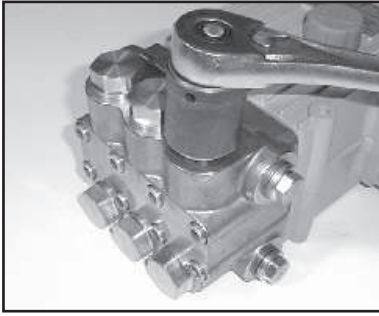
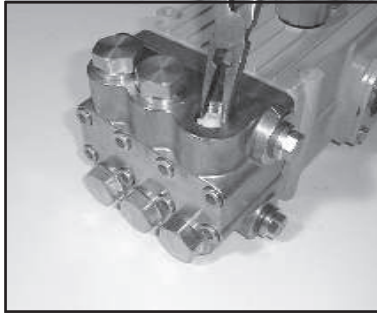


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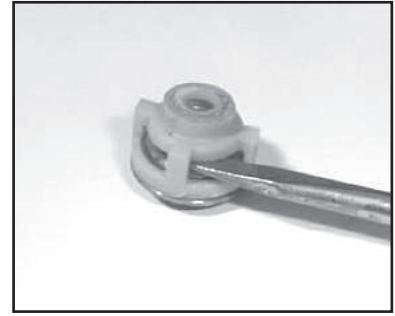
Note: Always take time to lubricate all metal and nonmetal parts with a light film of oil before reassembly. This step will ensure proper fit, at the same time protecting the pump nonmetal parts (i.e., the elastomers) from cutting and scoring.



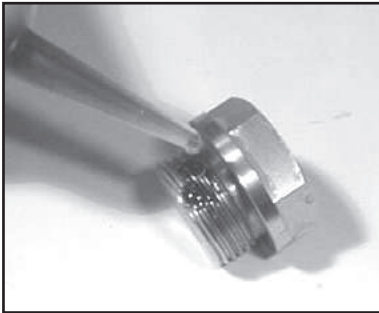
1) With a socket wrench, remove the three discharge valve plugs and three inlet valve plugs (32). Inspect the o-ring (33) for wear and replace if damaged.



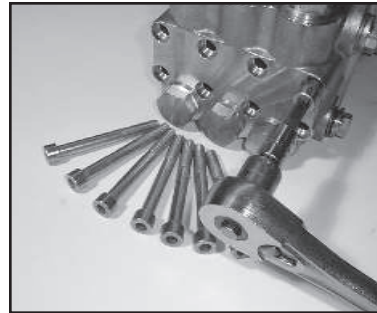
2) Using needle nose pliers, remove the inlet and discharge valve assemblies (27A). Note: It may become necessary to remove the valve seat (27) from the valve casing using a slidehammer.



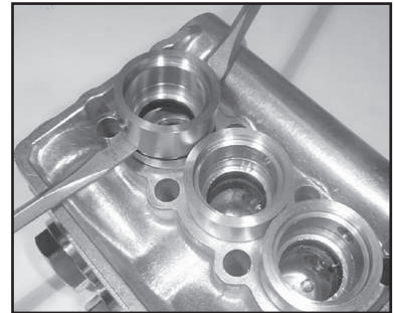
3) By inserting a small screw driver between the valve seat (27) and the valve spring retainer (30), the valve assembly can be separated.



4) Remove the o-ring (31). Inspect all parts for wear and replace as necessary. Apply one drop of loctite 243 to the valve plugs (32) and tighten to 107 ft.-lbs. (145 NM).



5) Use a 8mm allen wrench to remove the 8 socket head cap screws (34). Carefully slide the valve casing (26) out over the plungers.



6) Remove seal case (20) and weep return rings (25) from the valve casing.



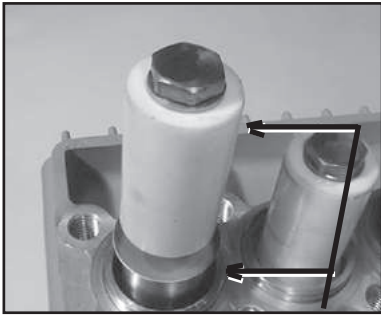
7) Remove the pressure rings (24) and v-sleeves (23 - Note: P422 & P423 pumps have a spacer ring) from the valve casing (26).



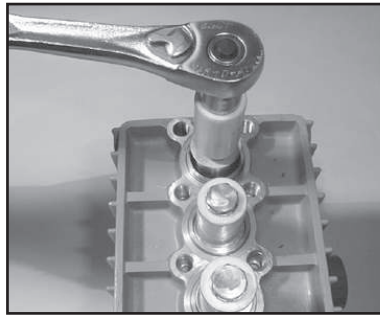
8) Remove the weep grooved seal (23 or 23B) together with pressure ring (24) (P420 and P425 only) out of the seal case (20). Check O-rings (21).

IMPORTANT! The grooved seal (23) on the high-pressure side is to be fitted carefully into the valve casing (26) using a screwdriver. Under no circumstances must the seal surface in the valve casing or the seal lip be damaged.

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9) Check surfaces of plunger (16). Damaged surfaces cause accelerated seal wear. Deposits of all kinds must be removed from the plungers.



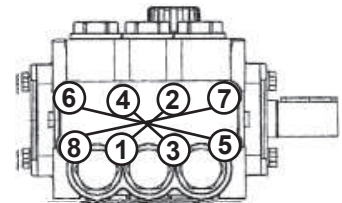
10) If the plunger pipe (16B), is damaged or worn, remove tension screw (16D) and plunger pipe (16B). Check and clean plunger surface (16A) and check flinger (16H). Cover thread of tension screw (16D) with a thin film of Loctite and tighten carefully to 20.7 ft.-lbs. (28 Nm).

IMPORTANT!

Plunger surfaces are not to be damaged. If there are lime deposits in the pump, care must be taken that the drip-return bore in parts (25) and (26) ensure trouble-free drip-return.

11) If oil leaks under the plunger (16), the oil seals (19) need to be replaced. Remove oil plug (5) and drain oil. With the valve casing (26) and seal case (20) removed (ref. instructions #5 & 6), and plunger disassembled (ref. #10), carefully pry out the oil seal with a flat screwdriver and replace it with a new one. Make sure that the oil seal groove faces inward towards the oil.
NOTE: Be careful not to score the crankcase guides where the oil seal sits and where the plunger base (16A) moves through the crankcase (1).

12) After installation of high pressure seals (23), place seal case (20) with weep seals & pressure ring installed, weep return ring (25) and high pressure weep return ring (24) over plungers. Slide valve casing over plungers and seat firmly. Replace the 8 socket head cap screws (34) and tighten to 30 ft.-lbs.(40 Nm) in a crossing pattern (as shown at right).



Torque Specifications

P420 / P420-0011 / P420-0021 / P422 / P423 and P425

<u>Position</u>	<u>Item#</u>	<u>Description</u>	<u>Lubrication</u>	<u>U.S</u>	<u>Metric</u>
3A	07186	Oil Sight Glass	Loctite 5910	106 in.-lbs.	12 Nm
5	07109	Oil Drain Plug		59 ft.-lbs.	80 Nm
5B	08092	Plug with Gasket		59 ft.-lbs.	80 Nm
6	01010	Screw		111 in.-lbs.	12.5 Nm
10	07114	Screw with Washer		133 in.-lbs.	15 Nm
15B	05349	Connecting Rod Screw		97 in.-lbs.	11 Nm
16D	08399	Tensioning Screw	Loctite 243	20.7 ft.-lbs.	28 Nm
32	08373	Plug	Loctite 243	107 ft.-lbs.	145 Nm
34	08396	Cap Screw	Lightly Oil	30 ft.-lbs.	40 Nm

Contact Giant Industries for service school information. Phone: (419) 531-4600