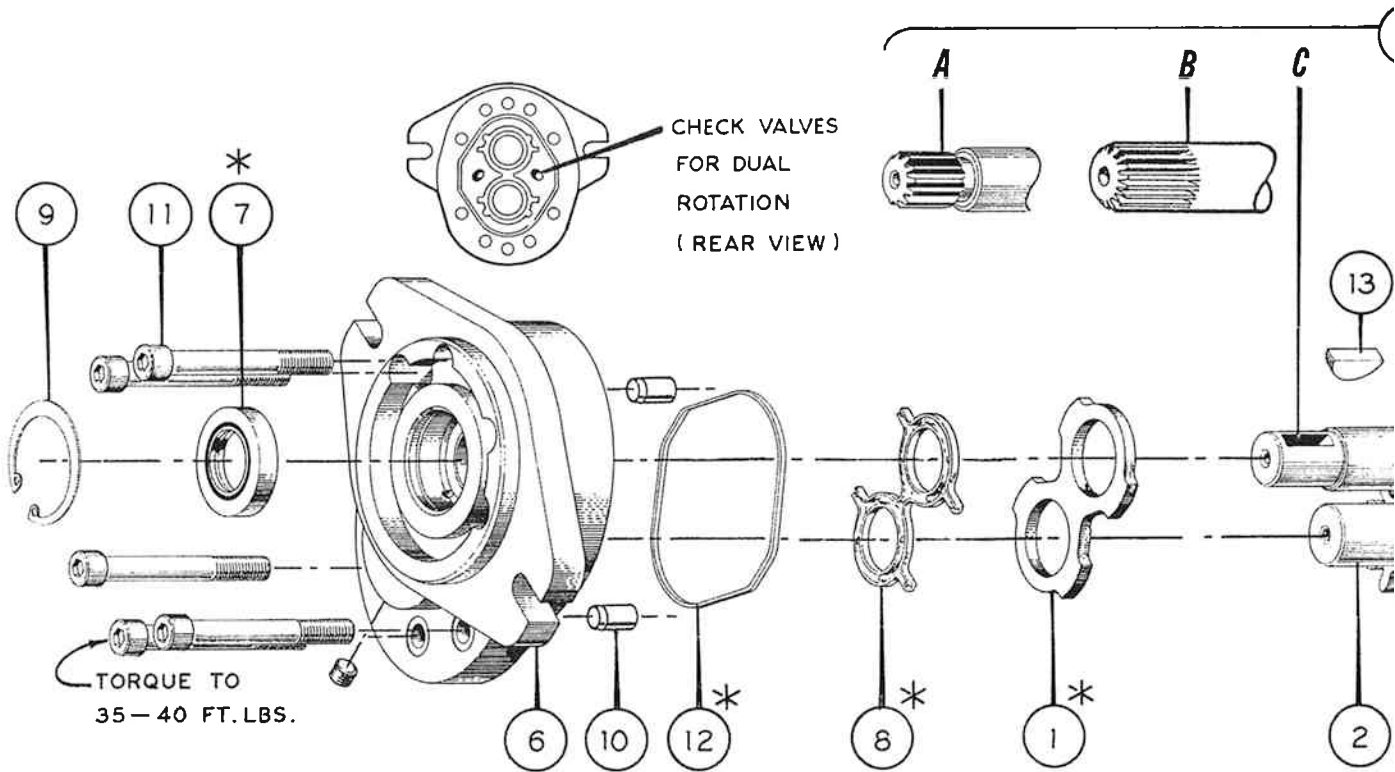


# SERIES 50 GEAR PUMP and MOTOR

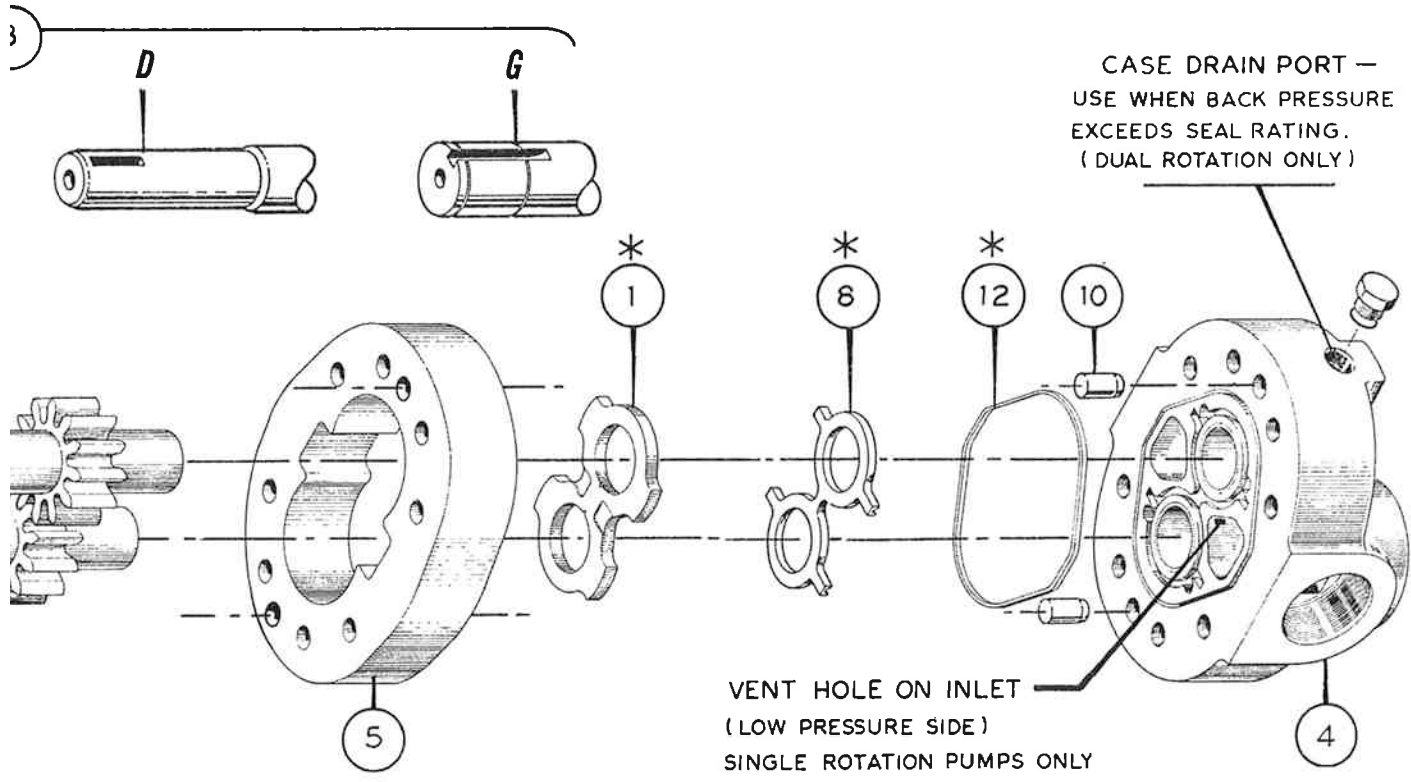
## Parts Exploded



### PARTS LIST

QTY	PART DESCRIPTION	DETAIL PART NO.	DASH NUMBER							QTY
			50P015 50M015	50P019 50M019	50P023 50M023	50P027 50M027	50P033 50M033	50P038 50M038	50P052 50M052	
1*	THRUST PLATE	5P0013	001							2
2	DRIVEN GEAR	5P0012	001	002	003	004	005	006	016P	1
3	DRIVE GEAR	5P0011	SEE SHAFT							1
4	REAR COVER ASSY	5P0007	SEE PORTING							1
5	BODY	5P0004	001	002	003	004	005	006	010	1
6	{ FRONT COVER ASSY	5P0003	003 DUAL ROTATION							1
	{ FRONT COVER ASSY	5P0003	001 SINGLE ROTATION							
7*	{ SHAFT SEAL	5A0009	HIGH PRESSURE (250 PSI)							1
	{ SHAFT SEAL	5A0008								
8*	LOADING SEAL	5A0077								2
9	RETAINING RING	2A0466	175							1
10	DOWEL PIN	2A0310	710							4
11	CAPSCREW	2A0079	630	632	632	634	636	640	646	8
	LENGTH		3	3 1/4	3 1/4	3 1/2	3 3/4	4	4 3/4	
12*	STATIC SEAL	1A1265								2
13	WOODRUFF KEY	5A0005								AS REQD.
	SEAL KIT	5P0017	009	PTO DUAL BODY						0
	SEAL KIT	5P0017	008	DUAL BODY (DUAL ROTATION)						0
	SEAL KIT	5P0017	007	DUAL BODY (SINGLE ROTATION)						0
	SEAL KIT	5P0017	006	PTO PUMP						0
	SEAL KIT	5P0017	004	PUMP OR MOTOR, DUAL ROTATION						0
	SEAL KIT	5P0017	002	PUMP OR MOTOR						0
	SHIPPING PLUG	2A0353	30	1 7/8 - 12 O-RING PORT (SAE #24)						AS REQD.
	SHIPPING PLUG	2A0353	26	1 5/8 - 12 O-RING PORT (SAE #20)						
	SHIPPING PLUG	2A0353	21	1 5/16 - 12 O-RING PORT (SAE #16)						

\* INCLUDED IN SEAL KIT



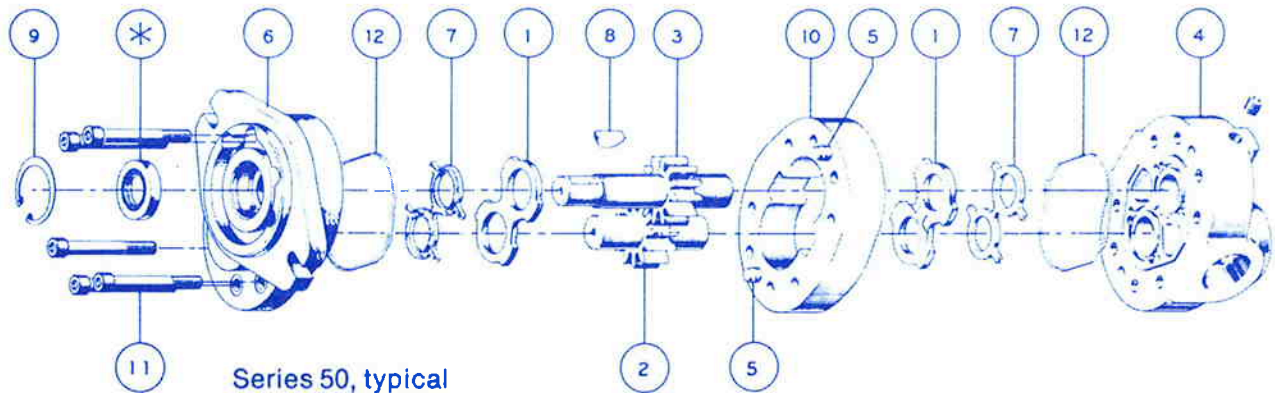
**PARTS LIST**

PART DESCRIPTION & SIZE			50P015	50P019	50P023	50P027	50P033	50P038	50P052
SHAFT FOR DRIVE GEAR, 5P0011 (3)			50M015	50M019	50M023	50M027	50M033	50M038	50M052
			DASH NUMBER						
A. 13 TOOTH SPLINE			007	008	009	010	011	012	142
B. 15 TOOTH SPLINE			019	020	021	022	023	024	025
C. 7/8" DIA. KEYED, STANDARD			001	002	003	004	005	006	149P
D. 7/8" DIA. LONG KEYED			055	056	057	058	059	060	151
G. PTO			084	085	086	087	088	089	090
SPECS	MINIMUM AT 1800 RPM	GPM	10.7	13.7	16.3	19.2	23.1	26.6	36.5
	90% VOL.	LPM	40.0	51.8	61.5	72.7	87.6	100.9	138.0
	DISPLACEMENT	CU. IN./REV.	1.52	1.95	2.32	2.74	3.30	3.80	5.20
		ml/REV.	24.9	32.0	38.0	44.9	54.1	62.3	85.2
	MAXIMUM PUMP RPM IN	1 5/16	3000	2300	2000	1700	1400	1200	1000
	INLET PORTS	1 5/8	3000	3000	3000	2600	2100	1800	1600
		1 7/8	3000	3000	3000	3000	3000	2700	2200

MAXIMUM MOTOR SPEED IS 3000 RPM.

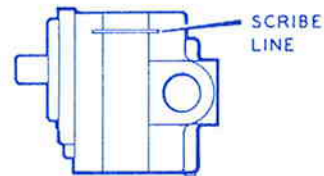
PART DESCRIPTION		PORT SIZES			DASH NO. FOR ALL ASSEMBLIES
5P0007 (4)		INLET		OUTLET	
SAE O-RING REAR PORTS	ROTATION	SINGLE	RD 1 7/8 -12 (# 24)	1 5/16 -12 (# 16)	003
			RE 1 5/8 -12 (# 20)	1 5/16 -12 (# 16)	004
			RF 1 5/16 -12 (# 16)	1 5/16 -12 (# 16)	006
SAE O-RING SIDE PORTS	DUAL		RD 1 7/8 -12 (# 24)	1 5/16 -12 (# 16)	019
			RE 1 5/8 -12 (# 20)	1 5/16 -12 (# 16)	016
			RF 1 5/16 -12 (# 16)	1 5/16 -12 (# 16)	008
	SINGLE		SA 1 7/8 -12 (# 24)	1 5/16 -12 (# 16)	001
			SB 1 5/8 -12 (# 20)	1 5/16 -12 (# 16)	002
			SC 1 5/16 -12 (# 16)	1 5/16 -12 (# 16)	005
DUAL		SA 1 7/8 -12 (# 24)	1 5/16 -12 (# 16)	015	
		SB 1 5/8 -12 (# 20)	1 5/16 -12 (# 16)	012	
		SC 1 5/16 -12 (# 16)	1 5/16 -12 (# 16)	007	

# SEAL REPLACEMENT INSTRUCTIONS



## A. DISASSEMBLY:

1. Remove unit and thoroughly clean. Remove shaft key (8) 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 (11) from front cover (6). (Nuts on series 60).
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 (12) and loading seals (7) from grooves. **DO NOT DAMAGE GROOVE OR COVER SURFACE.**
7. Remove snap ring (9) 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 (\*) in front cover (6). Be sure bearing drain hole is not blocked.
2. Install snap ring (9) and new seals (7, 12) in covers (if needed).
3. Assemble body (10) and rear cover (4) aligning dowel pins (5) and scribed line.
4. Insert thrust plate (1) into body (10) 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 (5). Tap if needed.
7. Insert cap screws (11) (or nuts) and tighten evenly as follows:  

Series 40: 35/40 ft. lbs.	Series 50: 35/40 ft. lbs.	Series 60: 65/80 ft. lbs.
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8. Rotate shaft, the maximum torque is:  

Series 40: 15 ft. lbs.	Series 50: 20 ft. lbs.	Series 60: 25 ft. lbs.
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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.