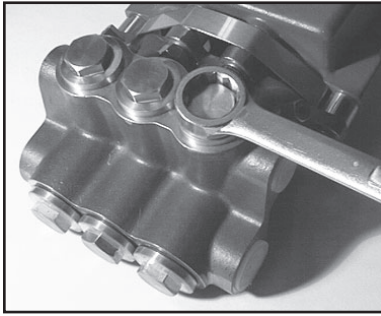
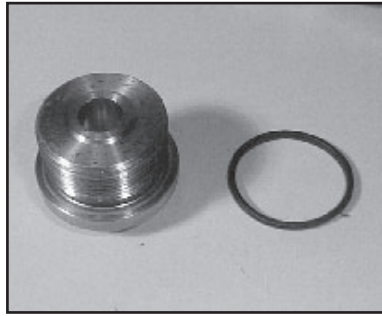


REPAIR INSTRUCTION - MP4126HT and MP4130HT

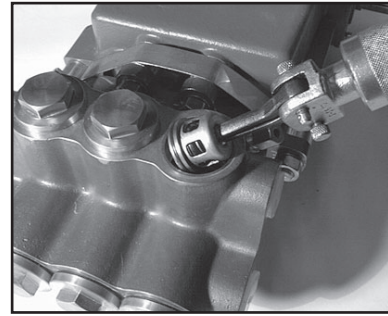
Disassembly sequence of the GIANT MP4126HT and MP4130HT Pumps



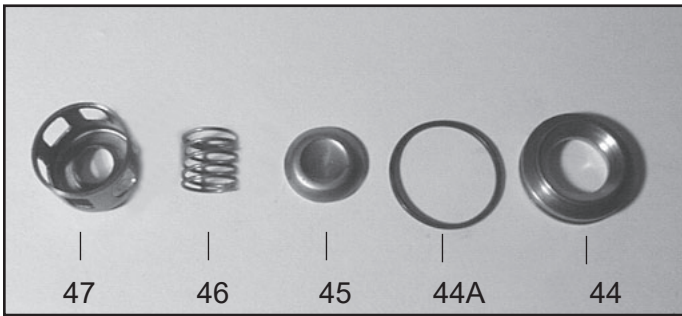
1. With a 27mm wrench, remove the three discharge plugs (#48) and three inlet plugs (#42A) from the manifold (#43).



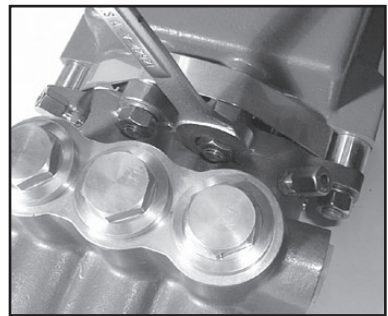
2. Inspect the plug o-rings (#48A and #42B) and replace as necessary.



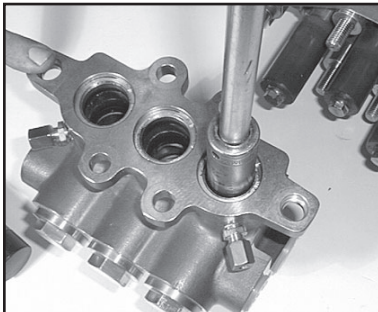
3. Using a valve puller (available from Snap-On-Tools), remove the discharge valve assembly (#44 - #47).



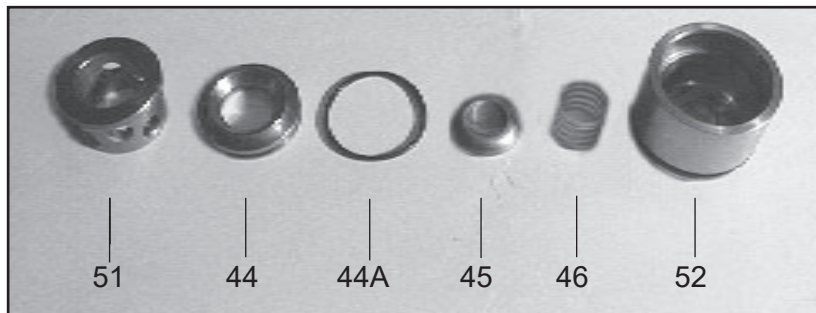
4. Inspect all parts, especially the seating surface of the valve plate (#45) and valve seat (#44) and replace as necessary.



5. Remove the six manifold stud nuts (#50) with a 19mm wrench. Remove the spring washers (#50A). Tap the back of the manifold with a rubber mallet to dislodge and slide it off the studs (#49).

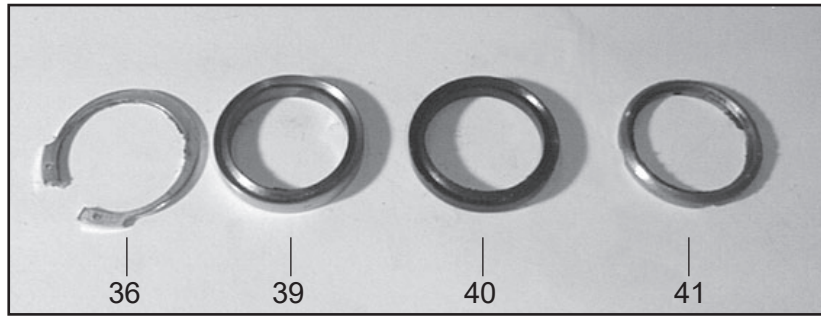
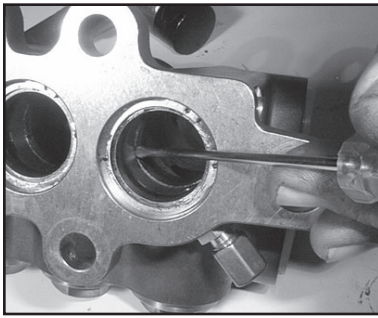


6. To remove the inlet valve assembly, insert a 13mm socket with extension through the rear of the inlet manifold (#43) port and tap it firmly with a hammer. This will force the tension spring (#42), valve housing (#52) and the remainder of the inlet valve assembly (#44-46/51) out through the front of the inlet port.



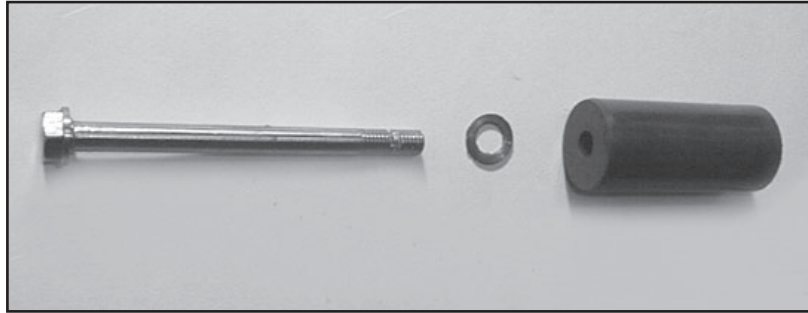
7. Pull the inlet valve assembly apart for inspection. Any resistance may be overcome by placing the valve housing (#52) in a brass jawed vise and carefully tapping the back of the valve plate (#45) with a screwdriver. Remove the spacer pipe (#51) valve seats (#44), o-ring (#44A), valve plate (#45), spring (#46) and replace them as necessary.

REPAIR INSTRUCTION - MP4126HT and MP4130HT

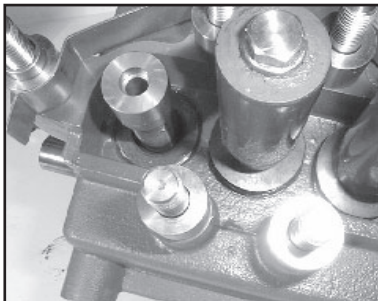


8. From the back of the manifold (#43), remove the packing assembly (#'s 42, 41, 40, and 39) by tapping assembly out from the back to the front.
9. Turn the manifold (#43) over and remove the rear v-sleeve snap ring (#36). Remove rear pressure ring (#39), rear v-sleeve (#40) and rear support ring (#41). These parts should slide out with little resistance. If necessary, a screwdriver may be used to pry outward. Replace all rubber parts and inspect the metal parts for wear.

10. **Note: The following procedure is only necessary if a stud bolt (#49) has been damaged and must be replaced.** To remove the manifold studs (#49), place a stud nut (#50), lock washer (#50A), and second nut on each stud. Tighten the nuts against each other. Hold the front nut with one wrench, and remove the stud bolt by turning the rear nut counterclockwise with another wrench. To reassemble, turn the front stud bolt nut clockwise.



11. To remove the ceramic plungers, turn the plunger bolt (#29C) counterclockwise with a 13mm socket. Use a steady torque to prevent ceramic plunger sleeve damage. Loosen and remove the plunger bolt assembly (#29C and #29D) and replace the seal washer (#29D).



- 11a. Inspect the crankcase oil seals (#31) for evidence of leaking. If there is oil on the crankcase (#1) at the sight of the oil seals, they must be replaced. The oil seals are replaced after removing the crosshead/plunger assembly (#25) as described below.

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Gear End Disassembly

Note: Make certain that the plungers (29B) have been removed before starting the following sequence.

12. Make sure the oil is drained from the pump before removing the crankcase cover (#4). Remove all screws (#10). Inspect the crankcase cover o-ring (#5) for damage and replace it as necessary.
13. Remove the connecting rod screws and washers (#s 24A) with a 6mm allen wrench. Remove the back halves of each connecting rod (#24). Push the connecting rods down as far as possible into the crankcase (#1) housing. **Note that the connecting rod halves are numbered (or colored) and that the numbers (or colors) must be matched for reassembly.**
14. Remove the crankshaft bearing cover screws (#17) with a 13mm wrench. Remove the key (#23) from the crankshaft (#22).
15. Remove the bearing cover (#14) and any shims (#20A) if any. **Remember to replace shims on the same side of the crankcase (#1) during the reassembly.**
16. Steady the pump gear end and, using a rubber mallet, tap the crankshaft (#22) from one side. The far side bearing race will be removed and the near side race will remain in the crankcase. The roller bearings (#20) will remain on the crankshaft with the Giant bearing tool (Tool-1). When both ends are free, the crankshaft can be removed by hand.
17. To remove the remaining bearing race, place a dowel against the inside edge of the race and tap it out with a rubber mallet. This is done only if the race wear surface has been damaged.
18. Inspect the bearing race removed with the crankshaft (#22) and replace if wear surface is damaged.
19. **Note: The following procedure is only necessary if the inspection shows evidence of heavy wear.** Inspect the crankshaft (#22) and bearings (#20) for wear. To remove the roller bearings from the crankshaft, use a three inch push puller with a pulley attachment. To remount the bearings use the Giant Bearing Tool (Tool-1) and tap the bearings down the well-lubricated crankshaft. Be sure that the bearing is firmly seated.
20. Remove the connecting rod (#24) with the attached crosshead/plunger assembly (#25) from the crankcase (#1) by pulling it straight out. The oil seals (#31) may now be removed by tapping them out through the front of the crankcase. Be careful not to damage the snap ring.
21. Inspect the surfaces of the crosshead/plunger assembly (#25) and connecting rods (#24) for heavy scoring or galling due to poor lubrication. Check for play at the joint between connecting rod crosshead/plunger assembly.
22. To remove the crosshead pin (#28) from the crosshead/plunger assembly (#25), the assembly should be positioned in such a manner to prevent damage to the crosshead when driving the pin out. The crosshead pin can be driven out by tapping on the tapered side of the pin

Reassembly sequence

Note: Always take time to lubricate all metal and nonmetal parts with a light film of oil before reassembly. This step will help ensure a proper fit, at the same time it will protect the pump nonmetal parts (elastomers) from cutting and scoring.

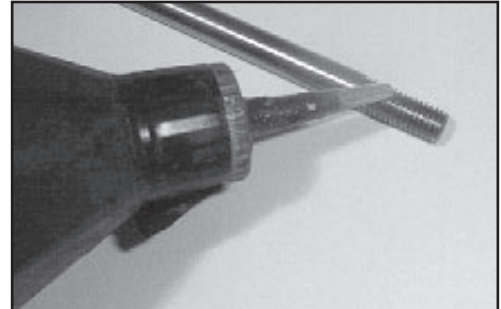
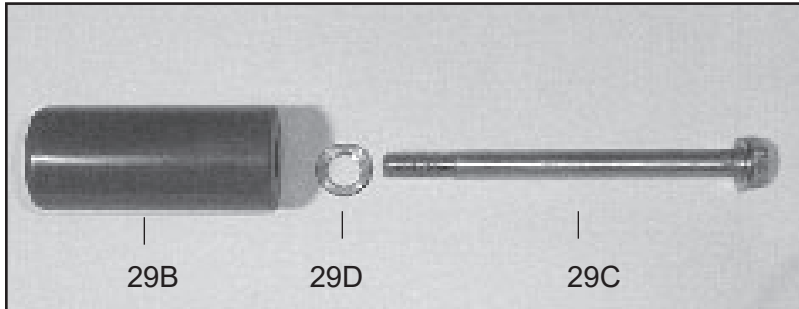
23. Take the crosshead/plunger rod assembly and insert the connecting rod (#24) into the crosshead/plunger assembly (#25). Drive the tapered end of the crosshead pin (#28) into the beveled side of the crosshead and through the connecting rod completing the assembly.

Note: The crosshead pin should not extend beyond either side of the crosshead in order to prevent damage to the crosshead bore of the crankcase.

24. Inspect the crankcase crosshead guides for any possible damage.
25. Replace the connecting rod (#24), crosshead/plunger rod assembly (#25) into the crankcase (#1).
26. If removed previously, replace the far side bearing race into the crankcase. Tap with a rubber mallet until the edges are flush with the crankcase surface.
27. Remove the old crankshaft seal (#15) from the bearing cover (#14). Lubricate the edges of the new seal and install with the Giant bearing tool (Tool-1). Remove the bearing tool and tap around the perimeter of the seal with a rubber mallet to firmly seat the seal. Position the far bearing cover on the crankcase (#1) and insert the cover bolts (#17). Tighten the cover evenly to the crankcase, setting the bearing into position. Torque the cover bolts to 221 inch-pounds (25 Nm).
28. Insert the crankshaft (#22) with the mounted bearings (#20) through the near side of the crankcase (#1). **Make certain that the numbers (or colors) or the crankshaft correspond to the numbers (or colors) on the connecting rods (#24).** Reinstall the near side bearing race by inserting it into the crankcase. Supporting the crankshaft with one hand, tap the race with a rubber mallet until the edge is flush with the crankcase.

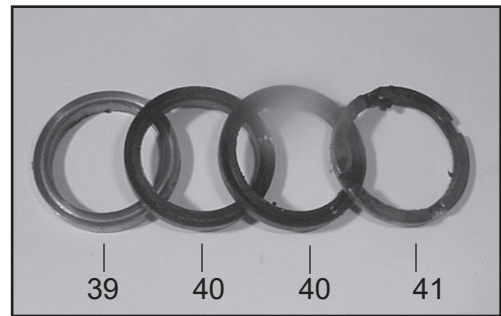
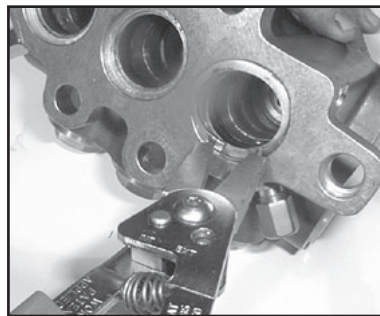
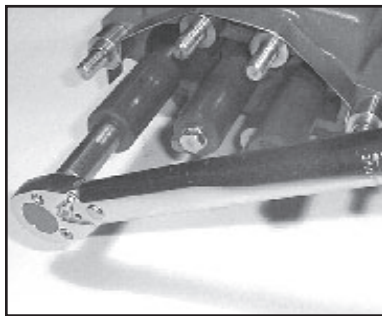
REPAIR INSTRUCTION - MP4126HT and MP4130HT

29. Replace any shims (#20A) and position the bearing cover (#14) as before. Tighten the bearing cover bolts (#17) evenly to position the bearing race. Torque the bolts to 221 inch-pounds (25 Nm). Once the crankshaft reassembly is complete, oil the crankshaft races freely before replacing the connecting rod (#24) end caps.
30. Reassemble the connecting rods (#24), matching the numbered (or colored) halves. Torque the connecting rod bolts (#24A) to 106 inch-pounds (12 Nm).
31. To replace the oil seal (#31) apply locktite to the outside edges of the seal and install from the front of the crankcase (#1). The side of the seal with the spring must face the oil. Make sure that the face of the seal is flush with the crankcase.



32. Inspect the ceramic plungers (#29B) and replace them if necessary. Clean the ends of the ceramic and remount onto the crosshead/plunger assembly. Make certain that the end of the plunger which is not counter-bored is facing the discharge side of the pump. Install the seal washer (#29D) on the bolt assembly.

33. Clean the bolt threads (#29C), apply locktite, and remount.



- 33A. Torque the ceramic plunger bolt assembly to 22 foot-pounds (30 Nm). If originally removed, reinstall the stud bolts (#49).

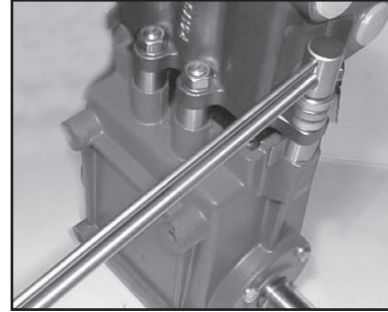
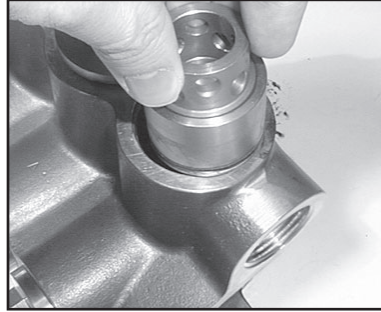
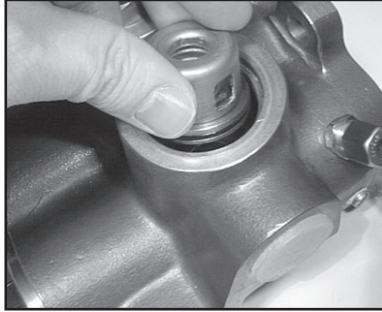
34. Install the rear support ring (#41), rear v-sleeve (#40), rear pressure ring (#39). Install the snap ring (#36).

35. Reinstall the pressure ring (#39), v-sleeves (#40) and support ring (#41) into each plunger bore. Reinstall the tension spring (#42).



36. Reassemble the discharge valve assembly by placing the valve plate (#45), spring (#46), and spring retainer (#47) on top of the valve seat (#44). Press fit together.

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37. Place the entire discharge assembly into discharge port making certain the assembly is properly seated. Install discharge plug (#48) and hand tighten.

38. Reassemble the inlet valve assembly in the reverse order of step #7. Make certain all the components are press fit together and that the spring retainer (#54) is slightly counter sunk in the valve housing (#52). Grease the o-ring (#53) and install it on to the valve housing. Reinstall the entire inlet valve assembly into the manifold (#43). install the tension plugs (#42A) and tighten.

39. Lubricate the plungers (29B) again and slide the manifold (#43) gently and evenly over the plungers. Press the manifold firmly into place against the crankcase (#1). Install the spring washer (#50A) and tighten the manifold stud nuts (#50) to 59 foot-pounds (80 Nm)

MP4126HT and MP4130HT TORQUE SPECIFICATIONS

Position	Item#	Description	Torque Amount
10	01010	Screw, Crankcase	221 in.-lbs. (25 Nm)
12	07109	Plug	29.5 ft.-lbs (40 Nm)
17	07114	Hex Screw, Bearing Cover	221 in.-lbs (25 Nm)
24A	07122	Hex Screw, Connecting Rod	106 in.-lbs (12 Nm)
29C	04150	Bolt, Plunger	22 ft.-lbs (30 Nm)
42A	06103	Plug, Inlet	107 ft.-lbs. (145 Nm)
48	07356	Plug, Discharge	107 ft.-lbs. (145 Nm)
50	07158	Nut, Manifold Stud	59 ft.-lbs (80 Nm)