





**SP20PB PUMP-PRIORITY
FLOW-COUNTER CLOCKWISE
ROTATION
(SP20PB _____ H_-L)**

ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	SEE CHART	BOLT
2	4	190100037	DOWEL PINS
3*	1	230001125	SNAP RING
4	1	500501000	FRONT PLATE
5	1	500501601	PRIORITY FLOW BACK PLATE
6	1	500502004	BEARING CARRIER ASSY
7	2	SEE CHART	BODY
8	1	SEE CHART	DRIVE GEAR
9	1	SEE CHART	IDLER GEAR
10	4	SEE CHART	WASHER
11	4	SEE CHART	KEY (NOT SHOWN)
12	1	500507507	RELIEF SEAT
13	1	500507509	SPRING
14	1	500507510	ADAPTER
15	1	500507511	ADJUSTER
16	1	500507512	SEALING WASHER
17	1	500507514	LOCK NUT
18	1	500507514	ACORN NUT
19	2	500512000	SEAL
20*	2	500512101	BACK-UP STRIP
21	1	500512111	POPPET
22*	1	SEE CHART	PRIORITY FLOW CARTRIDGE
23*	1	SEE CHART	SHAFT SEAL
24	1	SEE CHART	O-RING FOR KEY (NOT SHOWN)
	*	PMCK-SP20	SEAL KIT (ITEMS INCLUDED)

- NOTES:**
- ASSEMBLE WITH INLET SIDE OF BEARING CASE ADJACENT TO INLET SIDE OF BODY. THE INLET CAVITY OF BEARING CASE, AS IS SHOWN ABOVE, MUST BE TOWARDS THE SIDE OF THE GEAR.
 - ROTATION DIRECTION IS DETERMINED BY VIEWING THE PUMP FROM THE DRIVEN END OF DRIVE SHAFT. TO INSURE CORRECT PARTS AND ORIENTATION OF PARTS, OBSERVE THE FOLLOWING WHEN ROTATING THE DRIVE GEAR IN THE CORRECT ROTATION:
 - THE IDLER GEAR IS TURNED BY THE DRIVE GEAR THROUGH CONTACT ON THE DRIVE SIDE PROFILE OF THE TOOTH (SHALLOW SLOPE SIDE WITH NO UNDERCUT). LIKE PROFILES ARE TOUCHING AND GEARS ROTATE FREELY WHEN ASSEMBLED IN THE BEARING CASE.
 - THE GEAR TEETH ARE COMING OUT OF MESH ON THE INLET SIDE OF THE PUMP.
 - FRONT PLATE AND BACK PLATE MUST ALSO BE ORIENTATED SO INLET SIDE IS ADJACENT TO THE INLET SIDE OF THE PUMP.
 - BOLT TORQUE (LUBRICATED THREADS) 24 FT-LBS ±2 FT-LBS.
 - FRONT FACE OF BODY IS INDICATED BY DRILL POINT IDENTIFICATION ON FACE.
 - THE GROOVE IN THE MOLDED SEAL GOES TO THE OUTSIDE OF THE PUMP.
 - BACK-UP STRIP GOES TO THE INSIDE OF THE MOLDED SEAL.
 - LOCKTITE RELIEF SEAT IN PLACE WITH COMPOUND #RC680.
 - STAKE RELIEF SEAT IN PLACE AT BOTTOM OF PRIORITY FLOW PORT.
 - DURING BREAK-IN, A DUMMY PLUG IS TO BE INSTALLED IN THE PRIORITY FLOW CAVITY.
 - AFTER STANDARD BREAK-IN IS COMPLETE AND PERFORMANCE CHECKS HAVE BEEN MADE, THE DUMMY PLUG IS REPLACED WITH THE PRIORITY FLOW CARTRIDGE.
 - TORQUE THE PRIORITY FLOW CARTRIDGE TO 10-12 FT-LBS.
 - FOR THE PRIORITY FLOW CHECKS, THE RELIEF IS SET TO THE FULL FLOW PRESSURE INDICATED BY THE MODEL CODE AND THEN RECHECKED. THE PERFORMANCE OF THE PRIORITY FLOW PORT ONLY LOADED, WITH THE PRIORITY PORT ONLY LOADED TO 800 PSI, WITH THE EXCESS FLOW PORT ONLY LOADED TO 1500 PSI, AND WITH BOTH PORTS LOADED TO 800 AND 1500 PSI RESPECTIVELY. WITH BOTH PORTS UNLOADED, PRIORITY FLOW MUST BE WITHIN RANGE INDICATED. PRIORITY FLOW MUST ALSO REMAIN STABLE AT THE OTHER CONDITIONS TESTED.
 - IN ORDER TO MAINTAIN SUFFICIENT SPEED TO SATISFY THE PRIORITY FLOW, THE PRIORITY FLOW PERFORMANCE CHECKS WILL BE RUN AT 1200 RPM FOR SP20PB20 PUMPS AND LARGER. FOR SMALLER PUMPS THE PRIORITY FLOW TESTS WILL BE RUN AT 2000 RPM. (AT 2000 RPM, MAX PF TEST FLOW FOR 6CC/REV PUMPS IS 2.5 GPM, 8CC/REV PUMPS IS 3.0 GPM, FOR 9CC/REV PUMPS, 4.0 GPM)

PRIORITY FLOW - GPM NOMINAL (RANGE)	PRIORITY FLOW CARTRIDGE (ITEM 22)
1.5 (1.35-1.65)	500512123
2.0 (1.80-2.20)	500512124
2.5 (2.25-2.75)	500512125
3.0 (2.70-3.30)	500512126
3.5 (3.15-3.85)	500512127
4.0 (3.60-4.40)	500512128
4.5 (4.05-4.95)	500512129
5.0 (4.50-5.50)	500512115
5.5 (4.95-6.05)	500512130
6.0 (5.40-6.60)	500512120
6.5 (5.85-7.15)	500512116

ORING (ITEM 24)				KEY (ITEM 11)			
SHAFT CODE	PMC PART NO.	NO. REED	PMC PART NO.	NO. REED	PMC PART NO.	NO. REED	NO. REED
9 (9 TOOTH)	---	0	---	0	---	0	0
2 (.625 DIA)	240000015	1	500507504	1	---	0	1
3 (11 TOOTH)	---	0	---	0	---	0	0
4 (.75 DIA)	240000017	1	500507523	1	---	1	1
5 (10 TOOTH)	---	0	---	0	---	0	0

SHAFT SEAL (ITEM 23)	
STANDARD BUNA-N (MODEL CODE OMITTED)	500512500
MED. PRESSURE BUNA-N (MODEL CODE H)	500512503

PUMP MODEL DISPLACEMENT	HEX HEAD CAP SCREW (ITEM 1)	BODY (ITEM 7)	DRIVE GEAR (ITEM 8)										PUMP DISPLACEMENT			
			LEFT HAND ROTATION					RIGHT HAND ROTATION								
			9 T SPLINE DRV SHAFT CODE 9	5/8 KEYED DRV SHAFT CODE 2	11 T SPLINE DRV SHAFT CODE 2	3/4 KEYED DRV SHAFT CODE 3	10 T SPLINE DRV SHAFT CODE 4	10 T SPLINE DRV SHAFT CODE 5	9 T SPLINE DRV SHAFT CODE 9	5/8 KEYED DRV SHAFT CODE 2	11 T SPLINE DRV SHAFT CODE 3	3/4 KEYED DRV SHAFT CODE 4		10 T SPLINE DRV SHAFT CODE 4	10 T SPLINE DRV SHAFT CODE 5	IDLER GEAR (ITEM 9)
SP20PB 06	170002083 (5.0)	500503019	500505511	500505510	500505513	500505512	---	500504513	500504512	500504515	500504514	---	500506010	500507502 (.060)	SP20PB 06	
SP20PB 08	170002087 (5.5)	500503130	500505000	500505100	500505050	500505010	500505040	500504000	500504100	500504050	500504010	500504050	500504040	500506000	500507503 (.450)	SP20PB 08
SP20PB 09	170002087 (5.5)	500503131	500505001	500505101	500505051	500505011	500505041	500504001	500504101	500504051	500504011	500504051	500504041	500506001	500507502 (.350)	SP20PB 09
SP20PB 11	170002087 (5.5)	500503132	500505002	500505102	500505052	500505012	500505042	500504002	500504102	500504052	500504012	500504052	500504042	500506002	500507502 (.350)	SP20PB 11
SP20PB 14	170002087 (5.5)	500503133	500505003	500505103	500505053	500505013	500505043	500504003	500504103	500504053	500504013	500504053	500504043	500506003	500507501 (.120)	SP20PB 14
SP20PB 16	170002087 (5.5)	500503134	500505004	500505104	500505054	500505014	500505044	500504004	500504104	500504054	500504014	500504054	500504044	500506004	500507500 (.060)	SP20PB 16
SP20PB 20	170002088 (6.0)	500503135	500505005	500505105	500505055	500505015	500505045	500504005	500504105	500504055	500504015	500504055	500504045	500506005	500507502 (.350)	SP20PB 20
SP20PB 23	170002088 (6.0)	500503136	500505006	500505106	500505056	500505016	500505046	500504006	500504106	500504056	500504016	500504056	500504046	500506006	500507501 (.120)	SP20PB 23
SP20PB 27	170002088 (6.5)	500503137	500505007	500505107	500505057	500505017	500505047	500504007	500504107	500504057	500504017	500504057	500504047	500506007	500507503 (.450)	SP20PB 27
SP20PB 30	170002088 (6.5)	500503138	500505008	500505108	500505058	500505018	500505048	500504008	500504108	500504058	500504018	500504058	500504048	500506008	500507502 (.350)	SP20PB 30
SP20PB 33	170002088 (6.5)	500503139	500505009	500505109	500505059	500505019	---	500504009	500504109	500504059	500504019	500504059	---	500506009	500507501 (.120)	SP20PB 33