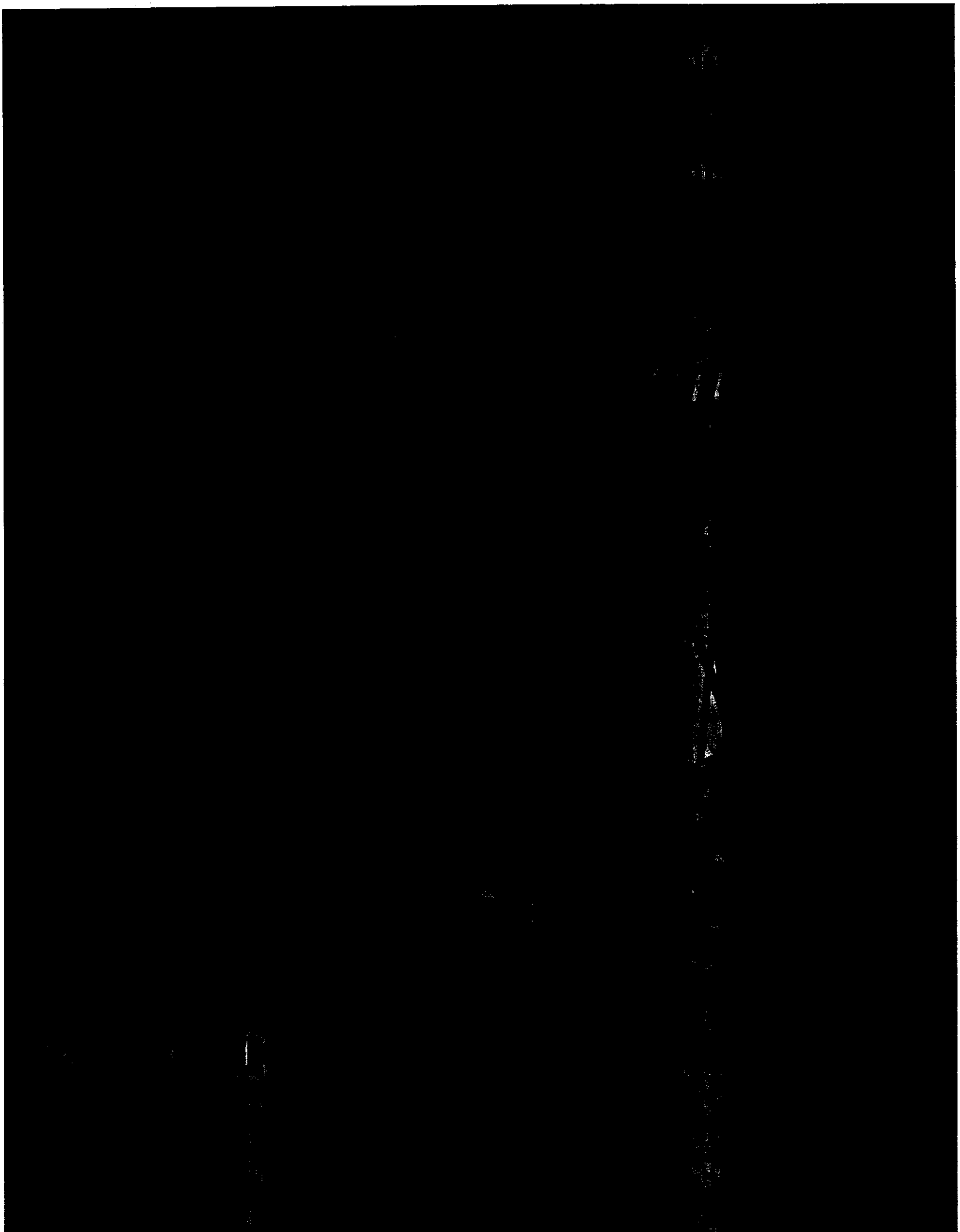

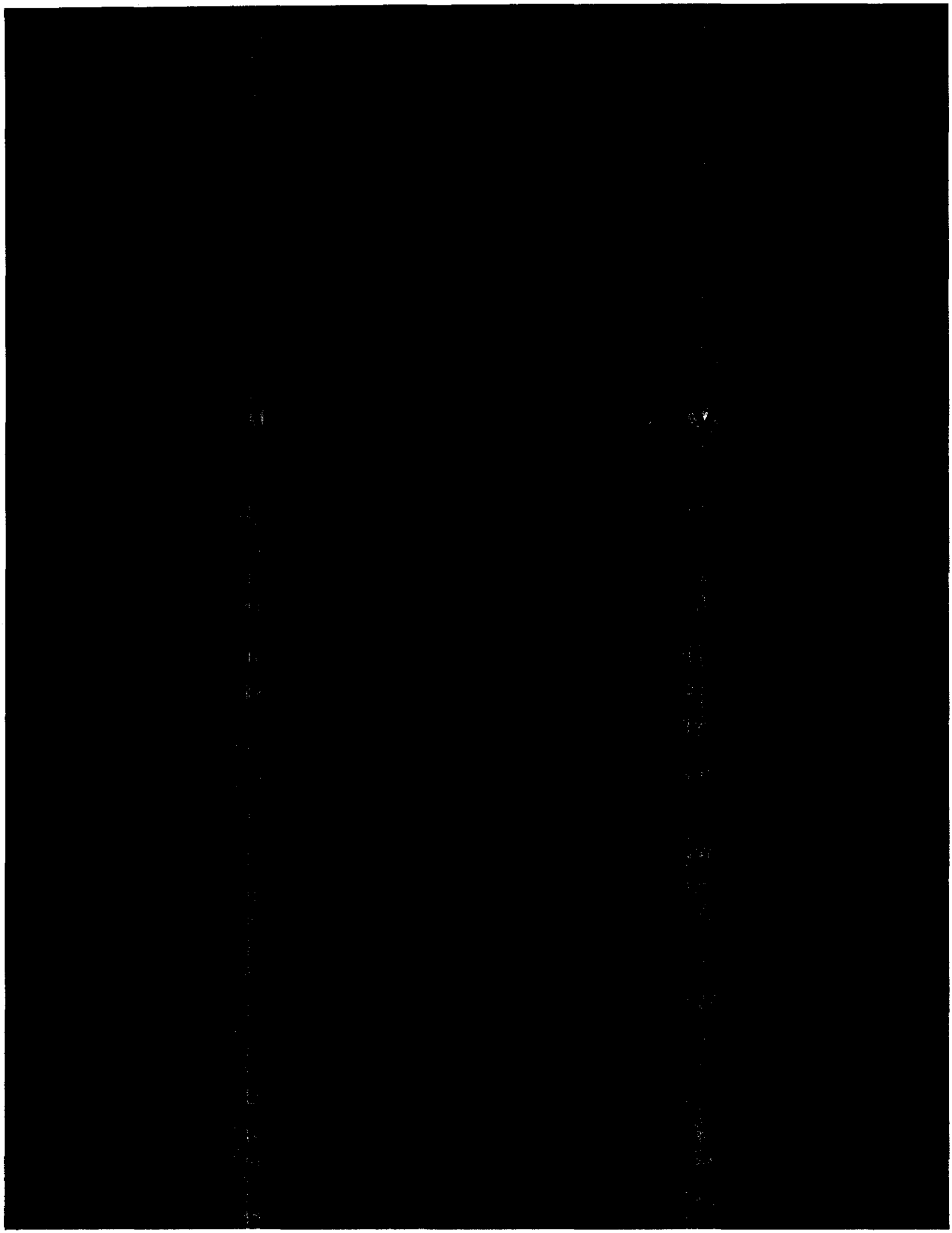

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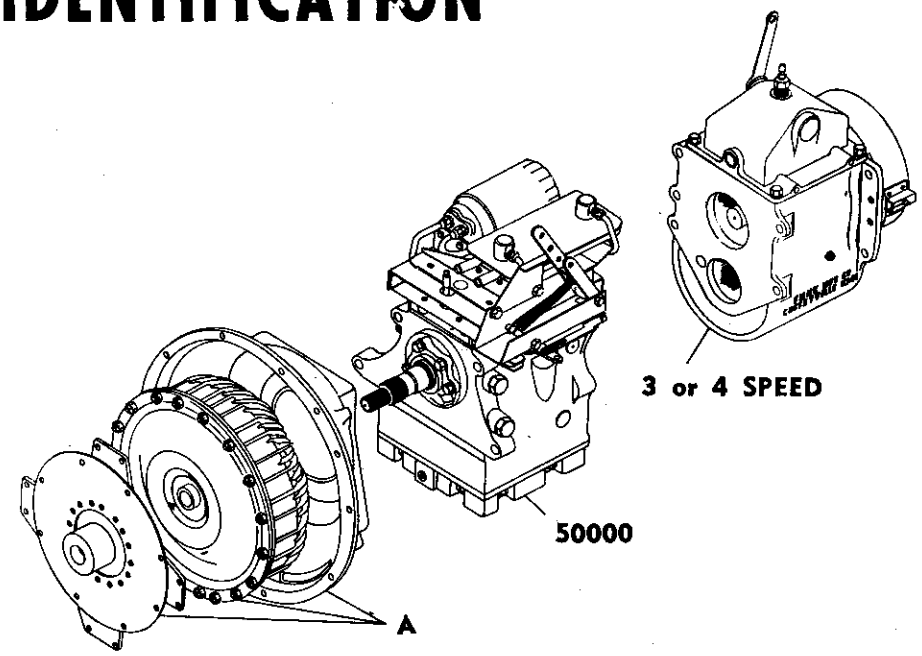
MODEL IDENTIFICATION



A—This part is the Drive Plate, Torque Converter, and Converter Housing.

50000—This is the Hydraulic Reversing Section called the Revers-O-Matic.

3 or 4 SPEED—This is the Selective Speed Transmission available in four models.

50000 SERIES REVERS-O-MATIC MODEL NO. CODE

1. The model number will consist of ten digits, as shown in the following example:

   Example:

4	050	A	O	OO	A	O
A	B	C	D	E	F	G

   The model number to contain seven sections as shown above.
   Explanation of each section is as follows:

2. "A"—In this section the first digit will always be "4" which designates Funk Division of Gardner-Denver.
3. "B"—In this section the second, third, and fourth digit designates the model series number, which in this case is the 50000 series, and in this model the number will always be 050.
4. "C"—In this section the fifth digit will designate whether the unit has converter housing and converter. The letter "A" will designate with converter housing and converter. The letter "O" will designate without housing and converter.
5. "O"—In this section the sixth digit will indicate whether the input shaft has 17 tooth or 29 tooth spline. The letter "O" will indicate 17 tooth spline. The letter "S" will indicate 29 tooth spline.
6. "E"—In this section the seventh and eighth digit will indicate the type of (or lack of) transmission to be attached.

   The letter code and indicated transmission are as follows:

"OO" = No transmission	(1⅜-10 spline shaft only)	"21" = Funk 23121	(3 speed, 3.17 Second & 6.3 Low)
"09" = Warner T9	(4 speed)	"50" = Funk 23150	(4 speed)
"98" = Warner T98	(4 speed synchronized)	"16" = Funk D16	(Right Angle Drive)
"10" = Funk 23110	(3 speed lo ratio)	"33" = Funk 33000	(Drop box)
"20" = Funk 23120	(3 speed hi ratio)	"FS" = Funk Special	(In this case refer to specification sheet for description of transmission arrangement.)

7. "F"—In this section the ninth digit indicates type of clutches used. The letter "A" will indicate standard clutches. The letter "B" will indicate step clutches.
8. "G"—In this section the tenth digit indicates governor drive or P.T.O. used. The letter "G" will indicate governor drive. The letter "P" will indicate P.T.O. The letter "O" will indicate neither.
9. Several specific examples and explanations are as follows:

4 050 A O 20 A G
- G — With Governor Drive
- A — Std. Clutches
- 20 — 23120 Transmission
- O — 17 Tooth Input Shaft
- A — With Converter Housing
- 050 — 50000 Series Revers-O-Matic
- 4 — Funk Div. of Gardner-Denver Co.

4 050 O O OO B P
- P — With P.T.O.
- B — Step Clutches
- OO — No Transmission
- O — 17 Tooth Input Spline
- O — No Converter Housing
- 050 — 50000 Series Revers-O-Matic
- 4 — Funk Div. of Gardner-Denver Co.

DESCRIPTION

The Revers-O-Matic Drive consists of a pair of hydraulically actuated multiple disc clutches. When the front clutch is engaged, the output shaft turns engine-wise and in most applications this produces forward motion. The rear clutch is driven by a simple gear train, and its rotation is opposite to the front clutch. . Therefore, when the rear clutch is engaged, the output shaft turns anti-enginewise and in most applications this produces rearward motion.

The power is transmitted from the engine to the Revers-O-Matic Drive through a torque converter. The use of a torque converter, has two distinct advantages. First, 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 with the elimination of engine stalling and lugging. Secondly, the converter multiplies torque, but only 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.

The Revers-O-Matic Drive is controlled by (1) one of (4) four control systems.

The standard control (40RC7824) is a very unique system, thus being a device that sorts out motions from a single hand lever that FIRST engages one of the clutches and then accelerates the engine as the lever is moved further. Therefore, it is a unified control that regulates both the direction of travel and the speed of travel. Movement of the lever from a neutral position in one direction produces forward motion, and opposite movement of the lever produces rearward motion.

The optional 40RC7818 control is basically the same type as the 40RC7824 standard control, except that it is actuated by foot pedals instead of a hand lever. The action of the foot pedal is essentially the same, except that one pedal produces forward motion and the other, rearward motion.

The optional control system (40RC7812) is designed to accommodate the system requiring a self centering control valve, it also features the synchronized characteristic of engaging the clutches before accelerating the engine.

The optional control system (40RC7804) is designed to accommodate the system requiring a 3 pos. valve and a separate accelerator device.

CAUTION:

The clutches are not power absorbing members and must not be subjected to slippage under power.

The clutch must be engaged prior to accelerating the engine when the vehicle is to be moved or direction changed.

The clutches are hydraulically applied and spring released. Each clutch has six friction plates which have sintered bronze facings and six reaction plates of polished steel. Because the clutches are hydraulically controlled, there is automatic compensation for normal wear - no adjustment is necessary.

SPECIFICATIONS AND APPLICATION DATA

Speed and Input Torque	Input r.p.m. (maximum): 2800 Input torque (maximum): 200 ft. lbs. gas engine, 150 ft. lbs. diesel, plus, subject to our Engineering Department approval of application.
Converters	11¾" converter - 2.12 (Max.) Torque Multiplication. 11¾" Hi-K Converter - 2.54 (Max.) Torque Multiplication. 12" Converter - 2.15 (Max.) Torque Multiplication.
Oil System	Clutch Operating Pressure 160 P.S.I. Conv. Charge Pressure 80 P.S.I. Converter "Out" Pressure 10 P.S.I. Oil Capacity With selective speed approx. 14 qts. Type oil: Type A automatic transmission fluid, or equivalent. Oil Temp: (Max.) 250° F.
Oil Cooler	Type - Oil To Water Oil Cooler Capacity 300 B. T. U. Per Minute

Gear Ratios

3 speed (Non-Synchronized) Transmission

GEAR RATIOS

Model	Low	2nd	High
4050211	3.74 to 1	1.9 to 1	1 to 1
4050212	6.63 to 1	2.54 to 1	1 to 1
4050213	6.63 to 1	3.17 to 1	1 to 1

4 Speed Transmission (Non-Synchronized)

GEAR RATIOS

Model	Low	2nd	3rd	4th
4050214	6.63 to 1	3.17-1	1.72-1	1-1

These standard transmissions do not have towable features.

Shuttle Transmission
Revers-O-Matic Only
Direct 1.00 - 1
(Forward and Reverse)

OPERATION

Like all mechanical equipment, the Revers-O-Matic and attached transmission will need attention and servicing. Routine checks will help prevent down-time. The operator can aid in preventive maintenance by keeping a watchful eye, reporting weak or borderline malfunctioning.

Because the unit operates "in" oil and "by" oil, most of the maintenance is concerned with oil replenishment and oil cleanliness.

RULES OF OPERATION

1. Check oil level daily, stopping engine before check. Make sure area around oil fill is clean before removing dip stick.
2. Always shift the Revers-O-Matic to neutral before starting the engine, or when the vehicle is parked and the engine is running.

   To move the vehicle, select the speed range desired by shifting the transmission behind the shuttle box and then engage the directional clutch (forward or reverse) in the Revers-O-Matic.
3. Engage forward and reverse clutches at idle speed only. The clutches are not power absorbing members and must not be subjected to slippage under pressure.
4. Use brakes to slow motion or stop before applying the opposite clutch.
5. If the oil temperature gauge which is the converter oil "Out" temperature rises above 250°F. or the warning light comes on, stop the vehicle immediately. Shift Revers-O-Matic to neutral and run the engine at 1000-1200 R.P.M. The temperature should drop rapidly to the engine water temperature (within minutes). If the temperature does not drop, trouble is indicated. The cause of trouble should be determined before further operation of the vehicle; refer to "TROUBLE SHOOTING" instructions to be found elsewhere in this manual. Generally when overheating does occur, it is due to rapid reversals in the higher gear ratios. Shifting to a lower gear will help eliminate overheating due to this cause.
6. Do not shut off the engine when the unit is overheated.
7. The drive shaft should be disconnected if the vehicle is to be towed.

SERVICE

THE FUNK MFG. COMPANY recommends the use of type [redacted] automatic transmission fluid or equivalent in the Revers-O-Matic Drive, Torque Converter and Attached Transmissions.

The type of service and the operating conditions will determine the maintenance interval. However as stated above, it is recommended that the oil level be checked daily; at the same time checking for oil leaks.

Because the hydraulic system is the heart of the transmission, it is especially important that the oil be kept clean.

All models of the unit have a common oil fill. This means the entire unit may be filled with lubricating oil from one oil fill location, positioned on the side of the Revers-O-Matic (shuttle) transmission.

When draining for an oil change, the Revers-O-Matic and ALL variable speed transmissions must be drained separately.

NOTE: ANY REFERENCE AS TO THE LEFT OR RIGHT HAND SIDE OF THE MODEL 50000 WITH ATTACHED IS MADE FROM THE REAR OF THE UNIT LOOKING FORWARD TOWARD THE ENGINE.

When servicing your unit for the first time, fill the Revers-O-Matic Drive to the overflow level with the recommended lubricant. This will take approximately 9 quarts. Start engine and run at idle speed for one minute. Stop engine and add 4 more quarts of fluid; some of the original fluid being required to fill the converter. Check the oil level with the dipstick, adding oil if necessary to bring the level up to the low mark when unit is cold, or the full mark when unit is warm. Run the engine for at least five minutes and recheck the oil level.

FUNK SERVICE BULLETIN

#100-5
2-8-77

SUBJECT: Lubrication Recommendations
Series RC, 12000, & 50000 Revers-O-Matic Transmissions.

LUBRICANT TYPE: Any Oil which meets Dexron or Dexron II Automatic Transmission Fluid specifications.

OR

Any Oil which meets Allison Type C2 or C3 Hydraulic Transmission Fluid specifications.

NOTE: Type "A", suffix "A" ATF is not approved for use.

LUBRICANT GRADE: Weather Temperature

1. If Fluid is below -10^{o}F. ($-23C^{o}$), an external heat source must be used to raise the Fluid temperature to -10^{o}F.

FUNK

Funk Manufacturing Company
DIVISION GARDNER-DENVER COMPANY

1211 W. 12th STREET COFFEYVILLE, KANSAS 67337 (316) 251-3400

SERVICE PROCEDURE AND RECOMMENDATIONS

1. Stop engine before checking or adding oil.
2. Always check the oil level of the Revers-O-Matic Drive immediately after stopping the engine.
3. Clean around oil fill before checking or adding oil.
4. It is recommended that all lubricating oil and oil filter be changed after the first 20 hours of operation and/or after overhaul.
5. Thereafter and under normal operating conditions, it is recommended that all lubricating oil and oil filters be changed after every 500 hours of operation. The oil in the system must be changed whenever the oil shows traces of dirt 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 hydraulic system (oil tubes, oil pump, oil filter, control valve, converter, clutches, heat exchanger, sump) must be thoroughly cleaned. Generally this means a tear-down of the units. Metal particles in the oil is evidence of failure of some part.
6. Drain dirty oil while unit is still warm, examining for contamination as described above.
7. Clean all magnetic drain plugs before replacing.
8. Replace oil filter element. Use AC TYPE PF-2 which is generally available at most gas stations.
9. Always use clean oil and clean containers.
10. Do not overfill.
11. Keep all joints in the shuttle box and transmission controls properly lubricated with heavy grease.
12. If radiator on the vehicle is drained during winter storage, the heat exchanger on the transmission must also be drained.

TROUBLE SHOOTING

The diagnosis of trouble in the transmission always should start by making certain preliminary checks before it is assumed that the transmission is at fault, or before carrying out any other trouble shooting procedures.

1. Check the coolant level in the engine radiator.
2. Check the oil level in the transmission. A low oil level can effect the operation of the transmission, and may indicate fluid leaks that could cause transmission damage. A high oil level can cause foaming of the oil which in turn may result in clutch slippage or leakage at the breather or filler tube.
3. Check the adjustment of the control and governor linkages. Make sure that the engine starts to rev up immediately after the pedal or lever leaves the neutral zone, and that the governor is being held wide open with pedal or lever in the full throttle position. All interferences that limit top R.P.M. should be remedied.

JERKING STARTS

If unit starts with a jerk, check the engine idle speed which is recommended at 450 to 550 R.P.M. If idle speed is lower than this, unit will die too easily in rapid reversals; and if higher than this, the converter will transmit too much torque for smooth starts. Maladjustment of the control system caused by excessive friction or external interference may cause the clutches to engage after the engine has started to accelerate. The control valve should be completely open before the engine starts to rev up. This is mandatory for smooth starts.

SLUGGISHNESS

Check engine for proper operating performance (refer to the performance check on Page 7). Adjust the rod from the control system to the governor so that the engine starts to rev up immediately after the control valve is opened.

All interferences that limit top R.P.M. should be remedied.

CLUTCH SLIPPAGE

Inspect the control valve and linkage for possible malfunction. Check the regulator valve for proper operating pressures as instructed under the performance check on Page **7**. If the readings are other than normal, check for broken pressure regulator springs; make certain the valves are clean. Internally, inspect the clutch affected for possible damage. Check the oil pump for damage and improper performance.

CLUTCH FAILING TO RELEASE

First check for high oil level. Internally, inspect the clutch affected for burned, damaged or worn parts and replace as necessary. Check the alignment of the missing teeth on the separator plates with the oil drain holes in the clutch cylinder, making sure the drain holes are not clogged. If the output shaft exerts a turning force of 30 inch pounds of torque or more with the unit in neutral, corrective measures should be taken and this would require disassembly of the unit and inspection of all parts.

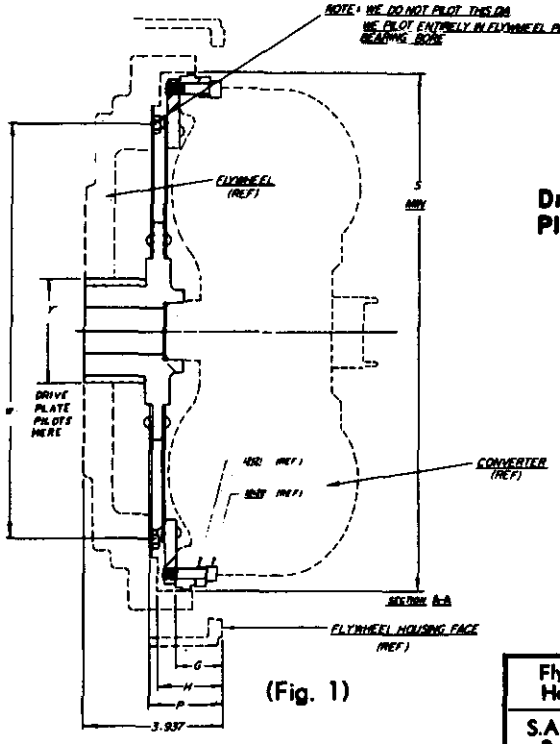
OVERHEATING

First, check for high oil level. Shifting to a lower gear will help eliminate the tendency to overheat. Inspect the heat exchanger and oil filter lines for obstructions and clean or replace as necessary. The possibility of insufficient oil flow to the heat exchanger caused by a worn or damaged oil pump should be checked. Inspect the oil filter for clogging.

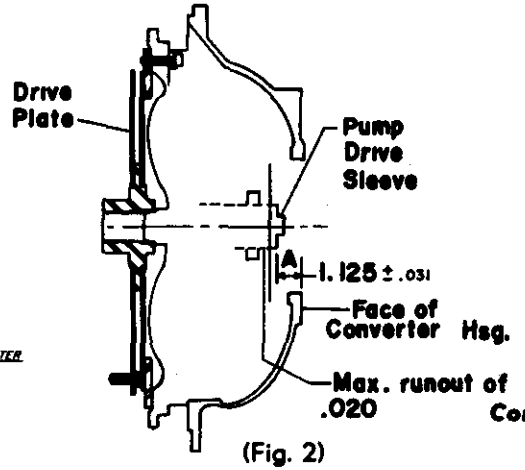
NOISY CONVERTER

First, check for low oil level. Inspect the converter for worn or damaged parts, check for damaged oil pump and replace if necessary.

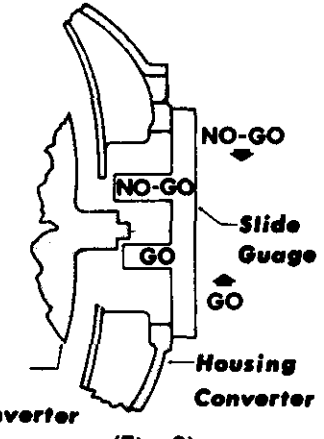
TORQUE CONVERTER INSTALLATION DATA



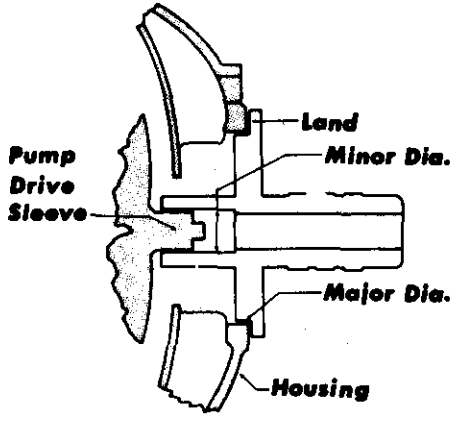
(Fig. 1)



(Fig. 2)



(Fig. 3)



(Fig. 4)

The 2 Drive Plate Assemblies Listed Below are Standards

Flywheel Housing	Flywheel	Converter	Y	D-ive Plate Ass'y. No.	W	S	H	P	G	P-G
S.A.E. No. 2, 3, 4	S.A.E. 10"	12"	2.440 or 2.835 With Sleeve	12101	11.625	14½	1 15/16	2⅛	1⅜	¾
S.A.E. No. 2, 3, 4	S.A.E. 10"	11¾	2.440 or 2.835 With Sleeve	12101-K	11.625	14 5/16	1 15/16	2⅛	1⅜	¾

1. Preliminary checks should be made for the dimensions shown in Fig. No. 1, also the following must be within SAE tolerances before starting converter installation.
   A. Engine flywheel face runout.
   B. Engine flywheel housing pilot bore runout, and parallelism of mounting face in relation to flywheel.
2. Attach the converter drive plate assembly to the engine flywheel with the #F10030-12 capscrew (⅜ x ¾) and the #F16202 lockwasher supplied with the assembly. If the drive hub sleeve is required, it should be installed at this time.
3. Attach the torque converter to the converter drive plate with the #F11004-20NY socket head capscrew (5/16 x 1¼) and the #4012121 half round washer supplied with the assembly. Be sure the converter is positioned so that the drain plugs #45015 on the front side of the converter do not interfere with the drive plate.
4. Remove the converter housing from the Revers-O-Matic and attach this to the engine flywheel housing. The capscrews and lockwashers for this are not ordinarily supplied.
5. The location of the pump drive end of the torque converter (shown as dimension "A" Fig. #2) must be checked on all installations. Due to the flexibility of the drive plate allowing the converter to tilt slightly, it will be necessary to hold the converter hub in the center position.
6. The dimension "A" is to be 1⅛" plus or minus 1/32" and may be checked with a depth mike, a closely graduated scale rule and a straight edge, or the #CDG-1 "Go" and "No-Go" gauge (see Fig. #3) is available for this check. The dimension "A" is to be checked at the end of the pump drive sleeve and not at the ends of the two driving lugs. (see Fig. #2).

7. If dimension "A" is less than 1⅛" minus 1/32" or if the "Go" side of the #CDG-1 gauge will not slide by the end of the pump drive sleeve, it will be necessary to remove the converter housing and check for interference of the torque converter, converter drive plate, and engine flywheel for possible damaged or deformed drive plate. If no interference is found, the thickness of the flywheel must be reduced, or metal shims may be installed between the converter housing and the Revers-O-Matic drive.
8. If dimension "A" is more than 1⅛" plus 1/32", or the "No-Go" side of the #CDG-1 gauge will slide by the pump drive sleeve, shims may be installed between the engine flywheel and the converter drive plate. Plain washers not more than 1/16" thick may be used for this purpose.
9. The runout of the pump drive sleeve, which is not to exceed .020" max., is checked by using the #CRG-1 gauge (Fig. #4), which also checks for converter housing misalignment. The use of this gauge depends on a sense of feel. The #CRG-1 gauge slips over the pump drive sleeve and into the converter housing bore, this may require a slight lifting because the flexibility of the converter drive plate may allow the torque converter to tilt slightly. The gauge is then turned as the engine is turned over slowly. If the gauge turns freely through a full turn of the crankshaft, the converter and converter housing are in satisfactory alignment. If the gauge will not enter the converter housing bore, or the gauge does not turn freely as the engine is turned over, it will be necessary to recheck the tolerances noted in paragraph #1, as this would indicate the runout is in excess of the .020" limit.
10. Attach the Revers-O-Matic Drive to the converter housing with the #F10040-32 capscrews (7/16 x 2") and #F16203 lockwashers, checking first that the oil pump drive lugs are set at right angles to the drive lugs on the converter pump drive sleeve. The full weight of the Revers-O-Matic must be suspended during installation to prevent damage to the oil seal at the front of the oil pump. The Revers-O-Matic should be rotated a few degrees each way during installation to mesh the spline connections inside the converter.

    NOTE: The Revers-O-Matic must be filled with oil per service instructions on page 4 before engine is started.
11. Installation with reference to the standard 40RC7824 control assembly is shown on page 17. Connect the throttle rod between the throttle lever (point "E" page 5) and the governor spring. Throttle rod length is adjusted so that the engine begins to rev up when the lever has left stop "A" by not more than 1/16". The rod from the operator's control is connected to the bell crank (point "D"), being sure that the operator can articulate the bellcrank thru 45° each way, or until stop "C" closes.

PERFORMANCE CHECK

Attach a tachometer to the engine with the transmission in neutral. Holding the forward pedal or lever wide open, the engine should turn up to the top governor R.P.M. as shown on the specification sheet. If the R.P.M. is less than this, check the control and governor linkage to make sure that the governor is being held wide open, or tune up the engine. Check the R.P.M. with the reverse pedal or lever fully depressed. The engine speed should be the same as above.

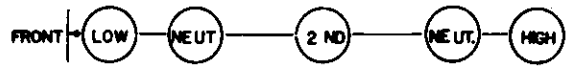
Next, place the transmission in high gear and lock the brakes. Holding the forward pedal or lever wide open, the engine should turn up to the minimum static R.P.M. as shown on the specification sheet. If the R.P.M. is less than this, tune up the engine. If the engine speed is over the maximum static R.P.M. as shown on the specification sheet, the torque converter or the hydraulic clutches in the Revers-O-Matic are slipping. Repeat the same test, using the reverse pedal or lever.

If a check indicates that the converter or the Revers-O-Matic are at fault, first check the oil level of the unit as described under "Service" on Page 4. Next, check the control oil pressures. Install a 200# pressure gauge in the pipe fitting located on top of the control valve and at the front end of the Revers-O-Matic Drive. With the engine turning approximately 1500 R.P.M. the pressure should read 150 P.S.I. minimum. If less than this, remove and clean the pressure regulator valves as follows:

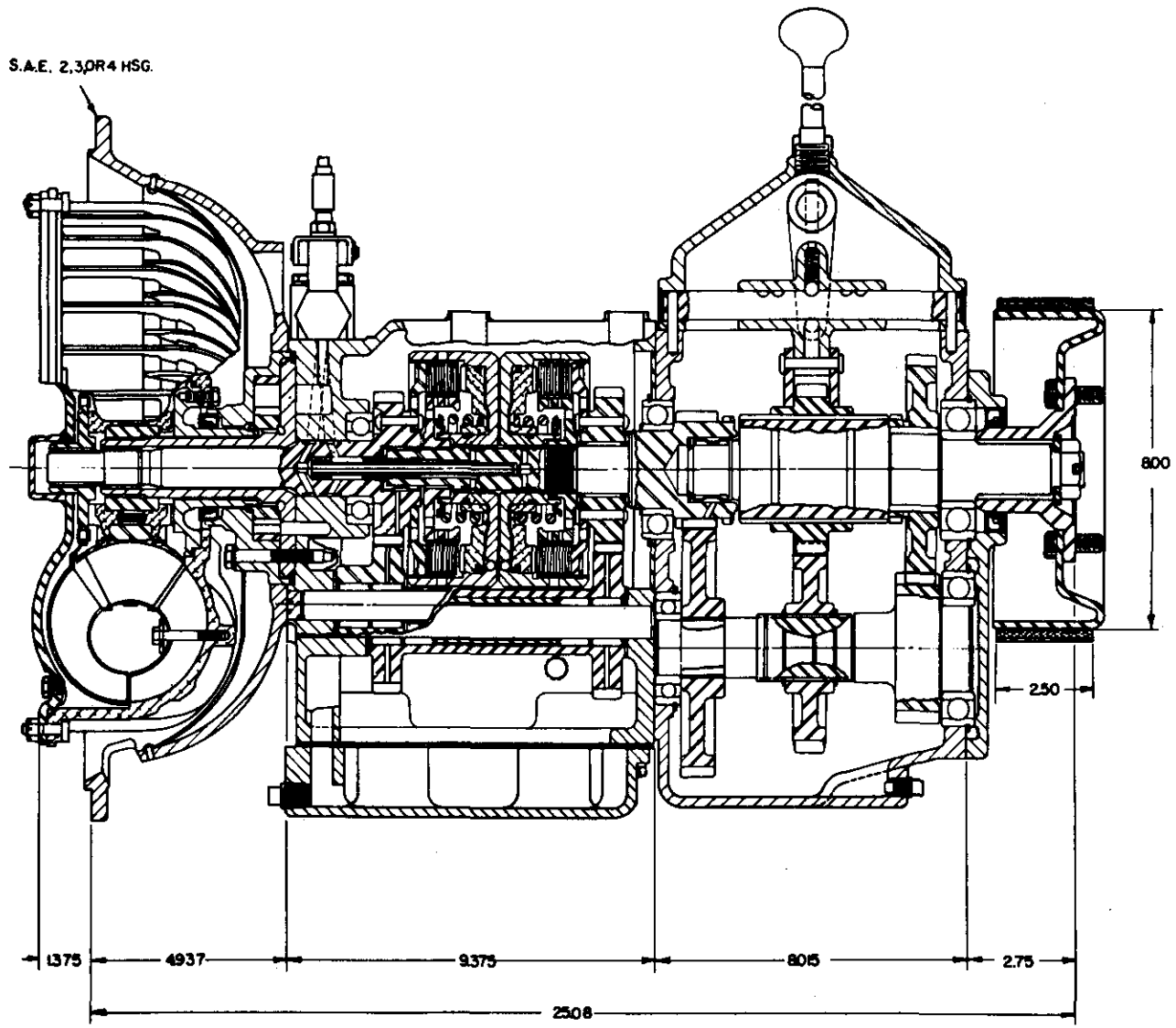
1. Remove the upper regulator cap on the left hand side of the unit near the front end of the case. Remove the spring, valve, and guide pin. Thoroughly clean the valve port as well as the various parts of the valve. Set the parts of the upper regulator valve aside so that they will not be mixed up with other parts later on.
2. Install the upper regulator cap **only** in the upper regulator valve port.
3. Remove the lower regulator cap, spring, valve and guide pin. Thoroughly clean the valve port as well as the various parts of the valve.
4. Reassemble the lower regulator valve complete, being sure that the valve slides freely in the valve port.
5. A pressure reading can now be taken on the lower regulator valve, using the gage previously installed. The lower regulator should be set at 75 to 80 P.S.I.
6. The pressure of the regulators can be adjusted by adding or removing washers under the springs in the regulator caps.
7. Remove the upper regulator cap and reassemble the upper regulator valve complete, being sure that the valve slides freely in the valve port.
8. The upper regulator valve should now be set so as to read 160 to 170 P.S.I. at 1800 R.P.M. in neutral. However, the pressure will drop momentarily below 100 P.S.I. when the clutches are engaged. With the engine idling, the regulator should read approximately 100 P.S.I.
9. With new oil in the unit, the pressure regulator valves may buzz. This is due to a foaming of the oil. Do not read the pressure gage when the regulator valves are buzzing. Idle the engine for several minutes, then rev up and read the pressure gage.
10. The 10# pressure regulator valve located on the right hand side of the unit is rarely a source of service problems. However, if the valve should require cleaning, follow the steps described above for the other two regulator valves.

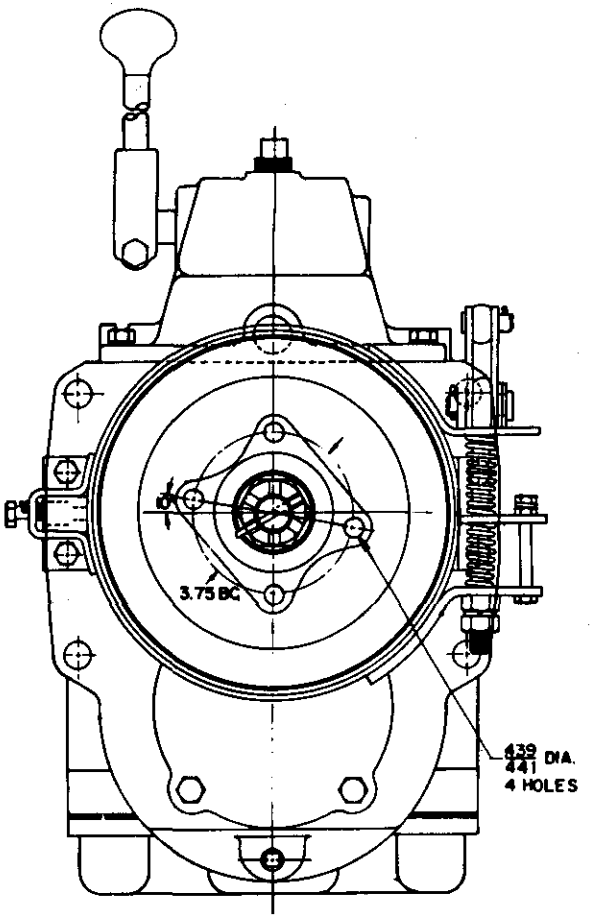
TYPICAL MODELS

4050A010A0, 4050A020A0,
4050A021A0, 4050A050A0



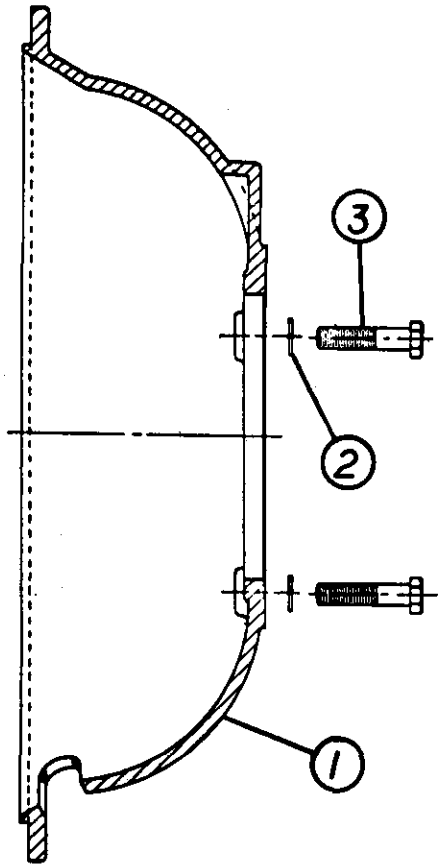
SHIFT PATTERN





CONVERTER HOUSING

4 TRCA 7500

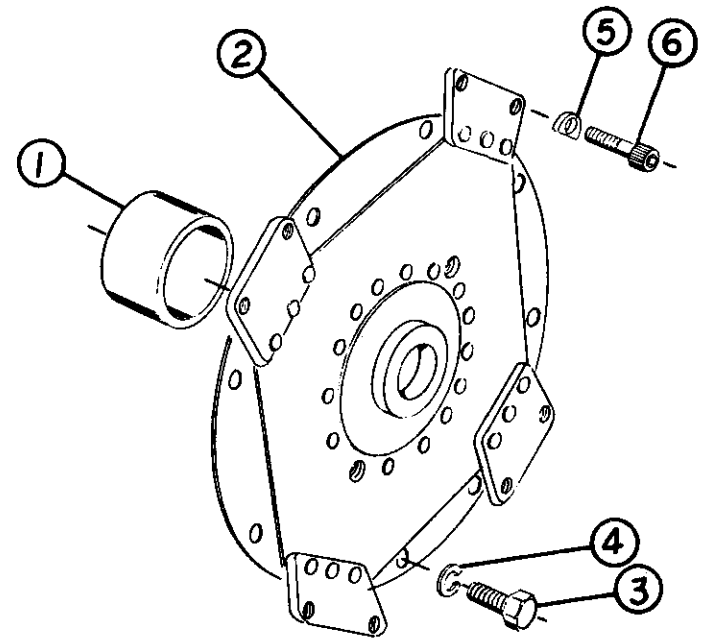


PARTS LIST

Ref. No.	Part No.	Description	No. Reqd.
1	4TRCA 7501-2 (S.A.E. No. 2) 4TRCA 7501-3 (S.A.E. No. 3) 4TRCC 7501-4 (S.A.E. No. 4)	Converter Housing	1
2	F 16203	Lockwasher, 7/16"	4
3	F 10040-32	Cap screws, 7/16" x 2" NC	4

DRIVE PLATE ASSEMBLY

PART NO. 4012101 and 4012101-K



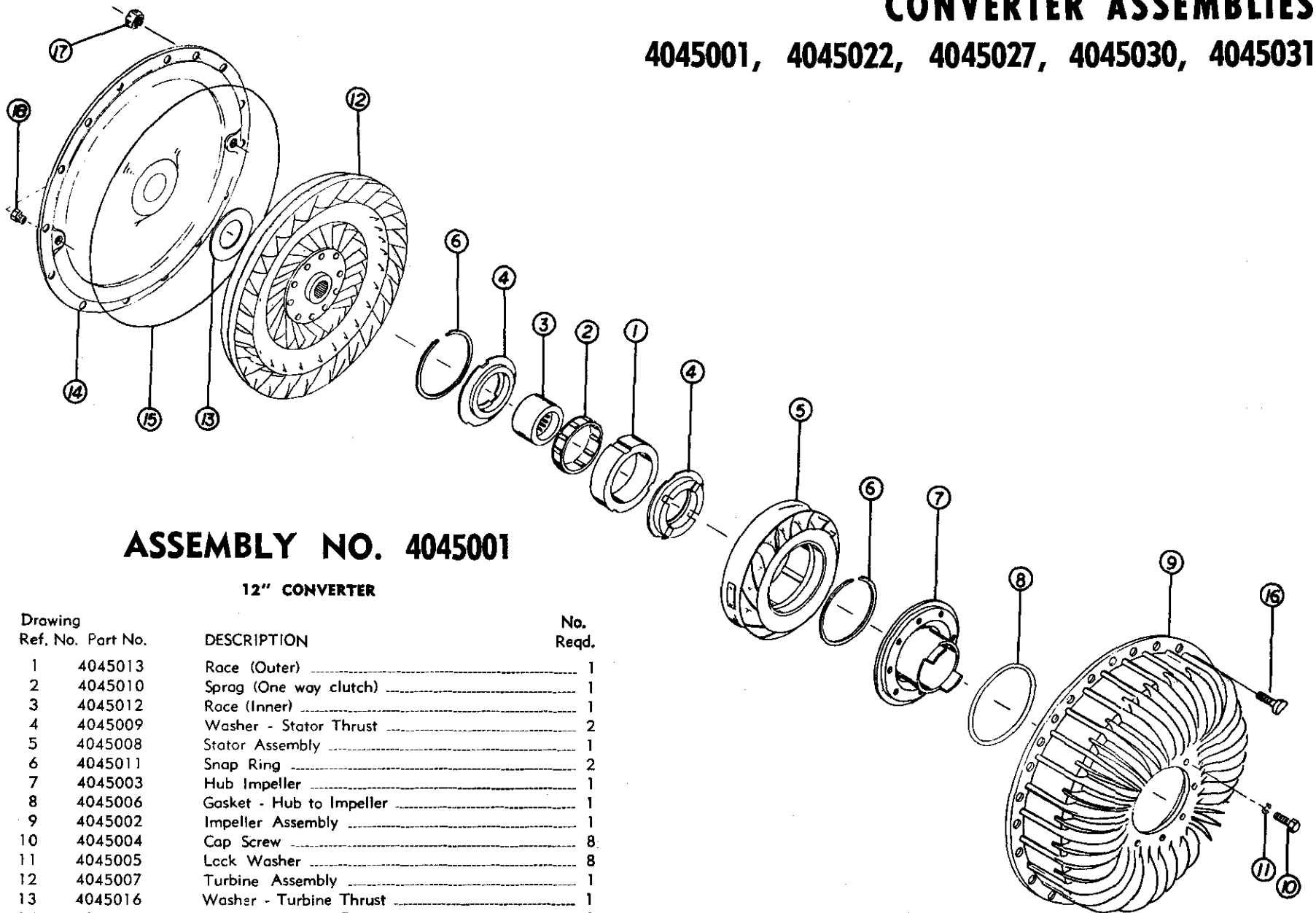
PARTS LIST

Ref. No.	Part No.	DESCRIPTION	No. Reqd.
*1	4012100-1	Sleeve, Drive Hub (1¾ long)	1
2	4012101	Drive plate assembly, converter (for 12" Converter)	1
	4012101-K	Drive plate assembly, converter (for 11¾ Converter)	1
3	F 10030-12	Cap screw ⅜-NC x ¾ hex head (HT)	8
4	F 16202	Washer ⅜ Medium spring lock	8
5	4012121	Washer half round 11/16 dia x ¼ thick	8
6	F 11004-20 NY	Cap screw 5/16 NF x 1¼ socket head (HT)	8

*** 4012100-1 sleeve is required to change the standard pilot hub diameter of 2.4395" to 2.8332" pilot hub diameter.**
NOTE: 4012101 & 4012101-K designed to fit S.A.E. standard 10" industrial flywheels only. For all other flywheels contact Funk Mfg. Co.

CONVERTER ASSEMBLIES

4045001, 4045022, 4045027, 4045030, 4045031



ASSEMBLY NO. 4045001

12" CONVERTER

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4045013	Race (Outer)	1
2	4045010	Sprag (One way clutch)	1
3	4045012	Race (Inner)	1
4	4045009	Washer - Stator Thrust	2
5	4045008	Stator Assembly	1
6	4045011	Snap Ring	2
7	4045003	Hub Impeller	1
8	4045006	Gasket - Hub to Impeller	1
9	4045002	Impeller Assembly	1
10	4045004	Cap Screw	8
11	4045005	Lock Washer	8
12	4045007	Turbine Assembly	1
13	4045016	Washer - Turbine Thrust	1
14	4045014	Cover Assembly - Front	1
15	4045017	"O" Ring Gasket	1
16	4045018	Bolt - Cover to Impeller	10
17	4045019	Lock Nut	10
18	4045015	Drain Plug	2

ASSEMBLY NO. 4045022

(11¾ Hi. K) Converter Without Drive Ring

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4045013	Race (outer)	1
2	4045010	Sprag (one way clutch)	1
3	4045012	Race (inner)	1
4	4045009	Washer - Stator Thrust	2
5	4045025	Stator Assembly	1
6	4045011	Snap Ring	2
7	4045003	Hub - Impeller	1
8	4045006	Gasket - Hub to Impeller	1
9	4045023	Impeller Assembly	1
10	4045004	Cap Screw	8
11	4045005	Lock Washer	8
12	4045024	Turbine Assembly	1
13	4045016	Washer - Turbine Thrust	1
14	4045026	Cover Assembly - Front	1
15	4045017	"O" Ring Gasket	1
16	4045018	Bolt - Cover to Impeller	10
17	4045019	Lock Nut	10
18	4045015	Drain Plug	2

ASSEMBLY NO. 4045027

(11¾ Hi. K) Converter With Drive Ring

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4045013	Race (outer)	1
2	4045010	Sprag (one way clutch)	1
3	4045012	Race (inner)	1
4	4045009	Washer - Stator Thrust	2
5	4045025	Stator Assembly	1
6	4045011	Snap Ring	2
7	4045003	Hub - Impeller	1
8	4045006	Gasket - Hub to Impeller	1
9	4045023	Impeller Assembly	1
10	4045004	Cap Screw	8
11	4045005	Lock Washer	8
12	4045024	Turbine Assembly	1
13	4045016	Washer - Turbine Thrust	1
14	4045028	Cover Assembly - Front	1
15	4045017	"O" Ring Gasket	1
16	4045018	Bolt - Cover to Impeller	10
17	4045019	Lock Nut	10
18	4045015	Drain Plug	2

ASSEMBLY NO. 4045030

(11¾) Converter With Drive Ring

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4045013	Race (outer)	1
2	4045010	Sprag (one way clutch)	1
3	4045012	Race (inner)	1
4	4045009	Washer - Stator Thrust	2
5	4045025	Stator Assembly	1
6	4045011	Snap Ring	2
7	4045003	Hub - Impeller	1
8	4045006	Gasket - Hub to Impeller	1
9	4045029	Impeller Assembly	1
10	4045004	Cap Screw	8
11	4045005	Lock Washer	8
12	4045024	Turbine Assembly	1
13	4045016	Washer - Turbine Thrust	1
14	4045028	Cover Assembly - Front	1
15	4045017	"O" Ring Gasket	1
16	4045018	Bolt - Cover to Impeller	10
17	4045019	Lock Nut	10
18	4045015	Drain Plug	2

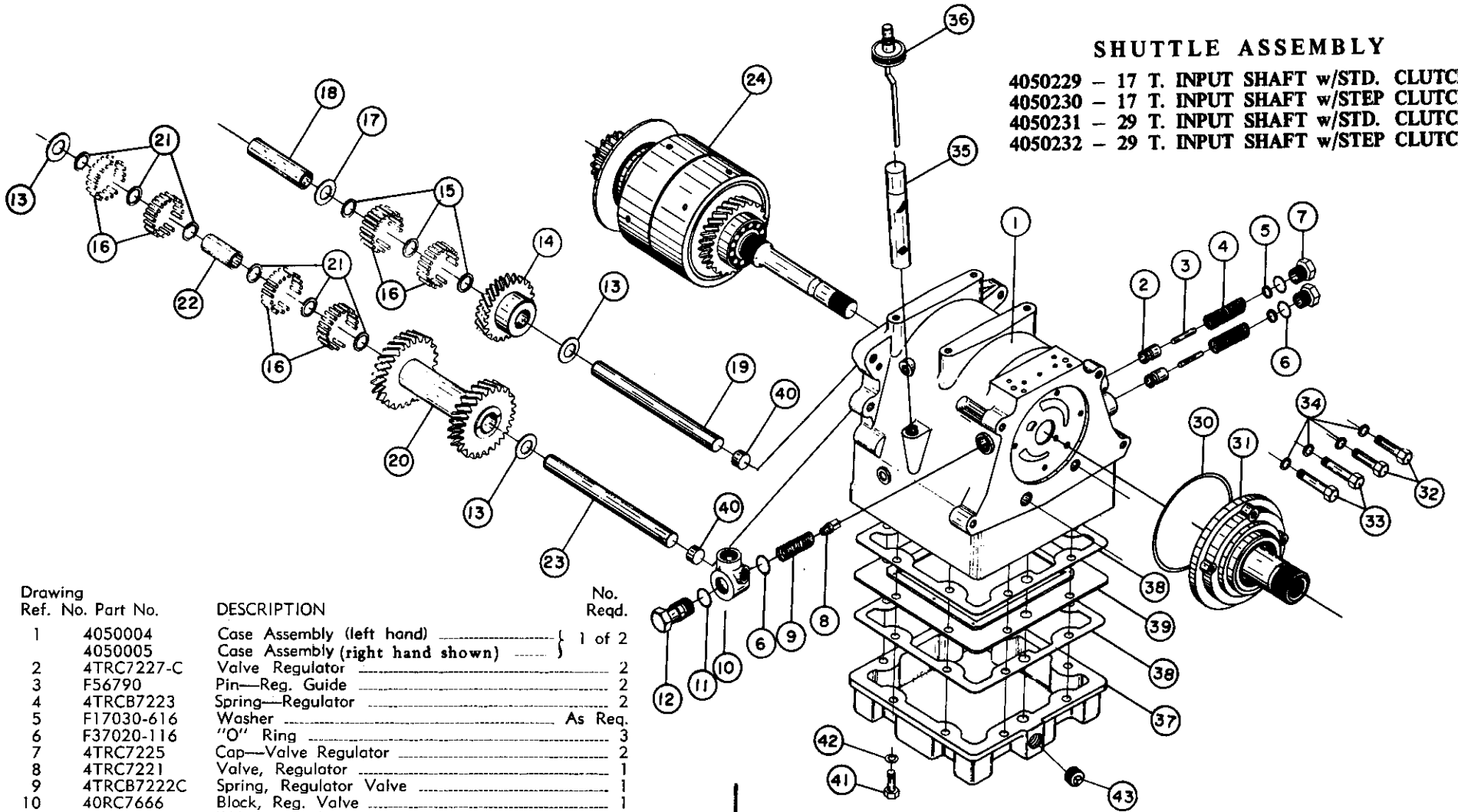
ASSEMBLY NO. 4045031

(11¾) Converter Without Drive Ring

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4045013	Race (outer)	1
2	4045010	Sprag (one way clutch)	1
3	4045012	Race (inner)	1
4	4045009	Washer - Stator Thrust	2
5	4045025	Stator Assembly	1
6	4045011	Snap Ring	2
7	4045003	Hub - Impeller	1
8	4045006	Gasket - Hub to Impeller	1
9	4045029	Impeller Assembly	1
10	4045004	Cap Screw	8
11	4045005	Lock Washer	8
12	4045024	Turbine Assembly	1
13	4045016	Washer - Turbine Thrust	1
14	4045026	Cover Assembly - Front	1
15	4045017	"O" Ring Gasket	1
16	4045018	Bolt - Cover to Impeller	10
17	4045019	Lock Nut	10
18	4045015	Drain Plug	2

SHUTTLE ASSEMBLY

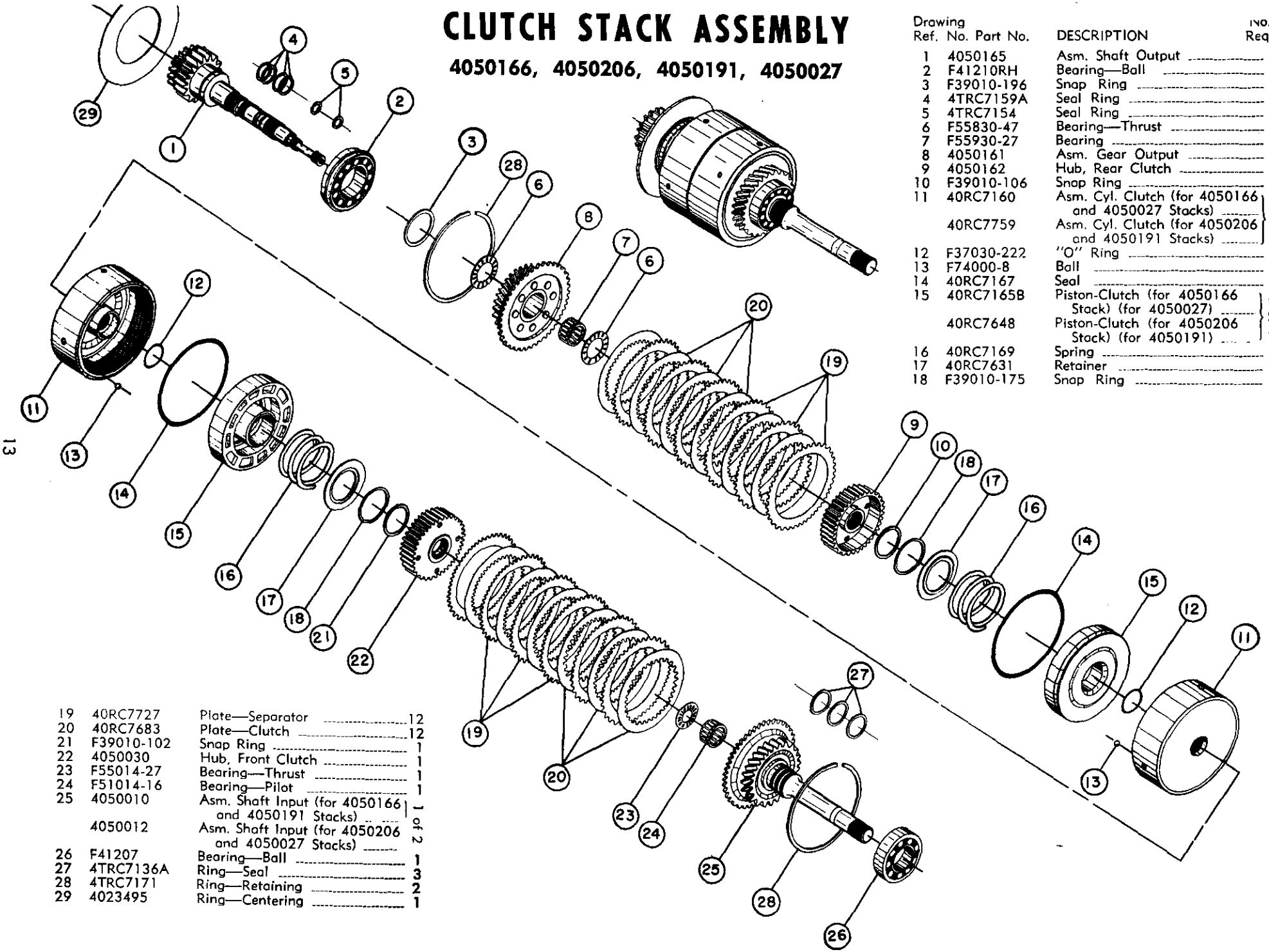
4050229 – 17 T. INPUT SHAFT w/STD. CLUTCH
4050230 – 17 T. INPUT SHAFT w/STEP CLUTCH
4050231 – 29 T. INPUT SHAFT w/STD. CLUTCH
4050232 – 29 T. INPUT SHAFT w/STEP CLUTCH



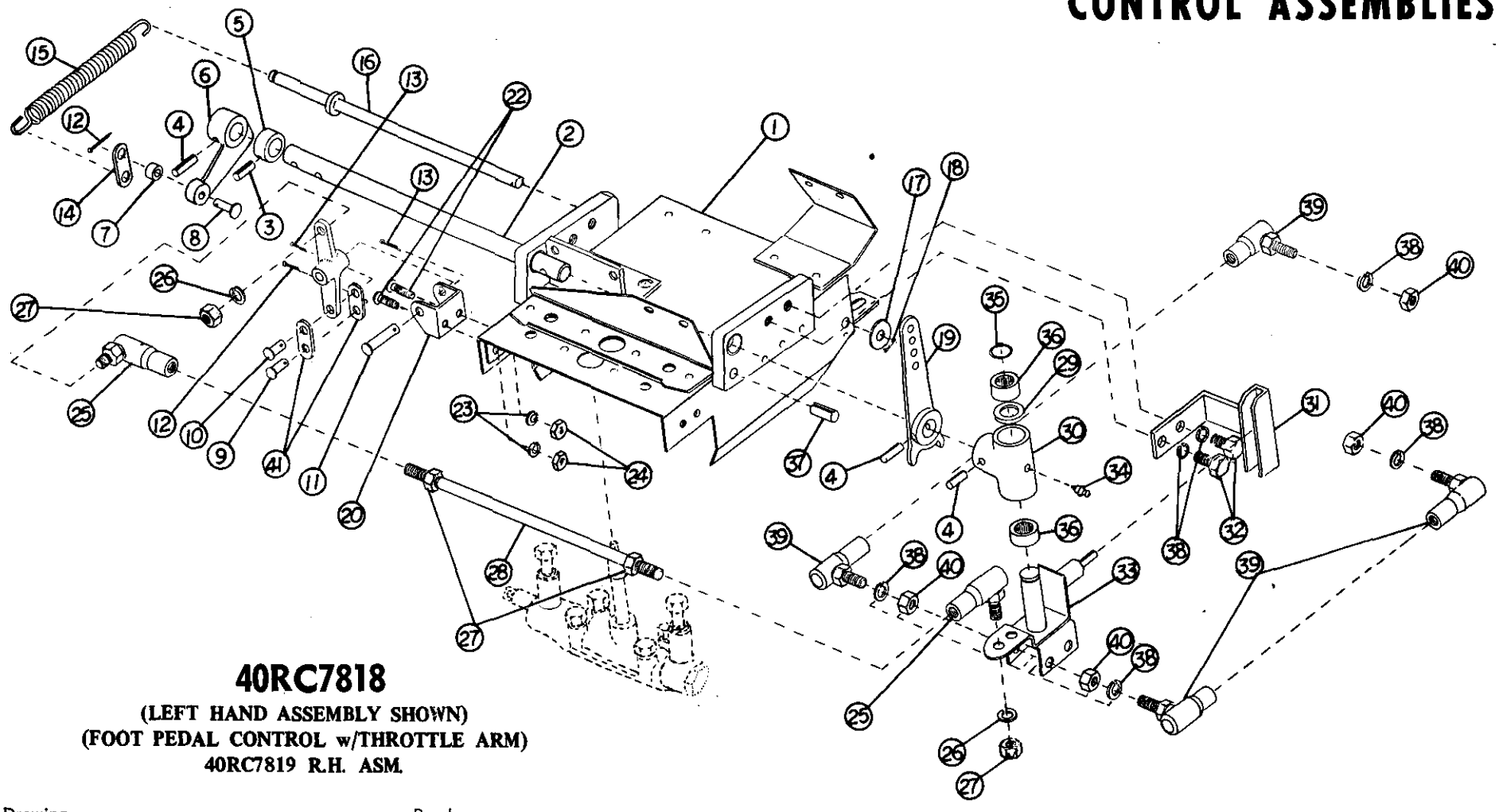
Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4050004	Case Assembly (left hand)	1 of 2
	4050005	Case Assembly (right hand shown)	
2	4TRC7227-C	Valve Regulator	2
3	F56790	Pin—Reg. Guide	2
4	4TRCB7223	Spring—Regulator	2
5	F17030-616	Washer	As Req.
6	F37020-116	"O" Ring	3
7	4TRC7225	Cap—Valve Regulator	2
8	4TRC7221	Valve, Regulator	1
9	4TRCB7222C	Spring, Regulator Valve	1
10	40RC7666	Block, Reg. Valve	1
11	F37010-20	"O" Ring—Outer	1
12	4TRC7232-D	Cap Regulator	1
13	40RC7798	Washer, Gear Thrust	3
14	4TRC7142G	Gear Idler	1
15	4TRCB7148-2	Washer, Idler Gear Bearing	3
16	4TRCB7148	Roller, Counter Shaft and Idler Gear Bearing	100
17	4TRC71432E	Washer, Idler Gear	1
18	4TRC71431E	Tube Spacer, Idler Gear	1
19	4050035	Shaft, Idler Gear	1
20	4TRCB7141-D	Gear, Counter Shaft	1
21	4TRCB7146-2	Washer	6
22	4TRCB7146-1	Spacer, Counter Shaft Bearing	1
23	4050033	Shaft, Counter Shaft Gear	1
24	4050166	Clutch Stack Asm. (for Model 4050229)	1 of 4
	4050191	Clutch Stack Asm. (for Model 4050230)	
	4050027	Clutch Stack Asm. (for Model 4050231)	
	4050206	Clutch Stack Asm. (for Model 4050232)	
30	4TRC7009	Gaskets	1
31	40RC7702	Asm. Oil Pump (for Models 4050229 and 4050230)	1 of 2
	4000583	Asm. Oil Pump (for Models 4050231 and 4050232)	
32	F10020-28	Capscrew	2
33	F10020-32	Capscrew	2
34	F18002	Washer—Dynaseal	4
35	4TRC7105	Screen	1
36	4TRC7104	Assembly—Cap	1
37	4050003	Sump, Oil	1
38	4050036	Gasket	2
39	4050037	Assembly—Screen	1
40	F87107	Cork	2
41	F10030-16	Capscrew	8
42	F16202	Washer—Lock	8
43	F20003	Plug	1

CLUTCH STACK ASSEMBLY

4050166, 4050206, 4050191, 4050027



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4050165	Asm. Shaft Output	1
2	F41210RH	Bearing—Ball	1
3	F39010-196	Snap Ring	1
4	4TRC7159A	Seal Ring	4
5	4TRC7154	Seal Ring	2
6	F55830-47	Bearing—Thrust	2
7	F55930-27	Bearing	1
8	4050161	Asm. Gear Output	1
9	4050162	Hub, Rear Clutch	1
10	F39010-106	Snap Ring	1
11	40RC7160	Asm. Cyl. Clutch (for 4050166 and 4050027 Stacks)	2 of 1
	40RC7759	Asm. Cyl. Clutch (for 4050206 and 4050191 Stacks)	
12	F37030-222	"O" Ring	2
13	F74000-8	Ball	2
14	40RC7167	Seal	2
15	40RC7165B	Piston-Clutch (for 4050166 Stack) (for 4050027)	2 of 1
	40RC7648	Piston-Clutch (for 4050206 Stack) (for 4050191)	
16	40RC7169	Spring	2
17	40RC7631	Retainer	2
18	F39010-175	Snap Ring	2
19	40RC7727	Plate—Separator	12
20	40RC7683	Plate—Clutch	12
21	F39010-102	Snap Ring	1
22	4050030	Hub, Front Clutch	1
23	F55014-27	Bearing—Thrust	1
24	F51014-16	Bearing—Pilot	1
25	4050010	Asm. Shaft Input (for 4050166 and 4050191 Stacks)	1 of 2
	4050012	Asm. Shaft Input (for 4050206 and 4050027 Stacks)	
26	F41207	Bearing—Ball	1
27	4TRC7136A	Ring—Seal	3
28	4TRC7171	Ring—Retaining	2
29	4023495	Ring—Centering	1



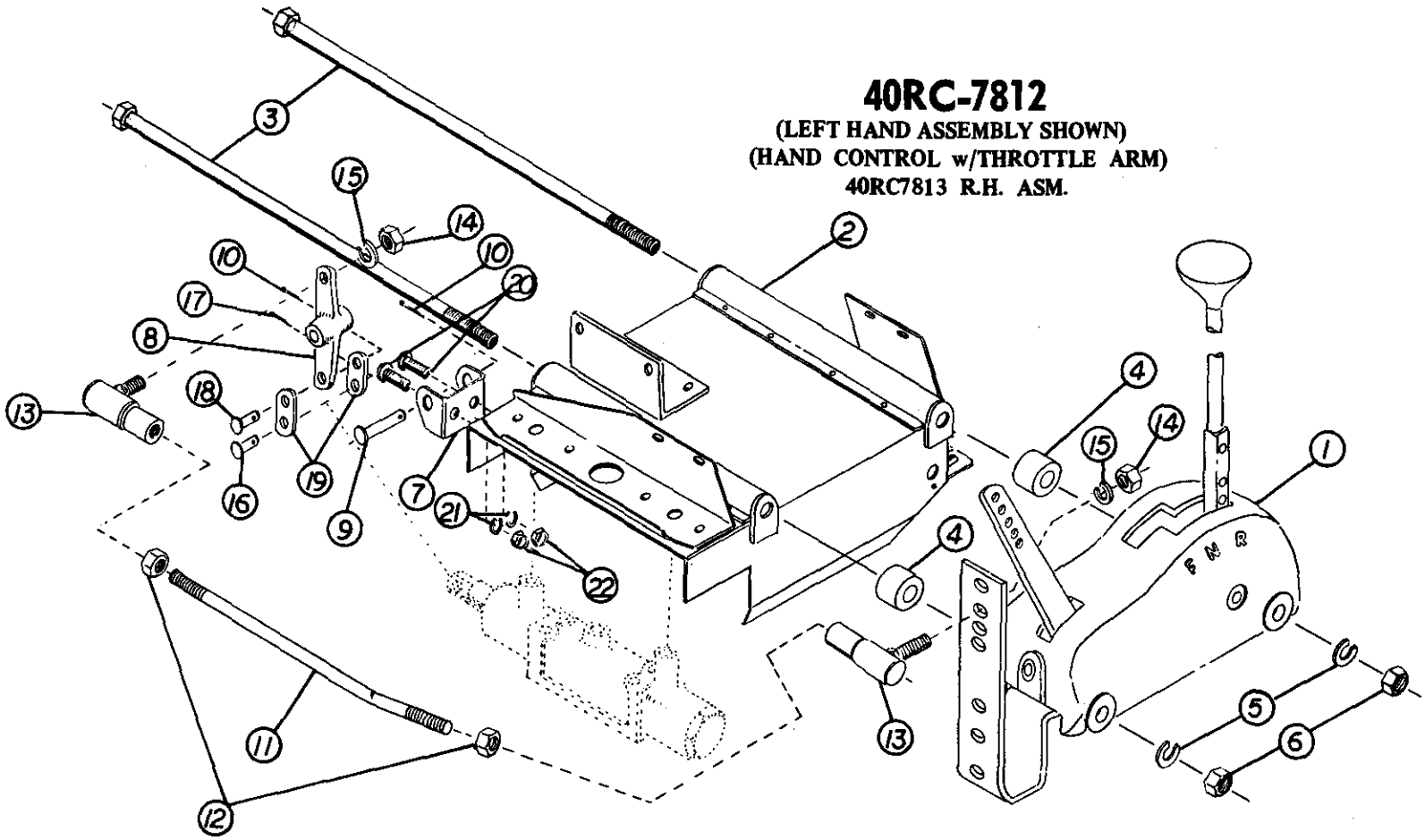
40RC7818

(LEFT HAND ASSEMBLY SHOWN)
(FOOT PEDAL CONTROL w/THROTTLE ARM)
40RC7819 R.H. ASM.

Drawing Ref. No.	Part No.	DESCRIPTION	Reqd. No.
1	4000720	Asm. - Support Control	1
2	4012617	Shaft	1
3	F25250-16	Roll Pin	1
4	F25250-20	Roll Pin	3
5	4012629	Spacer	1
6	4012628	Crank	1
7	4012641	Spacer	1
8	F24002-37	Clevis Pin	1
9	F24002-19	Clevis Pin	1
10	F24003-19	Clevis Pin	1
11	F24003-49	Clevis Pin	1
12	F26003-8	Cotter Pin	2
13	F26005-12	Cotter Pin	2
14	4012640	Conn. Link	1
15	4012606	Spring	1
16	4012611	Spring Anchor	1
17	F17003	Flat Washer	1
18	F26005-12	Cotter Pin	1
19	4012635	Asm. - Throttle Cont.	1
20	4012632	Fulcrum Bracket	1
21	4012627	Crank	1
22	F11145-12	Capscrew Button Hd.	2
23	F16200	Lockwasher	2
24	F13001	Nut	2
25	F35100-3R	Ball Joint	2
26	F16201	Lockwasher	8
27	F13004	Nut	6
28	4012625	Conn. Rod	1
29	4012622	Spacer	1
30	4012619	Control Block	1
31	4012633	Guide Stop	1
32	F10035-16	Capscrew	2
33	4012621	Bracket	1
34	F66012-S	Grease Fitting	1
35	F39010-62	Snap Ring	1
36	F47010-12	Bearing - Needle	2
37	F25375-16	Roll Pin	1
38	F16202	Lockwasher	6
39	F35100-4R	Ball Joint	4
40	F13006	Nut	4
41	40RC7696	Conn. Link	2

40RC-7812

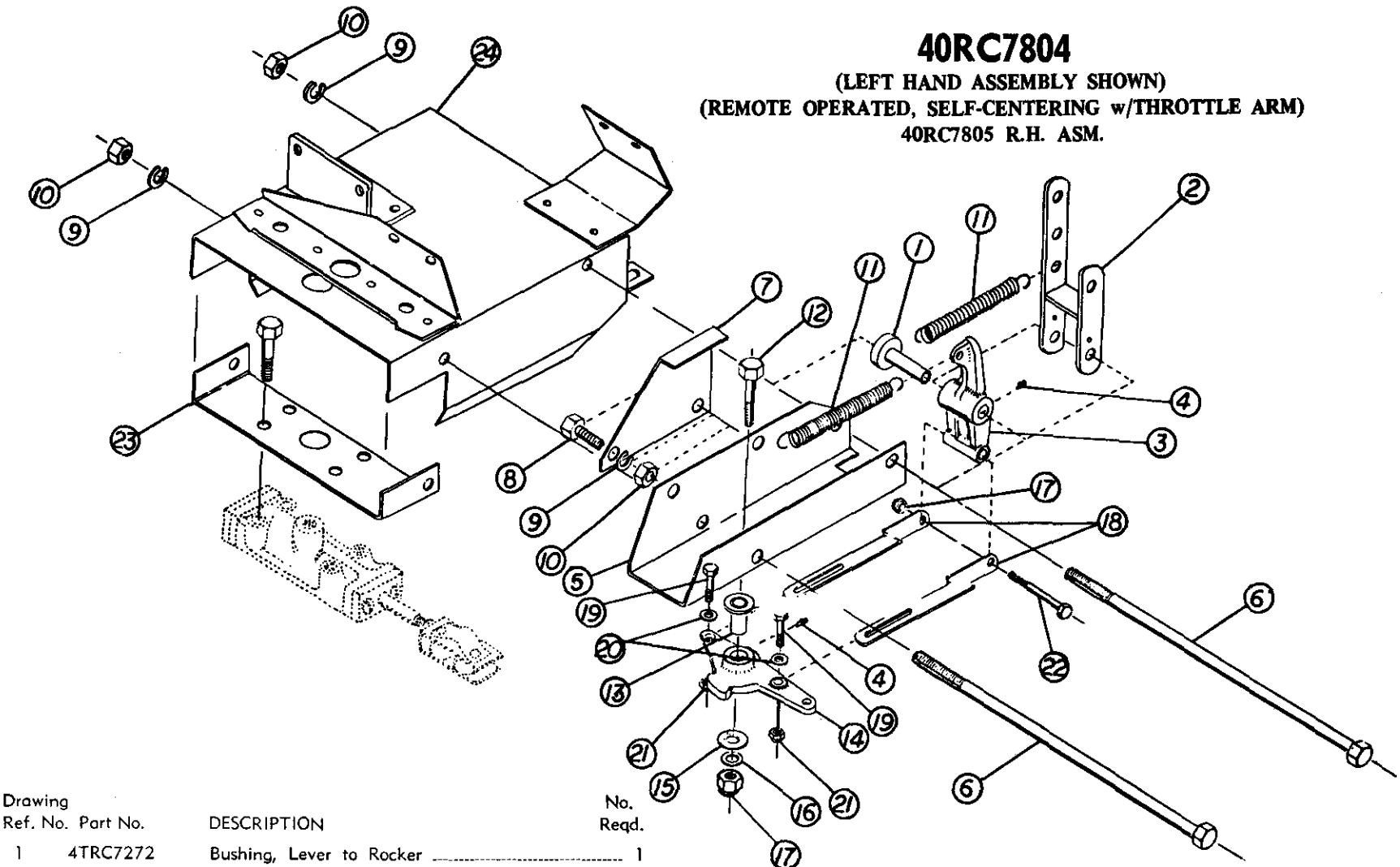
(LEFT HAND ASSEMBLY SHOWN)
(HAND CONTROL w/THROTTLE ARM)
40RC7813 R.H. ASM.



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40121067	Quadrant Asm. (Page 19)	1
2	4000717	Left Hand Support Control	1 of 2
	4000715	Right Hand Support Control	
3	F10030-216	Capscrew	2
4	40RC7652	Spacer	2
5	F16202	Lockwasher	2
6	F13005	Nut	2
7	4012632	Fulcrum Bracket	1
8	4012627	Crank	1
9	F24003-49	Clevis Pin	1
10	F26005-12	Cotter Pin	2
11	40RC7638	Connecting Rod	1
12	F79103	Jam Nut	2
13	F35100-3R	Ball Joint	2
14	F13004	Nut	2
15	F16201	Lockwasher	2
16	F24002-19	Clevis Pin	1
17	F26003-8	Cotter Pin	1
18	F24003-17	Clevis Pin	1
19	4012640	Link, Model RC	2
20	F11145-12	Capscrew Button Hd.	2
21	F16200	Lockwasher	2
22	F13001	Nut	2

40RC7804

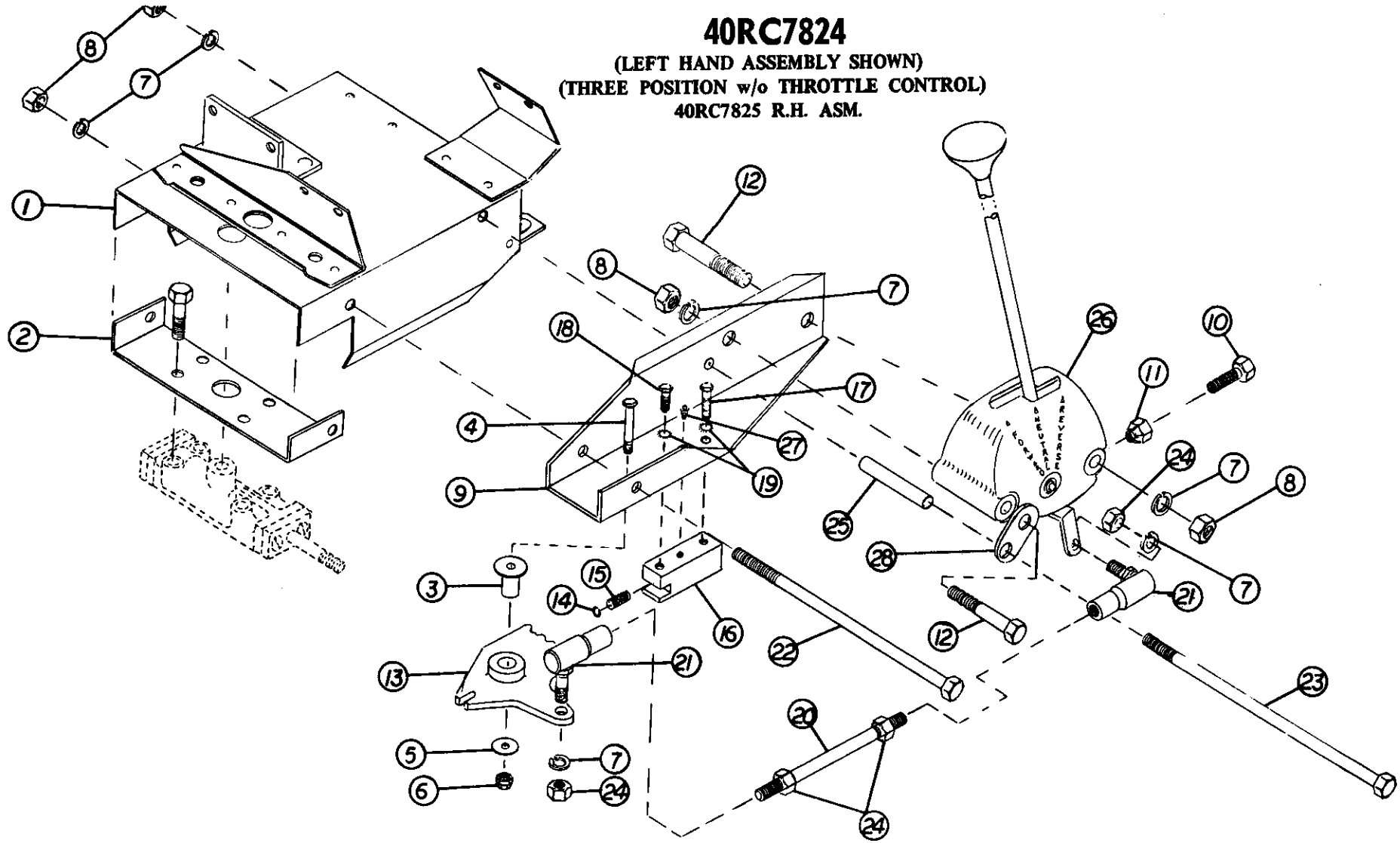
(LEFT HAND ASSEMBLY SHOWN)
(REMOTE OPERATED, SELF-CENTERING w/THROTTLE ARM)
40RC7805 R.H. ASM.



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4TRC7272	Bushing, Lever to Rocker	1
2	4TRCB7278	Lever, Throttle	1
3	4TRCB7271	Rocker, Throttle	1
4	F66010	Grease Fitting	2
5	4TRC7268	Bracket, Control	1
6	F10030-192	Tie Bolt	2
7	4TRCB7277	Stop, Control	1
8	F10030-16	Bolt	2
9	F16202	Washer	4
10	F13005	Nut	4
11	4TRCB7279	Spring, Throttle Lever	2
12	F10201-16	Bolt	1
13	4TRC7262	Bushing, Bellcrank	1
14	4000732	Bellcrank	1
15	F17001-W	Washer	1
16	F17000-36	Washer	1
17	F78425-28	Nut	2
18	4TRC7263	Link Bellcrank to Rocker	2
19	F10200-10	Bolt	2
20	F17000-10	Washer	2
21	F78110-32	Nut	2
22	F10201-23	Bolt	1
23	4TRC7269	Base	1
24	4000726	Air Scoop	1

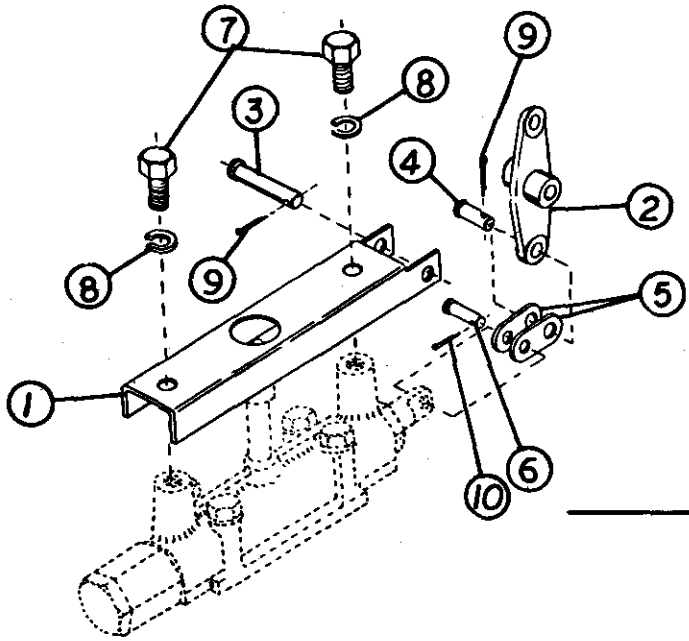
40RC7824

(LEFT HAND ASSEMBLY SHOWN)
(THREE POSITION w/o THROTTLE CONTROL)
40RC7825 R.H. ASM.



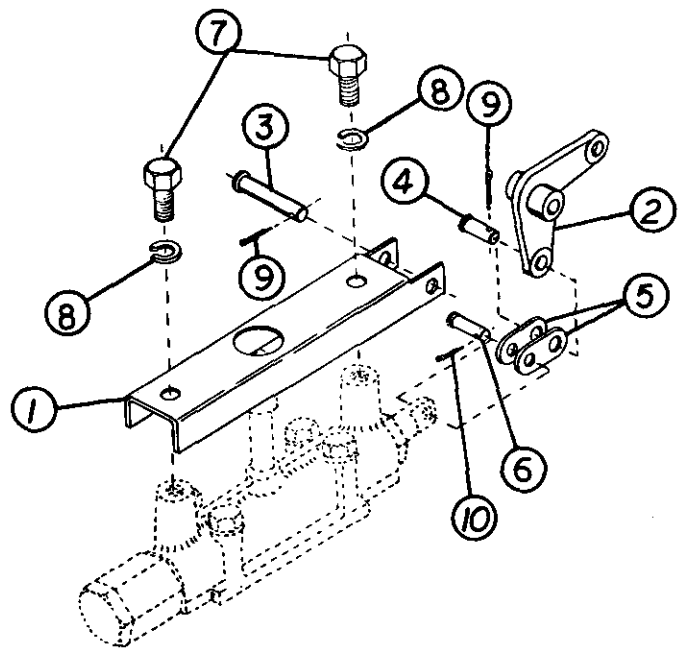
Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4000726	Asm. Control Support	1
2	4TRC7269	Base	1
3	4TRC7262	Bushing - Bellcrank	1
4	F10015-28	Bolt	1
5	F17001N	Washer	1
6	F78125-28B	Stop Nut	1
7	F16202	Lockwasher	6
8	F13005	Nut	4
9	40RC7268B	Bracket	1
10	F10035-32	Bolt	1
11	F78437-2451	Stop Nut	1
12	F10030-44	Bolt	2
13	40RC7616	Bellcrank	1
14	F74000-12D	Ball	1
15	40TR7204	Spring	1
16	4TRC7281A	Block, Detent	1
17	F10020-16	Capscrew	1
18	F10020-8	Capscrew	1
19	F15002	Starwasher (Ext.)	2
20	40RC7263C	Link Rod	1
21	F35100-4R	Rod End	2
22	F10030-176	Tie Bolt	1
23	F10030-184	Tie Bolt	1
24	F79105	Nut	4
25	40RC7451	Spacer	1
26	40RC7620	Quadrant Asm. (Page 19)	1
27	F66010	Grease Fitting	1
28	40RC7452	Brace Link	1

CONTROL SYSTEMS



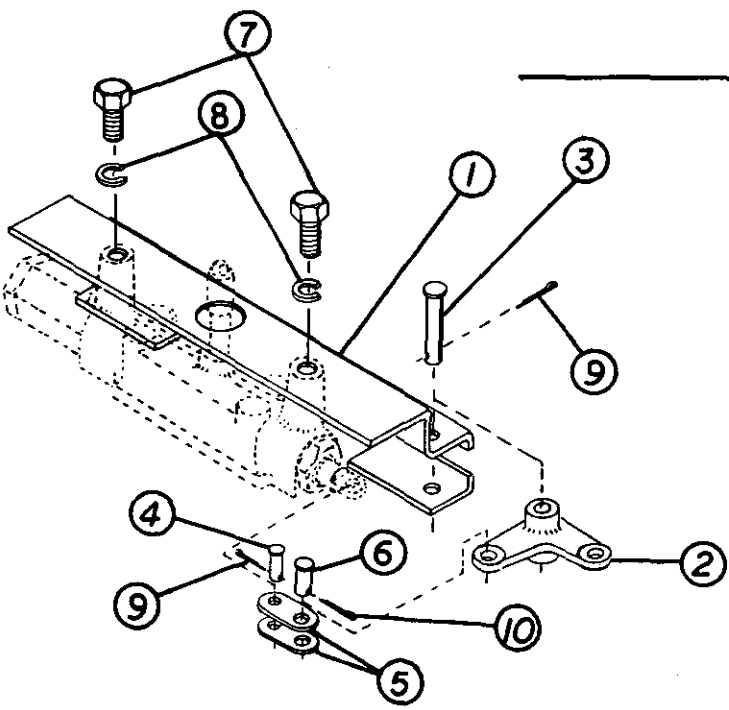
4050050
(LEFT HAND ASSEMBLY SHOWN)

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7678	Bracket	1
2	4012627	Crank	1
3	F24003-49	Clevis Pin	1
4	F24003-19	Clevis Pin	1
5	4012640	Connecting Link	2
6	F24002-19	Clevis Pin	1
7	F10030-12	Capscrew	2
8	F16202	Lockwasher	2
9	F26005-12	Cotter Pin	2
10	F26003-8	Cotter Pin	1



4050051
(LEFT HAND ASSEMBLY SHOWN)

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7678	Bracket	1
2	40RC7642	Crank	1
3	F24003-49	Clevis Pin	1
4	F24003-19	Clevis Pin	1
5	4012640	Connecting Link	2
6	F24002-19	Clevis Pin	1
7	F10030-12	Capscrew	2
8	F16202	Lockwasher	2
9	F26005-12	Cotter Pin	2
10	F26003-8	Cotter Pin	1

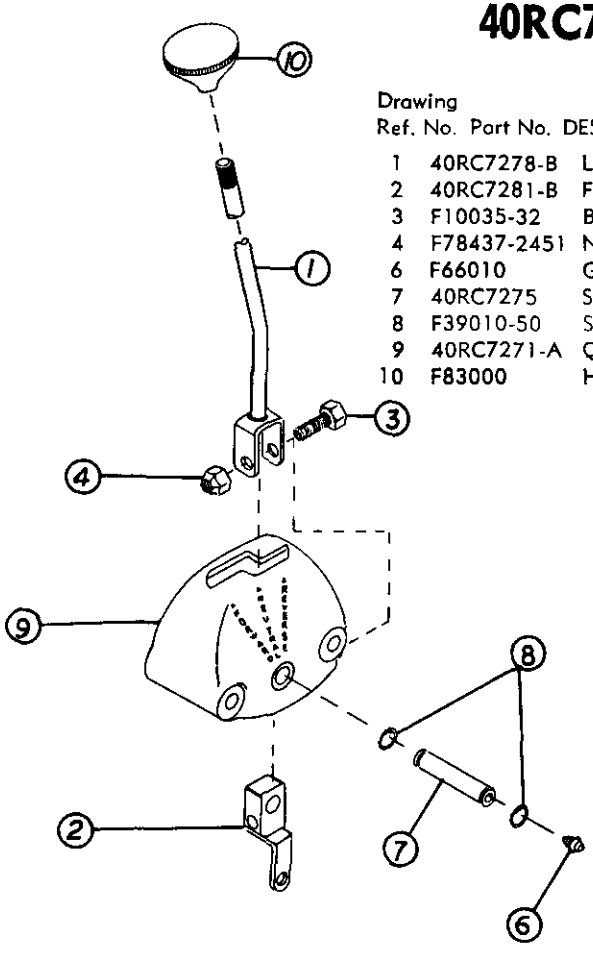


4050053
(LEFT HAND ASSEMBLY SHOWN)

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7682	Bellcrank Bracket	1
2	40RC7642	Crank	1
3	F24003-49	Clevis Pin	1
4	F24003-19	Clevis Pin	1
5	4012640	Connecting Link	2
6	F24002-19	Clevis Pin	1
7	F10030-12	Capscrew	2
8	F16202	Lockwasher	2
9	F26005-12	Cotter Pin	2
10	F26003-8	Cotter Pin	1

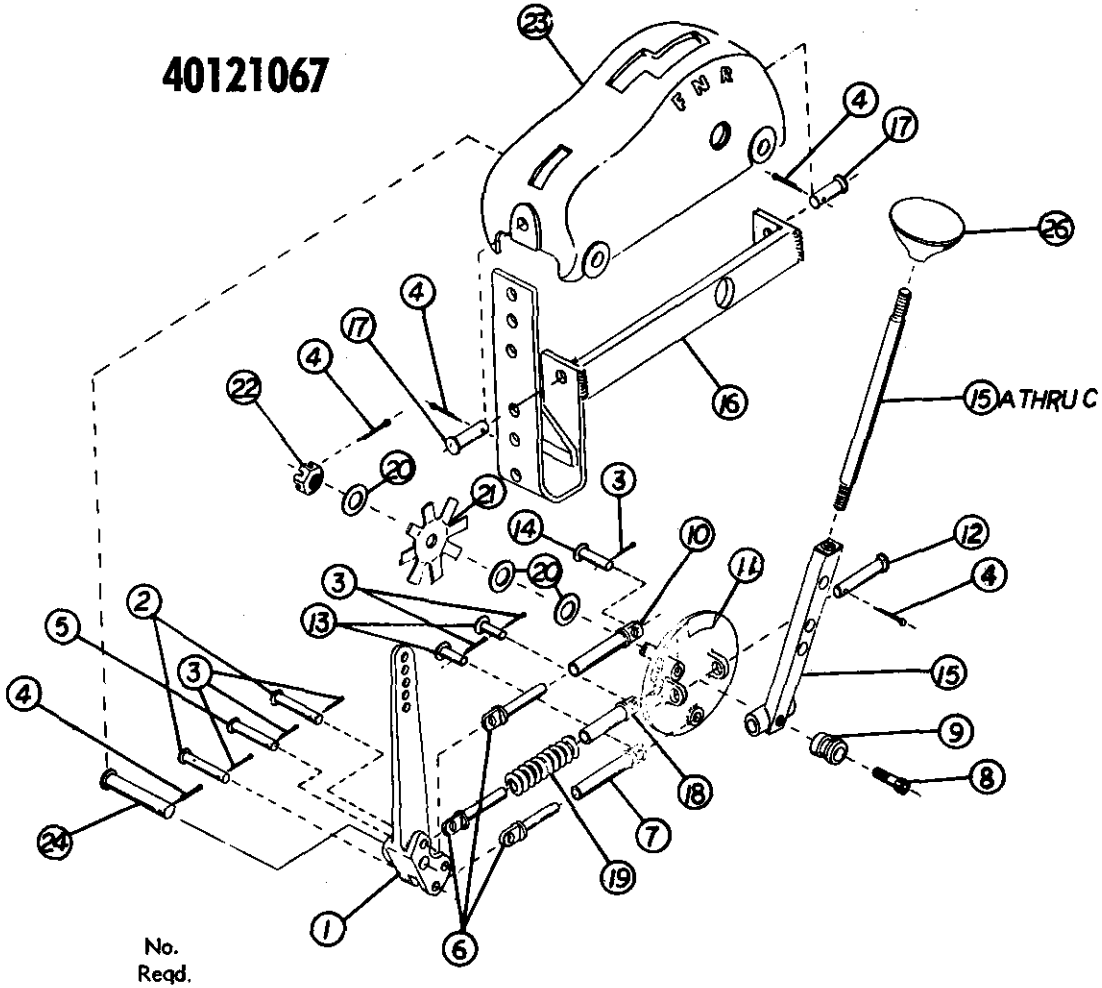
CONTROL LEVER ASSEMBLIES

40RC7620



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7278-B	Lever	1
2	40RC7281-B	Fulcrum	1
3	F10035-32	Bolt	1
4	F78437-2451	Nut	1
6	F66010	Grease Fitting	1
7	40RC7275	Shaft	1
8	F39010-50	Snap Ring	2
9	40RC7271-A	Quadrant	1
10	F83000	Hand Ball	1

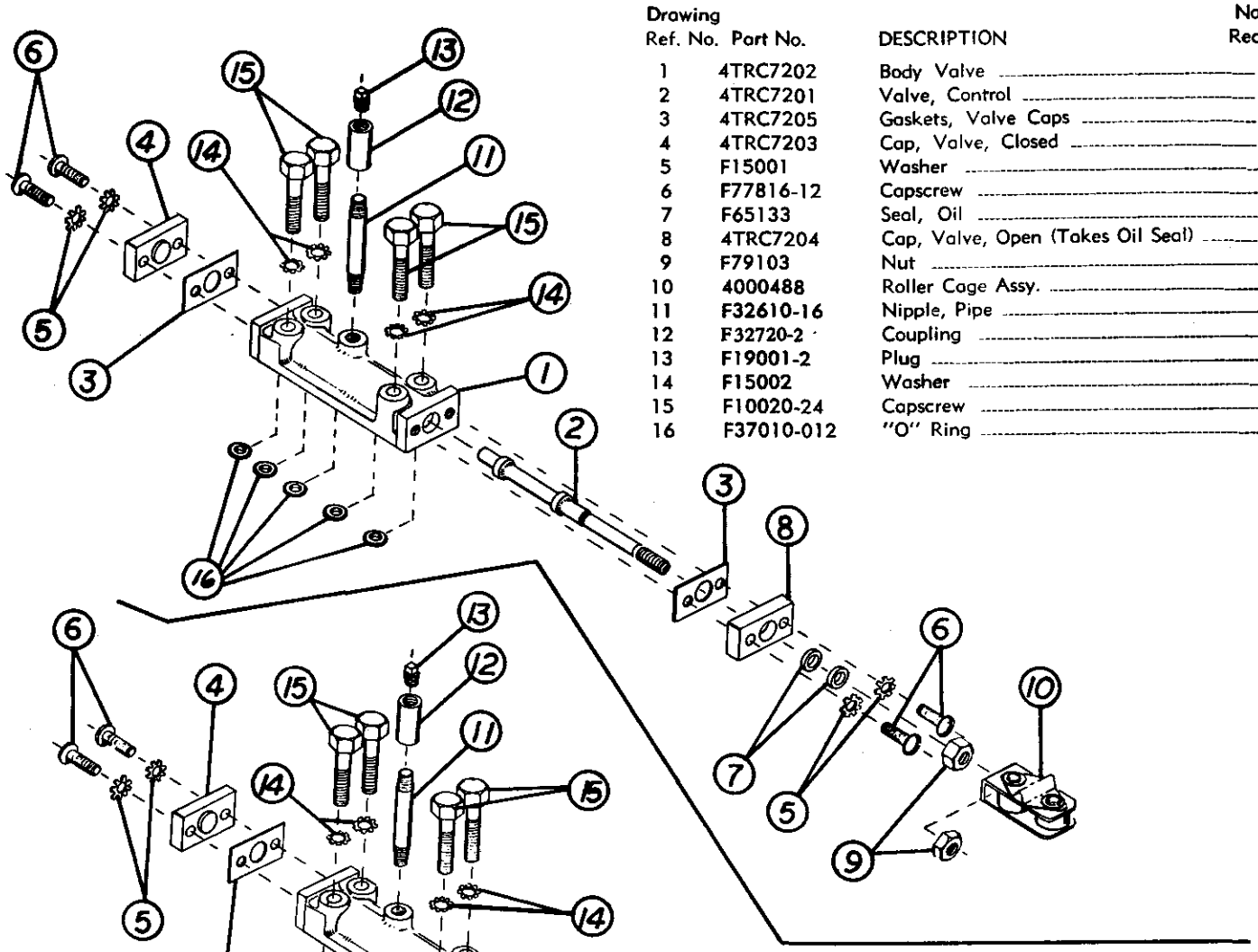
40121067



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4012655	Lever, Throttle	1
2	F24002-29	Clevis Pin	2
3	F26003-8	Cotter Pin	6
4	F26005-12	Cotter Pin	5
5	F24002-17	Clevis Pin	1
6	4012656	Strut, Male	3
7	4012658	Strut, Female Forward	1
8	F10010-16	Capscrew Socket Hd.	1
9	4012654	Stud, Ball	1
10	4012659	Strut, Female Reverse	1
11	4012653	Plate, Friction	1
12	F24004-66	Clevis Pin	1
13	F24002-20	Clevis Pin	2
14	F24002-37	Clevis Pin	1
15	4012652	Hand Lever Bracket	1
15A	4012652-4-A	Hand Lever Assy. 12" Stick	1 of 3
15B	4012652-4-B	Hand Lever Assy. 18" Stick	1 of 3
15C	4012652-4-C	Hand Lever Assy. 24" Stick	1 of 3
16	40121066	Valve Lever Assy.	1
17	F24004-29	Clevis Pin	2
18	4012657	Strut, Female Balance	1
19	4012668	Spring, Balance Strut	1
20	F17030-816	Flat Washer	3
21	4012665	Washer, Spring	1
22	F75320-7	Nut, Castle Shear	1
23	4012651	Body, Hand Lever Control	1
24	F24004-65	Clevis Pin	1
26	F83000	Ball, Hand Lever	1

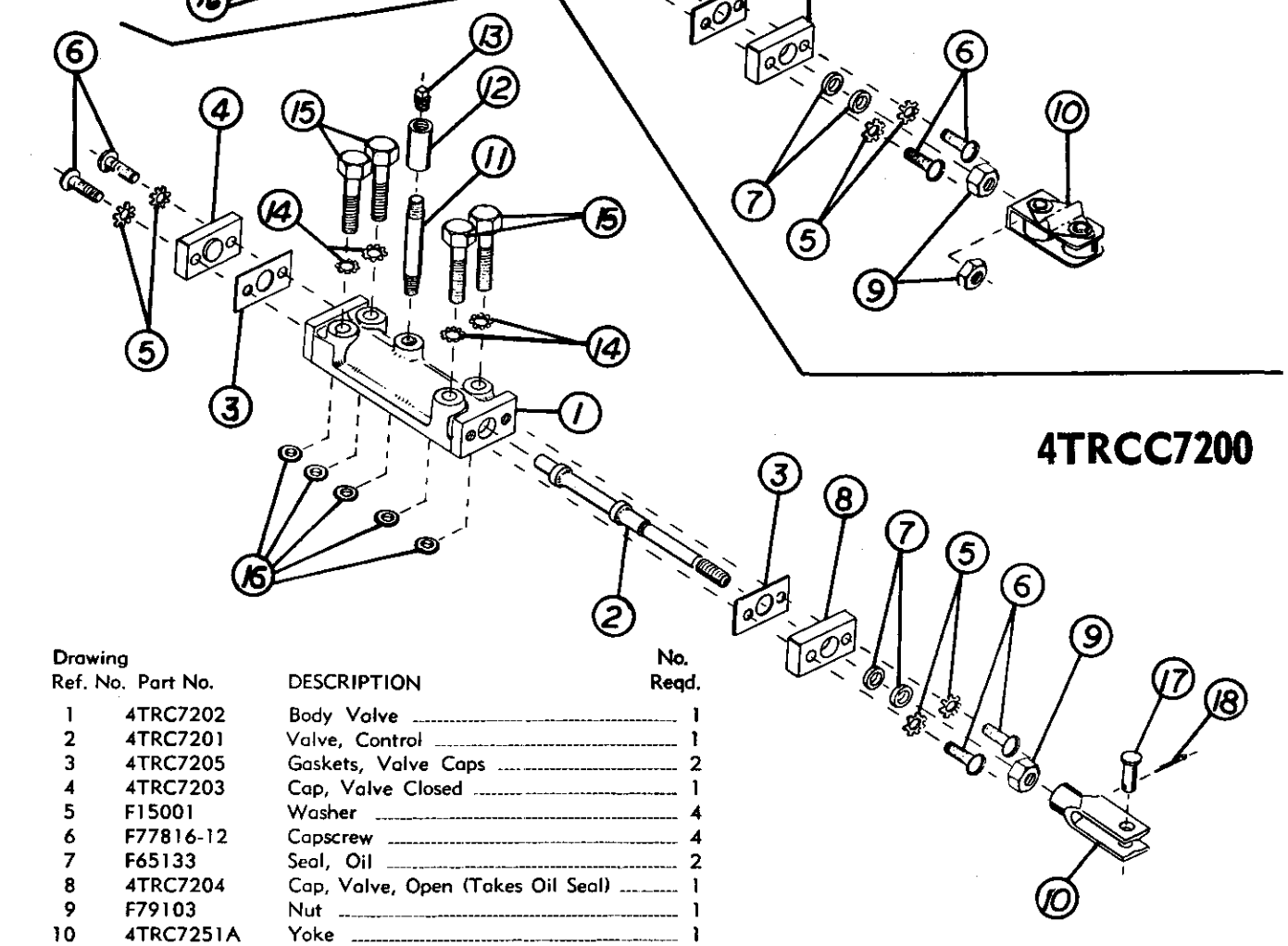
CONTROL VALVE ASSEMBLIES

4TRC7200



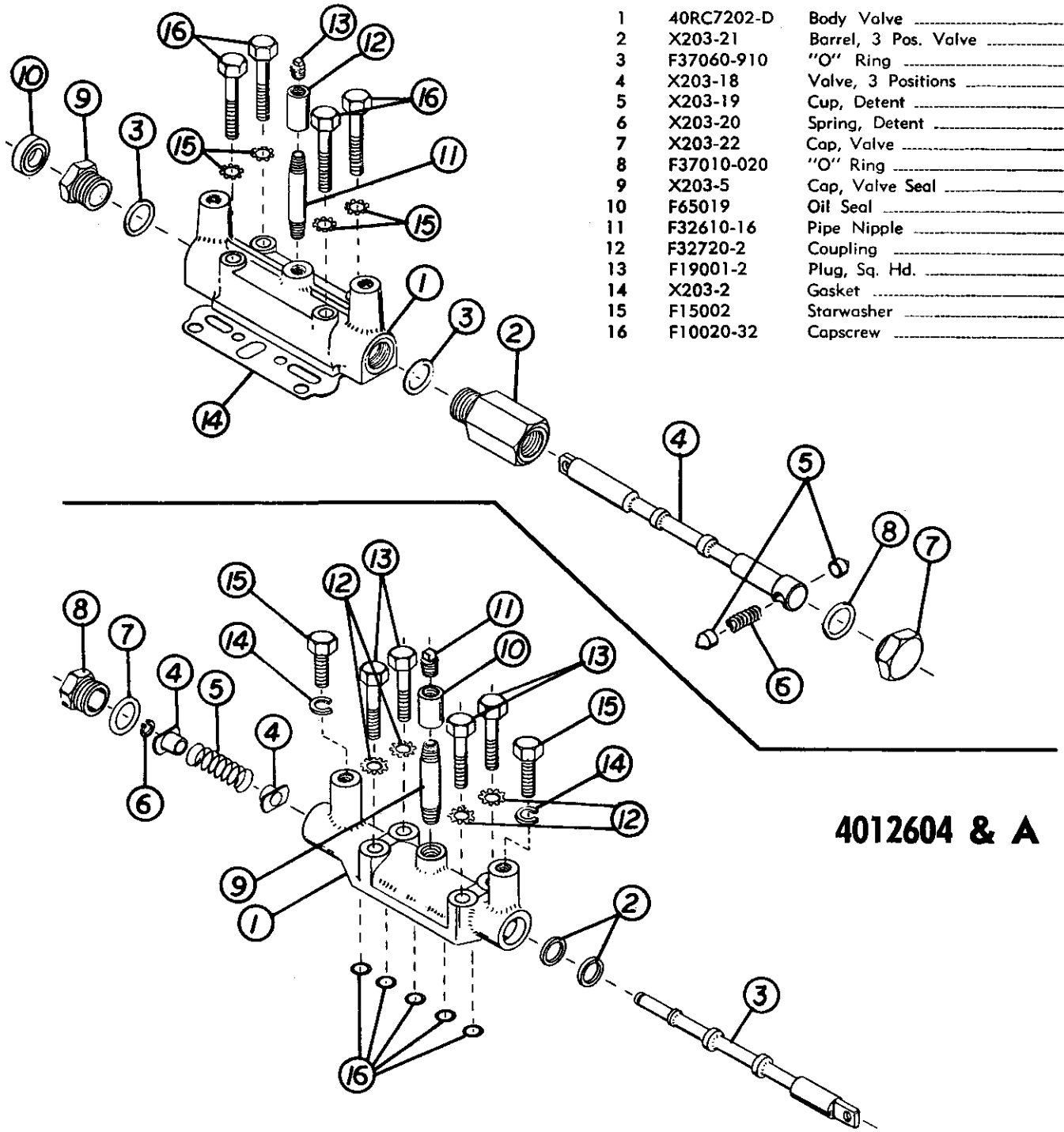
Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4TRC7202	Body Valve	1
2	4TRC7201	Valve, Control	1
3	4TRC7205	Gaskets, Valve Caps	2
4	4TRC7203	Cap, Valve, Closed	1
5	F15001	Washer	4
6	F77816-12	Capscrew	4
7	F65133	Seal, Oil	2
8	4TRC7204	Cap, Valve, Open (Takes Oil Seal)	1
9	F79103	Nut	2
10	4000488	Roller Cage Assy.	1
11	F32610-16	Nipple, Pipe	1
12	F32720-2	Coupling	1
13	F19001-2	Plug	1
14	F15002	Washer	4
15	F10020-24	Capscrew	4
16	F37010-012	"O" Ring	5

4TRCC7200



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4TRC7202	Body Valve	1
2	4TRC7201	Valve, Control	1
3	4TRC7205	Gaskets, Valve Caps	2
4	4TRC7203	Cap, Valve Closed	1
5	F15001	Washer	4
6	F77816-12	Capscrew	4
7	F65133	Seal, Oil	2
8	4TRC7204	Cap, Valve, Open (Takes Oil Seal)	1
9	F79103	Nut	1
10	4TRC7251A	Yoke	1
11	F32610-16	Nipple, Pipe	1
12	F32720-2	Coupling	1
13	F19001-2	Plug	1
14	F15002	Washer	4
15	F10020-24	Capscrew	4
16	F37010-012	"O" Ring	5
17	F24002-23	Clevis Pin	1
18	F26003-8	Cotter Pin	1

40RC-7200-D



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7202-D	Body Valve	1
2	X203-21	Barrel, 3 Pos. Valve	1
3	F37060-910	"O" Ring	2
4	X203-18	Valve, 3 Positions	1
5	X203-19	Cup, Detent	2
6	X203-20	Spring, Detent	1
7	X203-22	Cap, Valve	1
8	F37010-020	"O" Ring	1
9	X203-5	Cap, Valve Seal	1
10	F65019	Oil Seal	1
11	F32610-16	Pipe Nipple	1
12	F32720-2	Coupling	1
13	F19001-2	Plug, Sq. Hd.	1
14	X203-2	Gasket	1
15	F15002	Starwasher	4
16	F10020-32	Capscrew	4

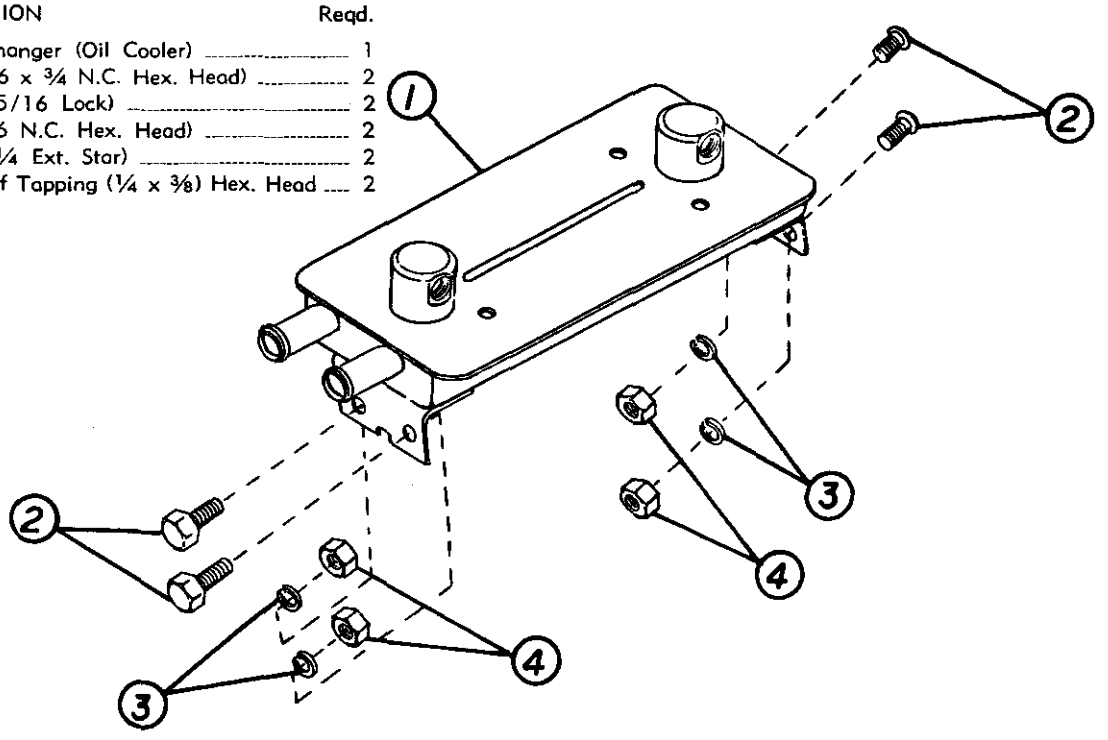
4012604 & A

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4012603	Valve Body	1
2	F65018	Oil Seal	2
3	4TRCL7201	Valve	1
4	4RCF7203	Spacer	2
5	4RCF7204	Spring Use with 12604 Valve	1
	400X-337	Use with 12604-A Valve	1
6	F39010-37	Snap Ring	1
7	F37020-116	"O" Ring	1
8	4RCF7207	Cap	1
9	F32610-20	Pipe	1
10	F32720-2	Coupling	1
11	F19001-2	Plug	1
12	F15002	Starwasher	4
13	F10020-28	Capscrew	4
14	F16202	Lockwasher	2
15	F10030-16	Capscrew	2
16	F37010-012	"O" Ring	5

HEAT EXCHANGER

4 TRCA 7230

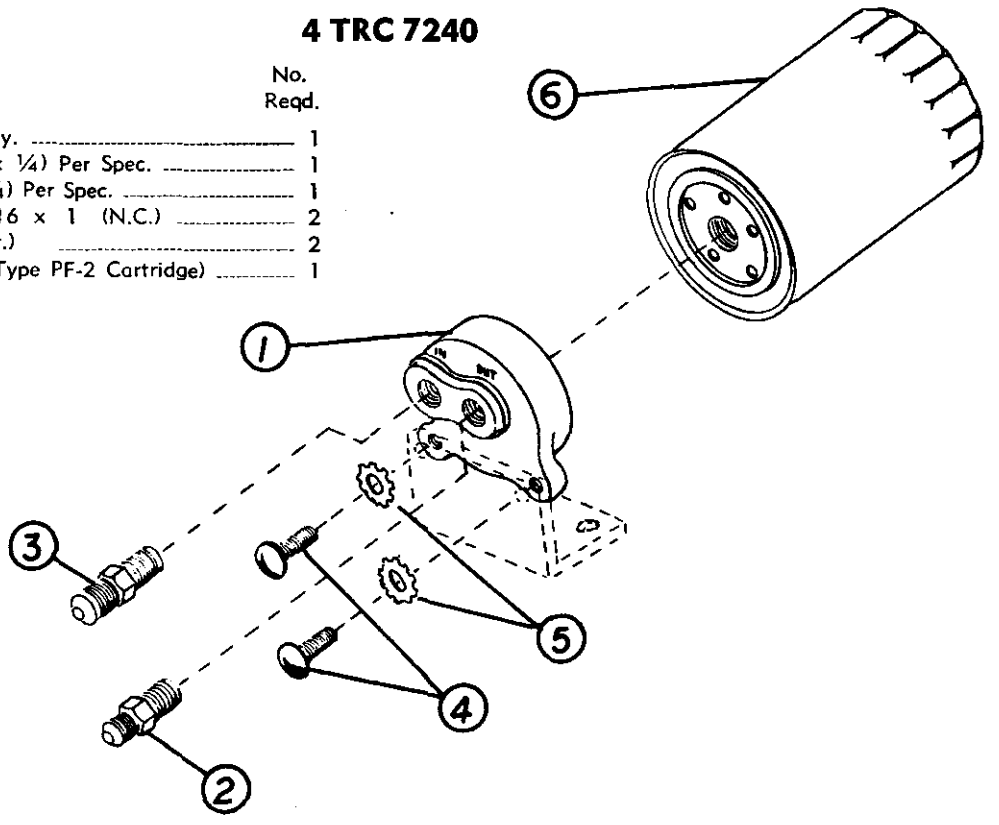
Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	TRCA 7236	Heat Exchanger (Oil Cooler)	1
2	F 10020-12	Bolt (5/16 x ¾ N.C. Hex. Head)	2
3	F 16201	Washer (5/16 Lock)	2
4	F 13003	Nut (5/16 N.C. Hex. Head)	2
5	F 15001	Washer (¼ Ext. Star)	2
6	F 86104-6	Screw, Self Tapping (¼ x ⅜) Hex. Head	2



OIL FILTER

4 TRC 7240

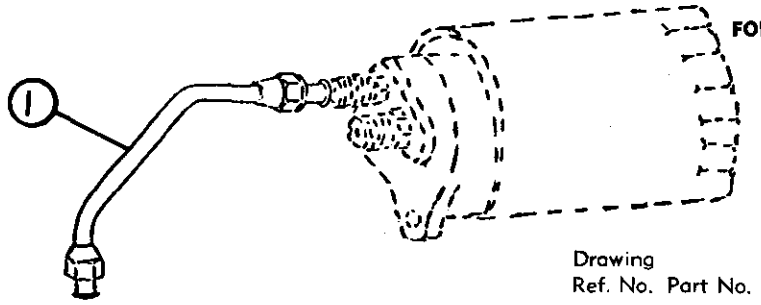
Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC 7607	Filter Cap Ass'y.	1
2	4TRC 7245	Fitting (5/16 x ¼) Per Spec.	1
3		Fitting (⅜ x ¼) Per Spec.	1
4	F11155-16	But. Screw 5/16 x 1 (N.C.)	2
5	F 15002	Starwasher (Ext.)	2
6	4TRC 7244	Oil Filter (AC Type PF-2 Cartridge)	1



OIL LINE GROUPS

40RC7839 OIL LINE

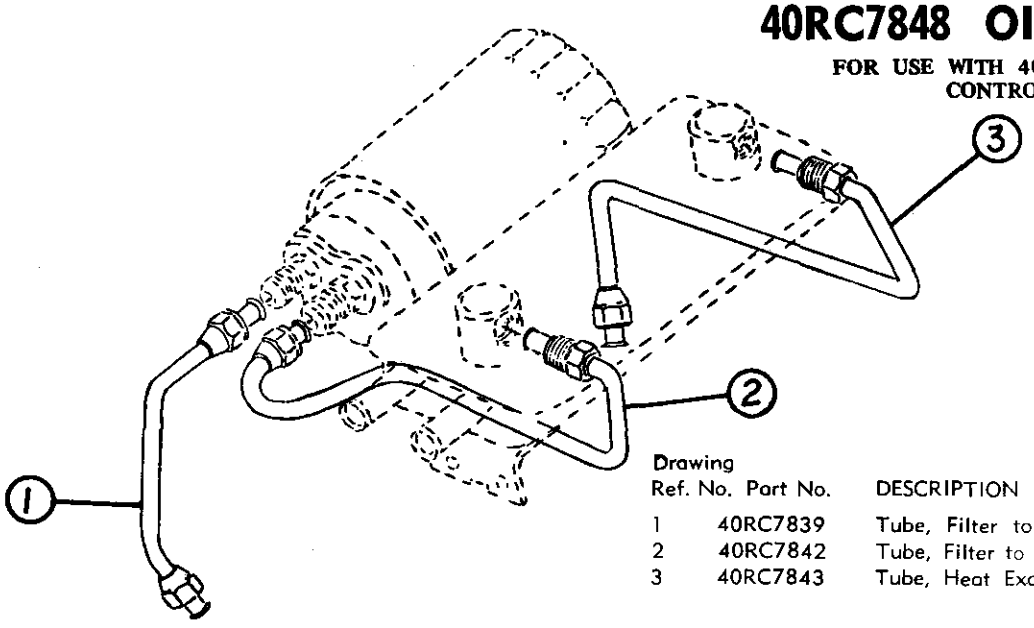
FOR USE ON CONTROLS WHERE HEAT EXCHANGER IS NOT SUPPLIED



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7839	Tube, Filter to Regulator	1

40RC7848 OIL LINE GROUP

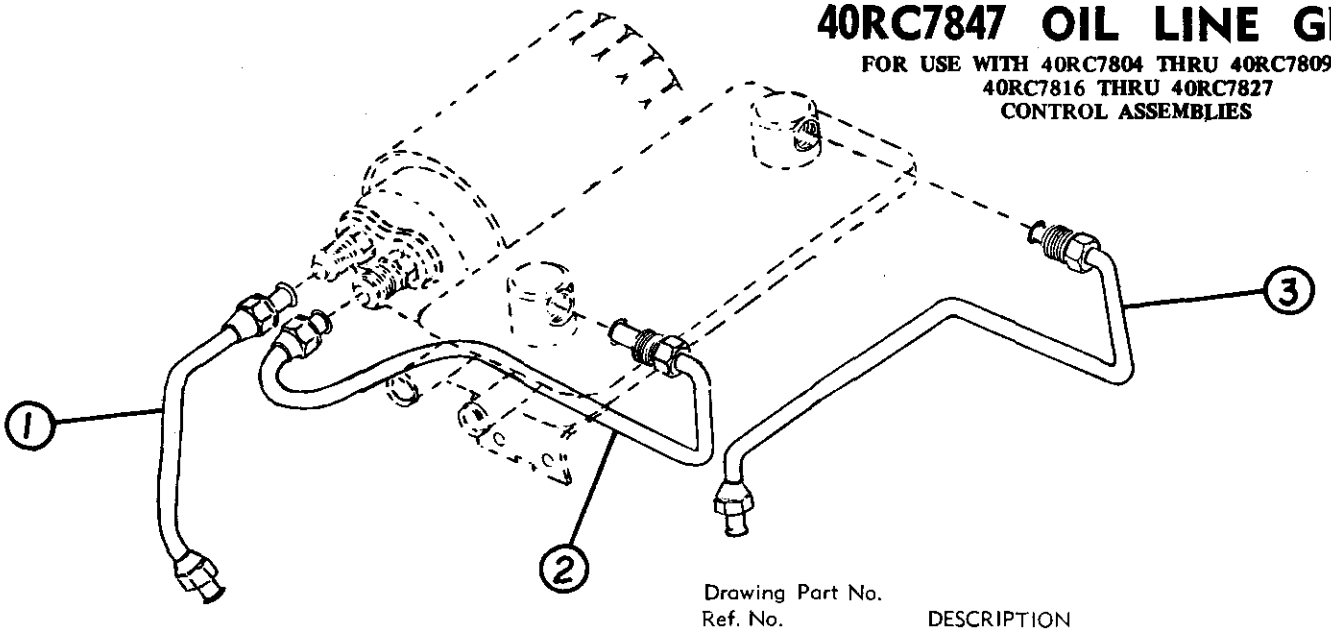
FOR USE WITH 40RC7810 THRU 40RC7815 CONTROL ASSEMBLIES



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7839	Tube, Filter to Regulator	1
2	40RC7842	Tube, Filter to Heat Exchanger	1
3	40RC7843	Tube, Heat Exchanger to Case	1

40RC7847 OIL LINE GROUP

FOR USE WITH 40RC7804 THRU 40RC7809 AND 40RC7816 THRU 40RC7827 CONTROL ASSEMBLIES



Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	40RC7839	Tube, Filter to Regulator	1
2	40RC7840	Tube, Filter to Heat Exchanger	1
3	40RC7841	Tube, Heat Exchanger to Case	1

FUNK SERVICE BULLETIN

#100-8
May 23, 1977

SERIES 50000 REVERS-O-MATIC TRANSMISSIONS.

SUBJECT: Sump Pan change, from cast iron to stamped sheet metal, for all models of the Series 50000 Transmissions.

WHEN ORDERING SERVICE PARTS, REFER TO THE FOLLOWING LIST FOR CORRECT PARTS:

	All units up to Serial #10596	All units after Serial #10597
Sump Pan	*4050003 or 4050289	4050297
Screen	4050037	4050301
Gasket (2 req.)	4050036	4050300
Drain Plug	F20003	F10055-12
Washer	Not Used	4050304
Capscrew(8 Req.)	F10030-16	F10030-12

NOTE: DO NOT MIX PARTS

*THE #4050003 & #4050289 SUMP PANS (CAST IRON) ARE NO LONGER AVAILABLE. IF A NEW SUMP PAN SHOULD BE REQUIRED, IT WILL BE NECESSARY TO ORDER THE #4050297 AND ALL OF THE NEW PARTS LISTED.

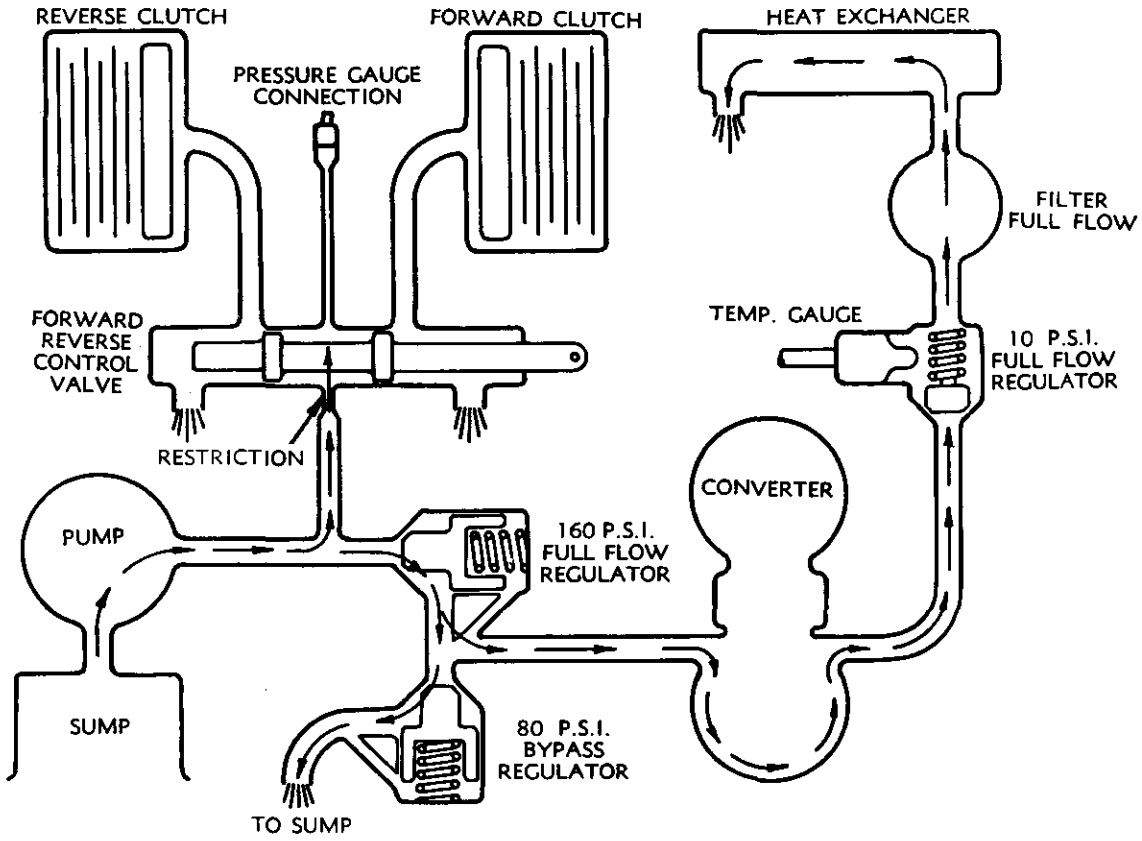
FUNK

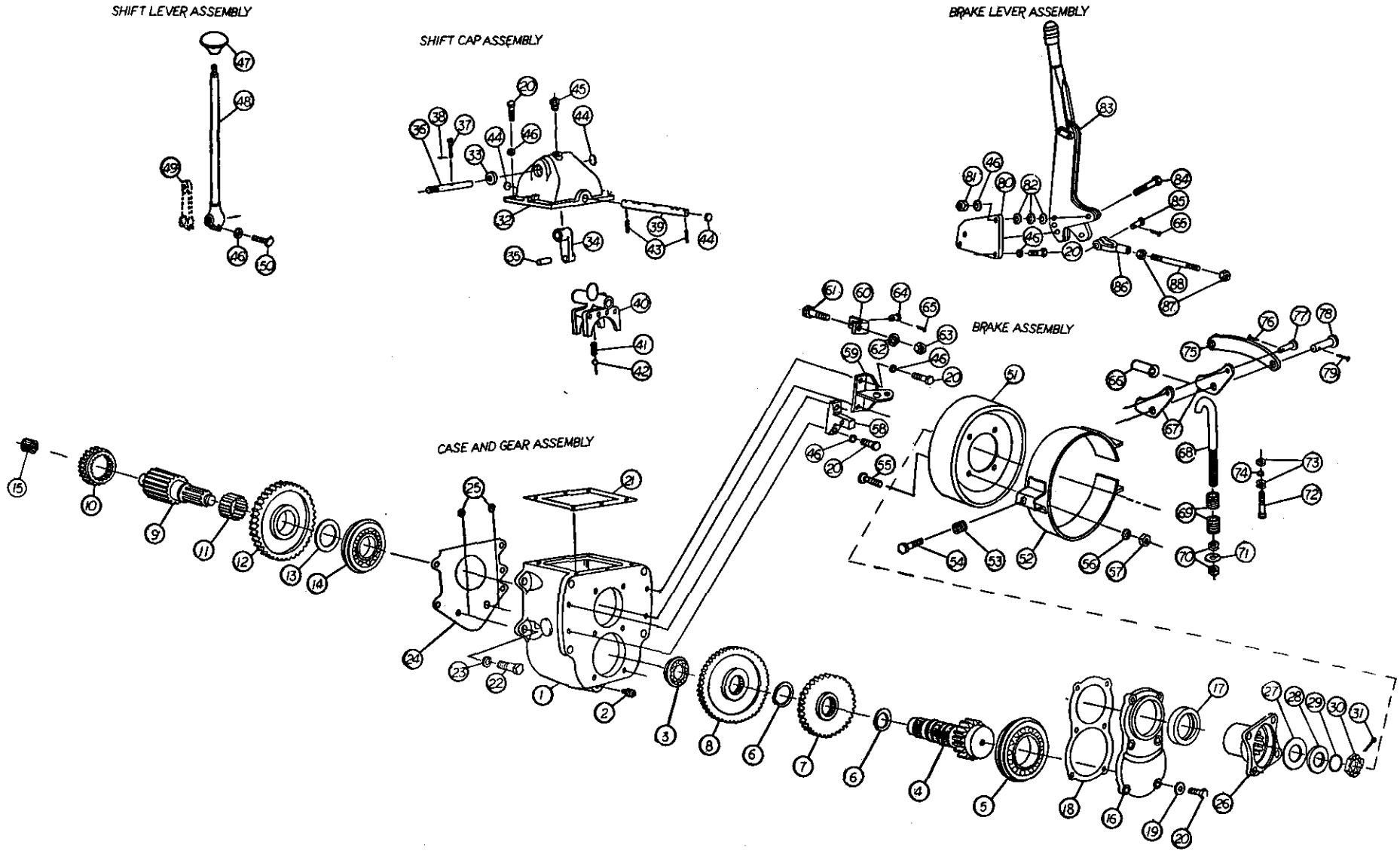
Funk Manufacturing Company
DIVISION GARDNER-DENVER COMPANY

1211 W. 12th STREET COFFEYVILLE, KANSAS 67337 (316) 251-3400

HYDRAULIC FLOW DIAGRAM

MODEL RC REVERS-O-MATIC (NEUTRAL)





4050211 - 4050212 - 4050213 3 SPEED (NON-SYNCHRONIZED)

FUNK SERVICE BULLETIN

#100-8
May 23, 1977

SERIES 50000 REVERS-O-MATIC TRANSMISSIONS.

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	All units up to Serial #10596	All units after Serial #10597
Sump Pan	*4050003 or 4050289	4050297
Screen	4050037	4050301
Gasket (2 req.)	4050036	4050300
Drain Plug	F20003	F10055-12
Washer	Not Used	4050304
Capscrew(8 Req.)	F10030-16	F10030-12

NOTE: DO NOT MIX PARTS

*THE #4050003 & #4050289 SUMP PANS (CAST IRON) ARE NO LONGER AVAILABLE. IF A NEW SUMP PAN SHOULD BE REQUIRED, IT WILL BE NECESSARY TO ORDER THE #4050297 AND ALL OF THE NEW PARTS LISTED.

FUNK

Funk Manufacturing Company
DIVISION GARDNER-DENVER COMPANY

1211 W. 12th STREET COFFEYVILLE, KANSAS 67337 (316) 251-3400

4050214 4 SPEED (NON-SYNCHRONIZED)

CASE AND GEAR ASSEMBLY

Drawing Ref. No.	Part No.	DESCRIPTION	No. Reqd.
1	4023301B	Case	1
2	F20000-2	Plug, Drain	1
3	F40207-R	Brg. Counter Front	1
3A	F40308-R	Brg. Output	1
4	4023543	Gear, Counter Lo	1
5	F41211-R	Brg. Counter Rear	1
6	F39010-162	Snap Ring, Counter	1
7	4023308	Gear, Counter 3rd	1
8	4023307	Gear, Counter Driven	1
9	4023668	Shaft, Main	1
10	4023343	Gear, Main Shaft 3rd	1
11	F56720	Roller, Gear Bore	39
12	4023355	Gear, Main Shaft Lo	1
13	4023356	Washer, Lo Gear	1
14	4023349	Gear, Main Shaft 2nd	1
15	F51022-20	Pilot Bearing	1
16	4023371	Cover, Rear	1
17	F65024	Oil Seal, Rear	1
18	4023372	Gasket, Rear	1
19	F18003	Washer, Dynaseal	6
20	F10030-16	Capscrew	16
21	4023481	Gasket, Cap	1
22	F10060-24	Bolt	5
23	F16205	Lockwasher	2
24	4023306	Gasket, Front	1
25	4023302	Screen Plug	2
26	4023572	Flange Brake	1
27	4023488	Gasket, Flange	1
28	4000326	Washer, Flange	1
29	F37020-118	"O" Ring, Flange	1
30	F75320-14	Nut, Flange	1
31	F26007-24	Cotter Pin, Flange	1
32	4023314	Gear, Counter 2nd	1

SHIFT CAP ASSEMBLY

33	4023406	Cap	1
34	F65022	Oil Seal	1
35	F24003-41	Clevis Pin	1
36	F26003-12	Cotter Pin	1
37	4023463	Shaft, Lever	1
38	F22010	Freeze Plug	3
39	F16202	Lockwasher	12
40	F19001-8	Plug	1
41	F39013-37	Snap Ring	2
42	4023451	Pin, Inhibiter	1
43	4023413	Rail Shift	1
44	F25250-22	Roll Pin	2
45	4023461	Pin, Lever	2
46	F25187-16	Roll Pin	2
47	4023456	Lever, Inside	1
48	4023424	Fork Assembly	2
49	4023453	Spring Detent	2
50	F74000-12	Ball, Detent	2

SHIFT LEVER ASSEMBLY

51	F83000	Knob, Lever	1
52	4023472	Lever, Hand	1
53	F82038-24	Locknut	1
54	F10045-40	Bolt	1

BRAKE ASSEMBLY

55	F10060-24	Bolt	1
56	4023388	Anchor, Brace Link	1
57	F24004-15	Clevis Pin	1
58	F26005-16	Cotter Pin	2
59	F13011	Nut	1
60	4023386	Bracket, Brake Guide	1
61	4023385	Anchor, Brake Band	1
62	4023384	Bolt, Brake Flange	4
63	F16203	Lockwasher	4
64	F13008	Nut	4
65	4023382	Drum Brake	1
66	4000192	Capscrew, Anchor	1
67	4000268	Spring Anchor Clip	1
68	4000276	Band & Lining Assembly	1
69	4000269	Cam Lever	2
70	4000272	Rod End	1
71	4023388	Link Brace	1
72	F26005-12	Cotter Pin	1
73	4000193	Pin Rod End	1
74	4000402	Pin Rod End	1
75	F26007-16	Cotter Pin	1
76	4000270	Bolt, Brake Adjustment	1
77	4000279	Spring, Brake Rel.	2
78	F79106	Nut	2
79	F16203	Lockwasher	1
80	4000254	Screw Filister Hd.	1
81	F79100	Nut	2
82	F16200	Lockwasher	1

BRAKE LEVER ASSEMBLY

83	F13005	Nut	2
84	4023387	Mtg. Brkt. Brake Lever	1
85	F17003-W	Washer, Flat Spacer	6
86	4023391	Brake Lever	1
87	F10030-28	Bolt	2
88	F24004-29	Clevis Pin	1
89	F79105	Jam Nut	2
90	F34120	Adjustable Yoke End	1
91	4023389	Link Rod	1

KITS AVAILABLE FOR 50000 SERIES REVERS-O-MATIC

4050271—**GASKET KIT** contains:

1 Ea. 4TRC7009 Pump Gasket
1 Ea. 4023306 Gasket
3 Ea. F37020-116 "O" Ring, Regulator Cap
1 Ea. F37010-020 "O" Ring, Regulator Block
5 Ea. F37010-012 "O" Ring, Under Control Valve
2 Ea. F87107 Cork
4 Ea. F18002 Washer, Sealing
2 Ea. 4050036 Gasket

4000651—**SEAL KIT** contains:

1 Ea. F65037 Oil Seal (for pump asm.)
2 Ea. 40RC7167 Seal (piston-outer)
2 Ea. F37030-222 "O" Ring (piston-inner)
2 Ea. 4TRC7154 Steel Seal Ring
3 Ea. 4TRC7136A Steel Seal Ring
4 Ea. 4TRC7159A Steel Seal Ring
2 Ea. 4TRC7205 Gasket, Valve Cap
2 Ea. F65133 Oil Seal, Valve Stem

4050272—**GASKET & SEAL KIT** contains:

One of the 4050271 and one of the 4000651 kits—This is the recommended kit for the shuttle unit when used with the three and four speed transmissions of our manufacture.

4000652—**GASKET KIT** contains:

1 Ea. 4023481 Gasket
1 Ea. 4023372 Gasket
1 Ea. 4023488 Gasket
1 Ea. F65024 Oil Seal
1 Ea. F65022 Oil Seal
1 Ea. F37020-118 "O" Ring
6 Ea. F18003 Sealing Washers

4050273—**GASKET KIT** contains:

One each of the 4050272 and the 4000652 kits—This one covers everything but the converter.

4050274—**WASHER KIT** contains:

6 Ea. F17030-616 Washer, Pressure Regulating
3 Ea. 40RC7798 Thrust Washer
1 Ea. 4TRC71432E Spacer Washer

4050275—**BEARING KIT** contains:

1 Ea. F41207 Ball Bearing, Input Shaft
1 Ea. F51014-16 Pilot Bearing, Input Shaft
1 Ea. F55014-27 Thrust Bearing, Front
2 Ea. F55830-47 Thrust Bearing, Output Gear
1 Ea. F55930-27 Thrust Bearing, Output Gear
1 Ea. F41210RH Ball Bearing, Output Shaft
100 Ea. 4TRCB7148 Loose Rollers, Counter & Idler Gears
3 Ea. 4TRCB71482 Washer, Idle Gear Bearings
6 Ea. 4TRCB71462 Washer, Counter Gear Bearings

4050276—**BEARING KIT** contains:

1 Ea. F40207R Bearing, Counter Front
1 Ea. F41211R Bearing, Counter Rear
39 Ea. F56720 Loose Roller, Low Gear Bore
1 Ea. F40308R Ball Bearing, Rear Main
1 Ea. F51022-20 Pilot Bearing, Main Shaft

4TRCB7220—**PRESSURE ADJUSTMENT KIT** contains:

4 Ea. F17030-616 Washer, Pressure Adjusting
2 Ea. 4TRCB-7223 Spring, Valve Regulator
2 Ea. 4TRC7227C Regulator, Valve
2 Ea. F56790 Pin, Valve Regulator
1 Ea. 4TRCB7222A Spring, Valve Regulator

4050197—**CLUTCH PACK ASSEMBLY** contains:

1 Ea. 40RC7160 Cylinder Assembly
1 Ea. F37030-222 "O" Ring, Piston
1 Ea. F74000-8D Ball
6 Ea. 40RC7683 Clutch Plate
6 Ea. 40RC7727 Clutch Plate
1 Ea. 40RC7165B Piston
1 Ea. F80500-175 Snap Ring
1 Ea. 40RC7167 Seal, Piston
1 Ea. 40RC7169 Spring, Clutch
1 Ea. 40RC7172 Retainer, Spring
Assembled and ready for quick installation.

If you have ten units or more in field, we recommend stocking a spare pump assembly (part No. 40RC7702 for units with a 17 tooth spline on input shaft and part No. 4000583 for units with 29 tooth spline), a set of clutch plates (12 Ea. 40RC7727 and 12 Ea. 40RC7683) and one 4050165 output shaft assembly. These items in addition to a 4050274 washer kit, a 4050275 bearing kit, and a 4050272 or 4050273 gasket kit will be sufficient to overhaul a 50000 Series Revers-O-Matic in a majority of cases.