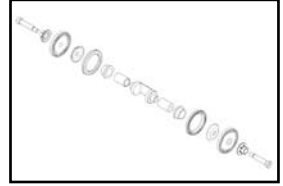


**1. Diaphragm / Connecting Rod Assembly: (Fig. 13)**

To assemble diaphragm / connecting rod assembly, first slide spacer onto pilot of connecting rod. Add a small amount of grease to the outer surface of the spacer. Then slide bushing onto spacer. Be sure to orientate the bushing properly (smaller diameter faces outward) when assembling this part. Apply a small amount of grease to the back side of the diaphragm. Thread shoulder bolt through front diaphragm support, diaphragm, (smooth, flat surface faces inward towards the connecting rod) backing plate, (smooth curved surface against diaphragm) and diaphragm clamp (grooved-side facing diaphragm). Spray Loctite activator on threads, then apply blue Loctite to threads. Finish by inserting bolt into spacer and tightening shoulder screw onto connecting rod with a 3/16" Allen wrench, while holding connecting rod with a crescent wrench or in a vise (Fig. 14). Shoulder bolt should be tightened to approximately 100 to 115 in.-lbs. Repeat procedure for second half of assembly.

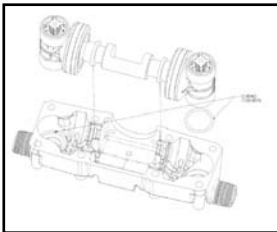
**Figure 13****Figure 14****2. Diaphragm / Valve Casing Assembly: (Fig. 15)**

Lubricate o-ring on valve with oil and push valve in casing as shown to the lower right. Note: The cage should always be on the upper side of the configuration. Solution enters the valve through the stainless steel metal seat and exits through the plastic cage. Note arrow on side of valve casing showing the direction of flow. The valve cage can only assemble into the valve casing from this side.

**Figure 15****3. Assemble Sub-Assemblies: (Fig. 16)**

Place oiled o-rings No. 1720-0076 (2) into pockets at the bottom half of pump body. One o-ring is placed on each side. With both hands, assemble the two valve casing parts to the connecting rod assembly. Orientate valve casing in the correct position relative to the connecting rod, as shown to the right (valve cages facing upward and connecting rod cupped face facing the motor pilot). Set the assembly into the body half.

With your index finger, align the bushing into the groove of the body as indicated (Fig. 17). At this point, make sure the diaphragm is properly mated with the valve casing and diaphragm clamp. You may need to roll or stuff the diaphragm into the groove (Fig. 18).

**Figure 16****Figure 17****Figure 18**

#### 4. Final Pump Head Assembly:

Lubricate and insert o-ring No. 1720-0076 into the bottom of the pump body's two circular cavities. Use grease or vacuum seal grease to hold o-rings in place. Next, work lower body with sub-assembly into upper body. Some lateral pressure will need to be applied to the two valve casings to compress the diaphragms and allow the valve casing to feed into the upper pump body. A bar clamp is a very helpful aid for this task (Fig. 19).

Once the two identical body halves are together, drop the bolts in so that the flanged nuts are positioned on the bottom (inlet) side. Tighten bolts and nuts 35 to 40 in.-lbs. Finally, lubricate connecting rod with wheel bearing grease (three pumps of grease gun). (See Fig. 20.) Pump head is now ready for assembly onto motor or gas engine.

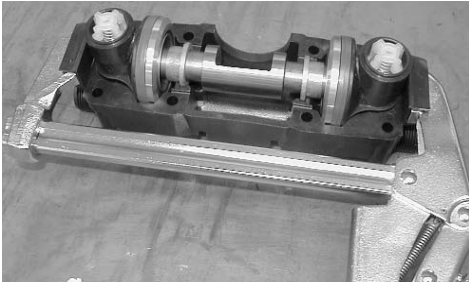


Figure 19



Figure 20

