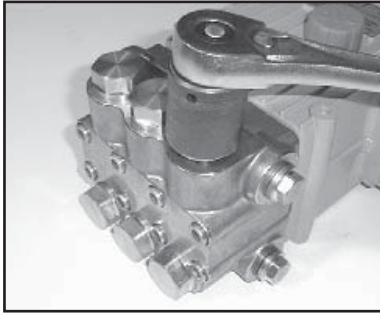
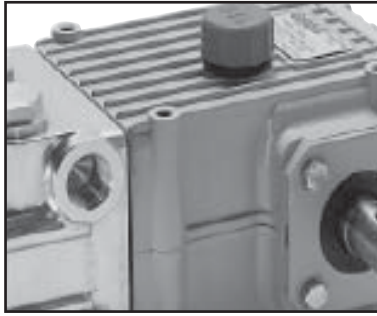


REPAIR INSTRUCTIONS - P430/P440, P450, AND P455

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.



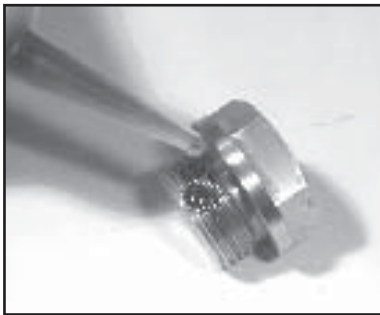
- 1) With a socket wrench, remove the three discharge valve plugs and three inlet valve plugs (32). Inspect the o-ring (33) for wear and replace if damaged.



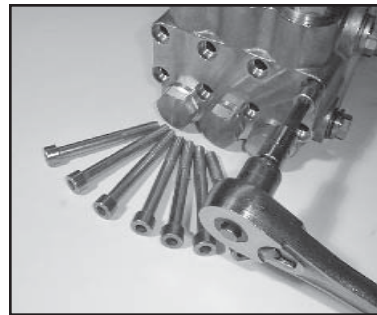
- 2) Using needle nose pliers, remove the inlet and discharge valve assemblies (27A). Note: It may become necessary to remove the valve seat (27) from the valve casing using a slidehammer.



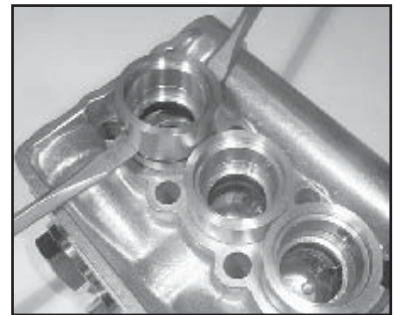
- 3) By inserting a small screw driver between the valve seat (27) and the valve spring retainer (30), the valve assembly can be separated.



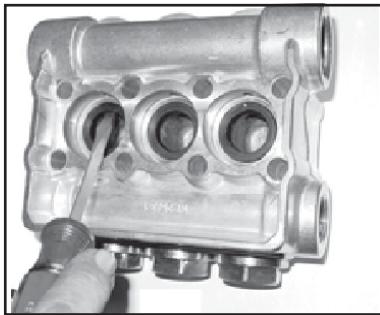
- 4) Remove the o-ring (31). Inspect all parts for wear and replace as necessary. Apply one drop of loctite 243 to the valve plugs (32) and tighten to 125 ft. lbs.



- 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 adaptors (20) and weep return rings (25) from the valve casing.



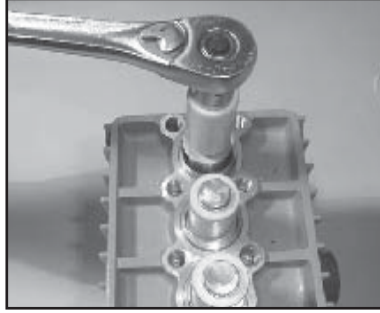
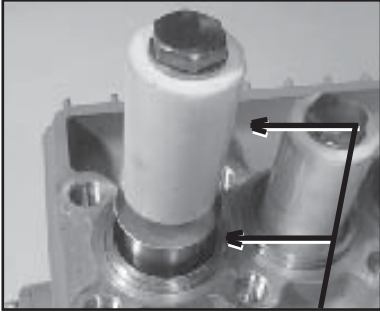
- 7) Remove the pressure rings (24) and v-sleeves (23 - Note: P422 & P423 pumps have a support ring) from the valve casing (26).



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

IMPORTANT! The grooved seal (23) or respectively grooved seal pack (23A) 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.

REPAIR INSTRUCTIONS - P430/P440, P450, AND P455



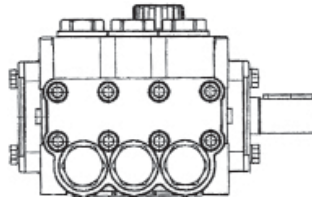
IMPORTANT! Care must be taken that glue does not get between the plunger pipe (16B) and centring sleeve (16C). The plunger pipe should not be strained by eccentric tightening of the tension screw or through damage to front surface of plunger, otherwise it is liable to fracture.

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

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.

- 10) If the plunger pipe (16B), or oil seal (19) is worn, remove tension screw (16D) and remove along with plunger pipe (16B). Check and clean plunger surface (16A), check oil scraper (16H). Remove the gear seal adapter (20A) and, if necessary, replace oil seals with seal lips facing crankcase (1). Cover thread of tension screw (16D) with a thin film of Loctite and tighten carefully to 26 ft.-lbs. (35NM).

- 11) After installation of high pressure seals (23 - Note: P422 and P423, also have a support ring), place seal adaptor (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 35 ft.-lbs. in a crossing pattern (as shown to the right).



TORQUE SPECIFICATIONS - P430/P440, P450, AND P455

Position	Item#	Description	U.S	Metric
15A	07311	Screw with Washer	216 in.-lbs.	24.4 N-M
16D	08399	Tensioning Screw	240 in.-lbs.	27.1 N-M
32	06624	Plug (P455)	125 ft.-lbs.	169.4 N-M
32	08406	Plug (P430, P440, P450)	110 ft.-lbs.	149.1 N-M
34	08396/08484	Cap Screw	35 ft.-lbs.	47.5 N-M

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