weight.
- B-4 As screw is tightened, the spring will tend to pull off-center. The spring must be straight and through the eye of the plastic weight to work properly.