

Installation

1. Make sure the shift lever insulator is in a straight downward position on the shift rail.
2. Position the shift lever in the extension housing so that the forked ends engage in the insulator properly (Fig. 5).
3. Install the three attaching metric (M8) bolts.
4. Install the boot and attaching screws.
5. Position the carpet or floor mat and install the step plates and screws.
6. Install the two kick pads.
7. Install the locknut and shift knob.
8. Check to make sure that the transmission lever is operating properly.

TRANSMISSION

Removal

1. Remove the shift lever (Fig. 6) following directions in paragraph above.
2. Raise the vehicle on a hoist.
3. Mark the driveshaft so that it may be reinstalled in the same relative position to the rear axle companion flange. Remove the driveshaft and install Tool T71P-7095-A in the extension housing to prevent lubricant leakage.
4. Disconnect back-up lamp switch wires.
5. Remove the speedometer cable attaching screw, lift the cable from the extension housing, and plug the hole to prevent oil spillage.
6. Support the rear of the engine with a jack and remove the bolts that attach the crossmember to the body (Fig. 7).
7. Remove the two bolts that attach crossmember-to-extension housing, and remove the crossmember.
8. Lower the engine as required to permit removal of bolts that attach the transmission assembly to the flywheel housing. Slide the transmission away from the flywheel housing and from under the vehicle.

Installation

1. Install the clutch release lever and bearing.
2. Apply a film of C4AZ-19584-A lubricant to the input shaft front bearing retainer. Position the transmission assembly into the flywheel housing and install and torque attaching bolts to specification. **It may be necessary to place the transmission in gear and rotate the output shaft to align the input shaft and clutch splines.**
3. Raise the engine until the transmission is in its normal position. Secure the crossmember to the body with the attaching bolts, and torque to specification. Install the two bolts that attach crossmember to extension housing, and torque to specification.
4. Install the speedometer cable and torque the attaching screw to specification.
5. Install the driveshaft, making sure that it is connected to the pinion flange in its original position.

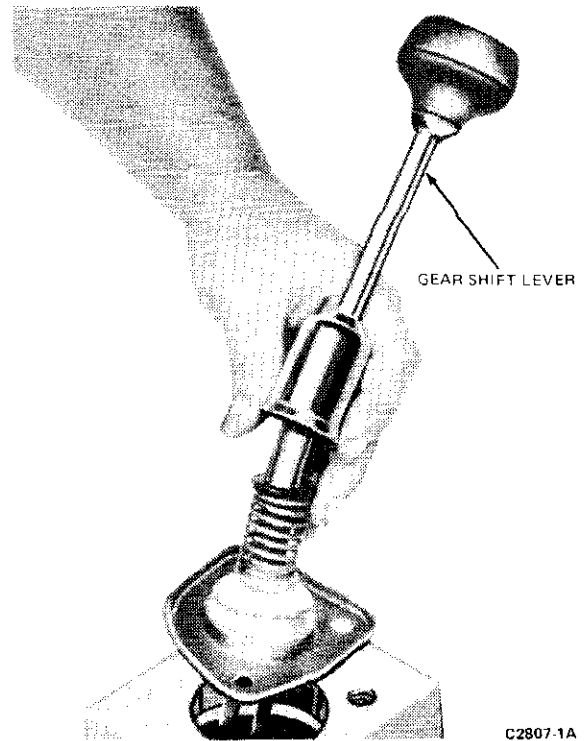


FIG. 6 Removing or Installing Shift Lever—Mustang II

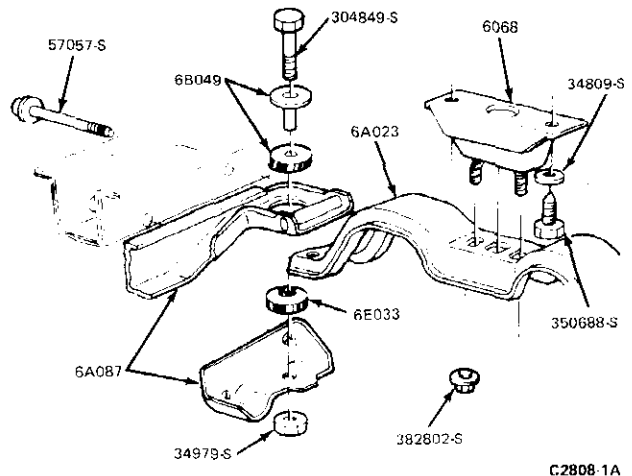


FIG. 7 Engine Rear Mount—Mustang II

6. Fill the transmission with the specified lubricant until it appears at the bottom of the filler plug hole. Install the filler plug and torque to specification.
7. Position the back-up switch wire in the clip and connect the wire to the switch.
8. Lower the vehicle to the ground.
9. Install the shift lever and carpet, following directions under Shift Lever Installation.
10. Check the transmission for proper operation.

DISASSEMBLY AND ASSEMBLY

TRANSMISSION (REFER TO FIG. 11)

Disassembly

1. Mount the transmission in a holding fixture (Fig. 8) and drain the lubricant by removing the lower extension housing bolt.

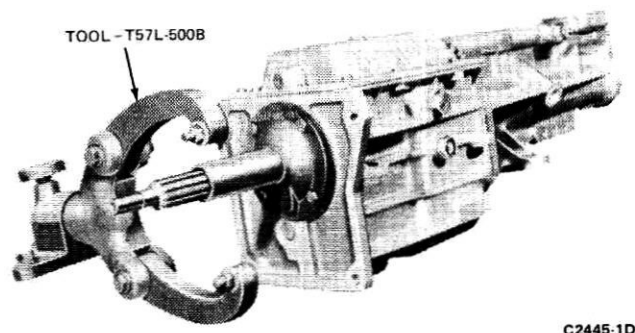


FIG. 8 Transmission Mounted in Holding Fixture

2. Drive the access plug from the rear of the extension housing. Remove the nut that secures the offset lever assembly, then remove the offset lever assembly. (See Fig. 9.)

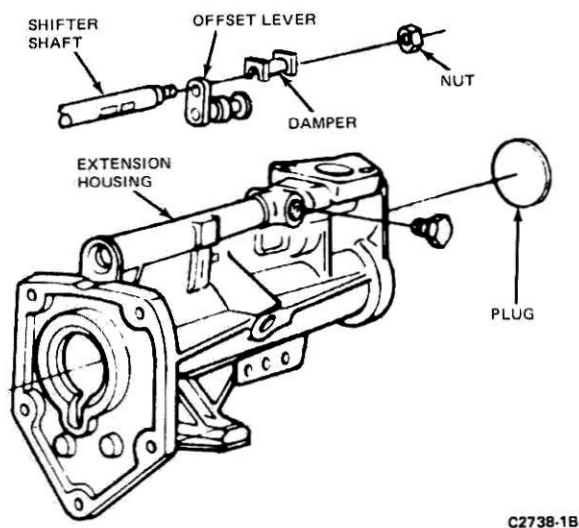


FIG. 9 Removal of Offset Lever

3. Remove the remaining metric extension housing bolts and lock washers. Remove the extension and gasket from the case.
4. Remove metric cap screws that attach cover to the transmission case. Remove the cover, shifter forks, shift rod assembly, and the cover-to-case gasket.
5. Remove metric bolts that attach the front bearing retainer to the case, then remove the front bearing retainer and gasket.

6. Remove the spring clip retaining the reverse lever assembly to pivot bolt. Remove the pivot bolt, and the reverse lever assembly.
7. Remove the snap ring securing the input bearing to the input shaft. Remove the outer snap ring from the input bearing. Locate a bearing removal tool in the outer snap ring groove and remove the bearing.
8. Remove the snap ring securing the speedometer gear to the output shaft and slide the gear off the shaft. Remove the lock ball from the shaft (Fig. 11).

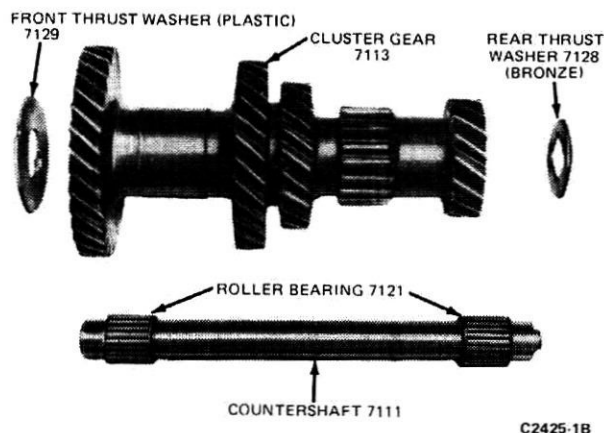


FIG. 10 Countershaft Removal

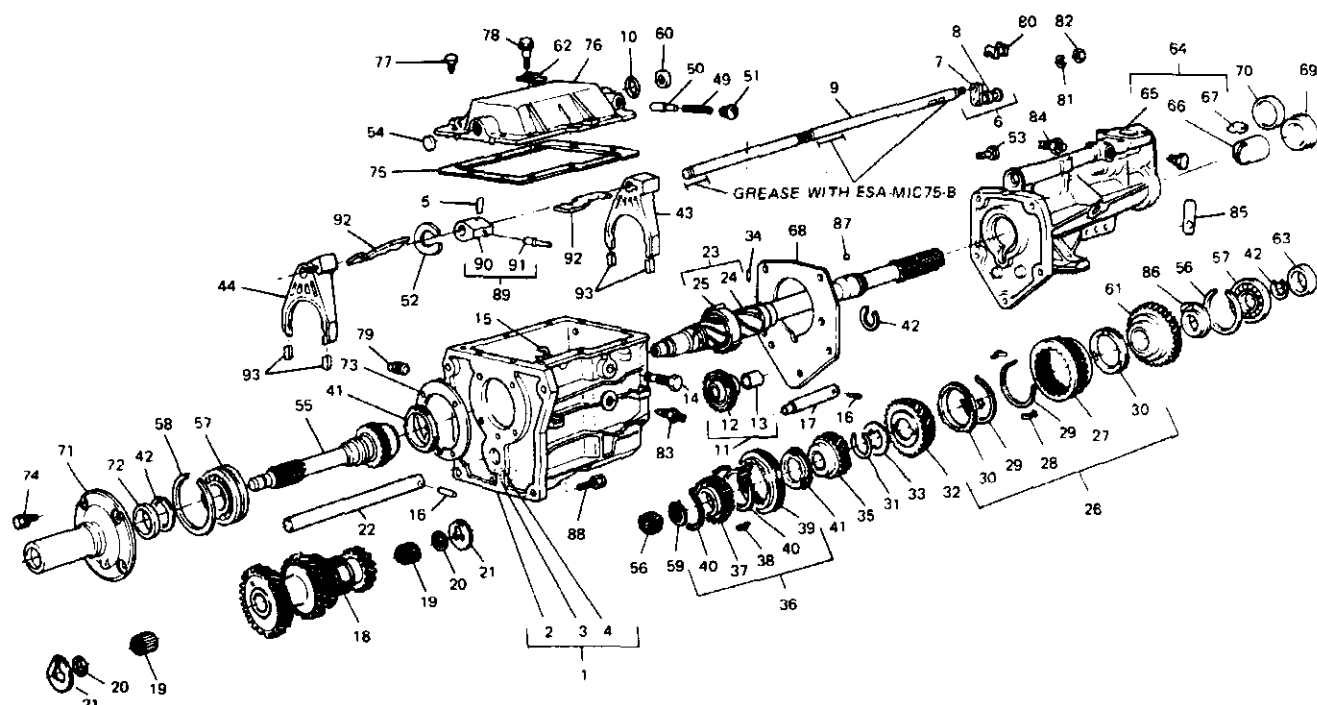
9. Remove the snap ring securing the output shaft bearing on the shaft. Remove the outer snap ring from the output shaft bearing.
10. Locate a bearing removal tool in the outer snap ring groove and pull the output shaft bearing from the case.
11. Remove the input shaft through the front bearing hole in the case. Carefully lift the output shaft and gear train through the top of the case.
12. Slide the reverse idler gear shaft out through the rear of the case and remove the reverse gear.
13. Use a dummy countershaft inserted from the front of the case to drive the countershaft out through the rear of the case. Lift out the countershaft gear, thrust washers and dummy countershaft through the top opening of the case (Fig. 10).
14. Clean and inspect all parts. DO NOT REMOVE THE BACK-UP LAMP SWITCH UNLESS DAMAGED.

TRANSMISSION SUB-ASSEMBLIES

Cover Assembly

Disassembly

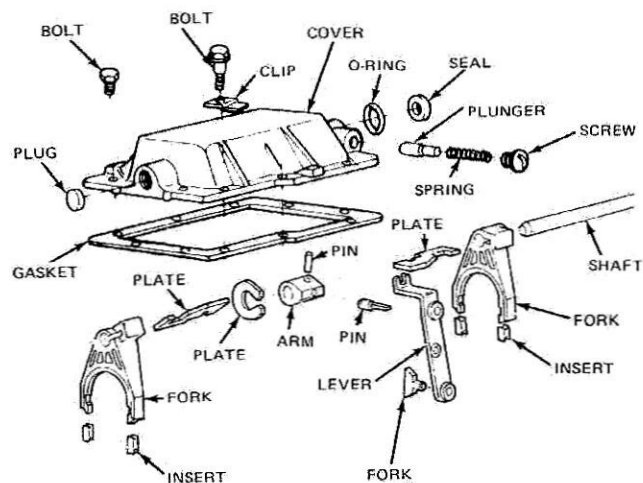
1. Remove detent screw, spring and plunger (Fig. 12).
2. Pull shifter shaft rod rearward and rotate counter-clockwise.
3. Remove spring pin that retains manual selector arm to the shifter shaft (Fig. 12).
4. Remove shifter shaft from the cover (take care not to damage seal).



ITEM	PART NAME	REQD.
1.	CASE ASSY. - TRANS.	1
2.	CASE - TRANS.	1
3.	MAGNET - TRANS. CASE CHIP	1
4.	NUT, SPRING 9/64	1
5.	PIN-3/16 DIA. X 13/16 ROLLED SPRING	1
6.	LEVER ASSY. TRANS. GEARSHIFT SHAFT OFFSET	1
7.	LEVER TRANS. GEARSHIFT SHAFT OFFSET	1
8.	PIN-TRANS. GEAR SHIFT SHAFT OFFSET LEVER	1
9.	SHAFT-TRANS. SHIFTER	1
10.	SEAL-O-RING	1
11.	GEAR & BUSH. ASSY. TRANS. REV. IDLER SLIDING	1
12.	GEAR-TRANS. REV. IDLER SLIDING	1
13.	BUSHING-TRANS. REV. IDLER GEAR	1
14.	PIN-TRANS. REV. GEAR SELECTOR FORK PIVOT	1
15.	RING-7/16 RETAINING	1
16.	PIN-1/4 X 1 SPRING	2
17.	SHAFT-TRANS. REVERSE IDLER GEAR	1
18.	GEAR-TRANS. COUNTERSHAFT	1
19.	ROLLER-TRANS. C'SHAFT GEAR BEARING	50
20.	WASHER-208 / .918 FLAT	2
21.	WASHER-TRANS. C'SHAFT GEAR THRUST	1
22.	COUNTERSHAFT-TRANSMISSION	1
23.	SHAFT ASSY. TRANS. OUTPUT	1
24.	SHAFT-TRANS. OUTPUT	1
25.	HUB-TRANS. SYN. 1ST & 2ND GEAR CL.	1
26.	SHAFT & GEAR ASSY. TRANS. OUTPUT	1
27.	GEAR-TRANS. REVERSE SLIDING	1
28.	INSERT-TRANS. SYNCHRO. HUB	3
29.	SPRING-TRANS. SYNCHRO RETAINING	2
30.	RING-TRANS. SYNCHRO BLOCKING	2
31.	RING-TRANS. 2ND SPEED GEAR RET. SNAP	1
32.	GEAR-TRANS. 2ND SPEED	1
33.	WASHER-TRANS. 2ND SPEED GEAR THRUST	1
34.	PIN - 1/8 X 3/8 ROLLED SPRING	1
35.	GEAR-TRANS. 3RD SPEED	1
36.	SYNCHRONIZER ASSY. 3RD & 4TH SPEED	1
37.	HUB-TRANS. SYNC. 3RD & 4TH GEAR CLUTCH	1
38.	INSERT-TRANS. SYNC. HUB	3
39.	SLEEVE-TRANS. 3RD & 4TH GEAR CLUTCH HUB	1
40.	SPRING-TRANS. SYNCHRO. RETAINING	2
41.	RING-TRANS. SYNCHRO. BLOCKING	2
42.	RING-TRANS. M/D GEAR BRG. SHAFT-SNAP	3
43.	FORK-TRANS. 1ST & 2ND GEAR SHIFT	1
44.	FORK-TRANS. 3RD & 4TH GEAR SHIFT	1
45.	LEVER ASSY. TRANS. REV. GEAR SHIFT RELAY	1
46.	RING-TRANS. REV. GEAR SHIFT RELAY LEVER	2

ITEM	PART NAME	REQD.
47.	LEVER-TRANS. REV. GEAR SHIFT RELAY	1
48.	FORK-TRANS. REVERSE GEAR SHIFT	1
49.	SPRING-TRANS. SHIFTER INTERLOCK	1
50.	PLUNGER-TRANS. MESHLOCK	1
51.	SCREW-M12 X 10 ROUND HEAD FLAT	1
52.	PLATE-TRANS. GEAR SELECTOR INTERLOCK	1
53.	SCREW & WASHER ASSY. M10 X 30 HEX. HEAD	5
54.	PLUG - 3/4 DIA. WELSH TYPE	1
55.	SHAFT-TRANS. INPUT	1
56.	ROLLER-TRANS. M'SHAFT BEARING	15
57.	BEARING ASSY. TRANS. M/D GEAR BALL	2
58.	RING-M/D GEAR BRG. RETAINING SNAP	2
59.	RING - 1.00 RETAINING	1
60.	SEAL-TRANS. SHIFT SHAFT	1
61.	GEAR-TRANS. 1ST SPEED	1
62.	CLIP-SPARK CONTROL SWITCH WIRE RET.	1
63.	GEAR-SPEEDOMETER DRIVE	1
64.	EXTENSION ASSY. TRANS.	1
65.	EXTENSION-TRANS.	1
66.	BUSHING-TRANS. EXTENSION	1
67.	STOP-TRANS. GEAR SHIFT LEVER REVERSE	1
68.	GASKET-TRANS. EXTENSION	1
69.	SEAL ASSY. TRANS. EXTENSION OIL	1
70.	PLUG-TRANS. EXTENSION	1
71.	RETAINER-TRANS. INPUT SHAFT GEAR BRG.	1
72.	SEAL ASSY. TRANS. INPUT SHAFT OIL	1
73.	GASKET-TRANS. INPUT SHAFT BRG. RETAINER	1
74.	BOLT M8 X 20 HEX HEAD - LOCK	4
75.	GASKET-TRANS. CASE COVER	1
76.	COVER-TRANS. CASE	1
77.	SCREW-M6 X 20 HEX. HEAD	8
78.	BOLT-M6 X 32 HEX. WASHER HD. SHOULDER	2
79.	PLUG-1 2-14 PIPE (FILLER)	1
80.	BUSHING-TRANS. GEAR SHIFT DAMPER	1
81.	NUT-HEXAGON	1
82.	SWITCH ASSY. BACK-UP LAMP	1
83.	SWITCH ASSY. TRANS. SEAT BELT WARNING SENSOR	1
84.	TAG TRANS. SERVICE IDENTIFICATION	1
85.	WASHER-TRANS. 1ST GEAR THRUST	1
86.	BALL-.25 DIA.	1
87.	SCREW & LOCKWASHER ASSY. M12 X 40	4
88.	ARM ASSY. TRANS. CONTROL SELECTOR	7
89.	ARM-TRANS. CONTROL SELECTOR	1
90.	PIN-TRANS. GEARSHIFT	1
91.	PLATE-TRANS. GEARSHIFT SELECTOR ARM	2
92.	INSERT-TRANS. GEARSHIFT FORK	4

FIG. 11 Transmission Assembly



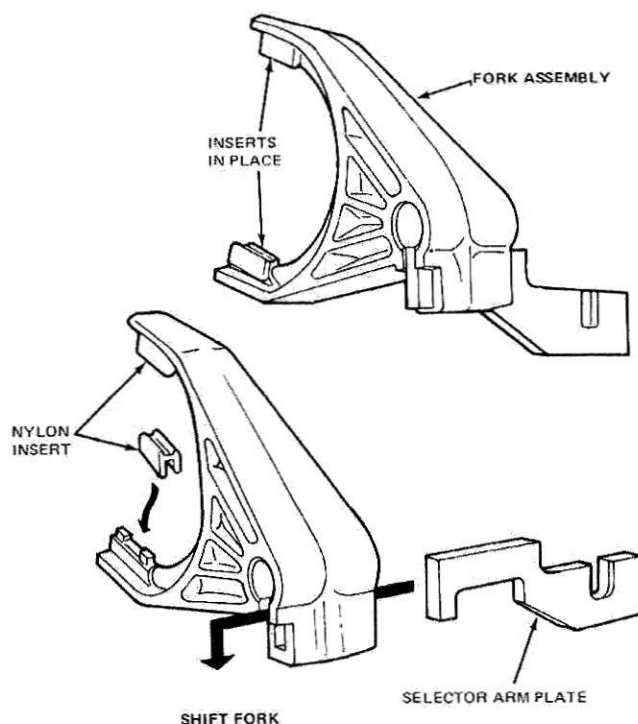
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FIG. 12 Transmission Cover Assembly

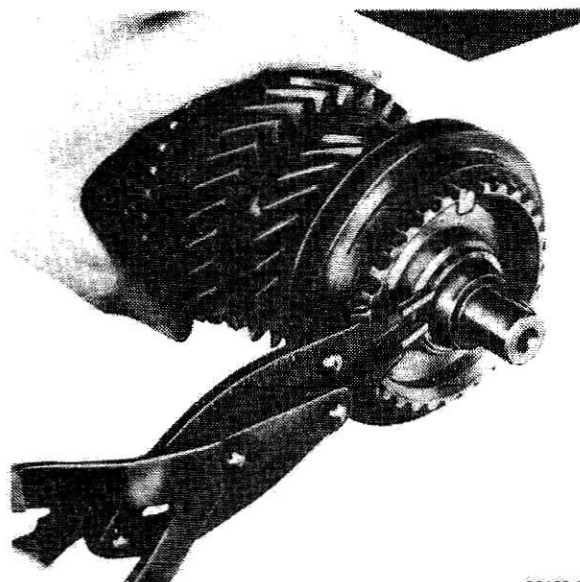
5. Remove manual selector arm and interlock plate.
6. Remove first- and second-speed shifter fork.
7. Remove third- and fourth-speed shifter fork.
8. Replace shifter shaft seal if damaged, replace welch plug if leaking or damaged.
9. Clean and inspect all parts.

Assembly

1. Assemble the two plastic inserts to each shift fork, making sure each insert is positioned so the two projections on the inside of each insert fit into the blind holes in each end of the shift forks (Fig. 13).
2. With inserts in place, insert the selector arm plates into the shift forks.
3. Install third- and fourth-speed shifter fork into cover.
4. Install first- and second-speed shifter fork into cover. Lubricate the shifter shaft bore with grease.
5. Install manual selector arm through the interlock plate, and position the two pieces into the cover, with wide leg of interlock plate towards the inside of transmission case.
6. Align the shifter shaft in cover, and insert the shaft through the shifter forks and manual selector. (The shifter shaft should be coated with a light coat of grease.) Make sure that the detent grooves face the plunger side of the cover.
7. Align the pin hole on the manual selector arm with the pin hole in the shifter shaft. Install the spring pin flush to surface of selector arm.
8. Install the detent plunger, spring, and plug. Torque the plug, 8 to 12 ft-lb.
9. Check the operation of the shift forks in each gear position.



C2977-1A

FIG. 13 Assembling Shift Forks

C2426-1A

FIG. 14 Removing and Installing Third-and-Fourth Synchronizer Snap Ring**Output Shaft****Disassembly**

1. Scratch or etch alignment marks on synchronizer and blocker rings. Remove the snap ring from the front of the output shaft (Fig. 14). Slide the third- and fourth-speed synchronizer assembly, blocker rings, and third-speed gear off the shaft.

2. Remove the next snap ring and the second-speed gear thrust washer from the shaft. Slide the second-speed gear and blocker ring off the shaft. (Take care not to lose the sliding gear from first- and second-speed synchronizer assembly. The first- and second-speed synchronizer hub cannot be removed from the output shaft.)
3. From rear of output shaft, remove the first gear thrust washer (oil slinger). Remove the spring pin which retains the first-speed gear onto the shaft. The spring pin also locates and drives the thrust washer-type oil slinger.
4. Slide the first-speed gear from the output shaft, along with the first-speed blocker ring. (Take care not to lose sliding gear from first- and second-speed synchronizer assembly.)
5. Clean and inspect all parts.

Assembly

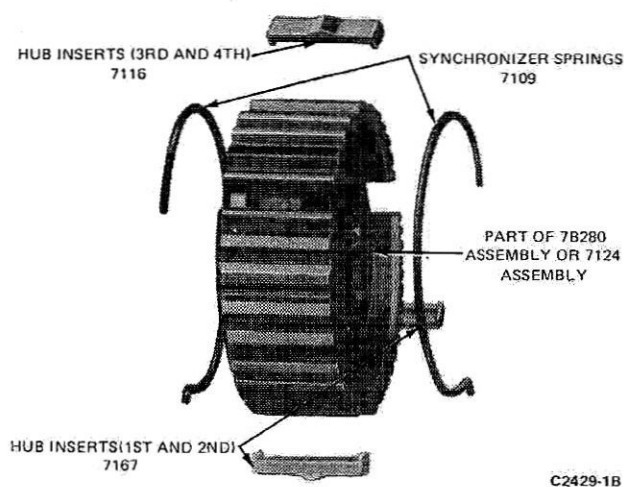
1. Place a blocker ring on the cone of the first-speed gear, and slide the gear and ring onto the output shaft. Make sure the inserts in the synchronizer engage the notches in the blocker ring.
2. Install the spring pin in the shaft to retain the first-speed gear.
3. Install a blocker ring on the cone of the second-speed gear, and slide gear and ring onto the output shaft, making sure the inserts in the synchronizer engage the notches in the blocker ring.
4. Install second-speed gear thrust washer on the shaft, along with a new snap ring.
5. Install a blocker ring on the cone of the third-speed gear, and slide the third gear and ring onto the output shaft. Install the third- and fourth-speed synchronizer. Make sure the inserts in the synchronizer engage the notches in the blocker ring (Fig. 15).
6. Install a new third- and fourth-gear synchronizer retaining snap ring (Fig. 14).
7. Position the first-speed gear thrust washer (oil slinger) on the shaft and on the spring pin retaining the first-speed gear. (Caution: Oil grooves must be positioned against gear. Do not install backwards.)

Countershaft Gear Bearing Replacement

1. Remove the dummy shaft, bearing retainer washers and the needle bearings from the countershaft gear. Clean and inspect all parts (Fig. 16).
2. Coat the bore in each end of the countershaft gear with grease.
3. Hold the dummy shaft in the gear and install the needle bearings and retainer washers in each end of the gear. (Needles should slip easily in bore.)

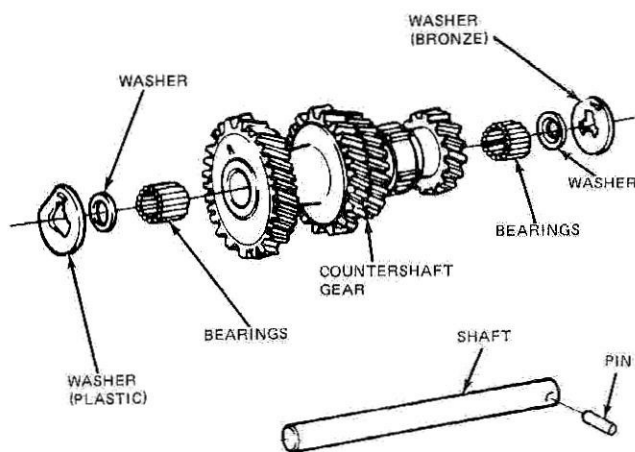
Input Shaft Pocket Bearing Replacement

1. Remove the roller bearings from the input shaft.
2. Clean and inspect all parts.
3. Lightly coat the bore of the input shaft with grease. (A thick film of grease will plug lubrication holes and prevent lubricant getting to the bearings.) Install the bearings (needles should slip easily in bore).



C2429-1B

FIG. 15 Synchronizer Spring Rotation



C2741-1B

FIG. 16 Countershaft Disassembled

Synchronizer

Removal

1. Etch alignment marks on the hub and sleeve of the synchronizer before disassembly.
2. Push the synchronizer sleeve from each synchronizer hub (the first- and second-speed synchronizer hub cannot be removed from the output shaft).
3. Separate the inserts and insert springs from the hubs. Do not mix the parts of the first- and second-speed synchronizer with the third- and fourth-speed synchronizer.
4. Clean and inspect all parts.

Installation

1. Position the sleeve on the hub making sure that the alignment marks are properly indexed.
2. Place the three inserts on the hub. Install the insert springs, making sure that the bent tab is seated in