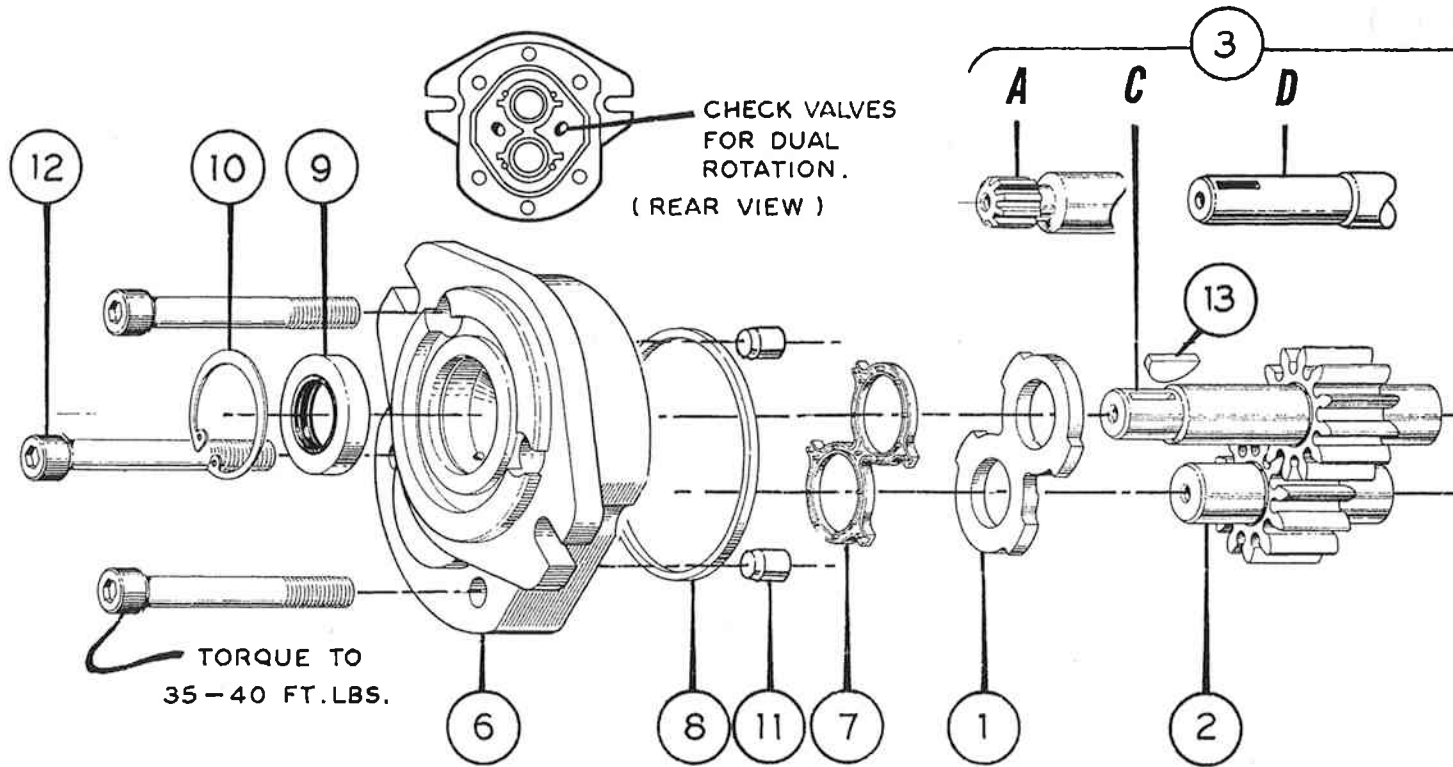


SERIES 40 GEAR PUMP and MOTOR Parts

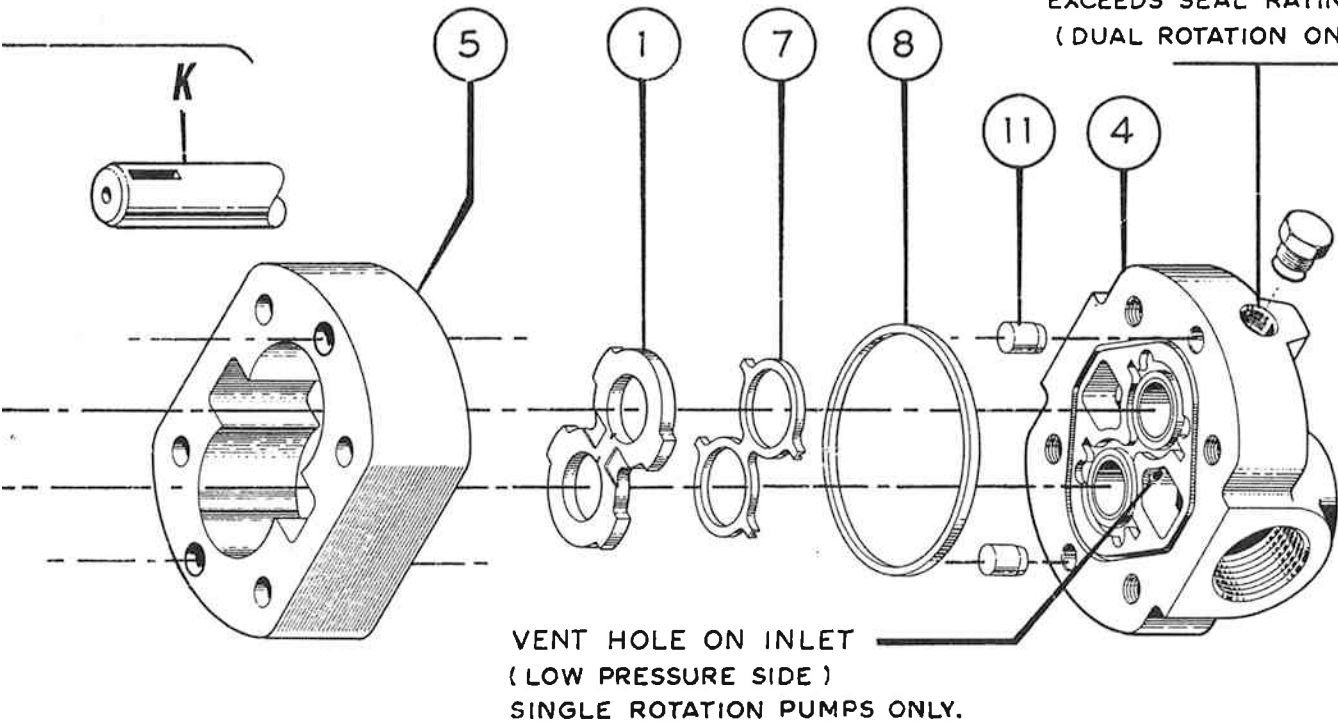


PARTS LIST

○	PART DESCRIPTION	DETAIL PART NO.	40P005	40P007	40P010	40P012	40P015	40P018	QTY.
			40M005	40M007	40M010	40M012	40M015	40M018	
1	THRUST PLATE	4P0013	001						2
2	DRIVEN GEAR	4P0012	007	008	009	010	011	012	1
3	DRIVE GEAR ASSY	4P0011	SEE SHAFT						1
4	REAR COVER ASSY	4P0007	SEE PORTING						1
5	BODY	4P0004	001	002	003	004	005	006	1
6	{ FRONT COVER ASSY	4P0003	002 SINGLE ROTATION PUMP/MOTOR						1
	{ FRONT COVER ASSY	4P0003	001 DUAL ROTATION PUMP/MOTOR						
7	LOADING SEAL	5A0078							2
8	STATIC SEAL	5A0048							2
9	{ SHAFT SEAL	5A0081	HIGH PRESSURE (250 PSI)						1
	{ SHAFT SEAL	5A0050	SINGLE ROTATION (20 PSI)						
10	RETAINING RING	2A0466	150						1
11	DOWEL PIN	2A0310	604						4
12	CAPSCREW	2A0079	624	624	626	630	632	634	4
	LENGTH →		2 1/2	2 1/2	2 3/4	3	3 1/4	3 1/2	—
13	WOODRUFF KEY	5A0067							AS REQD.
	SEAL KIT	4P0017	002 DUAL ROTATION (250 PSI)						0
	SEAL KIT	4P0017	001 SINGLE ROTATION (20 PSI)						0
	SHIPPING PLUG	2A0353	-21 15/16 -12 O-RING PORT (SAE #16)						AS REQD.
	SHIPPING PLUG	2A0353	-17 1 1/16 -12 O-RING PORT (SAE #12)						

Exploded

CASE DRAIN PORT —
USE WHEN BACK PRESSURE
EXCEEDS SEAL RATING.
(DUAL ROTATION ONLY)



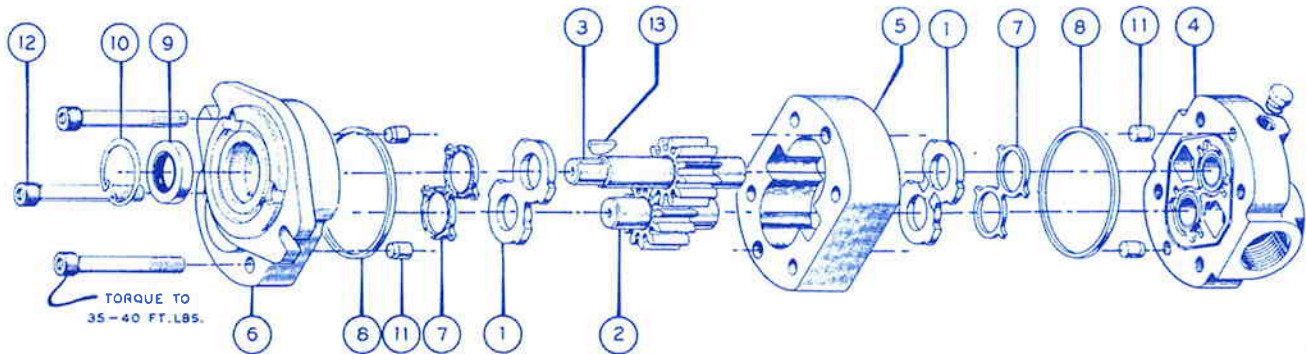
PARTS LIST

PART DESCRIPTION & SIZE		40P005	40P007	40P010	40P012	40P015	40P018
SHAFT FOR DRIVE GEAR, 4P0011 (3)		40M005	40M007	40M010	40M012	40M015	40M018
		DASH NUMBER					
A.	9 TOOTH SPLINE	007	008	009	010	011	012
C.	5/8" DIA., KEYED (STD)	001	002	003	004	005	006
D.	5/8" DIA., KEYED (LONG)	013	014	015	016	017	018
K.	3/4" DIA., KEYED (LONG)	024	025	026	027	028	029
SPECS	MINIMUM AT 1800 RPM	GPM	3.51	5.26	7.01	8.77	10.52
	90% VOL.	LPM	13.3	19.9	26.5	33.2	39.8
	DISPLACEMENT	CU. IN./REV.	.50	.75	1.00	1.25	1.50
		ml/REV.	8.2	12.3	16.4	20.5	24.6
MAXIMUM PUMP RPM IN INLET PORTS	1 1/16	3500	3400	2500	2000	1750	1400
	1 5/16	3500	3500	3500	3500	3000	2500

PART DESCRIPTION		PORT SIZES		DASH NO. FOR ALL ASSY'S	
4P0007 (4)		INLET	OUTLET		
SAE O-RING REAR PORTS	SINGLE	RB	1 5/16 - 12 (# 16)	1 1/16 - 12 (# 12)	005
		RD	1 1/16 - 12 (# 12)	1 1/16 - 12 (# 12)	006
	DUAL	RB	1 5/16 - 12 (# 16)	1 1/16 - 12 (# 12)	001
		RD	1 1/16 - 12 (# 12)	1 1/16 - 12 (# 12)	002
SAE O-RING SIDE PORTS	SINGLE	SA	1 5/16 - 12 (# 16)	1 1/16 - 12 (# 12)	007
		SC	1 1/16 - 12 (# 12)	1 1/16 - 12 (# 12)	008
	DUAL	SA	1 5/16 - 12 (# 16)	1 1/16 - 12 (# 12)	003
		SC	1 1/16 - 12 (# 12)	1 1/16 - 12 (# 12)	004

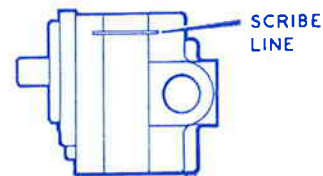
MAXIMUM MOTOR SPEED IS 3000 RPM. CONSULT CROSS ENGINEERING FOR APPLICATIONS ABOVE 3000 RPM.

SEAL REPLACEMENT INSTRUCTIONS



A. DISASSEMBLY:

1. Remove unit and thoroughly clean. Remove shaft key (13) and any nicks or burrs on shaft.
2. Scribe line on outside of unit across front cover, body and rear cover to assure proper reassembly.
3. Lightly clamp rear cover (4) in vise, shaft up. **EXCESSIVE CLAMPING PRESSURE CAN CAUSE DISTORTION.**
4. Remove cap screws (12) from front cover (6).
5. Tap upwards, underneath front cover flange and remove front cover. As unit separates, the body may remain with either the front or rear cover. Remove loose parts (rings, plates, etc.)
- *6. To separate body from front cover, clamp body in vise and again tap upwards on front cover flange. To separate body from rear cover, clamp body in vise and tap downward on shaft. Remove static seals (8) and loading seals (7) from grooves. **DO NOT DAMAGE GROOVE OR COVER SURFACE.**
7. Remove snap ring (10) from shaft seal cavity in front cover using internal snap ring pliers.
8. Clamp front cover in vise, seal down, and drive shaft seal out of cavity using screwdriver held at about a 45° angle. **USE CAUTION NOT TO DAMAGE CAVITY.**
- * Step 6 can be by-passed if only the shaft seal is being replaced.



B. PARTS INSPECTION:

1. Thoroughly clean all parts in solvent and dry with compressed air.
2. Inspect all parts for damage and unusual or excessive wear. If gears, bushings or body are damaged or badly worn, replace unit (Only plates and seals are replaceable).

C. REASSEMBLY:

1. Install new shaft seal (9) in front cover (6). Be sure bearing drain hole is not blocked.
2. Install snap ring (10) and new seals (7, 8) in covers (if needed).
3. Assemble body (5) and rear cover (4) aligning dowel pins (11) and scribed line.
4. Insert thrust plate (1) into body (5) flat side toward seal (7). Lubricate gears and insert.
5. Insert thrust plate (1) over shaft, flat side toward seal (7).
6. Lubricate shaft and slide front cover (6) over shaft and dowel pins (11). Tap if needed.
7. Insert cap screws (12) and tighten evenly as follows:
Series 40: 35/40 ft. lbs. Series 50: 35/40 ft. lbs.
8. Rotate shaft, the maximum torque is:
Series 40: 15 ft. lbs. Series 50: 20 ft. lbs.
If greater torque is required, disassemble unit, re-clean and re-assemble.

It is the policy of Cross Manufacturing, Inc. to improve its products whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.