GROUP 21

TRANSMISSION (TORQUE CONVERTER)
STANDARD THREE SPEED HEAVY DUTY TRANSMISSION A745

(MODEL RC-1)

DATA AND SPECIFICATIONS

Three Speed Transmission A745

RATIO	
First	2.55 to 1
Second	1.49 to 1
Direct	1.00 to 1
Reverse	3.34 to 1
LUBRICANT	
Capacity	4¼ Pints
Type	Type "A" Suffix "A" or SAE 80 Multi-Purpose (All Seasons)
Gears	Helical
TOLERANCES	
Clutch Housing	.003 inch
Clutch Housing Bore Run-Out	.004 inch
Countershaft End Play	.007 to .012 inch
Second Speed Gear End Play	.004 to .011 inch

TORQUE REFERENCE

	Foot-Pounds	Inch-Pounds
Front Bearing Retainer Bolts		200
Extension Housing Bolts	50	
Nuts	50	
Gearshift Operating Lever Nuts		180
Mainshaft Flange Nut	175	
Transmission to Clutch Housing Bolts	50	

SPECIAL TOOLS

Tool Name	Tool No.	Tool Name	Tool No.
Brake Drum Holding Wrench	C-3281	Pinion Seal Retainer Driver	C-3789
Cluster Gear Arbor	C-3834	Reverse Idler Arbor	C-464
Detent Ball Holding Tool	C-3765	Shifter Shaft Seal Driver	C-3650
Engine Support Fixture	C-3806	Shifter Shaft Seal Protector	C-3767
Mainshaft Seal Driver	C-3837	Shifter Shaft Seal Puller	C-3638
Mainshaft Seal Puller	C-748	Snap Ring Pliers	C-3301
Parking Brake Drum Puller	C-452	Snap Ring Pliers	C-484

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TRANSMISSION (TORQUE CONVERTER)
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(MODEL RC-1)

The heavy duty three speed manual transmission (Figs. 1 and 2) is of the synchromesh type with helical cut gears to provide silent operation. The countershaft gear is in constant mesh and is supported by two rows of needle type bearings at each end. The mainshaft is supported by ball bearings at each end of the extension housing. The speedometer drive gear is integral with the mainshaft.

SERVICE PROCEDURES

REMOVAL OF TRANSMISSION

(1) Drain the lubricant.

(2) Disconnect the propeller shaft, speedometer cable and the speedometer pinion sleeve assembly.

(3) Disconnect the gearshift control rods and the parking brake cable from the transmission.

(4) Remove the transmission to clutch housing bolts.

(5) Pull the transmission back until the pinion shaft clears the clutch disc and release levers.

(6) Lower the transmission and remove it from the vehicle.

EXTENSION HOUSING

Removal

(1) Apply parking brake and use flange holding Tool C-3281 while removing the flange nut and washer.

(2) Attach puller Tool C-452 (if necessary) and remove the drum and flange assembly.

(3) Remove the parking brake assembly.

(4) Remove the five bolts and one nut attaching the extension housing to the transmission case.

(5) Remove the extension housing.

(6) Remove the seal from the rear of the extension housing using Tool C-748.

(7) Remove the mainshaft rear bearing if it did not come off with the extension housing.

DISASSEMBLY OF THE TRANSMISSION COMPONENT PARTS (Fig. 1)

Drive Pinion

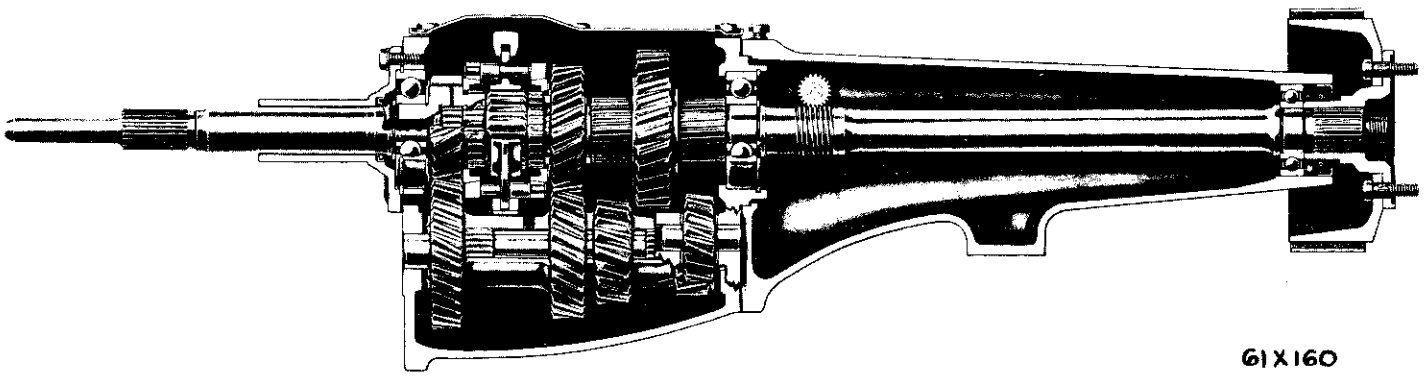

Fig. 2—Heavy Duty Transmission (Sectional View)

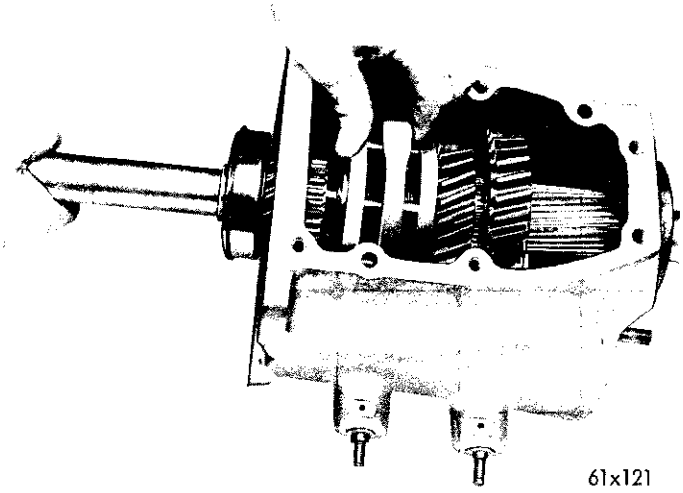

Fig. 3—Removing Drive Pinion Assembly

(1) Remove the transmission case cover and discard the gasket.

(2) Remove the four bolts from the drive pinion bearing retainer and remove the retainer.

(3) When removing the drive pinion and the bearing assembly from the transmission case (Fig. 3), slide the synchronizer front inner stop ring from the short splines on the pinion as the assembly is being removed from the case.

(4) Remove the snap ring which locks the main drive pinion bearing on the shaft.

(5) Carefully press the bearing off the pinion shaft and remove the oil slinger.

(6) Remove the mainshaft pilot bearing snap ring from the cavity in the end of the drive pinion gear.

(7) Remove the 15 roller bearings.

(8) Remove the seal from the pinion retainer.

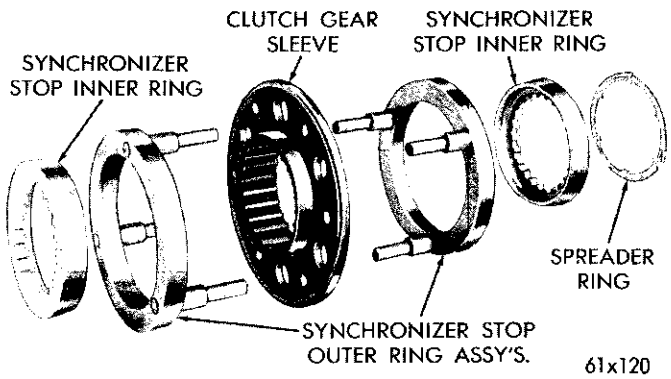

Fig. 4—Synchronizer Assembly

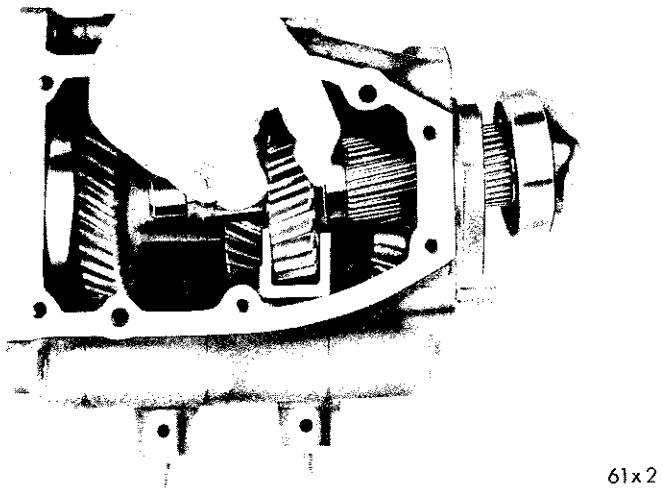

Fig. 5—Removing or Installing Mainshaft Assembly

Mainshaft

(1) Remove the mainshaft rear bearing snap ring from the groove in the mainshaft rear bearing bore in the case.

(2) Slide the mainshaft and rear bearing assembly to the rear, until the rear bearing is out of the case.

(3) Remove the synchronizer assembly (Fig. 4) from the mainshaft and out of the case.

(4) Remove the second and third speed shift fork.

(5) Remove the synchronizer clutch gear snap ring using Tool C-484.

(6) Remove the synchronizer clutch gear, second speed gear and first and reverse sliding gear from the mainshaft.

NOTE: If the synchronizer clutch gear cannot be removed easily from the mainshaft, position the low and reverse fork and sliding gear to the rear of the case and, using a plastic hammer, gently tap the mainshaft back out of the synchronizer clutch gear.

(7) Remove the mainshaft and bearing out through the rear of the case (Fig. 5).

(8) Remove the synchronizer clutch gear, second speed gear, low and reverse sliding gear, low and reverse shift fork from the case.

Countershaft

CAUTION

Do not drive countershaft toward front of transmission case.

(1) Using the countershaft bearing arbor Tool C-3834, drive the countershaft toward the rear of

the case until the small key can be removed from the countershaft.

(2) Drive the countershaft the remaining way out of the case, keeping arbor tight against the end of the countershaft to prevent loss of the roller bearing.

(3) Remove the cluster gear, and the thrust washers from the case.

(4) Remove the roller bearings (88), spacer rings (4), and the center spacer from the cluster gear.

Reverse Idler Gear

(1) Using a blunt drift, drive the reverse idler shaft toward the rear of the case far enough to remove the key from the shaft.

(2) Drive the shaft the remaining way out of the case, and remove the idler gear and the bearing assembly.

(3) Remove the thrust washers and the 22 needle bearings.

Gearshift Mechanism

(1) Using a small punch, remove the low and reverse gear lever shaft tapered lock pin by driving it toward the top of the transmission case.

(2) Remove the second and third gear lever shaft in the same manner.

(3) Remove the lever shafts from the transmission case, taking care not to lose the spring loaded detent balls.

(4) Remove the interlock sleeve, spring, pin and detent balls.

(5) Remove both lever shaft seals and discard.

INSPECTION AND CLEANING

(1) Before inspecting, wash each part thoroughly in a suitable solvent, then dry. Clean mainshaft, drive pinion shaft end bearings. Dry by applying compressed air directly through the bearing. **Never spin bearing with compressed air.** Apply a little oil and turn the bearing several times by hand.

(2) Inspect the bearings for looseness or noise by comparing with a new bearing. (Be sure to wash the grease from the new bearing, then apply a little oil before making the comparison test.)

(3) Inspect the fit of the bearings on their respective shafts and in the bores.

(4) Inspect the bearings, shaft, and case for wear. If installation of a new bearing does not correct conditions, install a new shaft or repair case as required.

(5) Inspect the mainshaft splines for galling or scoring. Inspect bearing mounting surfaces and snap ring groove. Slight nicks or burrs can be stoned off. Replace the damaged parts.

(6) Inspect the gear teeth and threads on the inner synchronizer rings and synchronizer clutch gear sleeve. If there is evidence of chipped or excessively worn teeth, replace the part. Make sure synchronizer clutch sleeve slides freely on clutch gear.

(7) Inspect the pins of the outer synchronizer stop ring assembly for straightness and tightness. Replace stop ring if pins are bent or loose.

(8) Replace countershaft cluster gear if any of its gear teeth are broken, chipped or excessively worn. Small nicks or burrs can be stoned off.

(9) Inspect rollers and countershaft for chips and nicks.

(10) Inspect condition of thrust washers, and replace if excessive wear is evident.

(11) Inspect the clutch teeth of the drive pinion. If excessively worn, broken or chipped, install a new pinion.

(12) Inspect the mainshaft pilot rollers in drive pinion for pitting or scoring. If either of these conditions exist, replace all roller bearings.

(13) Inspect the case at the gearshift bosses and operating levers. Replace rubber lip seals in the case, if worn or torn.

(14) Inspect the interlock sleeve for free movement in its bore. Examine interlock balls for corrosion. If operating lever shaft detents show signs of wear, replace shaft. Check shift fork for free movement.

(15) Inspect the general condition of the transmission case, extension housing and the front bearing retainer.

(16) Inspect all threaded holes and plugs for stripped or pulled threads.

(17) Inspect castings for small cracks and sand holes.

(18) Inspect all mating and gasket surfaces for roughness and scratches.

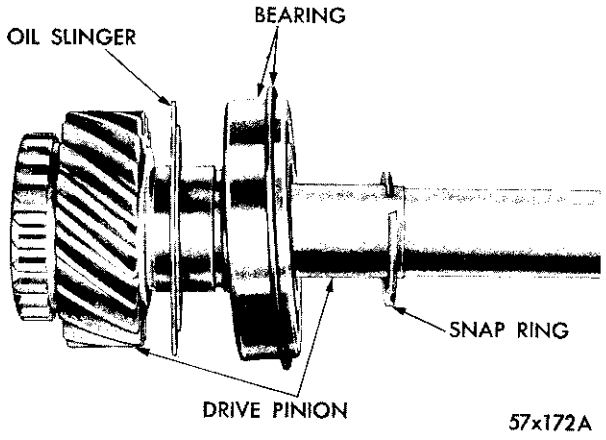

Fig. 6—Drive Pinion Assembly

ASSEMBLY OF THE TRANSMISSION COMPONENT PARTS (Refer to Figs. 1 and 2)

Drive Pinion and Bearing Assembly

(1) Place the oil slinger on the main drive pinion with the offset outer portion next to the drive pinion teeth (Fig. 6).

(2) Place the main drive pinion bearing on the pinion shaft with the outer snap ring away from the pinion gear.

(3) Press the bearing into position so it is seated firmly against the oil slinger and pinion gear.

(4) Install the bearing retaining snap ring on the pinion shaft, using snap ring pliers Tool C-3301. Be sure the snap ring is seated in its groove.

(5) Coat the 15 pilot bearing rollers with heavy grease and install them in the cavity at the rear of the main drive pinion.

(6) Install the snap ring.

Countershaft

(1) Place the bearing spacer in the center of the bore in the cluster gear and use arbor Tool C-3834 to assist in assembling the roller bearings.

(2) Install a row of 22 bearing rollers next to one end of the spacer, using heavy grease to help hold them in position.

(3) Place one of the 4 bearing spacer rings next to the row of rollers, and install another row of 22 rollers next to the spacer ring.

(4) Install another spacer ring at the outside end of the second row of bearing rollers.

(5) At the opposite end of the cluster gear bore, install the remaining spacer rings and bearing rollers in the same sequence, as listed in steps (2), (3) and (4).

(6) With a small amount of grease to hold it in place, install the front thrust washer on the arbor at the front end of the cluster gear, with the tabs outward.

(7) Install the tabbed rear thrust washer on the arbor against the rear of the cluster gear with the tabs positioned in the grooves provided in the cluster gear.

(8) Install the remaining rear thrust washer plate on the rear of the gear and arbor with the step in the washer facing upward as viewed from rear.

NOTE: Rear thrust washer must be installed with step on O.D. facing clockwise, as viewed from rear, in order to engage ledge on inside rear of case, thus preventing driving the shaft forward until the key seats in the recess.

(9) Align the tabs of the front thrust washer vertically to index with the notches in the transmission case, and with the step in the rear thrust washer positioned upward. Position the cluster gear and arbor assembly in the transmission case. Make sure the thrust washers are not dislodged from the arbor, and engage the thrust washer tabs in the case grooves, while sliding the assembly into position.

(10) Using the countershaft and a soft hammer, drive the arbor forward out of the cluster gear and through the bore in the front of the case. Before driving the countershaft all the way into the case, be sure keyway is positioned in line with the key recess provided in the rear of the case. Insert the shaft key and continue to drive the countershaft forward in the case until the key is bottomed in the recess.

Reverse Idler Gear

(1) Position an arbor Tool C-464 in the reverse idler gear and, using heavy grease, install the 22 roller bearings in the gear.

(2) Place the front and rear thrust washers at each end of the reverse idler gear, and position the assembly in the transmission case with the chamfered end of the gear teeth toward the front.

(3) Insert the reverse idler shaft into the bore at the rear of the case with keyway to the rear, pushing the arbor toward the front of the transmission.

(4) With the keyway aligned with the recess in the case, drive the shaft forward, inserting the key before the keyway is obscured. Continue driving the shaft forward until the key seats in the recess.

Gearshift Mechanism

(1) Install two new lever shaft seals in the transmission case, using seal driver Tool C-3650.

(2) Install the 2nd and 3rd speed lever shaft in the bore provided in the transmission case.

(3) Install the 2nd and 3rd speed lever shaft lock pin in the hole in the case boss, starting the pin at the top of the hole, and driving it downward. Drive the pin in firmly so it will not work out of the hole, and will also prevent the possibility of a lubricant leak at the pin hole.

CAUTION

While the lever shaft lock pins must be driven in firmly to prevent leakage or loss of the pin, some caution must be exercised to avoid driving the pin in too tightly, causing distortion or mushrooming of the pin. This could result in much difficulty if it is necessary to remove the pin at a later date.

(4) Place the interlock parts in position in the case in the following order: ball, sleeve, spring, pin and ball.

(5) Enter the low and reverse lever shaft in the case bore, and while using detent ball installer Tool C-3765 (Fig. 7), to depress the detent ball against spring tension, push the lever shaft firmly into position so it prevents the detent ball from escaping.

(6) Remove the detent ball installing tool.

(7) Install the low and reverse lever shaft lock

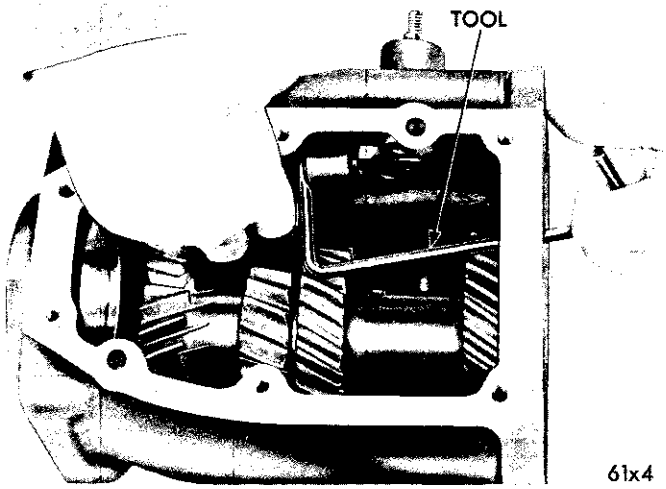

Fig. 7—Installing Detent Balls (Using Tool C-3765)

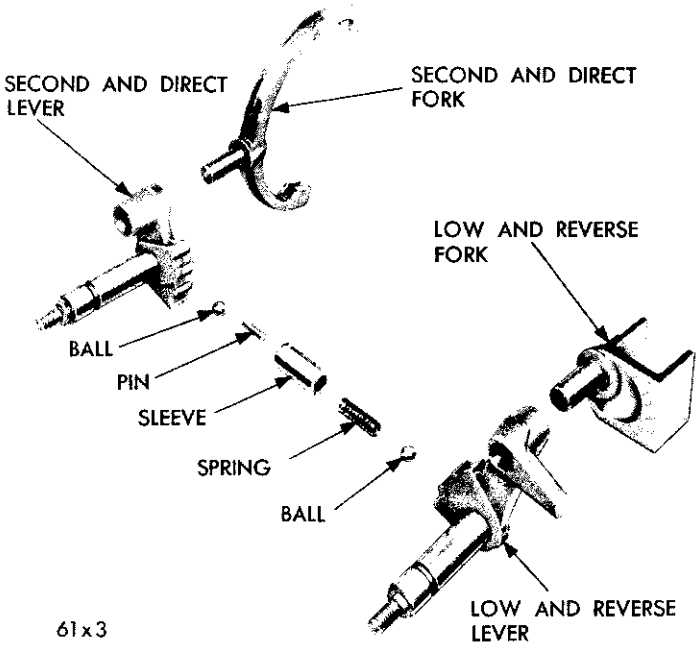

Fig. 8—Gearshift Forks and Shafts

pin in the case, driving it down firmly from the top using the caution as stated above.

(8) Place the low and reverse fork in the lever shaft, with the offset toward rear of transmission (Fig. 8).

Mainshaft

(1) While holding the low and reverse sliding gear in position in the fork, with the hub extension to the rear, insert the mainshaft with the rear bearing through the rear of the case and into the sliding gear.

(2) Place the synchronizer stop ring spring, and then the rear stop ring on the synchronizer splines of the 2nd speed gear. Install the 2nd speed gear on the mainshaft.

(3) Install the synchronizer clutch gear on the mainshaft with the shoulder to the front.

(4) Select the thickest synchronizer clutch gear snap ring that can be used, and install it in the mainshaft groove. Make certain ring is bottomed all the way around in the groove.

NOTE: Snap rings come in four different thicknesses (thin, medium, thick and extra thick). Use of the thickest ring possible eliminates end play at this point and provides more positive gear engagement in direct drive.

(5) Check clearance between clutch gear and 2nd

speed gear. Clearance should be .004 to .011 inch. End play in excess of .011 inch may cause the 2nd speed gear to "jump out" of gear.

(6) Hold the synchronizer clutch gear sleeve and two outer rings together with pins properly entered in the holes in the clutch gear sleeve and with the clutch gear sleeve engaged in the groove of the 2nd and 3rd speed shift fork, position the fork in the 2nd and 3rd speed lever shaft.

(7) While holding the synchronizer parts and fork in position, slide the mainshaft forward, entering the synchronizer clutch gear into the clutch gear sleeve and at the same time entering the mainshaft rear bearing in the case bore.

NOTE: If synchronizer parts are not positioned as described in steps 6 and 7, it will not be possible to place them in position after mainshaft is fully in position, due to interference with countershaft drive gear.

(8) While continuing to hold the synchronizer parts in position, tap the mainshaft forward until the rear bearing bottoms in the case bore.

(9) Install the mainshaft rear bearing snap ring in place in the groove in the case bore.

Drive Pinion

(1) Install the new seal in the retainer using Tool C-3789 until it bottoms on the seat of the counterbore. Synchronizer front inner ring must be positioned as outlined in steps 2 and 3 while installing the drive pinion, since it will not clear the countershaft drive gear teeth when attempting to install the drive pinion with the inner ring installed on the drive pinion splines.

(2) Place the synchronizer front inner ring in position in the front outer ring, and enter the main drive pinion through the case bore.

(3) Engage the splines on the rear of the pinion with the inner stop ring, and tap the drive pinion into the transmission case until the outer snap ring on the pinion bearing is against the transmission case.

(4) Place the drive pinion bearing retainer, without a gasket, over the pinion shaft, and against the transmission case. While holding the retainer with hand pressure against the transmission case, measure the clearance between the retainer and case, using a feeler gauge.

(5) Select a gasket .003 to .005 inch thicker than the clearance found. This eliminates end play of the front bearing in the transmission case and also eliminates the distortion of the bearing outer race due to excess pressure.

(6) Install and tighten the front bearing retainer attaching bolts to 200 inch-pounds torque.

Extension Housing

(1) Install a new seal in the extension housing, using Tool C-3837.

(2) Install the extension housing. Tighten the mounting bolts and nuts 50 foot-pounds torque.

(3) Install the parking brake assembly.

(4) Install the parking brake drum end flange assembly. Install the washer and nut and tighten to 175 foot-pounds torque, using the flange holding Tool C-3281.

(5) Install the drain plug in the transmission case.

(6) Install the gearshift operating levers with a flat washer and lockwasher under each nut, and tighten to 180 inch-pounds torque.

(7) Install the plug or back-up light switch (if so equipped), with gasket, tightening securely.

(8) Install the speedometer cable and drive gear pinion.

INSTALLATION OF TRANSMISSION (In the Vehicle)

A measurement of the clutch housing bore and the face alignment should be made before installation. Refer to Clutch Group 6 for procedure. An old transmission drive pinion shaft may be used to check the clutch disc alignment.

Place a small amount of short fibre wheel bearing lubricant around the inner end of the drive pinion shaft pilot bushing. A sufficient amount will be left at this location after pressing the excess out of the crankshaft cavity. Do not lubricate the bushing or the end of the transmission pinion shaft, the clutch disc splines or clutch release levers.

(1) Use extreme care when installing the transmission. The pinion shaft should be in alignment to enter the pilot bushing without distorting the clutch disc.

(2) Tighten the transmission to clutch housing bolts 50 foot-pounds torque.

(3) Connect the propeller shaft and the parking brake cable.

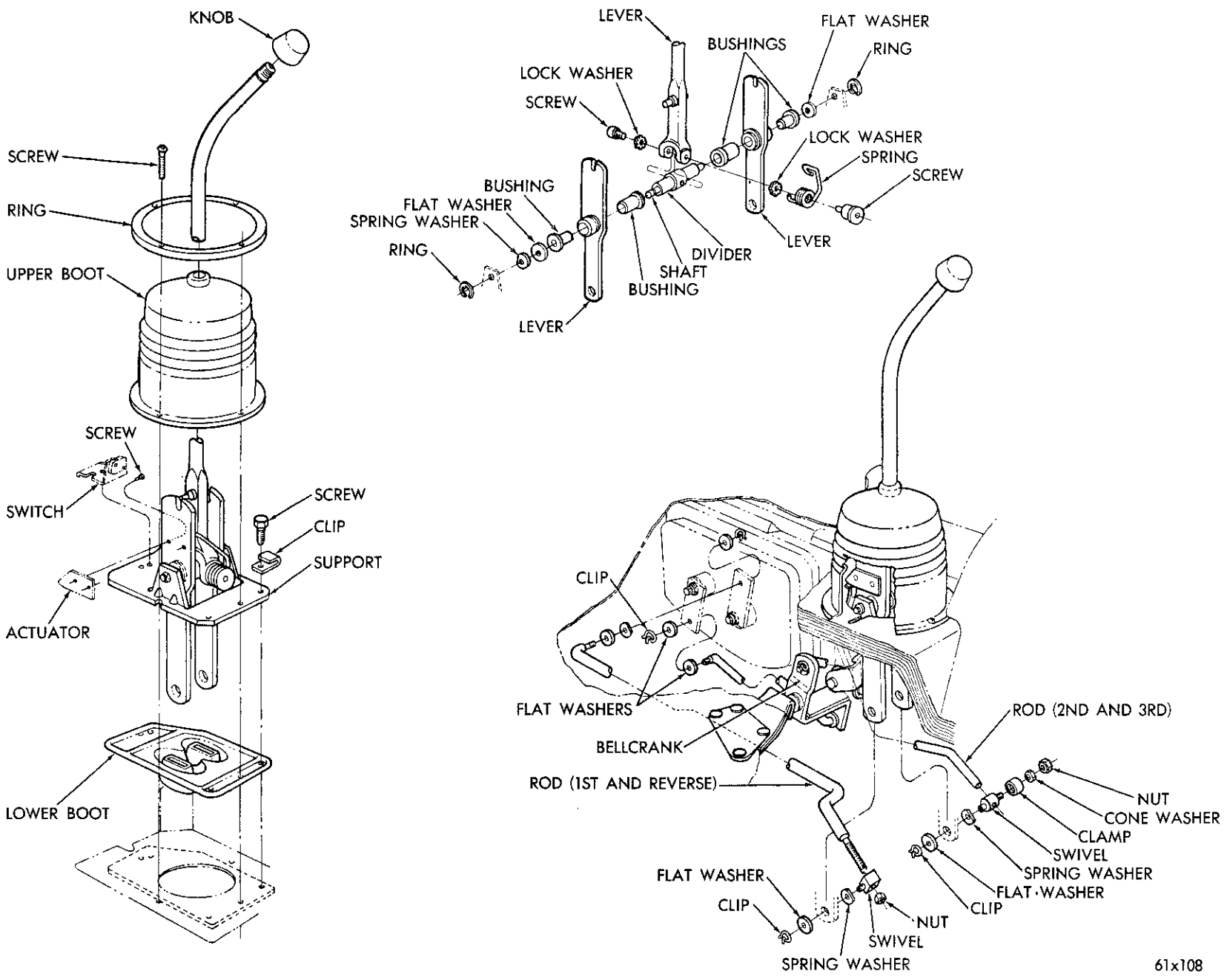

Fig. 9—Gearshift Controls

(4) Fill the transmission with 4¼ pints of Transmission Fluid Type "A" Suffix "A" or SAE 80 Multi-Purpose Lubricant for all seasons.

GEARSHIFT LINKAGE ADJUSTMENTS (RC-1) (A745A TRANSMISSION) (Fig. 9)

(1) Remove the screws that hold the upper boot and retaining ring to the floor pan.

(2) Remove the retaining ring and slide the boot up on the gearshift lever far enough to expose the shift mechanism.

(3) Disconnect the first and reverse shift rod by removing the spring clip, flat washer and the wavewasher. Disengage rod from lever.

(4) Disconnect the second and high shift rod by removing the spring clip, flatwasher and the wavewasher. Disengage the rod from the lever.

(5) Place the transmission shift levers in the neutral position.

(6) Slide a wedge between the second and high lever and gearshift fork, as shown in Figure 10. (This will position the cross-over pin partially in the first and reverse and second and high shift levers, thus locking the gearshift and shift levers in the neutral position.)

(7) Pre-set the length of the first and reverse shift rod (primary adjustment) by loosening the locknut on the end of rod, which is threaded through the swivel block.

(8) Turn the swivel block either in or out to properly position the hand lever and shift levers in neutral position. (Correct neutral position is where the shift levers are in a direct vertical position with the floor pan.)

(9) Loosen the clamping nut that holds the second and high shift rod in the swivel block.

(10) Slide the swivel block either to the front or rear on the rod, until the stud shaft on the block can be inserted into its lever. Split the backlash of the rod, then install the lever. Install the remaining flatwasher and spring clip and tighten to 100 inch-pounds torque.

(11) Remove the wedge. Slide the upper boot down into position and install the retaining ring and screws. Tighten screws securely.

With the linkage properly adjusted, the cross-over action should be smooth.

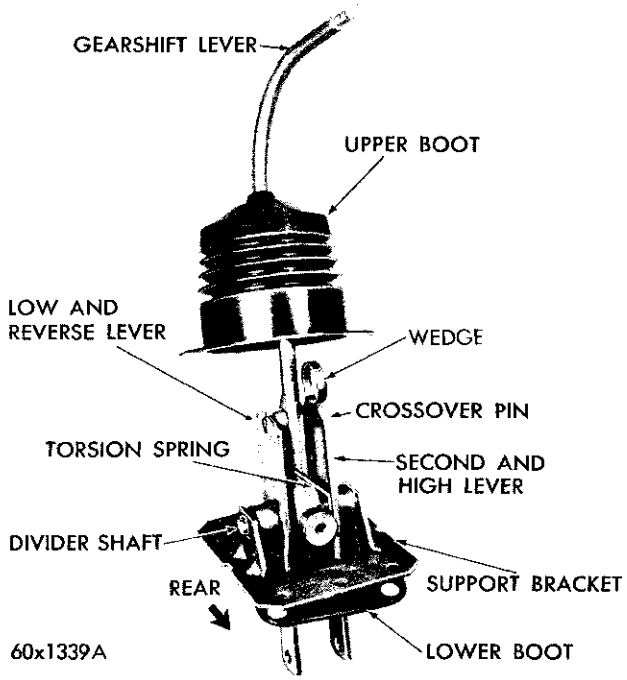

Fig. 10—Positioning Crossover Pin

SERVICING THE GEARSHIFT ASSEMBLY (Fig. 10)
Removal

(1) Disconnect the first and reverse, second and third shift rods from the shift levers. (Note position of the wavewashers.)

(2) Remove the screws that attach the upper boot retainer to the floor pan. Remove the retainer, and slide boot up on the hand lever to expose the gearshift mounting bolts.

(3) Remove the bolts that attach the gearshift assembly to the floor pan.

(4) Remove the gearshift assembly (and lower boot) from the vehicle. Slide the lower boot off the shift levers.

(5) Using a ¼-inch Allen wrench, remove the torsion spring retaining screw. Slide starwasher out from under spring.

(6) Using a screwdriver, pry the lower end of the spring out of its hole in the divider shaft, then disengage upper loop of spring from the shift lever.

(7) Again using an Allen wrench, remove the remaining screw and starwasher that holds the shifter fork to the divider. Slide the gearshift lever fork from the divider shaft and the shift levers.

(8) Remove the lock ring from each end of the divider shaft, and push divider shaft out of the gearshift support.

(9) Pull the levers, divider and bushing assembly from the gearshift support.

NOTE: The flatwashers between the outer bushings and gearshift support will drop out at this time.

(10) Separate the levers from the divider and remove the nylon bushings.

Check all the parts for wear or damage; installing new parts as required. At reassembly, lubricate all moving parts that pivot, with lubriplate, also the cross-over pin.

Assembly (Fig. 10)

(1) Slide each lever on the divider with the narrow shoulder (and nylon bushing bearing surface) down against the shoulder.

(2) Slide the outer bushings into position against the outer shoulders, then place the lever assembly in position in the gearshift support bracket.

(3) Slide the spacer washers (spring washer on 1st reverse side) between the support bracket and the nylon bushing shoulders, then align the divider shaft hole.

(4) Slide the divider shaft into the support, through the shaft lever assembly and out of the support on the other side, far enough to install the retaining lock rings. Install the retaining rings.

(5) Position the shift fork screw holes (in the divider, parallel with the center line of the divider shaft). Slide the gearshift fork and shaft down into position on the divider shaft with the gearshift knob facing to the rear and the three holes in the support plate (Fig. 11).

(6) Install the shift fork retaining screw and lockwasher (front). Do not tighten at this time.

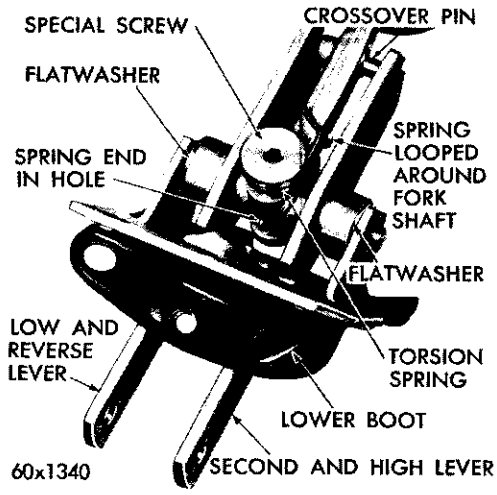

Fig. 11—Lever Torsion Spring (Installed)

(7) Engage the loop of the torsion spring with the gearshift fork shaft, and slide the other end into the hole at the bottom of the divider, as shown in Figure 11.

(8) Install spring retaining screw and lockwasher, tighten both screws securely.

(9) Slide the lower boot up over the shift levers, being sure the screw holes are aligned.

(10) Slide the tool wedge between the second and high lever and gearshift fork as described in Paragraph "Gearshift Linkage Adjustments," then install gearshift assembly in the vehicle.

(11) Install attaching bolts and tighten to 150 inch-pounds torque.

(12) Adjust the linkage. After adjustment has been made, reinstall boot and retainer and secure with screws.

SERVICE DIAGNOSIS

CONDITION	POSSIBLE CAUSE	CORRECTION
1. HARD SHIFTING	(a) Improper cross-over adjustment.	(a) Perform the cross-over adjustment as outlined in Paragraph "Gearshift Linkage Adjustments."
	(b) Synchronizer clutch sleeve damaged.	(b-c-d) Causes noted can only be corrected by disassembling the transmission and replacing damaged or worn parts.
	(c) Synchronizer spring improperly installed.	
	(d) Broken or worn synchronizer stop rings.	
	(e) Incorrect clutch adjustment.	(e) Refer to the Clutch Group for correction.

SERVICE DIAGNOSIS — Continued

CONDITION	POSSIBLE CAUSE	CORRECTION
2. TRANSMISSION SLIPS OUT OF GEAR	(a) Second or direct speed gear synchronizer clutch teeth worn.	(a) Disassemble the transmission and replace parts as necessary.
	(b) Clutch housing bore or face out of alignment.	(b) Refer to the Clutch Group for correction procedures.
	(c) Gearshift rods out of adjustment.	(c) Adjust the gearshift rods as outlined in Paragraph "Gearshift Linkage Adjustments."
	(d) Linkage interference.	(d) Inspect and remove all linkage interferences.
3. TRANSMISSION NOISES (BACKLASH NOISE)	(a) Excessive end play in the cluster gear.	(a) Replace the worn gear.
	(b) Loose synchronizer hub spline fit on mainshaft.	(b) Inspect the mainshaft and synchronizer hub and replace parts as necessary.
	(c) Loose spline fit on low speed sliding gear to mainshaft spline.	(c) Inspect the low speed sliding gear and mainshaft. Replace parts as necessary.
	(d) Loose spline fit of rear mainshaft flange.	(d) Inspect the mainshaft and flange splines. Replace parts as necessary.
	(e) Damaged, broken or excessively worn gear teeth.	(e) Replace the worn gears.
	(f) Drive pinion bearing worn.	(f) Replace the worn bearing.

TORQUEFLITE TRANSMISSION

DATA AND SPECIFICATIONS

TorqueFlite Transmission

Type	Automatic Three Speed with Torque Converter
Torque Converter Diameter (inches)	12½
Oil Capacity of Transmission and Torque Converter (Refill)	21 pints Automatic Transmission Fluid Type "A" Suffix "A"
Method of Cooling	Water
GEAR RATIOS	
1 – First	2.45 to 1
2 – Second	1.45 to 1

DATA AND SPECIFICATIONS — Continued

D – Drive	1.00 to 1
R – Reverse	2.20 to 1
N – Neutral	–

FRONT - REAR PUMPS

Type	Gear (Rotary)
End Clearance (Front Pump)	.001 to .0025 inch
End Clearance (Rear Pump)	.001 to .0025 inch
Tip Clearance	.005 to .008 inch
Outer Rotor Diametral Clearance	.008 inch maximum

THRUST WASHERS

Input Shaft	.115 to .117 inch (Natural) .097 to .099 inch (Black) .078 to .080 inch (Red) .059 to .061 inch (Orange)
Front Clutch and Sun Gear	.062 to .064 inch
Output Shaft	.062 to .064 inch

SNAP RINGS

Kickdown Annulus Gear	.060 to .062 inch .064 to .066 inch
Rear Clutch	.060 to .062 inch
Low-Reverse Planet Pinion Carrier	.060 to .062 inch .064 to .066 inch .068 to .070 inch
Front Clutch	.060 to .062 inch

Model	Engine (Cu. In.)	Kickdown Band	Front Clutch Cushion Spring	Front Clutch No. Discs	Front Clutch Accumulator Spring*	Rear Clutch No. Discs	Rear Clutch Spring*	Governor (Type)
RC-1	361	2½ turns	Yes	4	16	5	280	A
RC-2	383	2½ turns	Yes	4	16	5	280	A
RC-3, RY-1	413	2½ turns	Yes	4	16	5	280	A

*Pounds Spring Tension

Governor Assemblies "A" Type – Standard

TORQUE REFERENCE

	Foot-Pounds	Inch-Pounds
Accumulator Cover Screws		180
Compensated Throttle Pressure Tap		120
Front Pump to Transmission Case		180
Governor Body to Support		90
Locating Screw		70
Oil Pressure Take-Off Plug		120
Line Pressure Take-Off Plug		120
Oil Pan Bolts		175
Rear Clutch Pressure Tap		120
Pump Housing to Support		120
Oil Pressure Tap		180
Suction Pressure Tap		180
Servo Apply Pressure Tap		120
Transfer Plate to Transmission Case		180
Valve Bodies to Transfer Plate		55
Body End Cover		25
Band Lever Shaft Plug	35	
Extension to Transmission Case	25	
Filler Tube Nut	40	
Intermediate Support Locating Screw	25	
Case to Converter Housing	40	
Kickdown Band Adjusting Screw Nut	35	
Line Pressure Regulator Valve Retainer	50	
Low-Reverse Band Adjusting Screw Nut	35	
Manual Valve Control Cable Housing		200
Neutral Starter Switch – Initial Electrical Contact Plus 1/3 to 1/2 Turn	75 Max.	
Output Shaft Support to Case	25	
Propeller Flange Nut	175	
Torque Converter Cooler Line Fitting		120
Control Valve Retainer	40	
Reaction Shaft to Case	25	
Torque Converter Housing		
Housing to Engine Block 3/8 inch screws	30	
7/16 inch screws	50	
Dust Cover		200
Dust Plate		130

TORQUE REFERENCE — Continued

Torque Converter	Foot-Pounds	Inch-Pounds
Crankshaft Nut or Bolt	55	
Pan Drain Plug	50	
Converter Drain Plug		130
Drive Flange Stud	35	

SHIFT PATTERN SUMMARY CHART — MPH

Condition	RC-1	RC-2	RC-3	RY-1
Closed Throttle 1-2 Upshift	8-15	8-15	9-15	9-16
Closed Throttle 2-3 Upshift	12-18	12-19	12-19	13-20
Wide Open Throttle 1-2 Upshift	31-46	31-47	32-48	33-49
Wide Open Throttle 2-3 Upshift	67-83	68-84	69-86	72-90
3-2 Kickdown Limit	63-80	64-82	66-83	69-87
3-1 Kickdown Limit	30-43	31-44	32-45	33-47
Closed Throttle Downshift	6-13	6-13	6-13	7-14

LINE PRESSURE CHART

Push Button Position	Rear Wheels	Engine Speed (rpm)	Line Pressure (PSI)
R	Free to Turn	1600	200-240
N	—	1200	85-95
D (Shifted into Direct)	Free to Turn	1200	89-91
2	Free to Turn	1200	85-95
1	Free to Turn	1200	85-95
D	Free to Turn	3500	95-100

GOVERNOR PRESSURE CHART

Push Button Position	Rear Wheels	Car Speed MPH				Governor Pressure
MODELS		RC-1	RC-2	RC-3	RY-1	
2 (Second)	Free to Turn	18-22	18-22	18-23	19-24	15 PSI
D (Drive)	Free to Turn	41-50	43-51	43-51	45-54	50 PSI
D (Drive)	Free to Turn	69-77	72-80	72-80	75-83	75 PSI

SPEEDOMETER PINION USAGE CHART

Tire Size	Axle Ratio	Output Shaft	Pinion No. Teeth	Pinion Color
8.00 x 14 8.50 x 14 9.00 x 14	2.93 to 1	8 Teeth	17	Red
8.20 x 15	2.93 to 1	8 Teeth	16	Natural

TORQUEFLITE TRANSMISSION

The service procedures for the 1961 Chrysler TorqueFlite Transmission and torque converter remain the same as outlined in the 1960 Chrysler and Imperial Service Manual. When servicing components of the 1961 TorqueFlite Transmission, refer to Data and Specifications, Pressures and Charts in this supplement. Certain parts in the rear clutch assembly have also been changed and are described as follows:

Rear Clutch – The rear clutch piston retainer and pressure plate have been modified by decreasing the clearance between the pressure plate drive lugs and the grooves in the piston retainer. The new pressure plate is also used in the front clutch assembly. Servicing procedures for the clutch assembly remain the same; however, the new parts are not interchangeable with earlier transmissions.

GROUP 22
WHEELS, BEARINGS AND TIRES

DATA AND SPECIFICATIONS

MODELS	RC-1	RC-2
WHEELS		
Type	Steel Disc	
Rim	Drop Center – Safety Wheel	
Size	14 x 5½K	14 x 5½K
	14 x 6K (Town and Country)	
Number of Wheel Nuts	5	5
Stud Hole Circle	4½"	4½"
Stud Size	½"-20	½"-20
TIRES		
Type	Super Cushion Tubeless	
Size	8.00-14	8.00-14
	8.50-14 (Town and Country)	
Ply		4
TIRE PRESSURE – COLD PSI		
Pounds – Rear	22	22
Front	24 (Town and Country)*	24