

REPAIR INSTRUCTIONS - P57 & P57-0011

CAUTION: The stainless steel valve plugs (41 and 43) can seize (when being removed from the manifold). To release tension beforehand, strike the plugs 1 to 2 times with a steel hammer on the top (before removing them). When replacing them, make sure that the threads are coated with antiseize, e.g., Fel-Pro Nickel Anti-Seize 51119

To Check Suction and Discharge Valves

Inlet Valves

1. Using a socket wrench, carefully remove valve plugs (41 and 43). Take out the suction valve adaptor (39) along with the suction valve assembly (34-38).
2. Using a soft tool, push the valve assembly (34-38) out of the suction valve adaptor (39).
3. Replace o-rings (38, 40 and 42). Replace valve parts (34-37).
4. Carefully replace the valve plugs and tighten to 52 ft-lbs (70 NM).

Discharge Valves

5. Remove the valve plugs (43). Remove the exposed spring tension cap (34), valve spring (35) and valve plate (36).
6. Using a 12mm (diameter) valve puller, take out the valve seat (37).
7. Replace o-rings (38 and 44). Replace valve parts 34-37.
8. Carefully replace and tighten valve plugs to 52 ft-lbs (70 NM).

To Check Seals and Plunger Pipe

1. Carefully remove the valve plugs (41). Remove stud nuts (46) and washer (47) from the manifold (29) by pulling it out towards the front. Remove the manifold from the plungers (22).
2. Take out the suction valve adaptor (39), tension spring (33), support discs (33A & 33B) and seal unit (30, 31 and 32).
3. Check the surface of the plungers (22). **Any damaged surfaces will cause accelerated wear on the seals. If the plunger (22) is worn, the complete plunger must be changed - see the section below. The ceramic pipe alone cannot be changed due to reasons of precision.**
4. Check and clean the pressure ring and reinstall into the manifold (29).
5. Reinstall the support ring (32). Prior to replacing the seal assembly (31), grease the new seals.
6. Replace the remaining parts into the manifold (29) in the order that they were removed.
7. Evenly tighten the valve casing with the stud nuts (46) to 35 ft-lbs (47.5 NM).

To Check Plungers and Crankcase

1. If oil leaks at plunger outlet (22), the oil seal (26) and the plungers have to be examined (and replaced, if necessary). After re-moving the valve casing (29) and its components, drain the oil and remove crankcase cover (3) and bearing cover (12).
2. Remove the connecting rod screws (21) and push the outer connecting rod halves as far as possible into the crosshead guides. **Important! The connecting rods are marked for identification. Do not twist the connecting rod halves. Connecting rods are to be fitted back onto the crankshaft journals in their exact original position.**
3. While slightly turning, hit out (using a rubber hammer) the crankshaft (18) to one side. Either press out the second bearing in the crankcase or carefully hit it out with a soft tool. **Important! Do not bend the connecting rod shanks. Check the crankshaft, connecting rod surfaces as well as the shaft seals (26). Rough surfaces indicate a problem with lubrication and/or possible rough running of the pump. If you suspect that the pump has been running under cavitation or heavy pulsations, make improvements on the inlet and/or discharge connections to and from the pump.**
4. If oil has been leaking through the plunger base oil seals (26), remove them by pushing them out from the backside with a socket wrench. With the seal lip facing forward, replace them into the crankcase (1).

To Reassemble

1. Replace the front halves of the connecting rod (22) and plunger assembly (22). **Make sure that they are in the same position and orientation.**
2. Using a soft tool, press in one roller bearing until it lies level with the edge of the bearing hole. Mount the other bearing onto the crankshaft.
3. Carefully press in the crankshaft through the opposite bearing hole being particularly careful with the journals.
4. Install radial shaft seal (15), bearing cover (12) and o-ring (13).
5. Replace the back-halves of the connecting rods (**to their original position and orientation**) and tighten to 133 in-lbs (15 NM). **Important! After assembly has been completed, the crankshaft should turn easily (with very little movement).**
6. Replace the flinger (25) on the plunger (22)
7. Replace the back cover (3) o-ring (4), manifold (29) and its contents. Tighten the nuts (46) to 35 ft-lbs (47.5 NM).
8. Make sure Fill the crankcase (1) with the proper amount of oil.

NOTE: Contact Giant Industries for Service School Information. Phone: (419)-531-4600