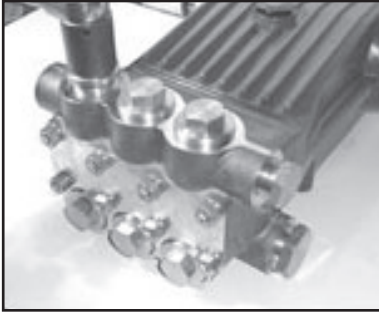
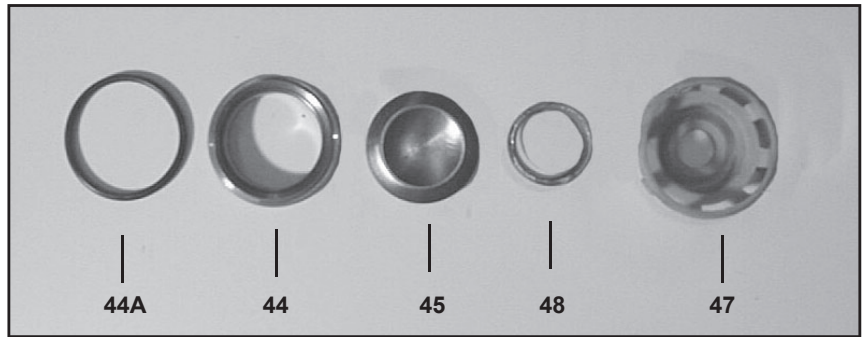


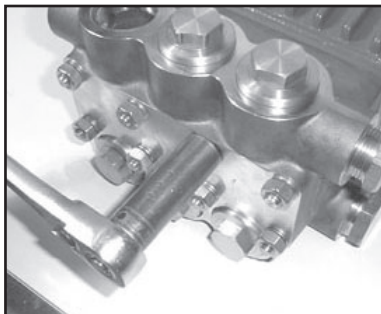
LP122A-3100 & LP250-3100 Repair Instructions



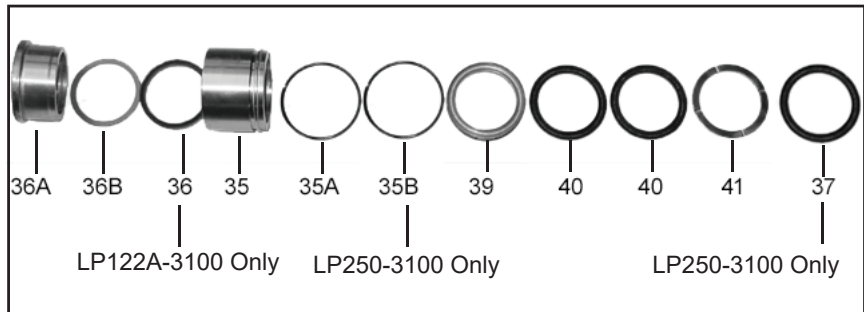
1. With a 30mm wrench, remove the six (6) plugs (48) from the valve casing (43). Inspect the o-rings (48A) and replace if necessary. With needle nose pliers, remove the complete valve assembly (46A).



2. To disassemble the valve assembly, insert a flat screwdriver between the valve plate (45) and valve seat (44) and gently twist. Examine all parts and replace if necessary. If the seat doesn't come out, use a valve puller to remove.



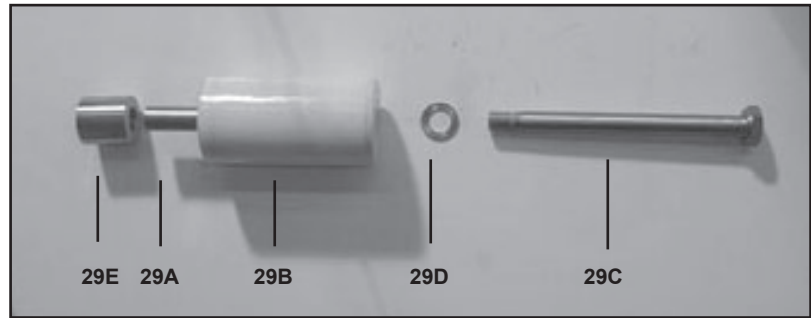
3. Remove the eight (8) hex nuts (49A) with a 19mm wrench. Tap the back of the manifold (43) with a rubber mallet to dislodge and slide off the studs.



4. Remove the seal sleeve (35) from the manifold (43) and/or crankcase (1). Remove the pressure rings (39 & 36A), drip shield for LP122A-3100 only (36B), v-sleeves (40 & 36), support ring (41) and o-rings (35A) from the manifold and seal sleeve, respectively. LP250-3100 pumps also have a support disc (37) and an O-ring (35B) for the seal sleeve. Examine seals carefully and replace if worn. Clean all parts.

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5. If there are signs of oil leaking through the plunger oil seals, then replacement is necessary. Remove the plunger pipe (29B) before inspecting oil seals. Disassemble the gear end and push out the seals from the back of the pump.



6. Inspect surface of plunger pipe (29B) carefully. Remove any chemical or mineral deposits taking care not to damage the surface of the plunger. If plunger pipe is worn, remove the plunger bolt (29C), plunger pipe (29B) and spacer (29E). Replace worn parts necessary. **Note: Always use a new copper gasket (29) when repairing the plunger assembly.**

To Dismantle Gear

7. After removing valve casing and plunger pipe, drain oil. Remove gear cover (4) and bearing cover (14). Loosen connecting rod screws (24) and push the front of the connecting rod forward as far as possible into the crosshead guide.

Important! Connecting rods are marked for identification. Do not twist connecting rod halves. Connecting rod is to be reinstalled in the same position on shaft journals.

8. Turning the crankshaft (22) slightly, hit it out carefully to the side with a rubber hammer.

Important! Do not bend the connecting rod shanks. Check crankshaft and connecting rod surfaces, shaft seals (15) and taper roller bearings (20).

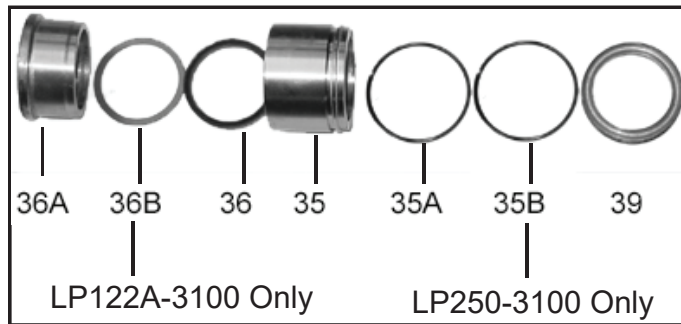
To Reassemble Gear

9. Using a soft tool, press in the outer bearing ring (20) until the outer edge lines up with the outer edge of the bearing hole.
10. Install bearing cover (14) together with shaft seal (15) and o-ring (16). Fit crankshaft (22) through bearing hole on the opposite side. Press in outer bearing (20) and tension it inwards with the bearing cover (14), keeping the crankshaft in vertical position and turning slowly so that the taper rollers of the bearings touch the edge of the outer bearing ring. Adjust axial bearing clearance to at least 0.1mm and maximum 0.15mm by placing fitting discs (20A, 20B, 20C) under the bearing cover.

Important! After assembly has been completed, the crankshaft should turn easily with very little clearance. Tighten connecting rod screws to 22.1 ft.-lbs. (30 Nm).

LP122A-3100 & LP250-3100 - Repair Instructions

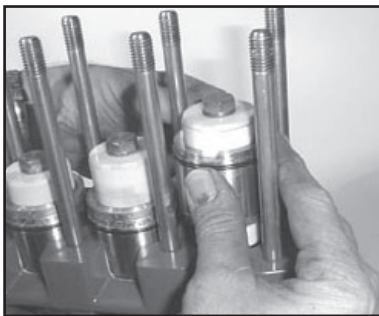
To Reassemble Fluid End



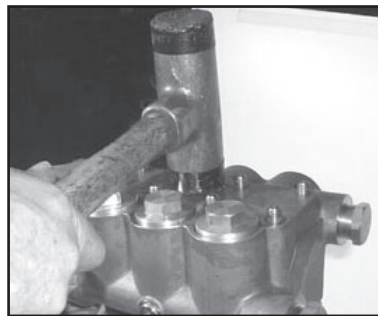
11. Lubricate seal (36). Place seal (36) and drip shield (36B for LP122A-3100 only), and pressure ring (36A) into the seal sleeve (35). Assemble the O-ring (35A) onto seal sleeve and lubricate. LP250-3100 has an additional O-ring (35B).



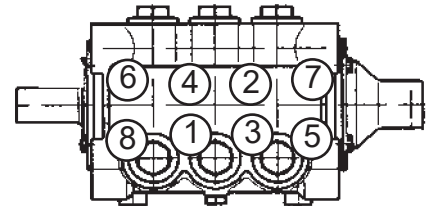
12. Place support ring (41) and v-sleeves (40) into valve casing. For LP250-3100, the support disc (37) is placed in the manifold (43) before the support ring.



13. Press seal sleeve assembly into the crankcase (1) and seat firmly.



14. Place entire manifold/seal sleeve assembly over the studs (49) and push firmly until seated against the crankcase.



15. Tighten hex nuts (49A) in a cross-wise pattern (shown above) to 59 ft.-lbs. (80 Nm).



16. Next, place valve assemblies (46A) into manifold after first lubricating the O-ring (44A). Seat firmly into manifold.



17. Replace plug with O-ring (48, & 48A) and tighten to 107 ft.-lbs. (145 Nm).

18. Fill crankcase with approximately 118 fluid ounces of Giant oil or equivalent SAE 80W/90 industrial gear oil and check oil level of the crankcase with the dipstick. Proper level is center of two lines. Reinstall your Giant LP pump into your system.

Contact Giant Industries for service school information.

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