

1000 SERIES

power shift transmissions

FUNK Manufacturing Co.

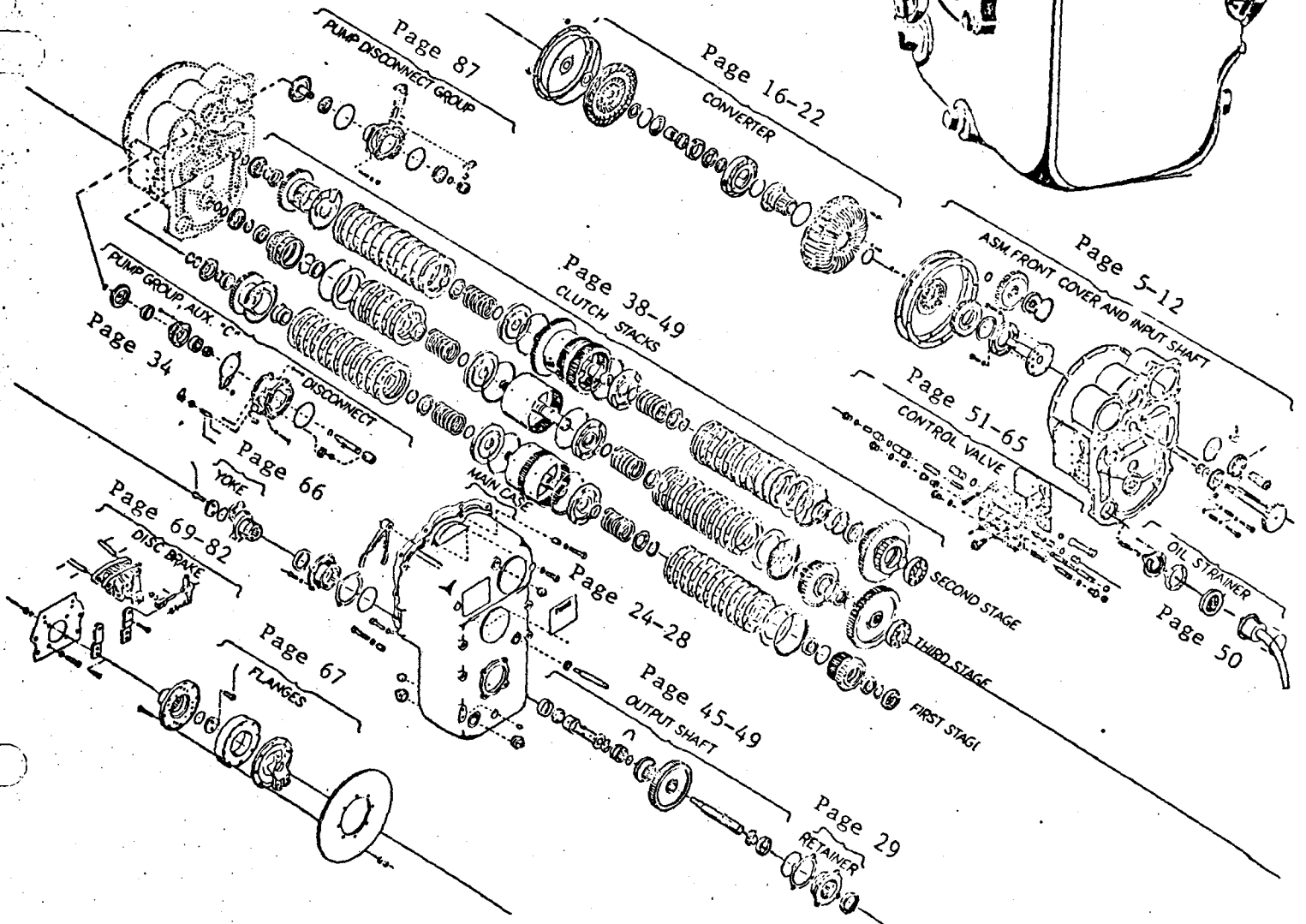
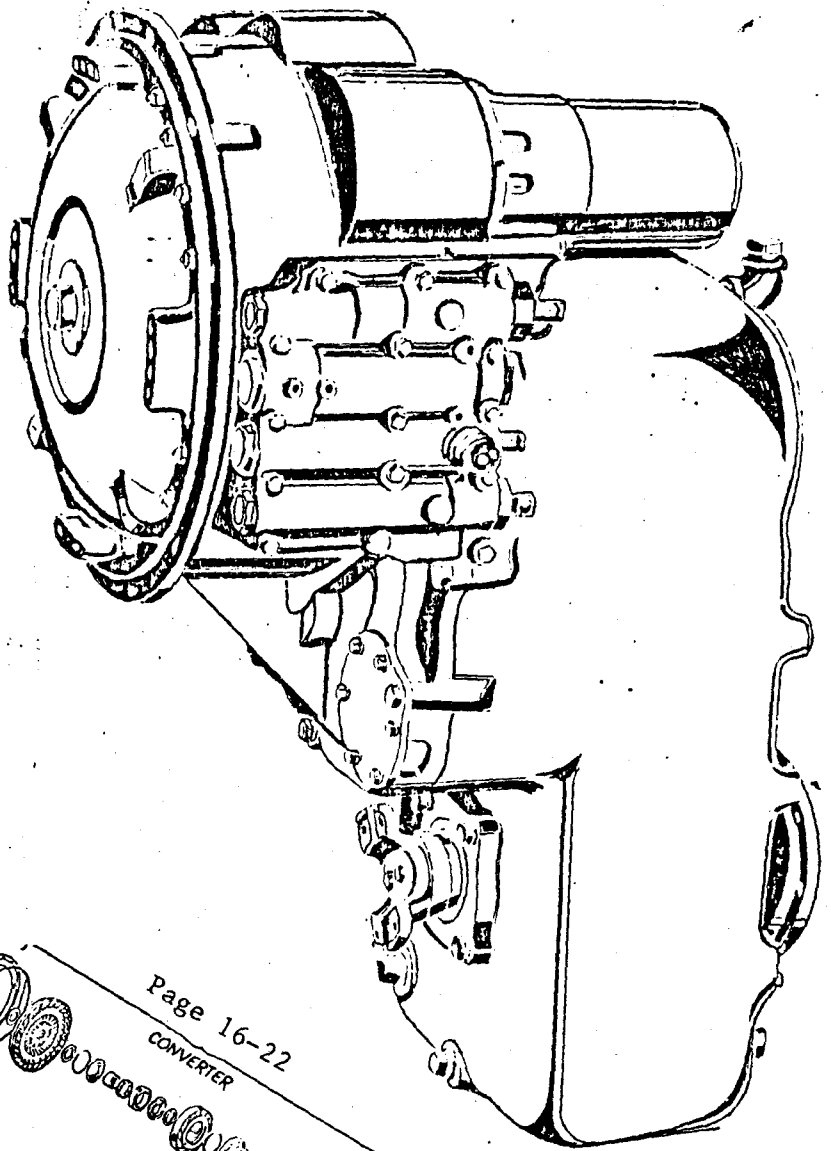
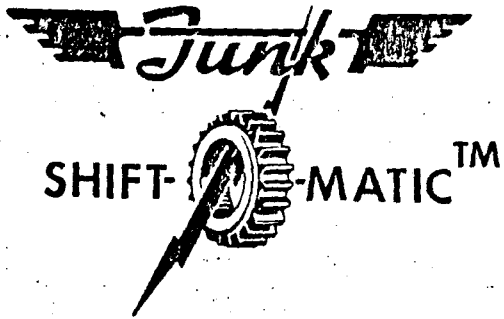
Division of Gardner-Denver
P.O. Box 577 Coffeyville, Kans. 67337

model 1024M13 spec 6939



parts list
and
instruction
manual

9/9/76



PARTS ORDERING INSTRUCTIONS

SHOULD REPAIR PARTS BE REQUIRED, PLEASE SPECIFY THE MODEL, SPECIFICATION, AND SERIAL NUMBERS OF YOUR UNIT AS WELL AS THE NAME AND NUMBER OF THE PARTS ACCOMPANYING YOUR PURCHASE ORDER.

THIS INFORMATION TAG IS ATTACHED TO YOUR UNIT.

The image shows a rectangular information tag with rounded corners and four mounting holes. At the top center is the 'Funk' logo in a stylized script font with wings. Below it is the 'SHIFT-O-MATIC' logo, where 'O' is replaced by a gear with a lightning bolt passing through it. Underneath the logo are three horizontal input fields. The first field is preceded by the word 'MODEL' in a black box. The second field is preceded by 'SPEC' in a black box. The third field is preceded by 'SERIAL' in a black box. At the bottom of the tag, the text 'MANUFACTURED BY' is centered above 'FUNK MANUFACTURING CO.', which is above 'COFFEYVILLE, KANSAS U.S.A.'.

MODEL	
SPEC	
SERIAL	

MANUFACTURED BY
FUNK MANUFACTURING CO.
COFFEYVILLE, KANSAS U.S.A.

YOU MAY WRITE TO:

FUNK MANUFACTURING CO.
ATTN. PARTS DEPARTMENT PLANT #2
1211 W. 12th STREET
COFFEYVILLE, KANSAS 67337

OR TELEPHONE

AREA CODE (316) 251-7500
ASK FOR PARTS DEPARTMENT.

OR TWX 910-740-1908

THANK YOU
THE FUNK MFG. CO.
DIV. OF GARDNER-DENVER

SERIES 1000 SHIFT-O-MATIC™ DRIVE

DESCRIPTION

The Series 1000 Shift-O-Matic™ Drive is a forward and reverse transmission, with the option of 2, 3, 4 or 6 speeds in either direction. Forward motion, reverse motion, and the four speeds are obtained through the use of hydraulically actuated multiple disc clutches. These clutches are power absorbing members that can be engaged at full engine power. Shifting under full engine power makes this model a full power shift for the forward and reverse motion in all four speeds.

The clutches in this unit are hydraulically applied and spring released. Because the clutches are hydraulically controlled, there is automatic compensation for normal wear, which eliminates the need for adjustment. Each clutch uses eleven semi metallic friction plates, and eleven polished steel reaction plates, except for the high gear clutch that uses eight of each plate.

The power from the engine is transmitted to the Shift-O-Matic™ through a torque converter. The use of the torque converter has two distinct advantages, one is the converter is essentially a fluid drive, there being no direct mechanical connection through it. This feature creates a very smooth and shock free drive eliminating engine stalling and lugging. A second advantage is that the converter multiplies torque during heavy pull-down loads. When loads are light the converter transmits the engine power directly at almost engine speed, and there is no torque multiplication. The net result is an action like a transmission, with infinitely variable and automatic speed ratios. The need for shifting gears, although present, is greatly reduced.

OPERATION

Like all mechanical equipment, the Shift-O-Matic™ Drive will need attention and servicing. Routine checks will help prevent down time. The operator can aid in preventative maintenance by reporting weak or borderline malfunctions.

Because the unit operates "in" oil and "by" oil, most of the maintenance is concerned with oil replenishment and oil cleanliness. The type of service and operating conditions shall determine the maintenance interval. However as previously stated, it is especially important that the oil be kept clean.

RULES OF OPERATION

1. Check oil level daily, with engine at idle speed and Shift-O-Matic™ in neutral. Make sure the area around oil level check plug is clean before removing plug.
2. The Shift-O-Matic™ should always be in the neutral position before starting engine, or when the vehicle is parked and the engine is running.
3. If the vehicle is to be towed, it will be necessary to run the engine at idle speed to lubricate the clutches.
4. If the oil temperature gauge, which is the converter oil out temperature, rises above 250° or the warning light comes on, stop the vehicle immediately. Shift to neutral and run the engine at 1000-1200 R.P.M. The temperature should drop rapidly to the engine water temperature. If the temperature does not drop, trouble is indicated. The trouble should be determined before the vehicle is operated again. Overheating generally occurs due to working in too high of a gear ratio. Shifting to a lower gear will help eliminate overheating.
5. Do not shut off engine when unit is overheating.

SERVICE

1. Funk Manufacturing Company recommends the use of Type "A" Automatic Transmission Fluid or equivalent.
2. When servicing the unit for the first time after vehicle installation and/or after repair, the unit is filled as follows:
 - A. Fill the unit with 5 gallons of the recommended lubricant.
 - B. Start engine and run at idle speed to let the hydraulic system charge.
 - C. With engine at idle speed, finish filling unit to the full level. This will take approximately 3 quarts.

*The oil level is always checked with the engine running at idle speed and the Shift-O-Matic[™] in neutral.

SERVICE PROCEDURES AND RECOMMENDATIONS

1. It is recommended the oil and oil filter be changed after the first 40 hours of operation and/or after repair.
2. Thereafter and under normal operating conditions, it is recommended the oil and oil filter be changed whenever the oil shows traces of contamination, or the effects of high operating temperature evidenced by discoloration or strong odor.

If the oil in the system has become contaminated with metal particles, all the components of the system (oil lines, oil pump, oil filter, control valve, clutches, converter, heat exchanger) must be thoroughly cleaned. Generally this means a tear down of the unit. The metal particles in the oil is evidence of failure of some part.
3. When changing the oil, the dirty oil should be drained while the unit is warm, examining for contamination as described above.
4. Keep all controls properly lubricated.
5. If the radiator on the vehicle is drained for winter storage, the heat exchanger on the Shift-O-Matic[™] must also be drained.

CONVERTER INSTALLATION FOR ALL SERIES 1000 SHIFT-O-MATICS

All 1000 series are shipped with a small parts bag attached to the unit with a copy of this memo and the following parts included.

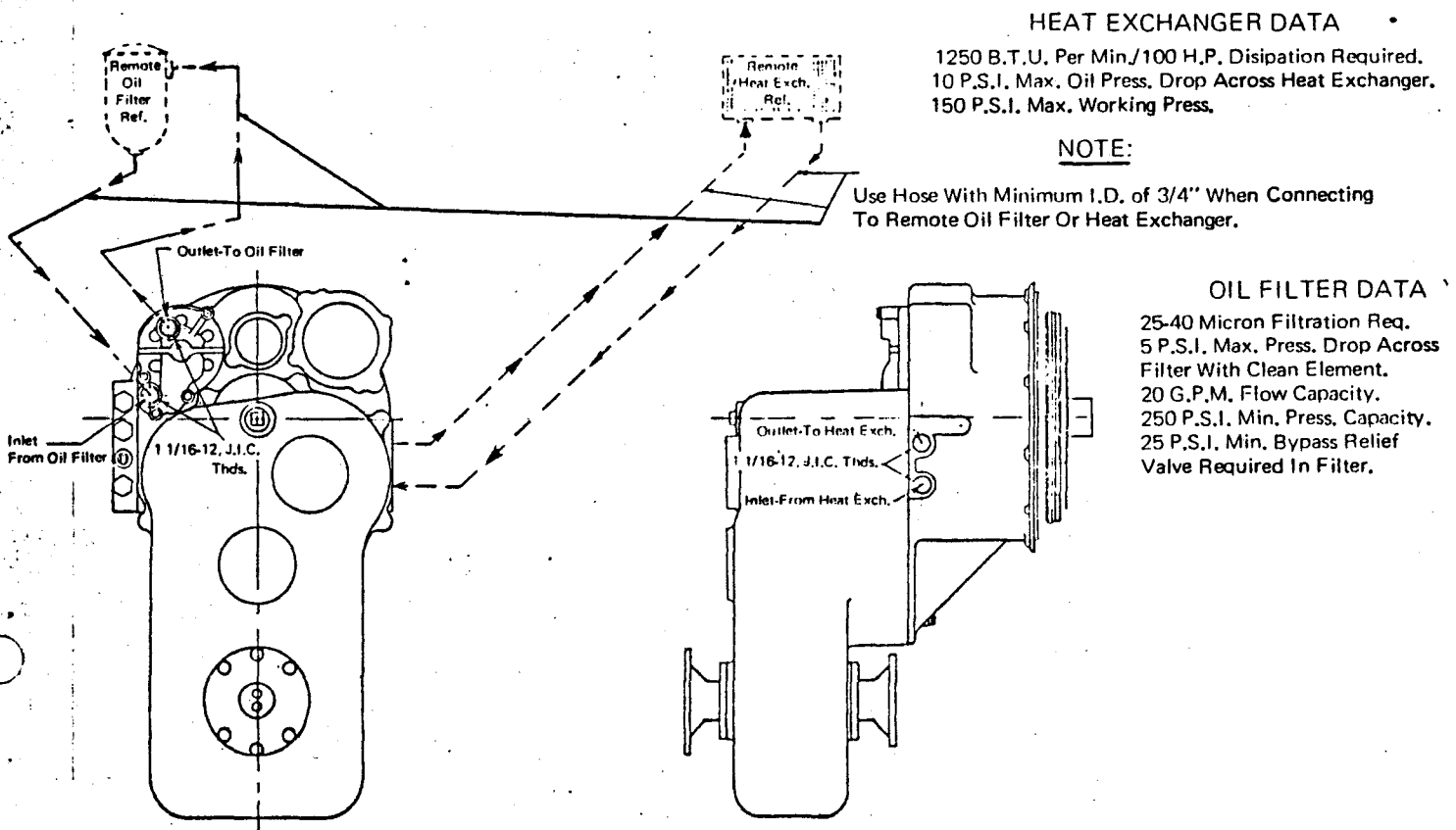
1. The following parts are for attaching the drive plate assembly to the engine flywheel.
8 each F10030-12 Capscrew (3/8-16 x 3/4" hex. head H.T.)
2. The following group is for attaching the converter to the drive plate assembly.
Group #40121191—supplied with the 11 3/4"
8 each F11004-20NY Capscrew (5/16 N.F. x 1 1/4" Socket head H.T.)
8 each 4012121 Washer, Half Round (11/16" Dia. x 1/4" thick)

CONVERTER INSTALLATION INSTRUCTIONS

1. Remove drive plate assembly and converter from unit by pulling straight out.
2. Attach drive plate assembly to the engine flywheel using capscrew and lockwashers provided in parts bag. Refer to No. 1.
3. Attach converter to the drive plate assembly using the socket head capscrews and the half round washers provided in the parts bag. Refer to No. 2. The half round washer is used under the head of the socket head capscrew.
4. Center the converter hub gear seal ring in its groove, grease will help hold ring in position.
5. Align unit with converter and mate together.

NOTE: To aid in installation, the stator support tube spline, the input shaft spline, and converter hub gear seal ring should be lightly greased.

REMOTE OIL FILTER AND HEAT EXCHANGER INSTALLATION DATA



Spec. No., Model No., Serial No.
and Ratio MUST Be Shown on
All Orders For Repair Parts

FUNK MFG. CO. **FILE COPY**
COFFEYVILLE, KANSAS

SPEC. 6939 SH 1 OF 2
ASSEMBLY NO. 1024M13
DATE WRITTEN 4-26-76
PRODUCT CODE: 01016

SPECIFICATIONS 4 SPEED 18 5/8" DROP 12 3/4" CONVERTER
W/1 1/2" GEROTOR SAE #4 RATIO: 5.12, 2.7, 1.5, .8 W/INTERNAL DISC.
ENGINE: DETROIT DIESEL A.D. 4-53 N45 F.W. 5136069

COMPANY PETTIBONE CORPORATION
CHICAGO, ILL.

MATERIAL LIST

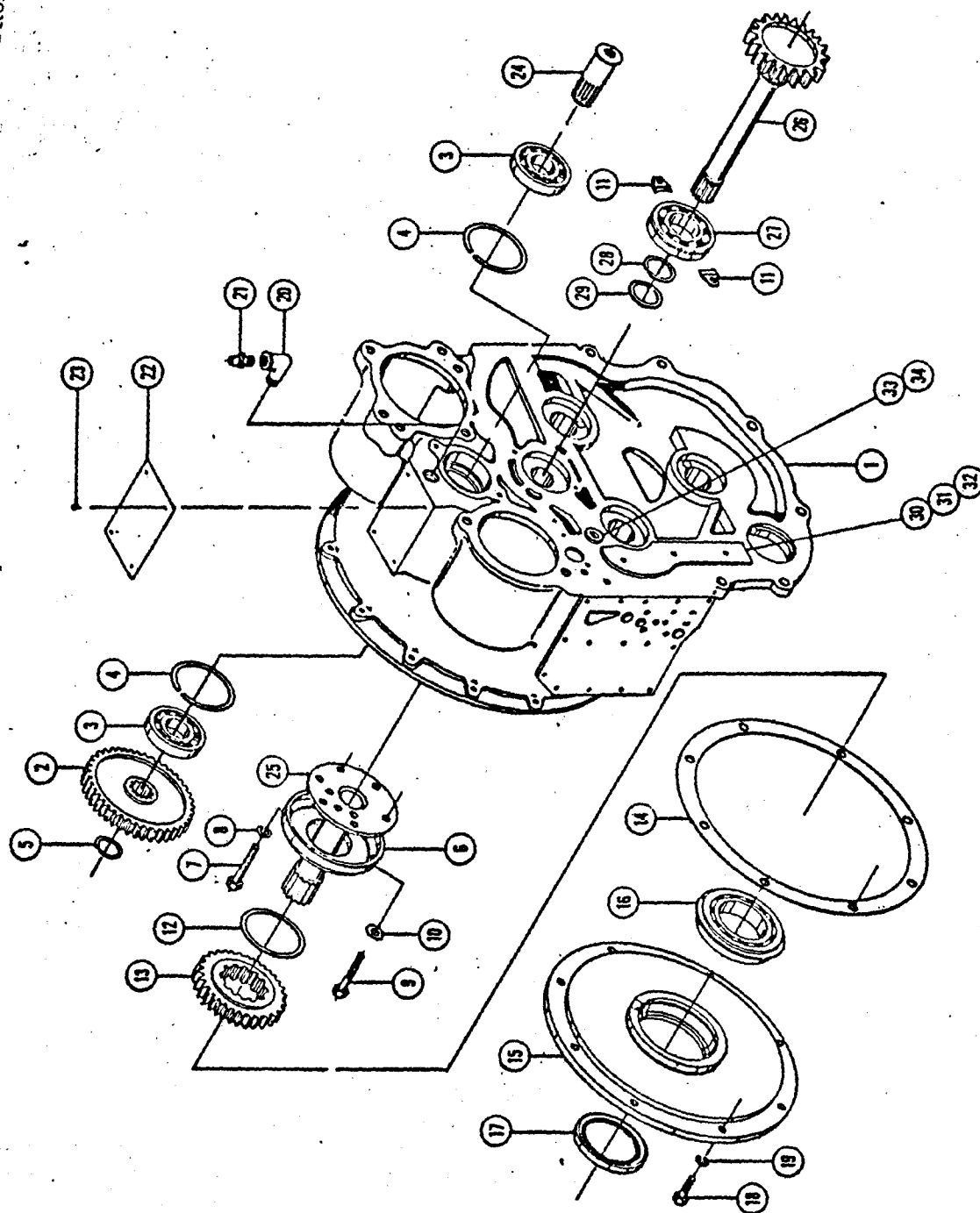
DWG. REF. NO.	NAME OF PART	PART NO.	NO. REQ'D.	MATERIAL DESCRIPTION	DWG. SIZE
	ASM. TRANSMISSION	1024M13	1	WITH FOLLOWING OPTIONS:	
	ASM. FRONT COVER & INPUT SHAFT	4002360	1		
	INPUT MIDSHIP GROUP	4002142	1		
	ASM. CONVERTER	4045135	1		
	CASE-MAIN GROUP	4001585	1	W/ INTERNAL DISC.	
	PUMP GROUP CHARGE & AUX. "C"	4006142	1	W/1 1/2" GEROTOR	
	GEAR GROUP	4001772	1	1720 1754 1717 1697	
	VALVE CONTROL GROUP	4001911	1	3 POSITION	
	RETAINER OUTPUT GROUP	4001200	2		
	ADDITIONAL EQUIPMENT:				
	YOKE 6C(MIDSHIP MOUNT)	F84014	1		
	YOKE GROUP 7C	4001451	1	ENGINE SIDE	
	YOKE FLANGE GROUP 7C	4001445	1	OPP. ENGINE SIDE	
	BRAKE DRUM GROUP	4001470	1		

WRITTEN BY B.H.

SPEC. 6939 SH 1 OF 2

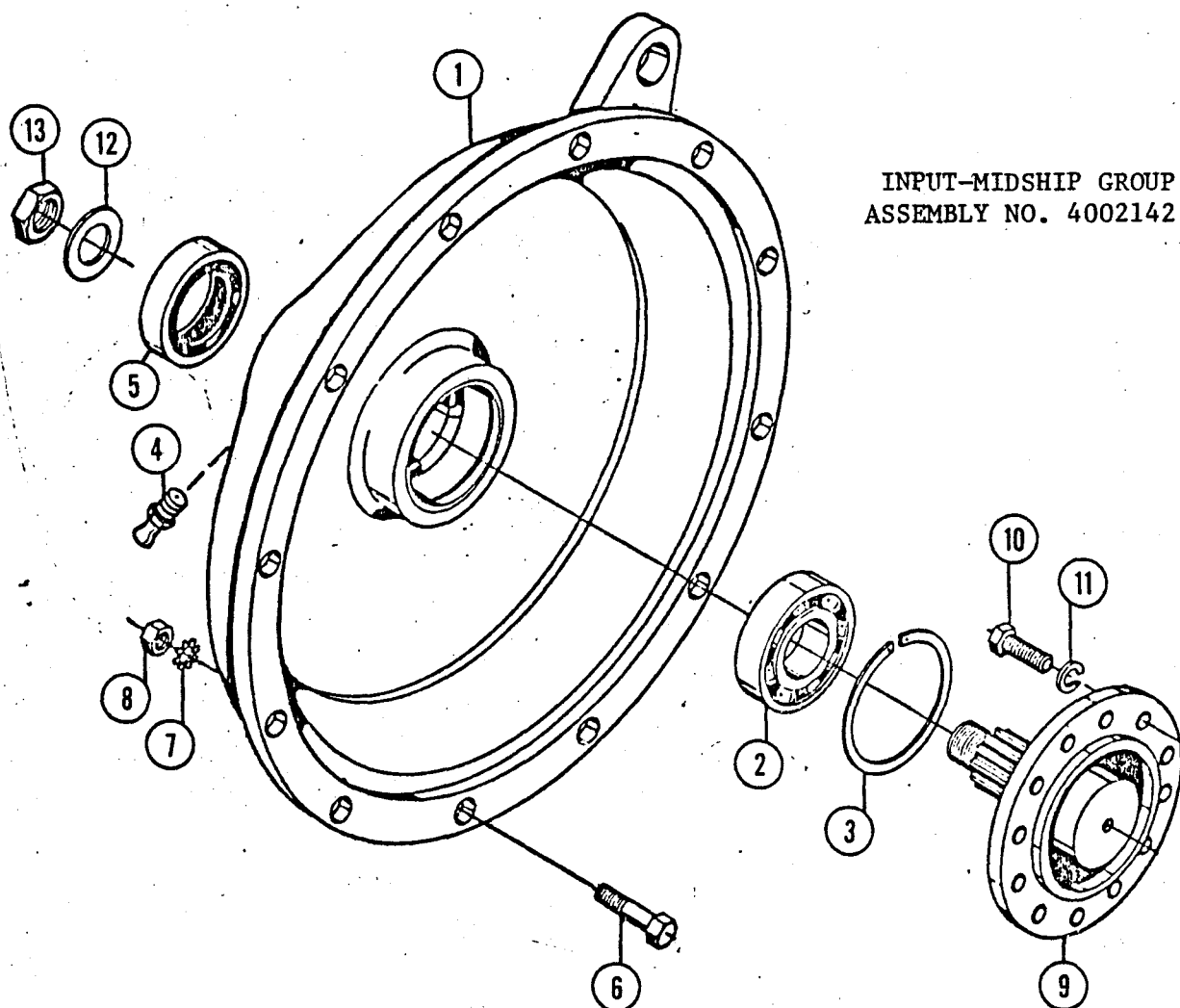
SPEC. 6939 SH 2 OF 2

ASM FRONT COVER INPUT SHAFT GROUP
4002360



ASM. FRONT COVER, INPUT SHAFT GROUP 4002360

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001799	Asm. Front Cover.	1
2	4001043	Gear, Aux. "A" Pump	1
3	F40307	Bearing	2
4	F39000315	Ring, Retainer.	2
5	F39010131	Ring, Retainer.	1
6	4001117	Plate, Cover.	1
7	F1002020	Capscrew.	4
8	F16201	Lockwasher.	4
9	F1002036	Capscrew.	2
10	F15002	Starwasher.	2
11	4001492	Clip, Brg. Ret.	2
12	F5554458	Washer, Thrust, Pump.	1
13	4001120	Gear, Impeller Hub.	1
14	4001122	Gasket, Retainer.	1
15	4001041	Retainer, Brg.	1
16	F40114R	Bearing	1
17	F65015	Seal, Oil	1
18	F1003016	Capscrew.	7
19	F16202	Lockwasher.	7
20	F323001	Elbow, Street	1
21	F68300	Breather.	1
22	4001660	Plate, Name	1
23	F310064	Drive Screw	4
24	4001044	Shaft	1
25	4006084	Tube, Stator Support.	1
26	4001484	Shaft, Input.	1
27	4000866	Bearing	1
28	F39010177	Ring, Retainer.	1
29	4012328	Ring, Seal.	1
30	4001702	"O" Ring.	1
31	4001700	Cover, Oil Passage.	1
32	F1121824	Capscrew, Hx. Hd. Socket Flat	3
33	F1900316	Plug, Pipe Socket Hd.	1
34	4002293	Valve, Regulator.	1

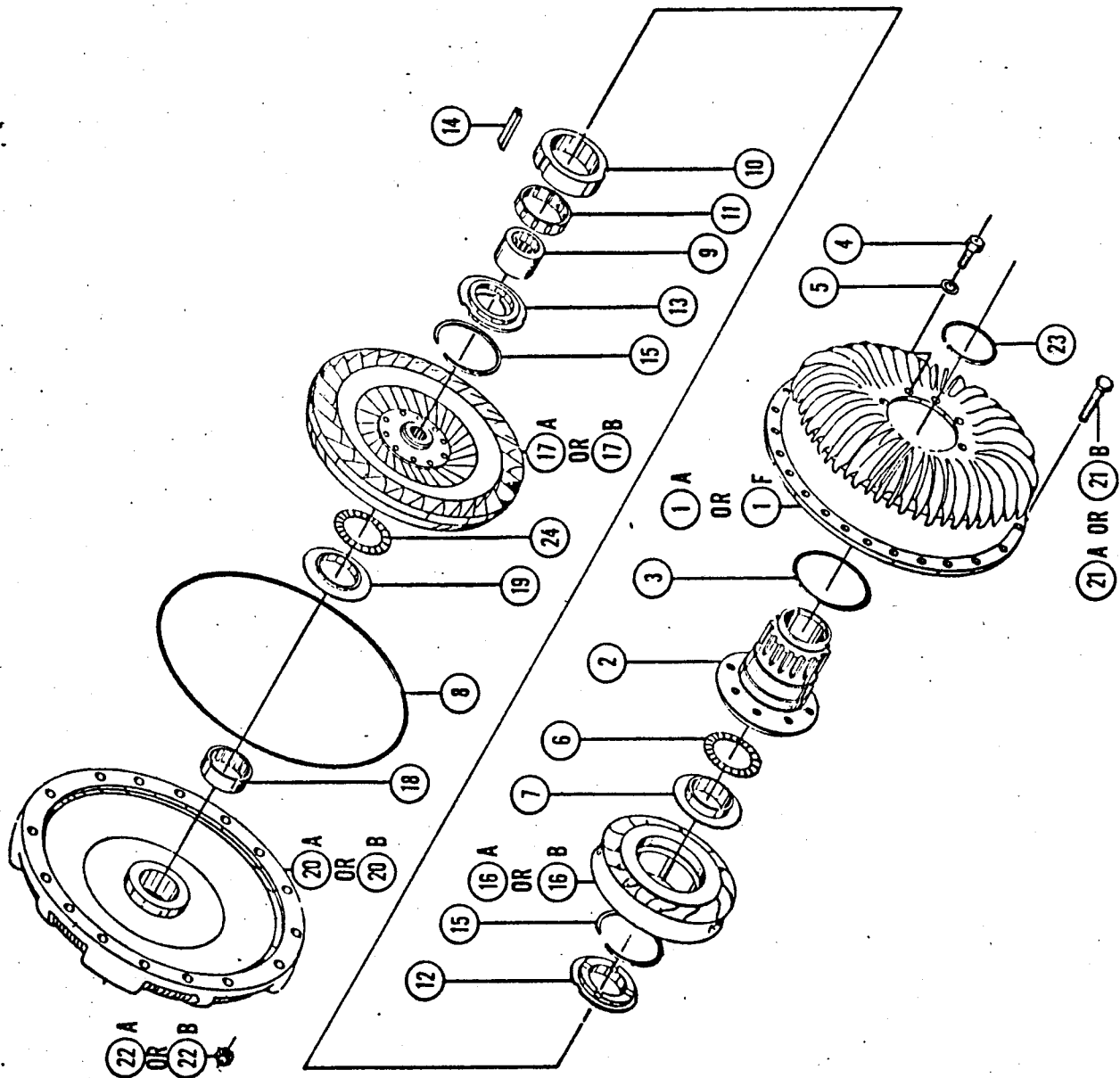


INPUT-MIDSHIP GROUP
ASSEMBLY NO. 4002142

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001899	Housing-Front	1
2	F40208S	Bearing	1
3	F39000315	Ring, Retaining	1
4	F66012S	Fitting, Grease	1
5	F65181	Seal, Oil	1
6	F1003028	Capscrew.	12
7	F15003	Starwasher.	12
8	F13005	Nut	12
9	4045047	Asm., Drive Hub. Conv.	1
10	F1003016	Capscrew.	12
11	F16202	Lockwasher.	12
12	4000326	Washer.	1
13	F7828714B	Nut	1

CONVERTER ASSEMBLYS 1000 SERIES

██████████ - 4045136 13" - MIDSHIP MOUNTED
 4045138 12 3/4" - 4045137 13" - ENGINE MOUNTED



CONVERTER ASSEMBLYS 1000 SERIES

██████████ - 4045136 13" - MIDSHIP MOUNTED
4045138 12 3/4" - 4045137 13" - ENGINE MOUNTED

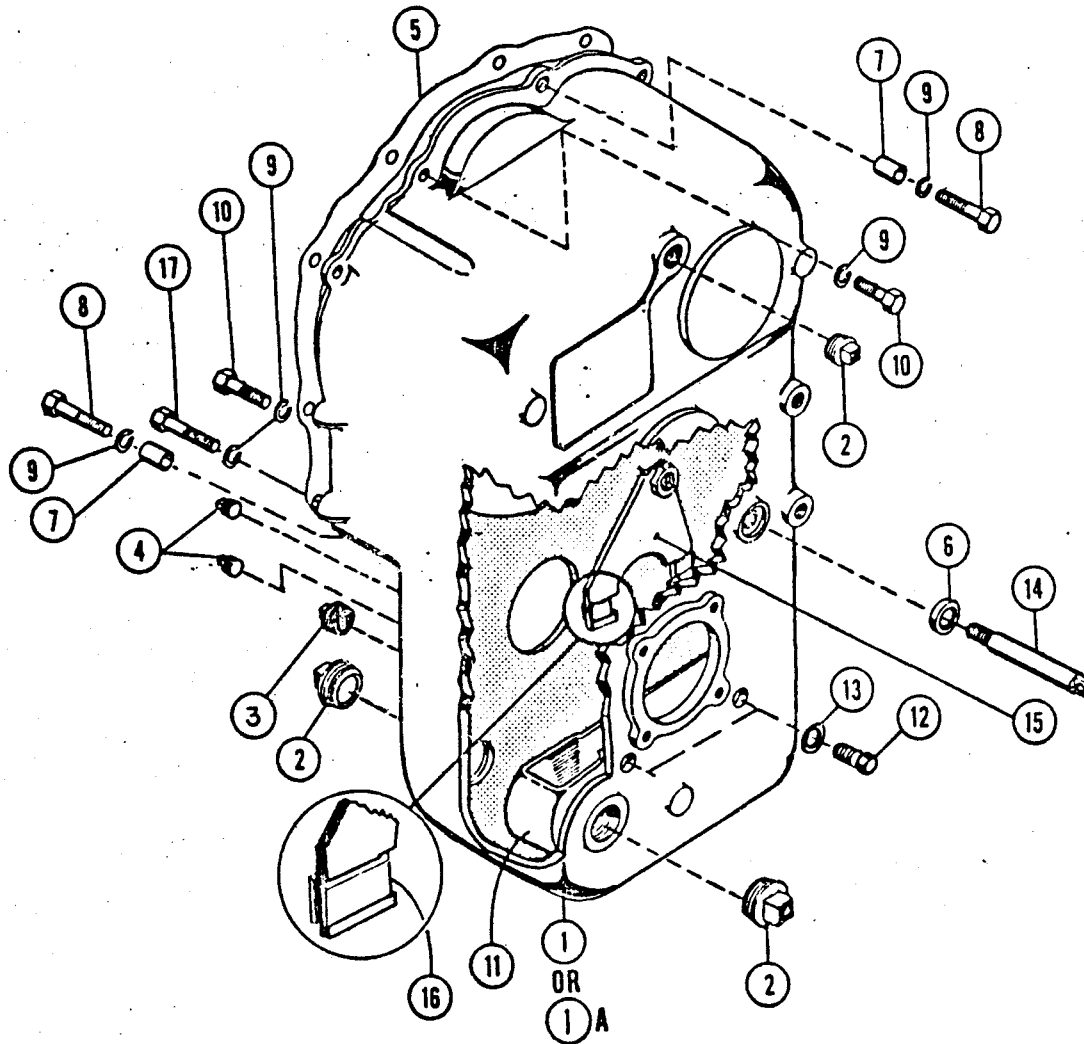
REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1A	4012164A	Impeller-Used on Assy's 4045135 & 4045138	1
1F	4012164F	Impeller-Used on Assy's 4045136 & 4045137	1
2	4045132	Impeller Hub	1
3	F37030236	"O" Ring	1
4	4012167B	Place Bolt	12
5	F18002	Washer, Dynaseal	12
6	F55136-50	Thrust Bearing	1
7	4045130	Thrust Washer	1
8	4000537	"O" Ring	1
9	4045076	Inner Race of Clutch	1
10	4045077	Outer Race Overrun Cam	1
11	4045081	Sprag Clutch Assembly	1
12	4045126	Clutch Retainer-Rear	1
13	4045079	Clutch Retainer-Front	1
14	F36604	Key	4
15	F80200-381	Snap Ring	2
16A	4045055	Stator-Used on Assy's 4045136 & 4045137	1
16B	4045089	Stator Free-Used on Assy's 4045135 & 4045138 . .	1
17A	4045133	Turbine Assembly-Used on Assy's 4043136 & 4045137	1
17B	4045134	Turbine Assembly-Used on Assy's 4045135 & 4045138	1
18	F46028-12	Bearing	1
19	4045129	Thrust Washer	1
20A	4045117	Front Cover-Used on Assy's 4045135 & 4045136 . .	1
20B	4045110	Front Cover-Used on Assy's 4045137 & 4045138 . .	1
21A	F10025-24	Capscrew-Used on Assy's 4045135 & 4045136 . . .	24
21B	F10025-24	Capscrew-Used on Assy's 4045137 & 4045138 . . .	16
22A	F13110D0	Locknut-Used on Assy's 4045135 & 4045136	24
22B	F13111000	Locknut-Used on Assy's 4045137 & 4045138	16
23	4000912	Seal Ring	1
24	F55136-50	Thrust Bearing	1

NOTE:
40121192
CONVERTER ATTACHMENT FITTINGS
(SHOWN WITH DRIVE PLATE)
USE WITH ASSEMBLIES
4045138 4045137

Revised 7-1-76

MAIN CASE GROUP 18 5/8 DROP

ASM. NO. 4001583



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001582	Main Case for Group 4001583	1
1A	4001577	Main Case for Group 4001585	1
2	F19001-20	Plug 1 1/4 N.P.T.	3
3	F20000-7	Plug, Drain (Mag.) 3/4 N.P.T.	1
4	F19001-4	Plug, 1/4 N.P.T.	2
5	4001124	Gasket, Main Hsg.	1
6	F65021	Seal, Oil	1
7	4001123	Bushing, Locating	2
8	F10050-32	Capscrew 1/2-13 x 2	2
9	F16204	Lockwasher 1/2	9
10	F10050-24	Capscrew 1/2-13 x 1 1/2 For Group 4001585	6
		Capscrew 1/2-13 x 1 1/2 For Group 4001583	7
11	4001829	Oil Trough 54T Gear	1
12	F10030-14	Capscrew 3/8-16 x 7/8	2
13	F18003	Washer 3/8, Dynaseal	2
14	4001472	Shaft Shifter	1
15	4001895	Fork	1
16	4001897	Clip-To be installed from inside out	2
17	F10050-52	Capscrew 1/2-13 x 3 1/4 for Group 4001585	1

SPEC. _____ SH _____ OF _____
 ASSEMBLY NO. _____
 DATE WRITTEN 9-1-76

GROUP CHARGE AND AUXILIARY PUMP 4006142

DWG. REF. NO.	PART NO.	NAME OF PART	
	4002496	HOUSING	6141 ASM. CHARGE PUMP
	F97501003	BUSHING	1925 HOUSING ASM.
	4006007	SHAFT, DRIVE	
	F5557625	WASHER, DRIFT	
	F3620061HT	KEY, WOODRUFF	
	4006000	ASM. GEOROTR	
	4006009	ASM. CHARGE PUMP RETAINER	
	4006008	RETAINER	
	F97501003	BUSHING	
	F1002040	CAPSCREW	5/16-18 X 2 1/2
	F15002	STARWASHER, EXT.	5/16
	F40208	BALL BEARING	
	4001340	GEAR	
	F39010100	RING, RETAINING	
	4001456	SLEEVE	
	4001213	O-RING	
	4012299CP	COVER, SHIPPING	
	F2310014	PLUG, SHIPPING	
	F2310029	PLUG, SHIPPING	
	4040107	O-RING	
	4001059	GASKET	
	F1003040	CAPSCREW	3/8-16 X 2 1/2
	F1003020	CAPSCREW	3/8-16 X 1 1/4
	F15003	STARWASHER, EXT	3/8

NOTE: THERE IS NO DRWG. TO REFERENCE THIS PARTS LIST AVAILABLE.
 IT IS NOT YET COMPLETE.

FUNK SERVICE BULLETIN

#100-2

Date: 1-28-76

SUBJECT: SERIES 1000 SHIFT-O-MATIC TRANSMISSION

The clutch plates used in the Series 1000 transmission was changed on 12-5-74 at Serial #3359, and the Series 1000R was changed on 12-2-74 at Serial #158. This change was made to use graphitic clutch plate material, and this change will require the use of a different separator plate and a different clutch retainer plate.

#4002022 Clutch Plate (Graphitic) replaces #40121159 (Semi-Metallic)

#40121323 Separator Plate (Flat) replaces #4012382 (Wavy)

#4002191 Clutch Retainer Plate (.44" thick) replaces #4001597 (.50" thick)

These parts can be used in units prior to the above referenced serial numbers, except they must be used as a complete set only. All clutch plates, all separator plates, and the clutch retainer plate would have to be replaced at the same time.

Caution:

Do not mix old and new parts together in the same clutch pack, as this may cause premature clutch failure.

Funk



Funk Manufacturing Company

DIV. OF GARDNER-DENVER

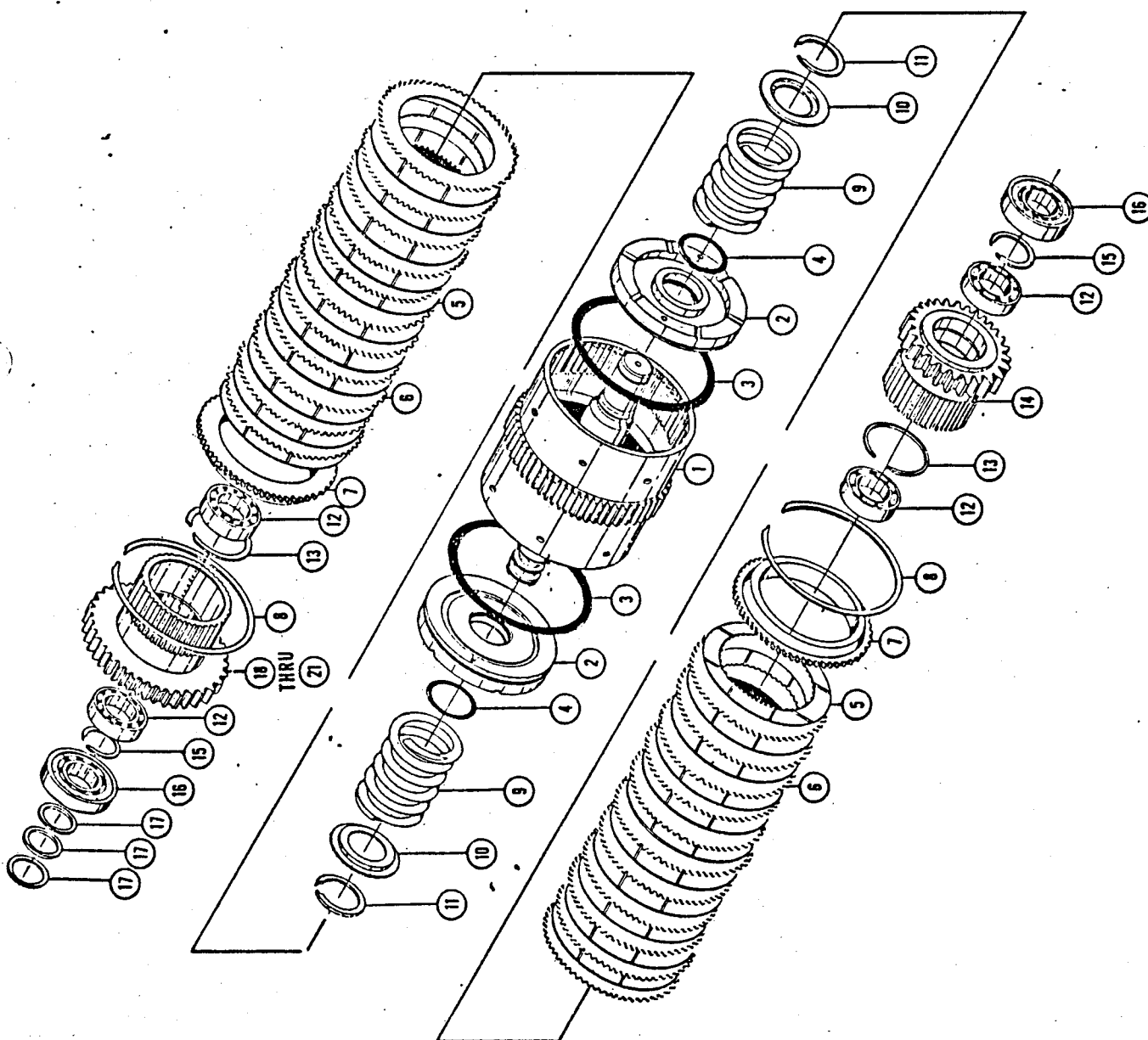
1211 W. 12th STREET COFFEYVILLE, KANSAS 67337 (316) 251-7500

CLUTCH ASSEMBLY - 1ST STAGE

ASM. 4001741

ASM. 4001751

ASM. 4001854



CLUTCH ASSEMBLY - 1ST STAGE

ASM. 4001741 ASM. 4001751
 [REDACTED] ASM. 4001854

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001742	Asm. Weld, Clutch 1st	1
2	4001738	Piston, Clutch	2
3	4012376-A	Ring, Seal	2
4	4001210	"O" Ring, Piston	2
5	4002022	Plate, Clutch	22
6	40121323	Plate, Separator	22
7	4002191	Retainer Clutch Plate	2
8	4012383	Ring, Snap	2
9	4001025	Spring, Clutch	2
10	4001846	Retainer, Clutch Spring	2
11	F81677	Ring, Retainer	2
12	F40108	Bearing	4
13	F39000-268	Ring, Retainer	2
14	4001731	Asm. Weld, Gear & Hub	1
15	F81656	Ring, Retainer	2
16	4000859	Bearing, Roller	2
17	4012365	Ring, Seal	3

NOTE: IN ADDITION TO THE ABOVE PARTS, THE FOLLOWING PARTS ARE
 TO BE USED WITH ASSEMBLYS NOTED.

18.	4001730	Asm. Weld, Gear & Hub - To be used with Asm. 4001741	1
19.	4001726	Asm. Weld, Gear & Hub - To be used with Asm. 4001720	1
20.	4001740	Asm. Weld, Gear & Hub - To be used with Asm. 4001751	1
21.	4001849	Asm. Weld, Gear & Hub - To be used with Asm. 4001854	1

Revised 7-1-76

CLUTCH ASSEMBLY - 2ND STAGE

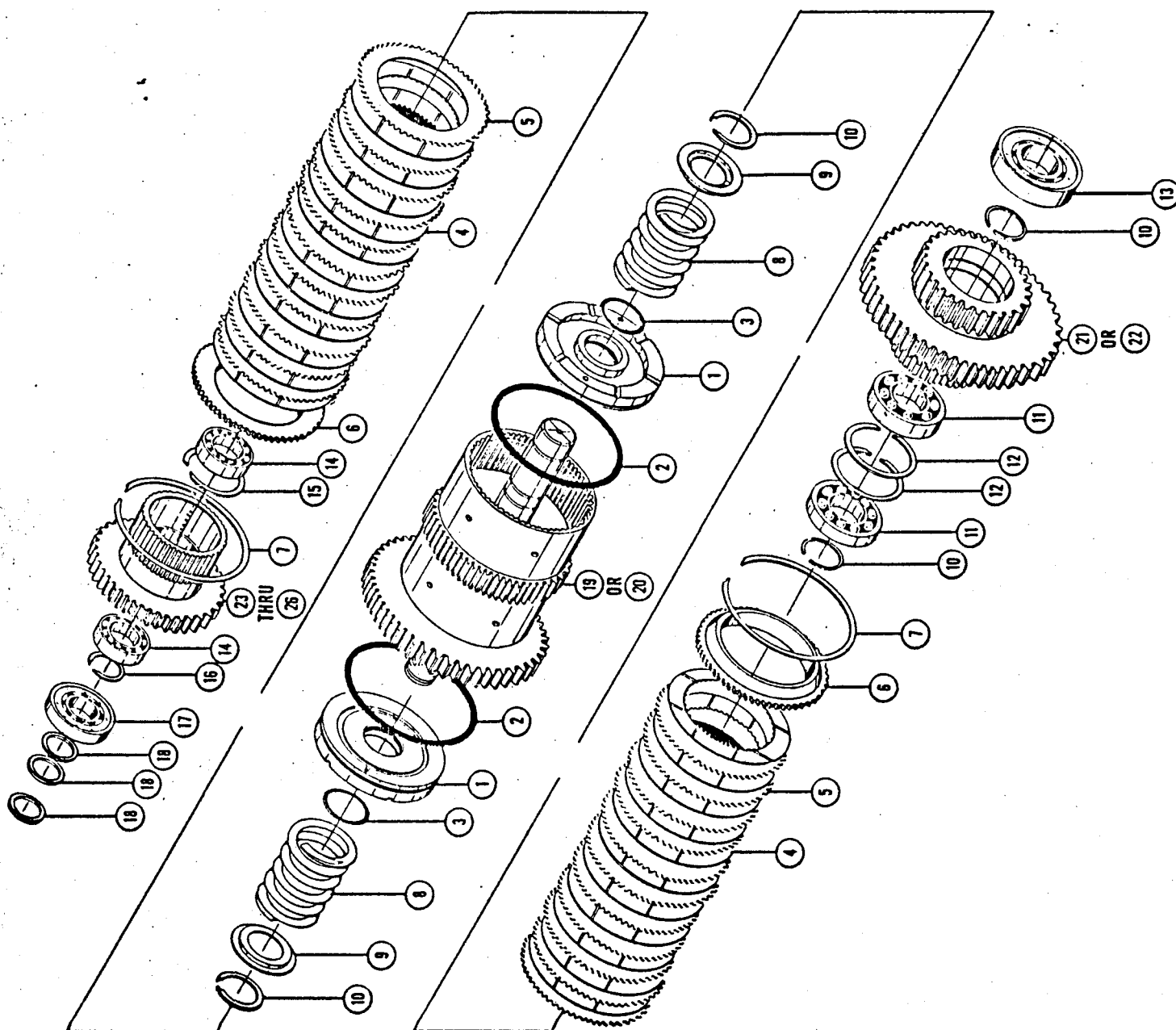
ASM. 4001744

ASM. 4001752

ASM. 4001822

ASM. 4001954

ASM. 4001855



CLUTCH ASSEMBLY - 2ND STAGE

ASM. 4001744 XXXXXXXXXX ASM. 4001954
 ASM. 4001752 ASM. 4001822 ASM. 4001855

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001738	Piston, Clutch	2
2	4012376A	Ring, Seal	2
3	4001210	"O" Ring, Piston	2
4	4002022	Plate, Clutch	22
5	40121323	Plate, Separator	22
6	4002191	Retainer, Plate, Clutch	2
7	4012383	Ring, Snap	2
8	4001025	Spring, Clutch	2
9	4001846	Retainer, Clutch Spring	2
10	F81677	Ring, Retainer	4
11	F41209	Bearing	2
12	F39000-334	Ring, Retainer	2
13	4000858	Bearing, Roller	1
14	F40108	Bearing	2
15	39000-268	Ring, Retainer	1
16	F81656	Ring, Retainer	1
17	4000859	Bearing, Roller	1
18	4012365	Ring, Seal	3

NOTE: IN ADDITION TO THE ABOVE PARTS, THE FOLLOWING PARTS ARE
 TO BE USED WITH ASSEMBLYS NOTED.

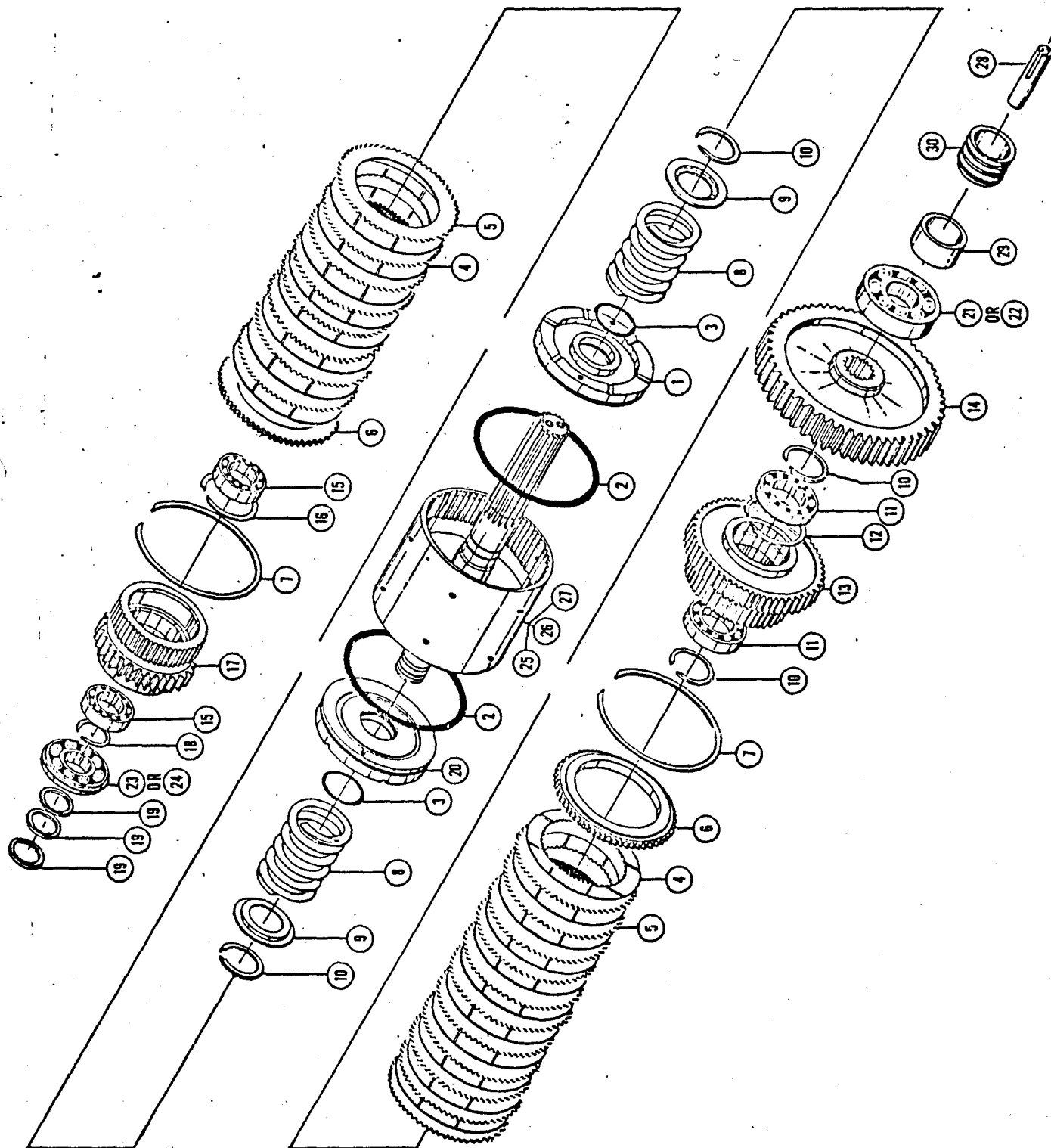
19	4001745	Asm. Weld, Clutch, 2nd - For Asms. 4001744, 4001752 and 4001954	1
20	4001755	Asm. Weld, Clutch, 2nd - For Asms. 4001754, 4001822 and 4001855	1
21	4001945	Asm. Weld, Gear & Hub - For Asms. 4001744 and 4001954	1
22	4001732	Asm. Weld, Gear & Hub - For Asms. 4001752, 4001754, 4001822 and 4001855	1
23	4001730	Asm. Weld, Gear & Hub - For Asm. 4001744	1
24	4001740	Asm. Weld Gear & Hub for Asms. 4001752 & 4001822	1
25	4001726	Asm. Weld, Gear & Hub - For Asms. 4001754 & 4001954	1
26	4001849	Asm. Weld, Gear & Hub - For Asm. 4001855	1

CLUTCH ASSEMBLY - 3RD STAGE

ASM. 4001714

ASM. 4001757

ASM. 4001588



CLUTCH ASSEMBLY - 3RD STAGE

ASM. 4001714

ASM. 4001757

ASM. 4001588

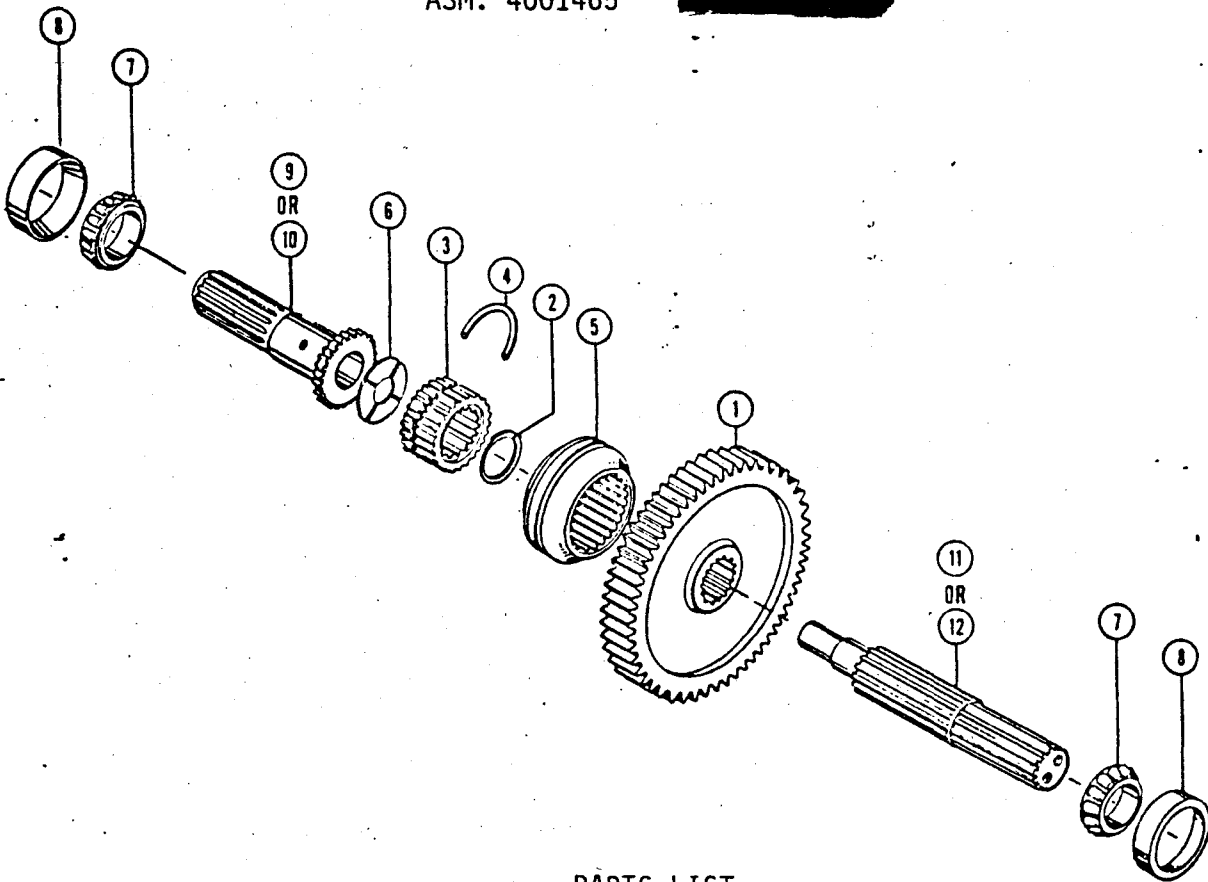
REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001738	Piston, Clutch	1
2	4012376A	Ring, Seal	2
3	4001210	"O" Ring, Piston	2
4	4002022	Plate, Clutch	19
5	40121323	Plate, Separator	19
6	4002191	Retainer, Plate, Clutch	2
7	4012383	Ring, Snap	2
8	4001025	Spring, Clutch	2
9	4001846	Retainer, Clutch Spring	2
10	F81677	Ring, Retainer	4
11	F40109	Bearing	2
12	F39000-300	Ring, Retainer	1
13	4001727	Asm. Weld, Gear & Hub	1
14	4001026	Gear	1
15	F40108	Bearing	2
16	F39000-268	Ring Retainer	1
17	4001725	Asm. Weld, Gear & Hub	1
18	F81656	Ring Retainer	1
19	4012365	Ring, Seal	3
20	4001739	Piston, Clutch	1

NOTE: IN ADDITION TO THE ABOVE PARTS, THE FOLLOWING PARTS ARE
TO BE USED IN ASSEMBLYS NOTED.

21	4000858	Bearing - For Asms. 4001717 and 4001588	1
22	F41309	Bearing - For Asms. 4001714 and 4001757	1
23	4000859	Bearing for Asms. 4001588 and 4001717	1
24	F41208	Bearing-For Asms. 4001714 and 4001757	1
25	4001891	Asm. Weld, Clutch 3rd for Asm. 4001714	1
26	4001718	Asm. Weld, Clutch 3rd for Asm. 4001717 & 4001588	1
27	4001889	Asm. Weld, Clutch 3rd for Asm. 4001757	1
28	4001587	Shaft, Speedometer for Asm. 4001588	1
29	4001637	Spacer, Speedometer drive for Asm. 4001757	1
30	4001638	Gear, Speedometer Drive for Asm. 4001757	1

OUT PUT GROUPS

ASM. 4001465



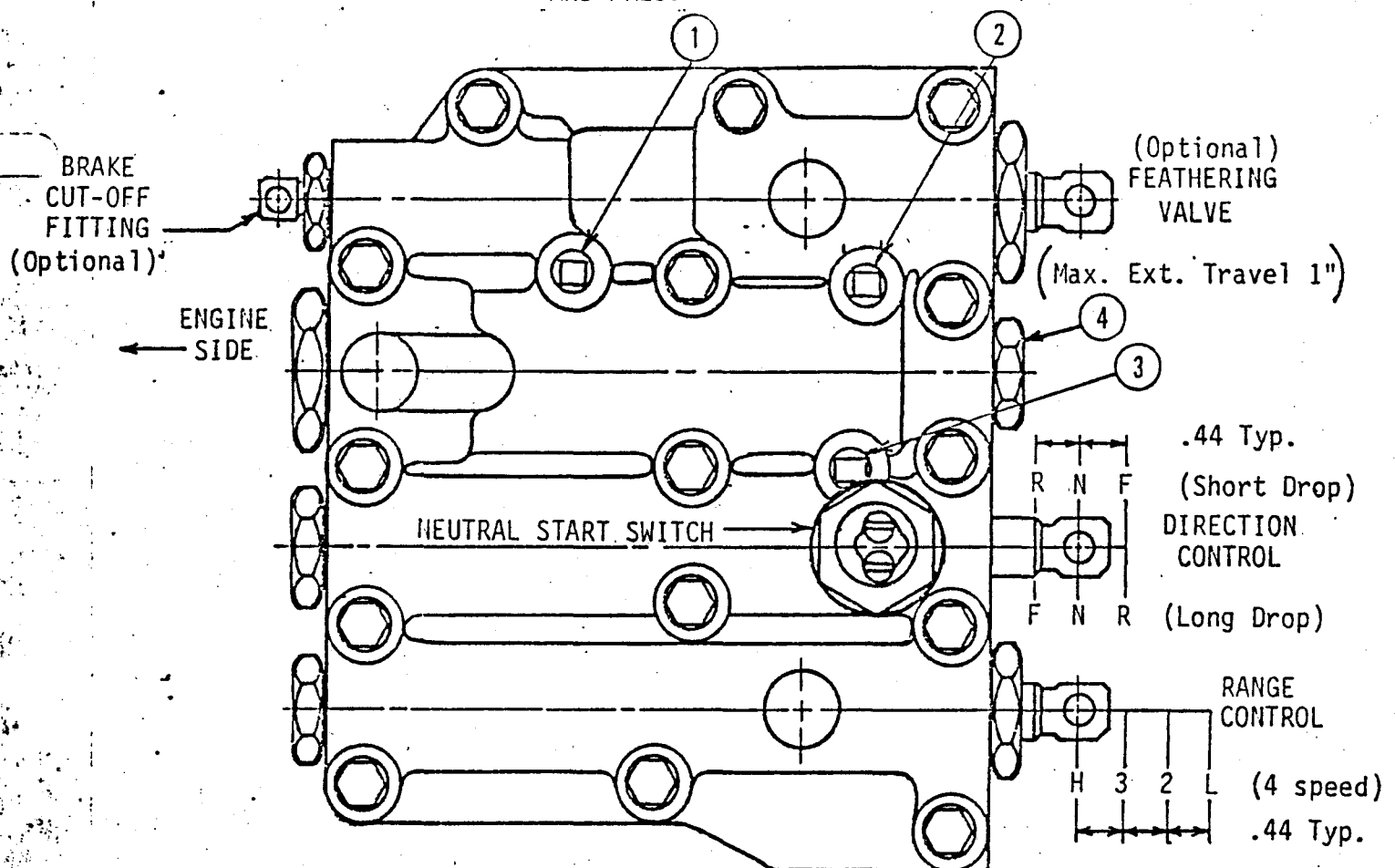
PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001026	Gear, Third & Output	1
2	F80300-181	Ring, Retainer	1
3	4001156	Hub, Disc.	1
4	4001150	Ring, Detent	1
5	4001898	Collar, Shifting	1
6	4001553	Washer, Thrust	1
7	F58032	Cone, Bearing	2
8	F58525	Cup, Bearing	2

NOTE: IN ADDITION TO THE ABOVE PARTS, THE FOLLOWING PARTS WILL BE USED WITH ASSEMBLYS NOTED.

9	4001696	Asm.-Shaft-For Asms. 4001465	1
10	4001879	Asm.-Shaft-For Asm. 4001697	1
11	4001877	Asm.-Shaft Output-For Asm. 4001697	1
12	4001466	Asm.-Shaft-For Asm. 4001465	1

AND PRESSURE CHECK



THE PRESSURE CHECKS ARE TO BE MADE WITH THE TRANS. OIL TEMP. AT 100° TO 140°

STEP 1 CLUTCH PRESSURE

- Install a 200 P.S.I. gauge in Port #1.
- Run engine at approx. 2000 R.P.M.
- Engage each speed clutch forward and reverse, the clutch pressure should be within the span of 155 to 180 P.S.I. for all clutches.
- If all clutches have low pressure, the pressure regulator valve should be checked, and adjusted if necessary.
 - Remove cap Ref. #4 and remove the pressure regulator valve, dowel pin, and spring.
 - Check valve to be sure it works freely in the valve body.
 - The pressure can be raised by adding the #4001651 spacer ring, as required, on the end of the valve next to the spring.

STEP 2 CONVERTER CHARGE PRESSURE

- Install a 100 P.S.I. Gauge in Port #3.
- Run engine at approx. 2000 R.P.M.
- The pressure should be within the span of 40 to 70 P.S.I.

STEP 3 FEATHERING VALVE - IF USED

- Install a 200 P.S.I. Gauge in Port #1.
- Run engine at approx. 2000 R.P.M.
- Pull stem to full out position (1"), clutch pressure should be between 5 to 7½ P.S.I.

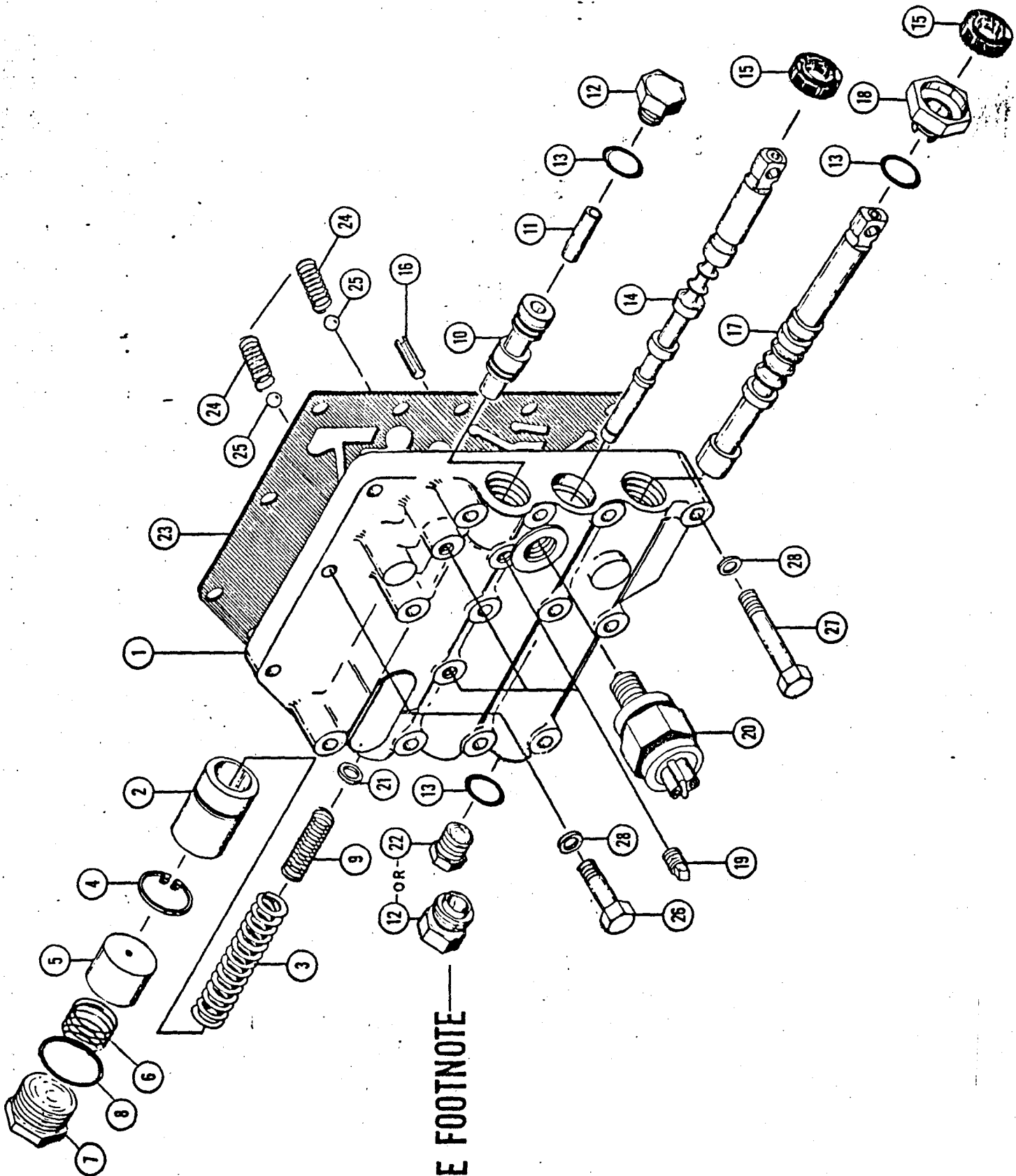
STEP 4 BRAKE CUTOFF VALVE - IF USED

- Install a 200 P.S.I. Gauge in Port #1.
- Run engine at approx. 2000 R.P.M.
- Apply 325-375 P.S.I. to cut off valve, clutch pressure should be between 5 to 7½ P.S.I.

VALVE CONTROL GROUPS

4001936 - 3 OR 6 SPEED - 3 POSITION

9 5/8 DROP OR 18 5/8 DROP



SEE FOOTNOTE

VALVE CONTROL GROUPS

4001936 - 3 OR 6 SPEED - 3 POSITION

9 5/8 DROP OR 18 5/8 DROP

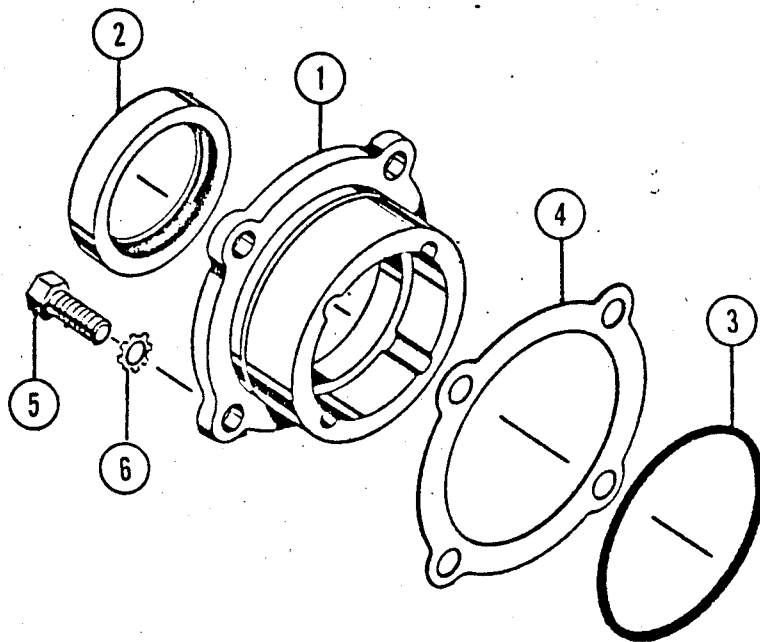
REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001912	Asm-Valve, Plugged	1
2	4001661	Valve Modulator	1
3	4001388	Spring, Accumulator	1
4	F39020-125	Ring, Retaining	1
5	4001081	Valve, Dump	1
6	4001074	Spring, Dump Valve	1
7	4001080	Plug, Dump Valve	1
8	4001218	"O" Ring	1
9	4001845	Spring, Main Regulator	1
10	4001578	Valve, Main Regulator	1
11	F27104-20	Pin, Dowel 3/8 Dia. x 1 1/4	1
12	4001290	Plug-(See Footnote)	1 or 2
13	40392071	"O" Ring	3
14	4001913	Stem Fwd. Rev. Control	1
✓15	F65227	Seal, Oil	2
16	F56790	Pin, Roll	1
17	4001089	Asm. Stem	1
18	4001091	Plug 3, 4 & 6 Speed	1
19	F190012	Plug, Pipe Sq. Hd. 1/8-27 N.P.T.	5
20	F91001	Switch, Neutral Safety	1
21	4001651	Spacer, Spring	As Req.
22	4001090	Plug for Asm. 4001936 (See Footnote)	1
✓23	4001910	Gasket, Valve Body	1
24	4001079	Spring, Detent	2
25	F74000-12D	Ball 3/8	2
26	F10020-20	Capscrew Hex. 5/16 - 18 x 1 1/4	3
27	F10020-36	Capscrew Hex. 5/16 - 18 x 2 1/4	12
28	F17030-516	Washer, Plain Aircraft	15

NOTE: REF. NO. 22, PART NO. 4001090 IS USED FOR A 3 OR 6 SPEED CONTROL
REF. NO. 12, PART NO. 4001290 IS USED FOR A 4 SPEED CONTROL

Revised 7-1-76

RETAINER, OUTPUT GROUP

ASM. 4001454

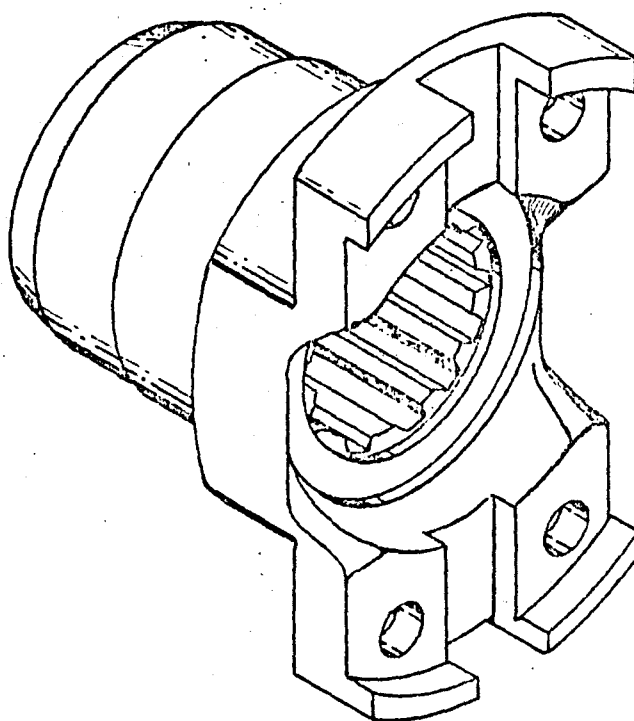


PARTS LIST

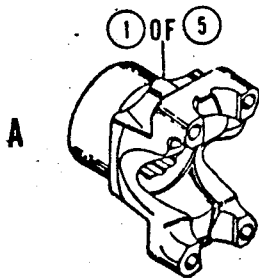
REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001142	Bearing Retainer	1
2	F65121	Oil Seal	1
3	4001216	"O" Ring	1
4	4001143	Shim, Bearing Retainer	As Req.
*5	F10050-20	Capscrew-Hex. 1/2-13 x 1 1/4 Lg.	4
*6	F15005	Starwasher Ext. 1/2	4

NOTE: REF. NO. *5 AND REF. NO. *6 ARE TO BE USED WITH ASM. 4001200 ONLY.

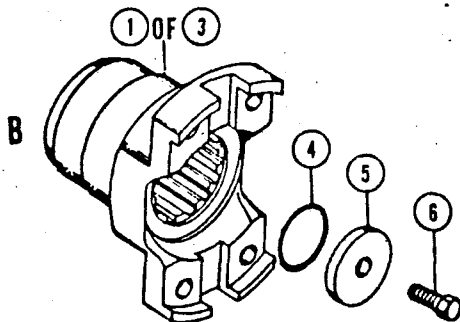
YOKE 6C
F84014



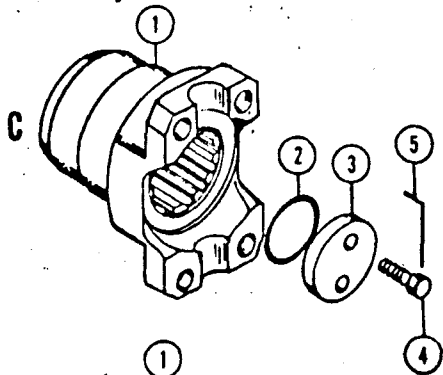
YOKE GROUPS



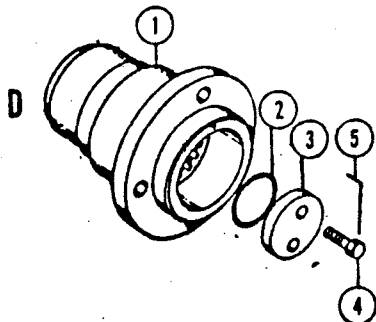
- A
1. F84006 Yoke, 4C
 2. F84010 Yoke, 5C
 3. F84204 Yoke, 1410
 4. F84205 Yoke, 1350
 5. F84202 Yoke, 1310



- B
1. 4001448 Yoke, 5C for Group 4001449
 2. 4001446 Yoke, 6C for Group 4001447
 4. 4001217 "O" Ring
 5. 4001892 Washer, Companion Flange
 6. F10455-20 Place Bolt

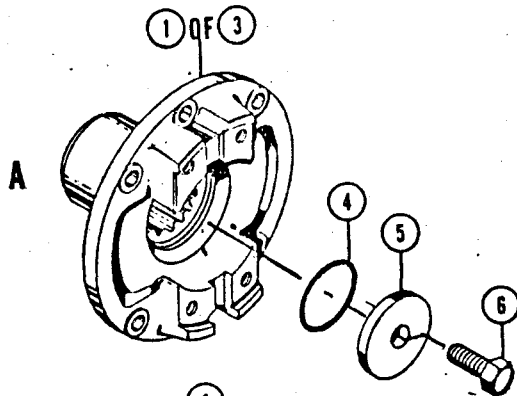


- NOTE: ENG. SIDE
- C
1. 4001535 End Yoke for Group 4001703
 2. 4001217 "O" Ring
 3. 4012817 Washer
 4. F10045-16R Capscrew (2 Req'd.)
 5. F90040-4C Wire, Safety



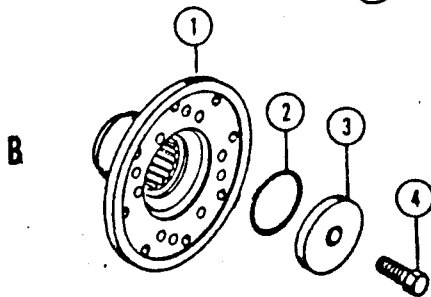
- NOTE: OPPOS. ENG. SIDE
- D
1. 4001536 End Yoke For Group 4001704
 2. 4001217 "O" Ring
 3. 4012817 Washer
 4. F10045-16R Capscrew (2 Req'd.)
 5. F90040-46 Wire, Safety

YOKE FLANGE AND FLANGE GROUP

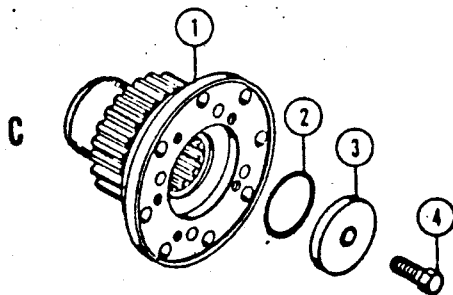


- A 1. 4001442 Yoke-Flange, 5C for Group 4001443
2. 4001440 Yoke-Flange, 6C for Group 4001441

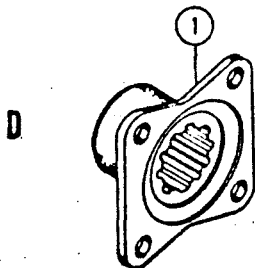
4. 4001217 "O" Ring
5. 4001892 Washer
6. F10455-20 Place Bolt



- B 1. 4001496 Flange-Companion for Group 4001497
2. 4001217 "O" Ring
3. 4001892 Washer
4. F10455-20 Place Bolt

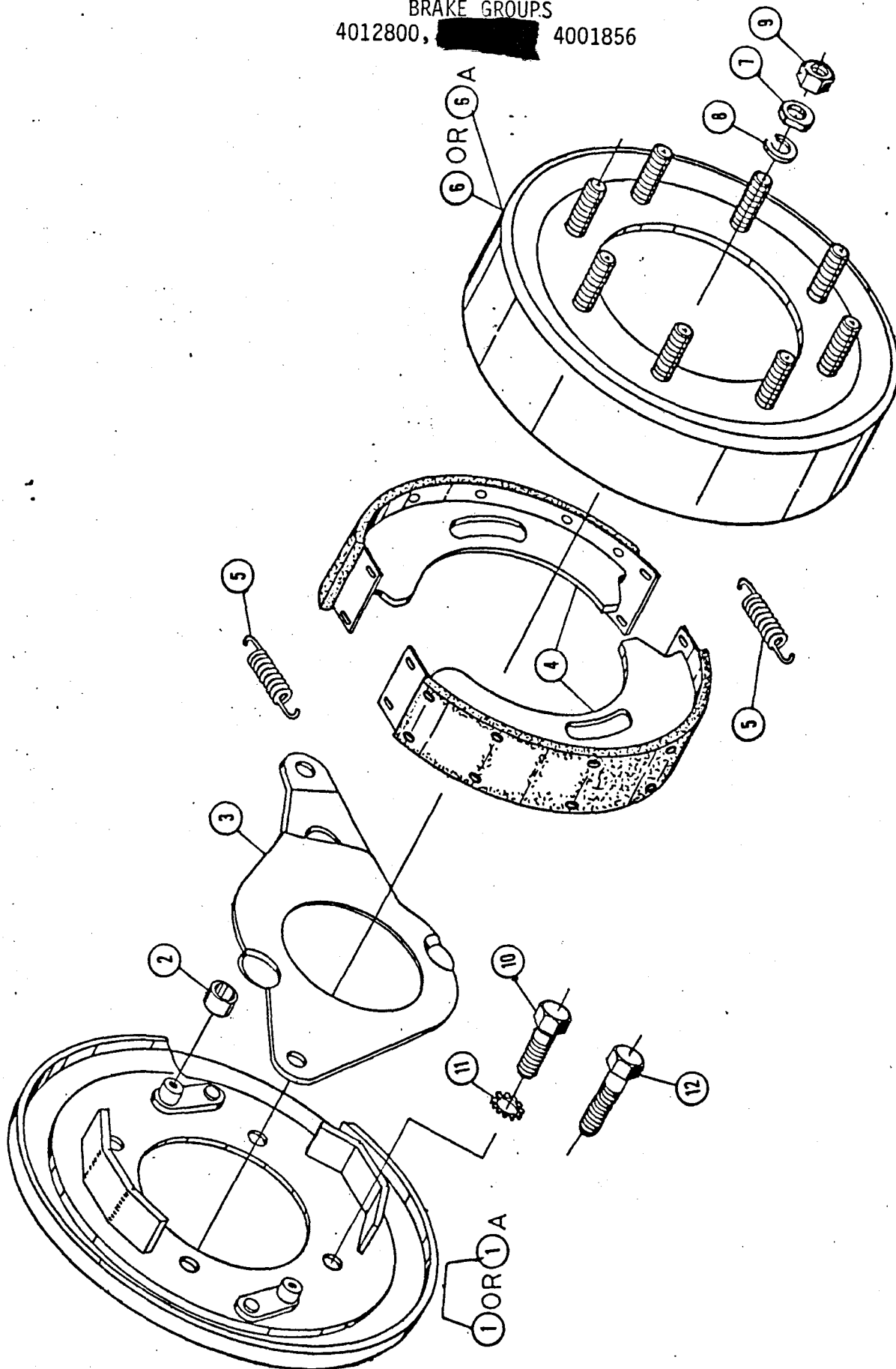


- C 1. 4001674 Brake Flange for Group 4001678
2. 4001217 "O" Ring
3. 4001892 Washer
4. F10455-20 Place Bolt



- D 1. F84306 Companion Flange, 1310

BRAKE GROUPS
4012800, 4001856



BRAKE GROUPS

4012800, [REDACTED] 4001856

<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>NO. REQ.</u>
1	4012801	Backing Plate-For Asms. 4012800 & 4001470 . . .	1
1A	4001857	Backing Plate-For Asm. 4001856 (See Footnote) .	1
2	4012807	Spacer	1
3	4012806	Bell Crank	1
4	4012808	Shoe, Brake	2
5	4012809	Spring, Return	2
6	4012810	Assembly-Brake Drum-For Asm. 4012800	1
6A	4001469	Assembly-Brake Drum-For Asms. 4001470 & 4001856	1
7	4012821	Washer, Clipped-For Asm. 4012800 Only	8
8	F16202	Lockwasher 3/8 Med. Spring-For Asm. 4012800 . .	8
		Lockwasher 3/8 Med. Spring-For Asm. 4001470 . .	6
		Lockwasher 3/8 Med. Spring-For Asm. 4001856 . .	6
9	F13006	Nut 3/8-24 Hex. Full for Asm. 4012800	8
		Nut 3/8-24 Hex. Full for Asm. 4001470	6
		Nut 3/8-24 Hex. Full for Asm. 4001856	6
10	F10050-14	Capscrew Hex.Hd. 1/2-13 x 7/8 for 9 5/8 Drop Only	4
11	F15005	Starwasher Ext. 1/2 for 9 5/8 Drop Only	4
12	F10450-48	Place Bolt-Add for 9 5/8 Drop When Speedometer and Brake are Used	4

NOTE: REF. NO. 1A (4001857) BACKING PLATE IS USED TO LOCATE BELL CRANK
IN A DOWN POSITION WHEN MOUNTED ON UNIT.

ADAPTER GROUP

SAE "A" PUMP - 4002085

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001042	Adapter Pump, "C" Aux..	1
2	4001045	Gear, "C" Aux. Pump	1
3	F40208R	Bearing	2
4	F39010156	Ring, Retaining	1
5	4001213	"O" Ring, "C" Aux. Pump	1
6	4001212	"O" Ring, Pump Adapter.	1
7	4001575	Adapter, Pump "A"	1
8	4061007	Sleeve Adaptor.	1
9	F37010042	"O" Ring.	1
10	F1005020	Capscrew.	4
11	F23303	Plug Shipping	1

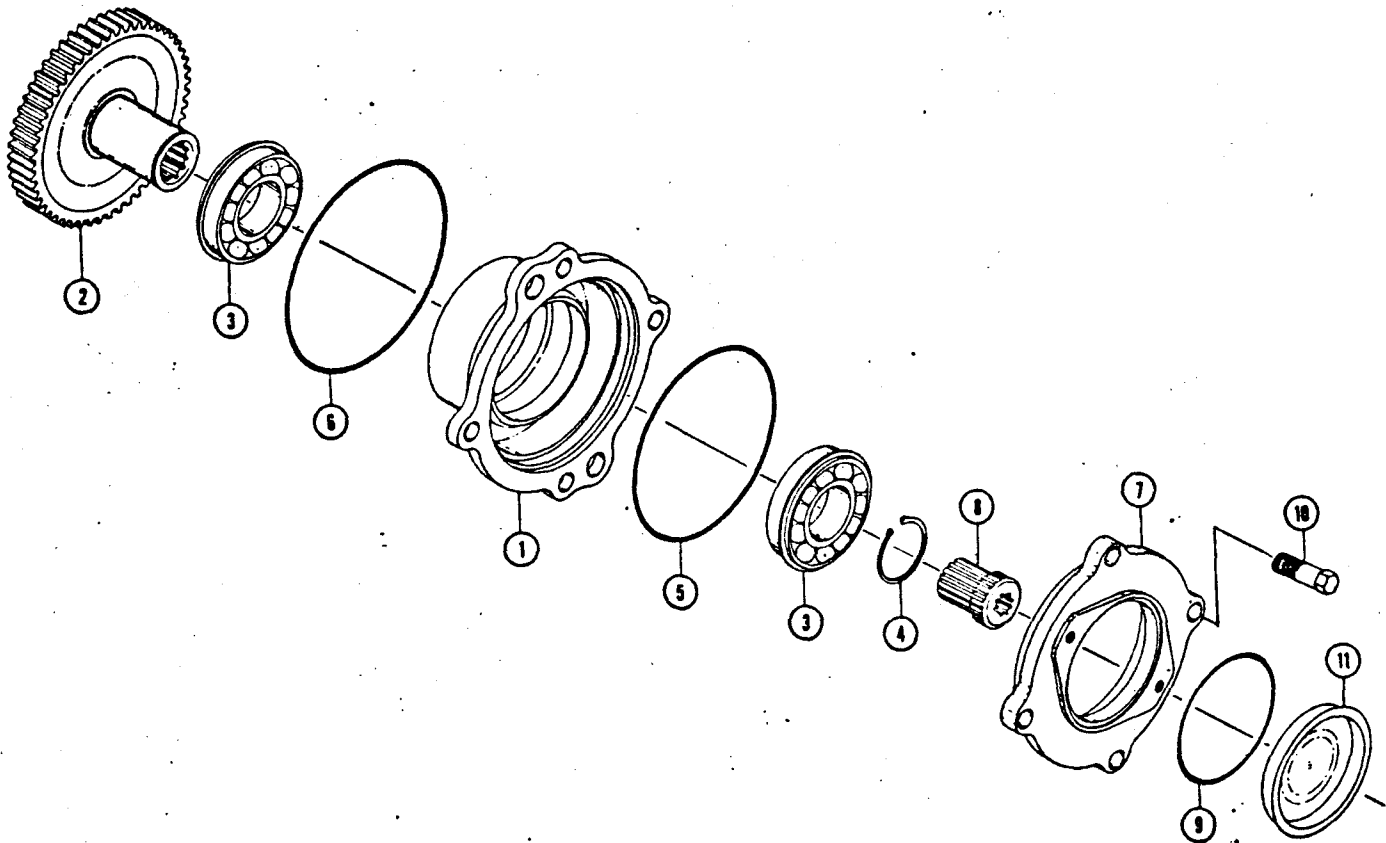
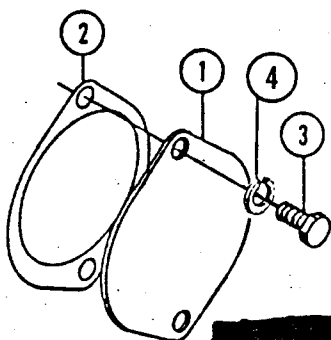


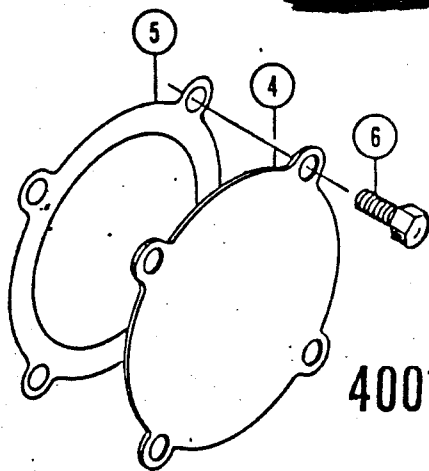
PLATE GROUP
4001209- SMALL

REPLACES THE 4001841



REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4012289	Plate Cover Aux. "A"	1
2	4010499	Gasket, Pump Mount	1
3	F1003016	Capscrew 3/8-16 x 3/4	2
4	F16202	Washer-Lock	2

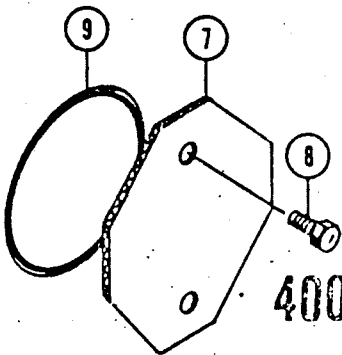
PLATE GROUP
4001842 LARGE



REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
4	4001839	Plate Cover Aux. "C"	1
5	4001220	Gasket-Pump Mount	1
6	F10050-16	Capscrew 1/2-13 x 1	4

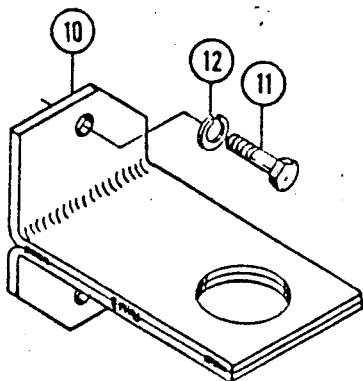
4001842

SHIPPING COVER
CENTER AUX. PUMP ASM. "A"
4001208



REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
7	4000748	Cover, Shipping . . .	1
8	F10030-8	Screw-Hex Cap 3/8-16 x 1/2	2
9	4001211	"O" Ring "A" Aux. Pump	1

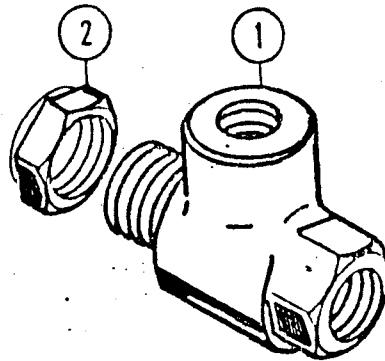
LIFT BRACKET GROUP
4001828



4001828 BY ADDING
REF. NOS. 1 & 2

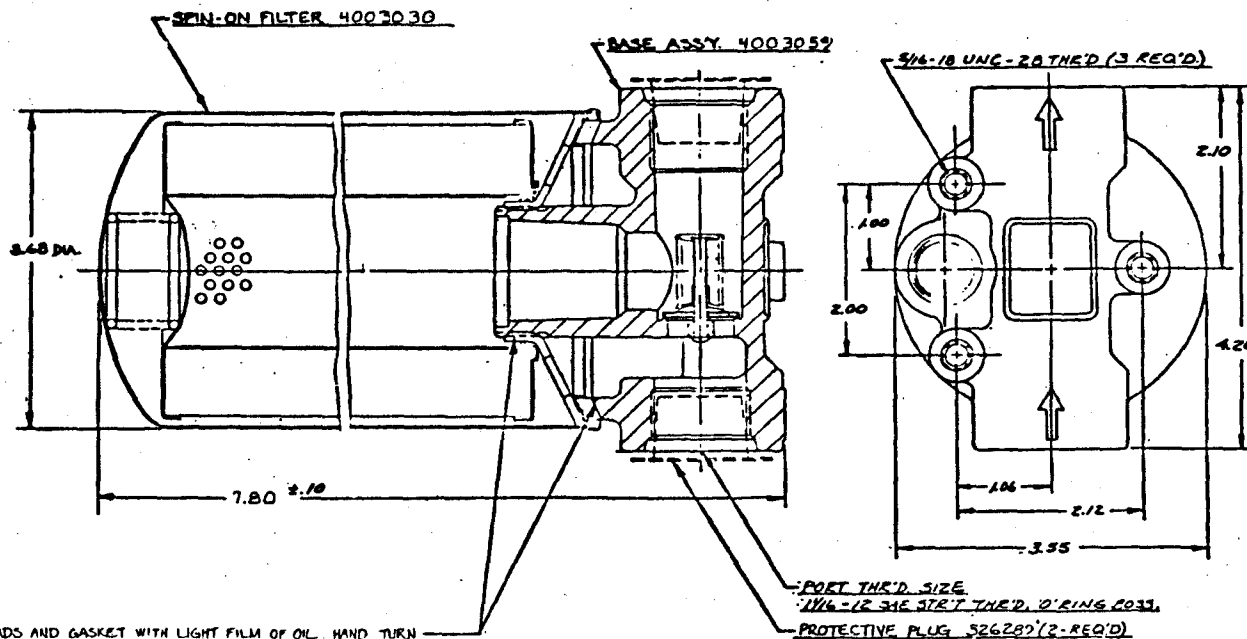
REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
10	4001827	Asm. Lift Bracket (See Footnote). . .	1
11	F10030-16	Capscrew	2
12	F16202	Lockwasher	2

NOTE: USE REF. NO. 1, 4001823 & REF. NO. 2, 4001694 WITH REF. NO. 10, 4001827
LIFT BRACKET WHEN MOUNTED TO CENTER AUX. PUMP FACE. CANNOT BE USED WHEN
CENTER P.T.O. IS REQUIRED.



TEEFITTING GROUP
4002005

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4001940	Fitting, Adv. Oil Sender	1
2	4001939	Nut, Tru-Seal.	1

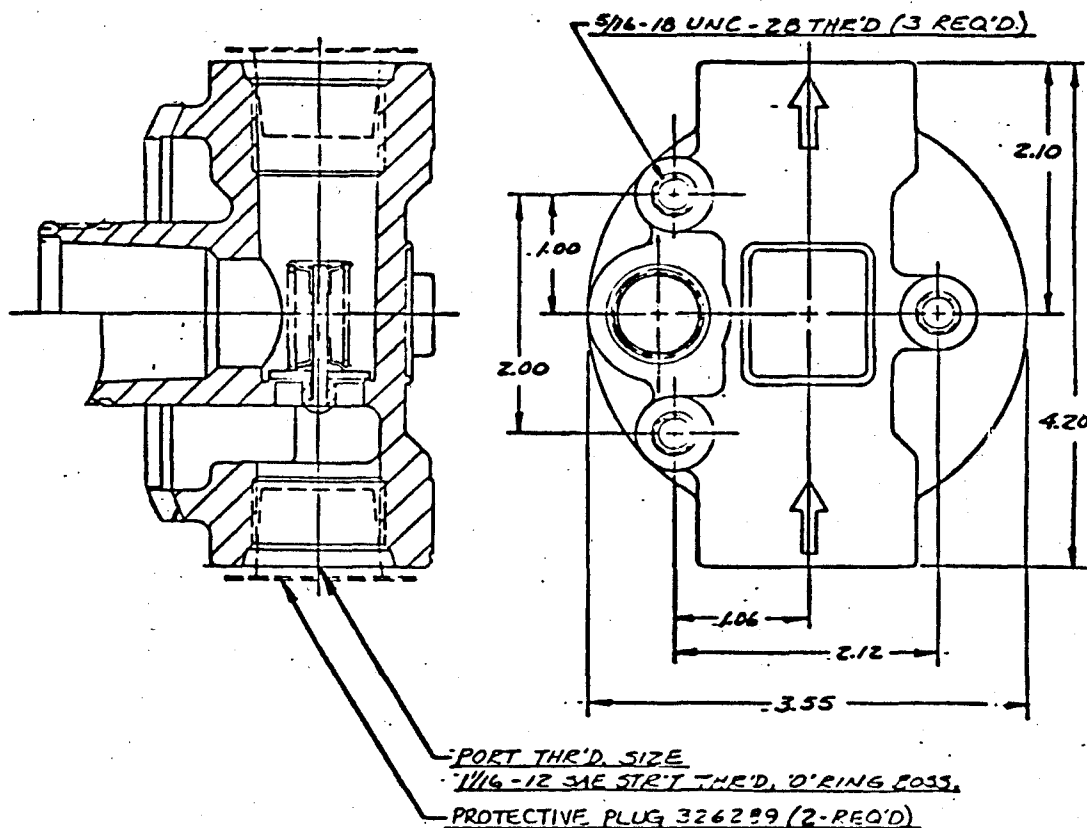


LUBRICATE THREADS AND GASKET WITH LIGHT FILM OF OIL. HAND TURN UNTIL GASKET CONTACTS BASE. THEN HAND TIGHTEN $\frac{1}{2}$ TURN MORE.

1. FILTER MEDIA: 66 PLEATS, 4.59 SQ. IN., F0502/25 MICRON (NOM.)
 2. RELIEF VALVE SETTING: 25 ± 2 P.S.I.D.
 3. FINISH: SPIN-ON PAINTED PRIOR TO ASS'Y - BASE ASS'Y. UNPAINTED

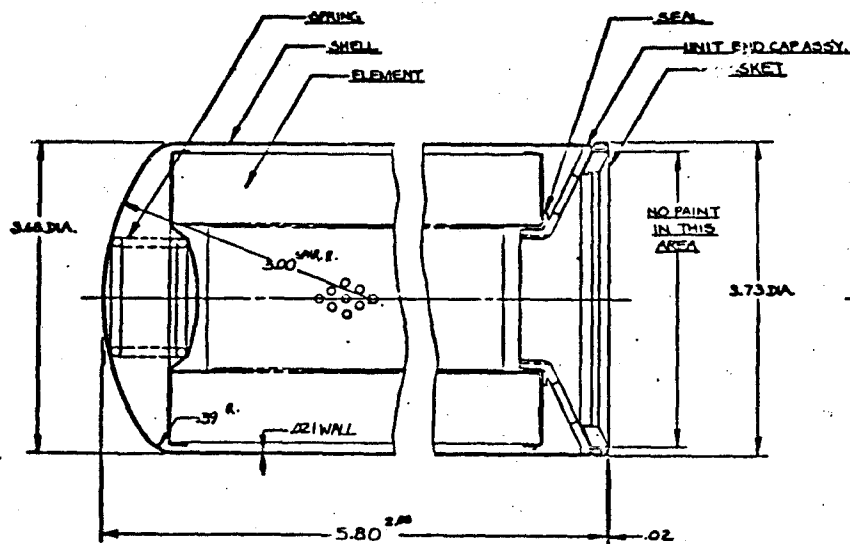
LET.	REVISION	E.C.N.	DATE	BY
ALL MACHINE SURFACES TO BE: UNLESS OTHERWISE SPECIFIED				
HEAT TREAT SPECIFICATIONS - NONE				
PROD. CODE-04000	UNLESS OTHERWISE SPECIFIED TOLERANCE ON DIMENSIONS ARE AS FOLLOWS:			
DOC. CODE- 2	FRACTIONAL DIMENSIONS: $\pm 1/32$			
PROJ. NO.- 12	TWO PLACE DECIMAL (0.00): $\pm .010$			
ACC. NO.- 533	THREE PLACE DECIMAL (0.000): $\pm .005$			
WRN.	ANGLES: $\pm 2^\circ$			
WT.	CAST DIMENSIONS: $\pm 1/16$			
NEXT ASSY.- 4004305, 4001239, 4002125, 4002124				
MATERIAL- NOTED				
FUNK MFG. CO. KANSAS				
COFFEYVILLE				
DWN. VARGAS	CHK. A.B.	APP. A.B.		
DATE: 1-21-76		SCALE: NONE	NO. REQ'D.	

4003059



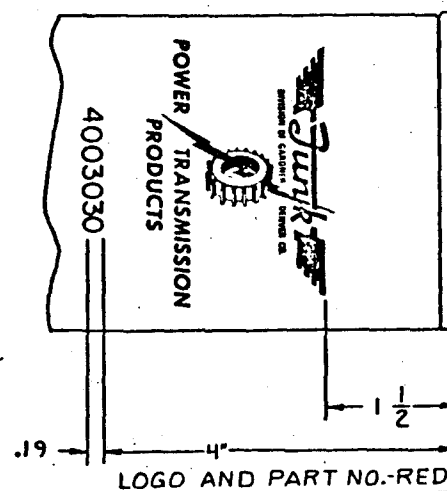
LET.	REVISION	E.C.N.	DATE	BY
ALL MACHINE SURFACES TO BE UNLESS OTHERWISE SPECIFIED				
HEAT TREAT SPECIFICATIONS —				
NONE				
PROD. CODE- 04000	UNLESS OTHERWISE SPECIFIED TOLERANCE ON DIMENSIONS ARE AS FOLLOWS:			
DOC. CODE-				
PROJ. NO.- 92				
ACC. NO.- 533	FRACTIONAL DIMENSIONS ± 1/32			
WR-	TWO PLACE DECIMAL (0.00) ± .010			
WT-	THREE PLACE DECIMAL (0.000) ± .005			
	ANGLES ± 2°			
	CAST DIMENSIONS ± 1/16			
NEXT ASSY.- NOTED				
MATERIAL- DELUXE NO. 330304				
FUNK MFG. CO.				
COFFEYVILLE, KANSAS				
DWN.- VARGAS CHK- F13	APP.- MB			
DATE- 1-26-76	SCALE- NONE			
ASM. BASE				NO. REQ'D- 1

4003063
4003061
4003057
NEXT ASM. 4003056



FILTER MEDIA: 66 PLEATS, 459 SQ. IN. F0502 (2.5 MICRON NOM.)

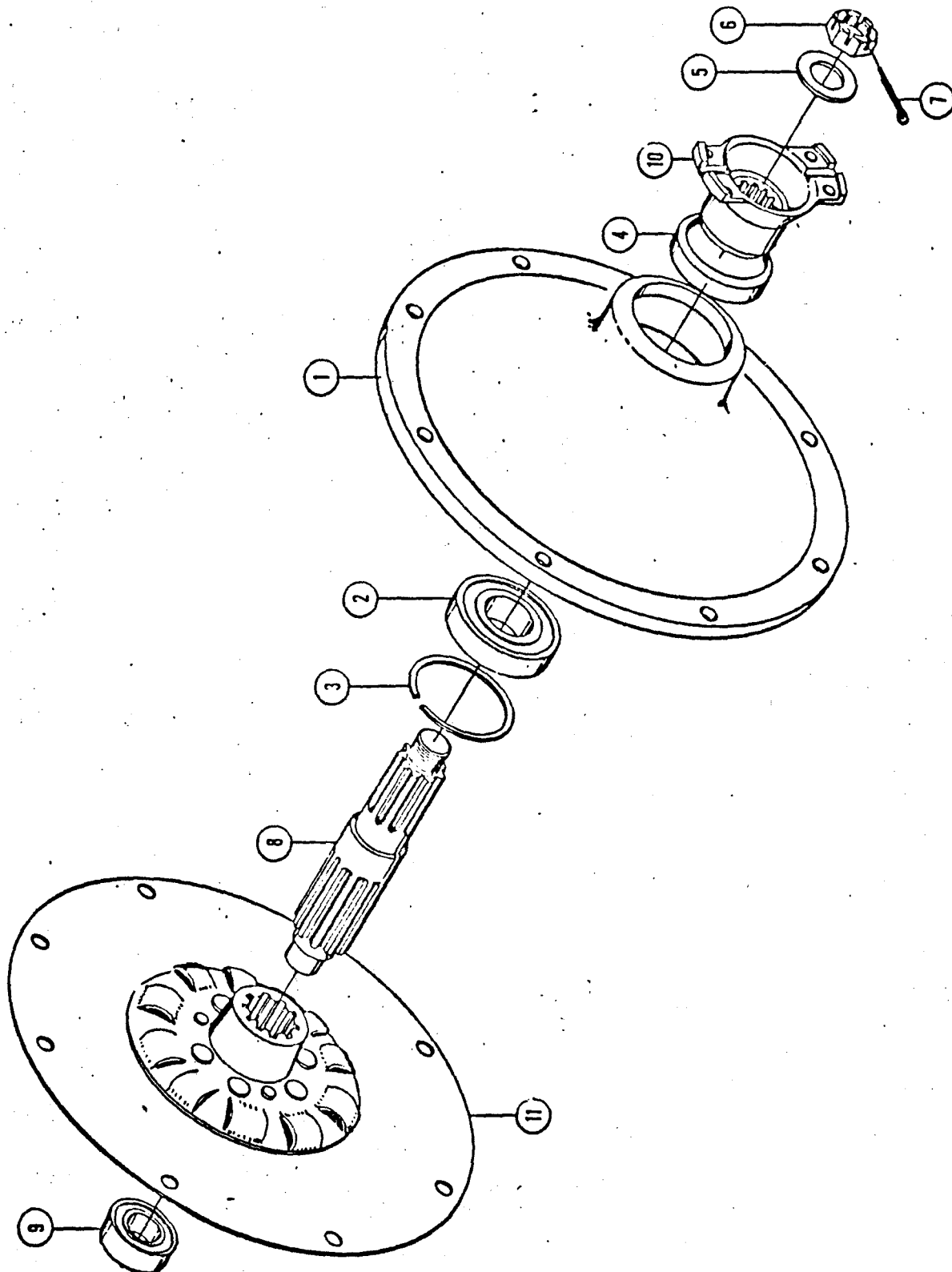
CANISTER COLOR: LIGHT BLUE



A		REDRAWN		23128	1-28-76	J
LET.	REVISION	E.C.N.	DATE			
ALL MACHINE SURFACES TO BE: UNLESS OTHERWISE SPECIFIED						
HEAT TREAT SPECIFICATIONS - NONE						
PROD. CODE-04000		UNLESS OTHERWISE SPECIFIED TOLERANCE ON DIMENSIONS ARE AS FOLLOWS:				
DOC. CODE-	92		FRACTIONAL DIMENSIONS		1/2	
PROJ. NO.-	533		TWO PLACE DECIMAL (0.00)		1/16	
ACC. NO.-			THREE PLACE DECIMAL (0.000)		1/32	
WTP.			ANGLES		1/2	
WT.			CAST DIMENSIONS		1/4	
NEXT ASSY.- 400 3030/4002177						
MATERIAL- DELUXE # 331499						
FUNK MFG. CO.						
COFFEYVILLE, KAN.						
OWN.- J.T.	CHK.- KB	APP.- RS				
DATE-11-8-74	SCALE- NONE	NO. REQD.- 1				
ELEMENT FILTER						

TORSIONAL DAMPER ASSEMBLY

4058047



ASM. 4058047
TORSIONAL DAMPER

REF. NO.	PART NO.	DESCRIPTION	NO. REQ.
1	4058001	Housing, P. T. O.	1
2	F40208SS	Bearing	1
3	F39000315	Snap Ring	1
4	4000868	Seal.	1
5	4000326	Washer, Flange.	1
6	F7532014	Nut	1
7	F2600724	Cotter Pin.	1
8	4058002	Drive Shaft, P.T.O.	1
9	F40205SS	Pilot Bearing	1
10	F84010	Fitting, Yoke	1
11	4000869	Asm. Drive Plate.	1

9-10-76