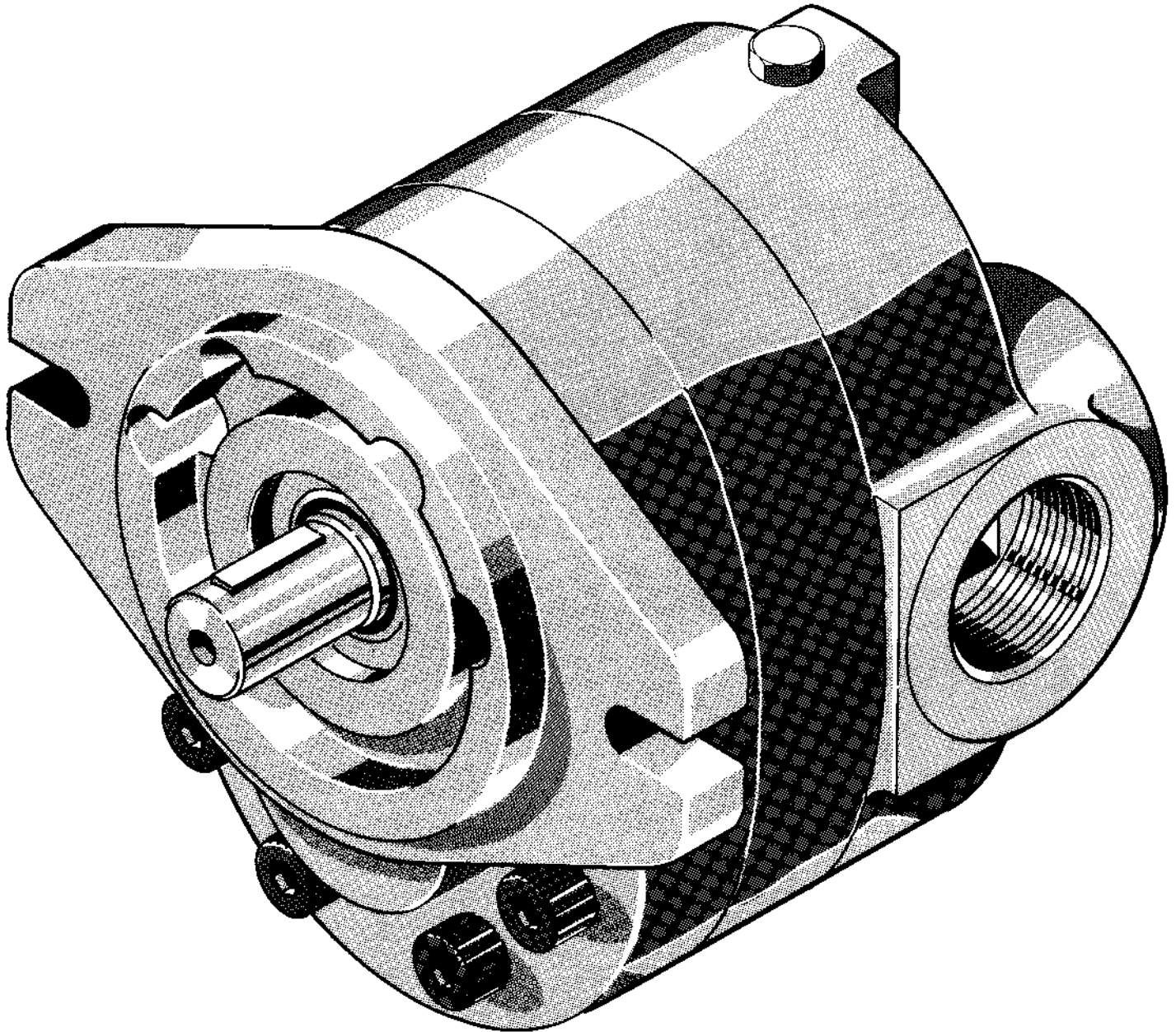
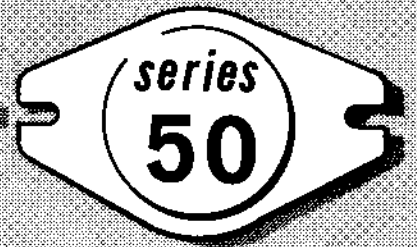


**GEAR PUMP and MOTOR**



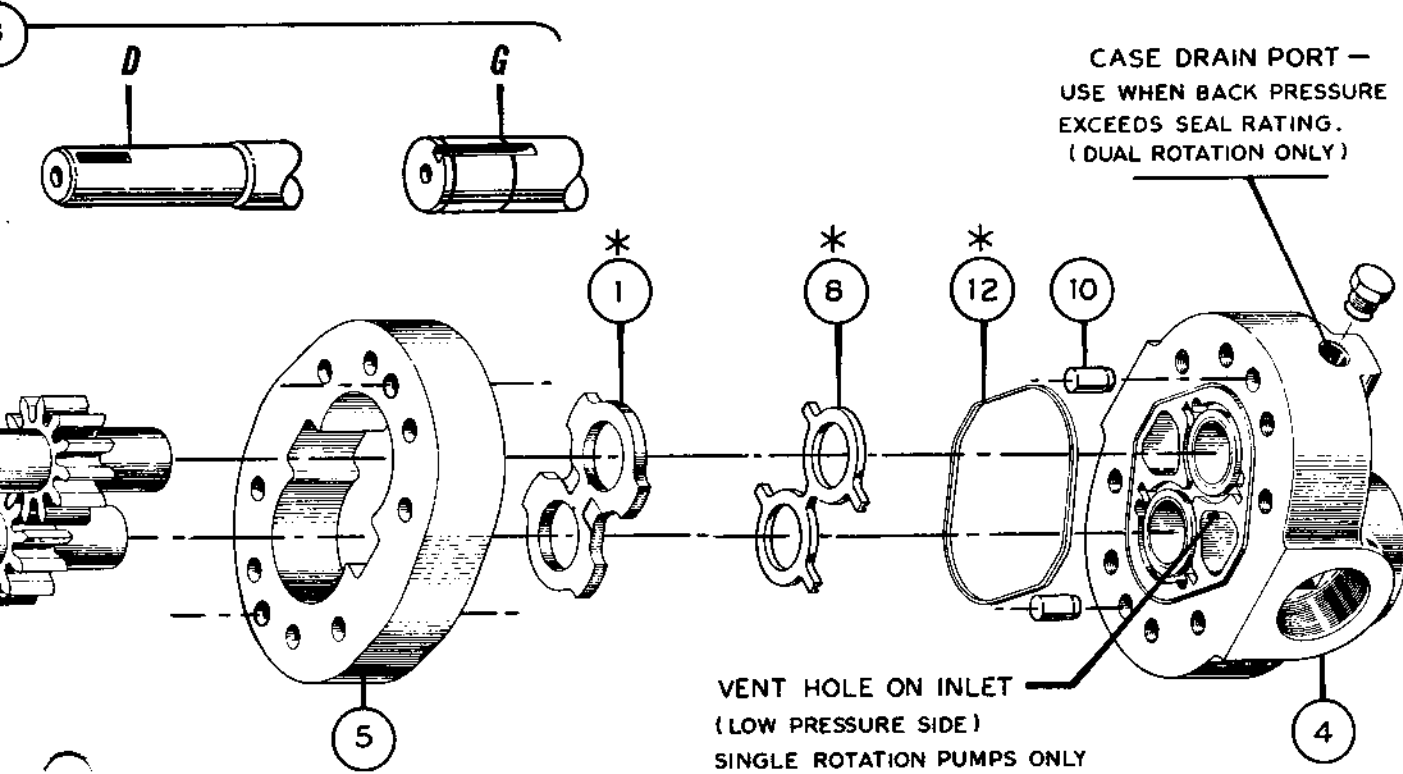
**CROSS** MANUFACTURING, INC.

LEWIS, KANSAS 67552

316-324-5525

*August 1, 1988*





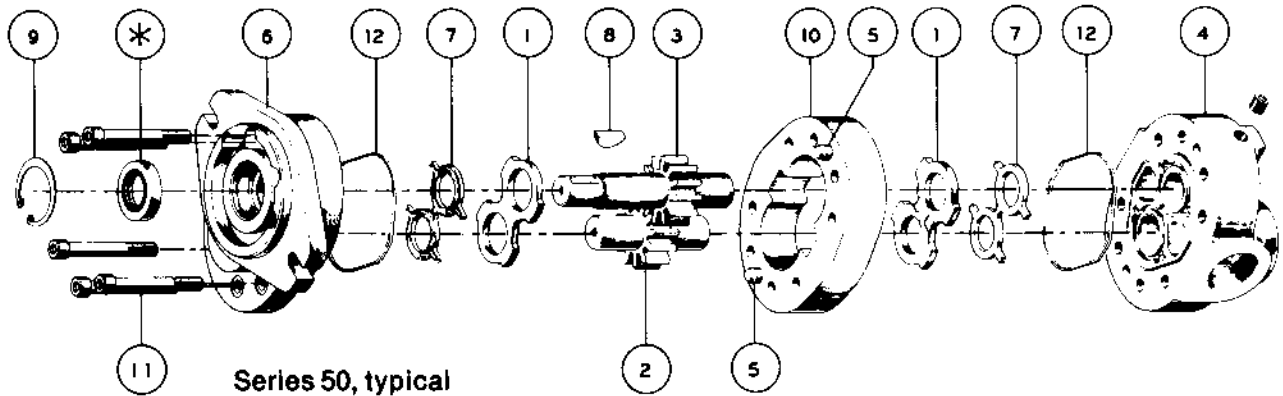
**PARTS LIST**

PART DESCRIPTION & SIZE			50P015	50P019	50P023	50P027	50P033	50P036	50P052	
SHAFT FOR DRIVE GEAR, 5P0011 (3)			50M015	50M019	50M023	50M027	50M033	50M036	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	149	
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 90% VOL.		GPM	10.7	13.7	16.3	19.2	23.1	26.6	36.5
			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 INLET PORTS		1 5/16	3000	2300	2000	1700	1400	1200	1000	
		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.

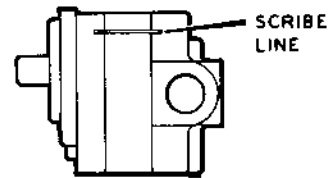
PART DESCRIPTION 5P0007 (4)		PORT SIZES		DASH NO. FOR ALL ASSEMBLIES	
		INLET	OUTLET		
SAE O-RING REAR PORTS	SINGLE	RD	1 7/8 -12 (# 24)	1 5/16-12 (# 16)	003
		RE	1 5/8 -12 (# 20)	1 5/16-12 (# 16)	004
		RF	1 5/16 -12 (# 16)	1 5/16-12 (# 16)	006
SAE O-RING SIDE PORTS	DUAL	RD	1 7/8 -12 (# 24)	1 5/16-12 (# 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
SAE O-RING SIDE PORTS	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
SAE O-RING SIDE PORTS	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.