

# SECTION A

## (43-44-45-46000 SERIES)

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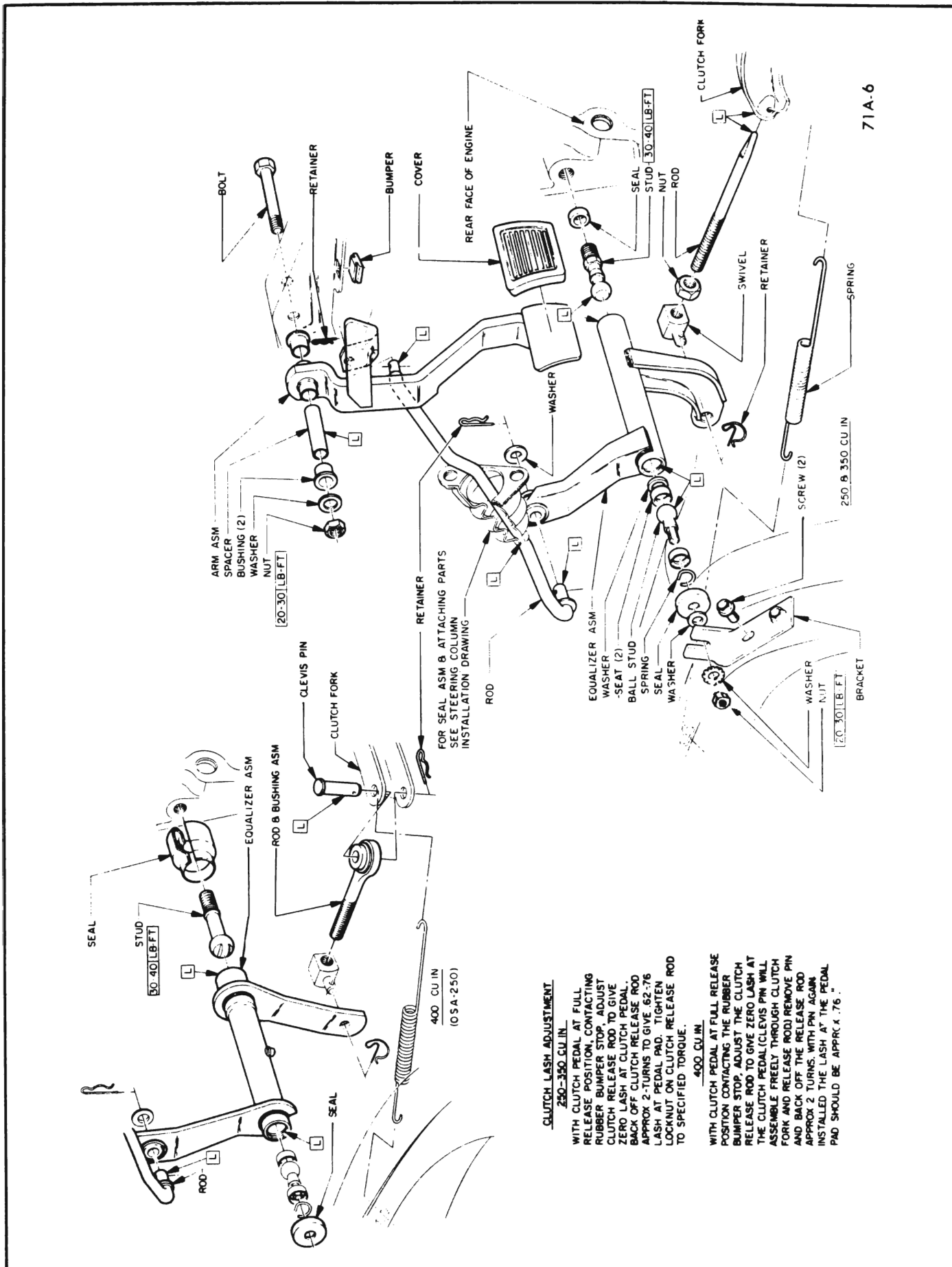
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## DIVISION I SPECIFICATIONS AND ADJUSTMENTS

### 71-1 GENERAL SPECIFICATIONS

a. Clutch Specifications	250 Cu. In.	350 Cu. In.	400 Cu. In. and 430 Cu. In.
Type .....		Single Plate — Dry Disc	
Pedal Pressure .....		28 to 35 lbs. (New)	
Pedal Lash .....	5/8" — 7/8"	5/8" — 7/8"	5/8" — 7/8"
Driven Plate Diameter .....	9 1/8"	10.4"	11"
Driven Plate Facings .....		Woven Asbestos	
Number of Facings.....		2	
Facing Attachment .....		Riveted	
Facing Area (Sq. In.).....	71.88	103.5	123.7
Vibration Dampening .....		6 Torsional Springs	5 Torsional Springs

b. Bolt Tightening Specifications	Special, Sportwagon, and Skylark	G.S. 350	G.S. 400	LeSabre & Wildcat
Location	Thread Size	Torque Lbs. Ft.	Thread Size	Torque Lbs. Ft.
Clutch Cover to Flywheel.....	3/8-16 x 1	30-40	3/8-16 x 1	30-40
Clutch Release Fork Ball.....	1 3/16-16	35-45	1 3/16-16	35-45
Flywheel Housing to				
Cylinder Block .....	3/8-16 x 1 1/4	45-60	3/8-16 x 1 1/4	45-60
Clutch Equalizer Ball Stud:				
To Engine .....	1/2-13	30-40	1/2-13	30-40
To Frame Bracket .....	3/8-16	20-30	3/8-16	20-30
To Trans. Bracket .....	—	—	—	3/8-16 20-30
Clutch Equalizer Bracket				
To Trans. ....	—	—	—	7/16-14 45-60
Trans. to Flywheel Housing.....	7/16-14	45-60	7/16-14	45-60
Clutch Equalizer Bracket				
To Frame .....	—	—	—	5/16-18 x 3/4 10-15
Clutch Adjustment Lock Nut.....	3/8-16	5-15	3/8-16	5-15



71A-6

Figure 71-1 - Special, Skylark, G.S. 350 and G.S. 400 Clutch Linkage

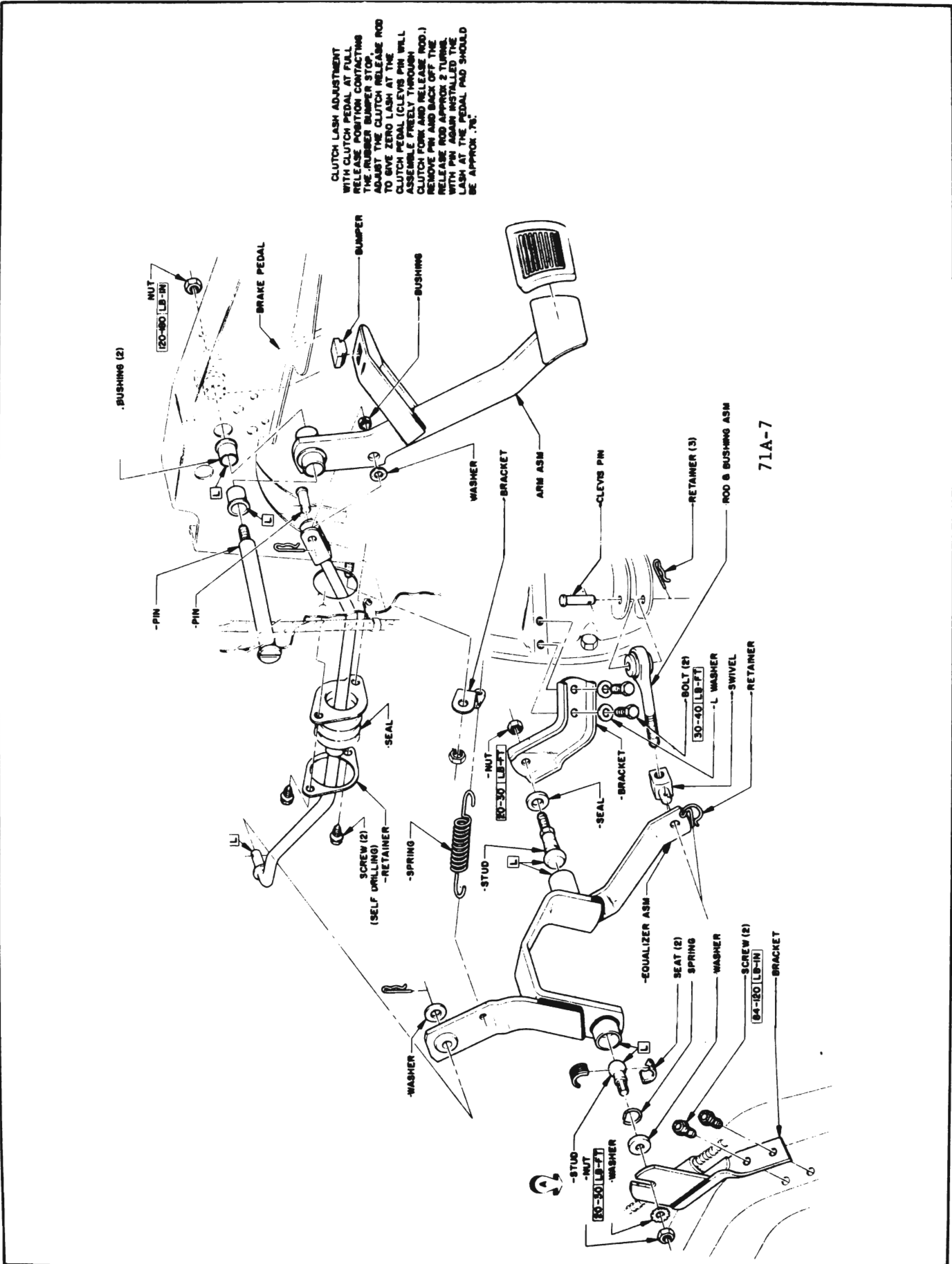


Figure 71-2 LeSabre and Wildcat Clutch Linkage

**71-2 CLUTCH LASH ADJUSTMENT**

Pedal lash, free pedal, must be adjusted occasionally to compensate for normal wear of the clutch facing. As the driven plate wears thinner, pedal lash decreases.

All Series To adjust pedal lash:

1. Make certain clutch fork is on ball stud.
2. On Special, Skylark, G.S. 350 and G.S. 400, see Figure 71-1.

- a. Unhook return spring from clutch fork.
- b. Push and hold equalizer and release rod toward front of car while at the same time holding the clutch fork toward the rear of the car.

c. If clutch is properly adjusted, there will be 1/16" to 1/8" clearance between the end of the rod and the clutch fork. Lash at the pedal should be 5/8" to 7/8".

**DIVISION II****DESCRIPTION AND OPERATION****71-3 DESCRIPTION AND OPERATION**

A single plate, dry disc clutch is used on all manual transmission equipped Special, Skylark, G.S. 350, G.S. 400, LeSabre and Wildcat models.

The pressure plates for 250 and 350 cu. in. engines continue to use a

straight finger belleville type spring for clutch release while the pressure plates for the 400 cu. in. and 430 cu. in. engines as used in the G.S. 400 and Wildcat utilize a bent finger-type belleville spring. See Figure 71-3.

**DIVISION III****SERVICE PROCEDURES****71-4 REMOVAL, INSPECTION, LUBRICATION AND INSTALLATION (SEE FIGURES 71-4 AND 71-5)****a. Removal from Vehicle**

1. Remove transmission.
2. Remove pedal return spring from clutch fork. See Figure 72-1.

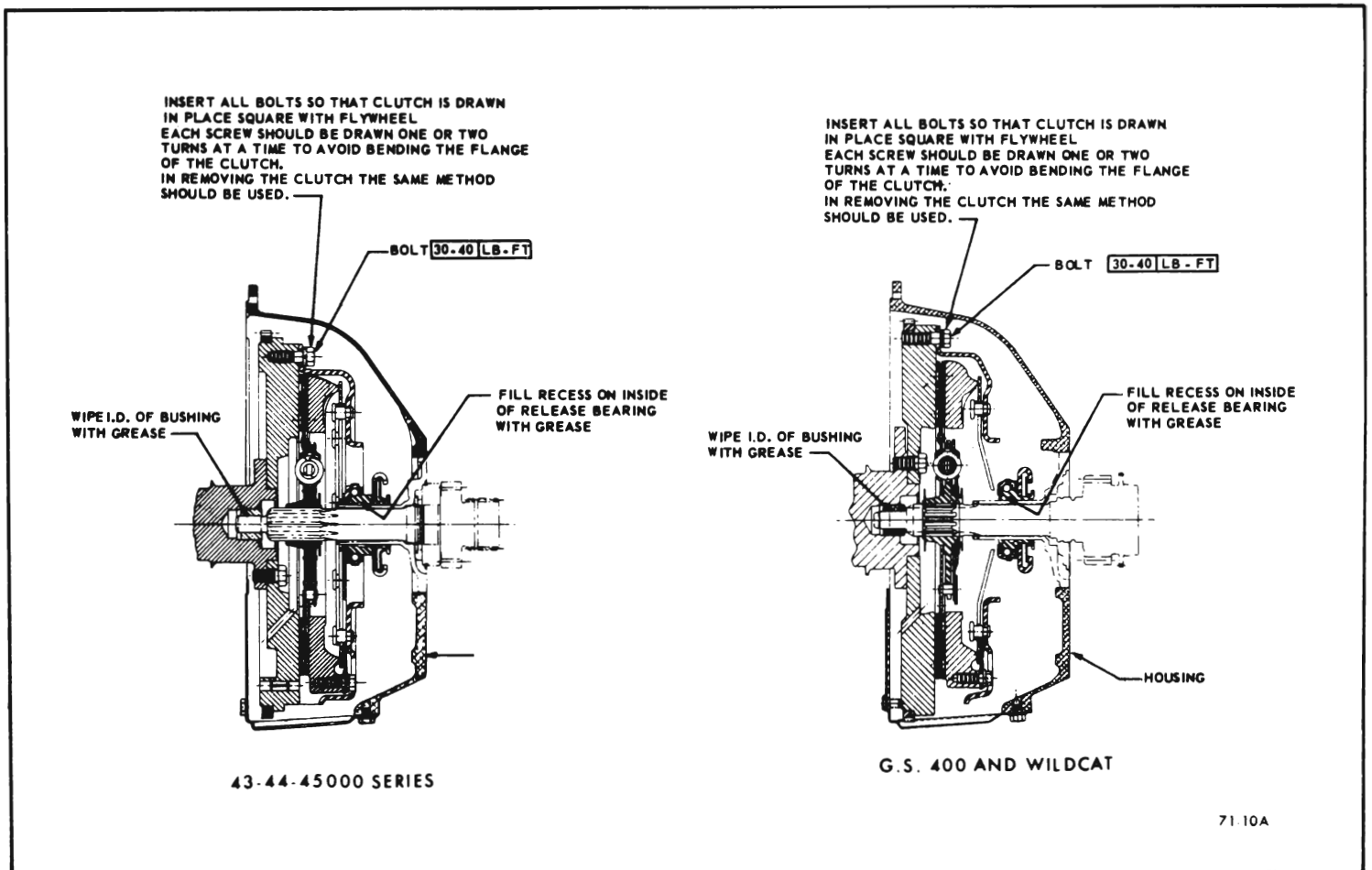


Figure 71-3 - 43-44-45-44600 (G.S. 400) - 46000 Clutch Assemblies

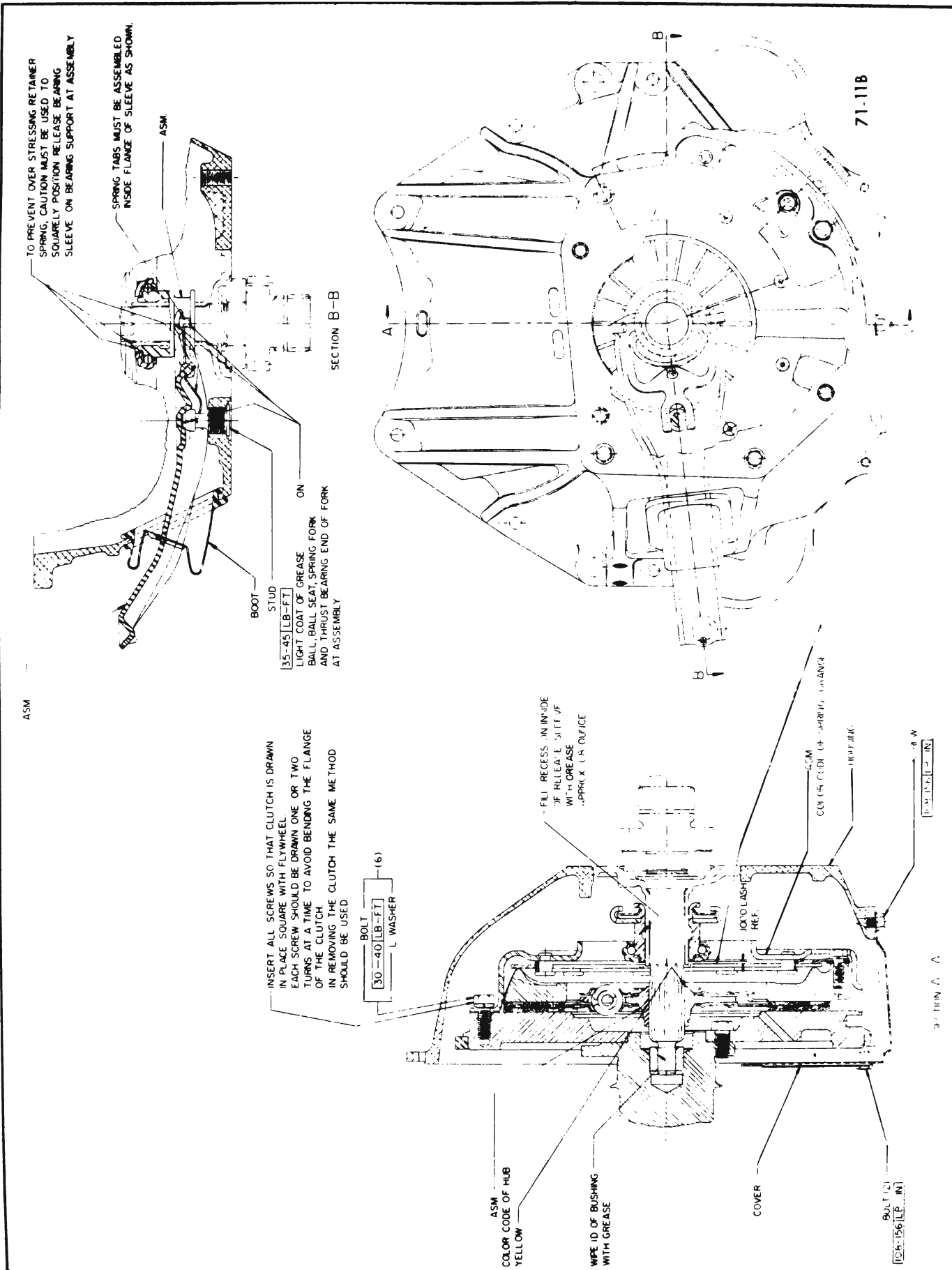


Figure 71-4 - Clutch Inner Controls - 43-44-45000 Series

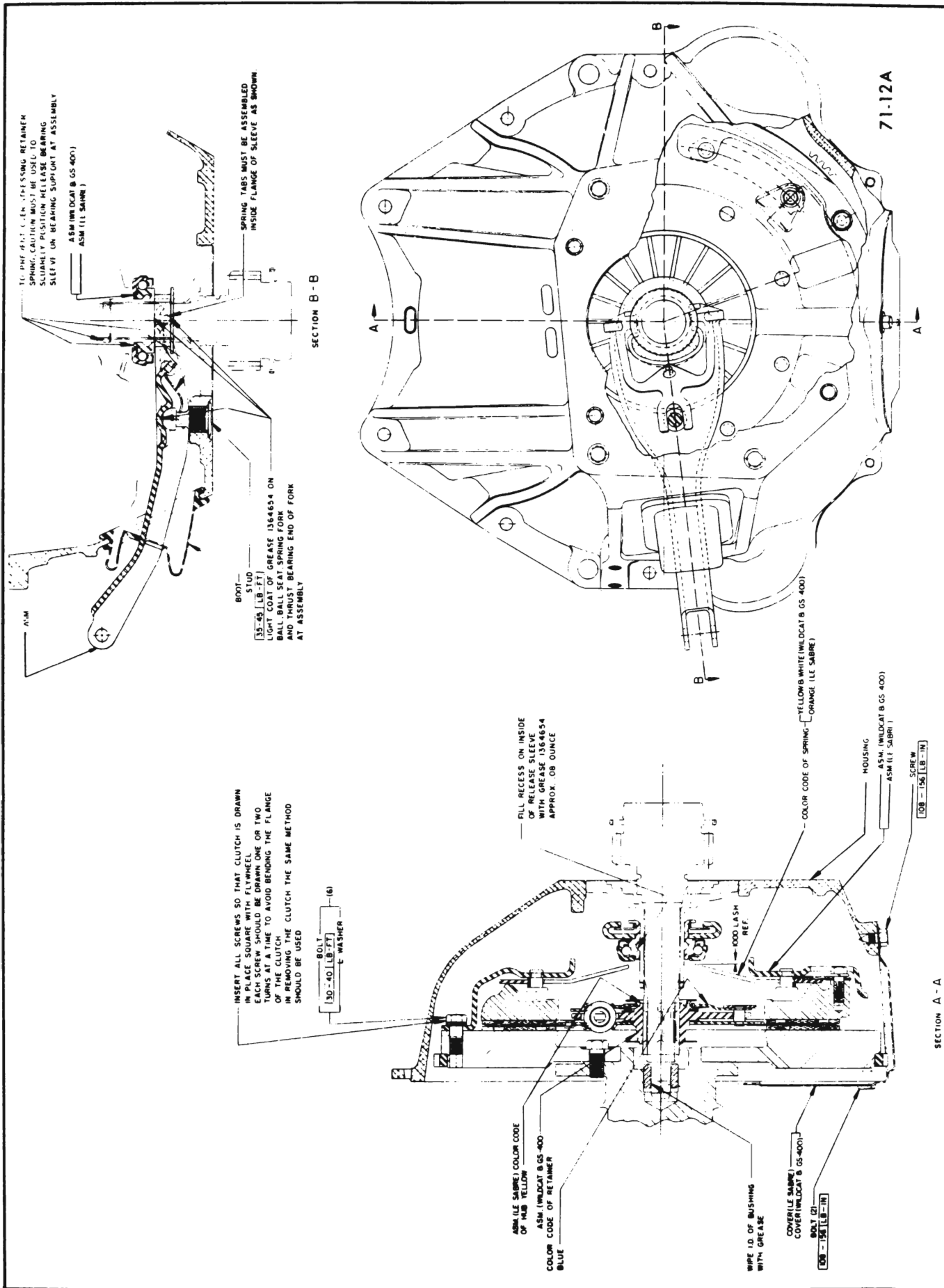


Figure 71-5 - Clutch Inner Controls -44600 (G.S. 400), and 46000 Series

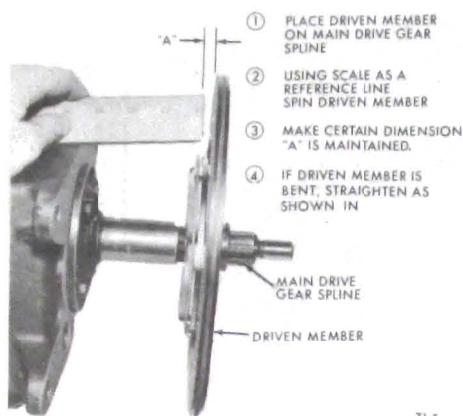


Figure 71-6 · Checking Driven Plate Run-Out

a. On LeSabre and Wildcat models, disconnect rod assembly from clutch fork. See Figure 71-2.

3. Remove flywheel housing.

4. Remove clutch throw-out bearing from clutch fork.

5. Disconnect clutch fork from ball stud by moving it toward the center of flywheel housing.

6. Mark clutch cover and flywheel so that cover can be reinstalled in the same position on flywheel to preserve engine balance.

7. Loosen clutch cover to flywheel attaching bolts one turn at a time each to avoid bending of clutch cover flange until spring pressure is released.

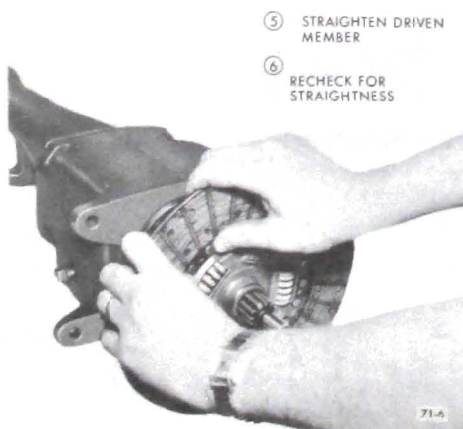


Figure 71-7 · Checking Driven Plate Run-Out

8. Support the pressure plate and cover assembly while removing last bolts, then remove pressure plate and clutch driven plate assemblies.

**NOTE: Use extreme care in keeping clutch driven plate clean.**

9. Should it be necessary to disassemble the pressure plate, proceed as follows:

a. Remove three drive-strap to pressure plate bolts and retracting spring. Then lift off clutch cover.

**NOTE: Alignment marks should be made on clutch cover and pressure plate for assembly purposes to maintain balance.**

b. The clutch belleville spring and two pivot rings are riveted to the clutch cover. The spring, rings and cover should be inspected for wear or damage. If necessary, replace the complete cover assembly.

#### b. Inspection of Clutch

Wash all metal parts of clutch, except release bearing and driven plate in suitable cleaning solution to remove dirt and grease. Soaking release bearing in cleaning solution would permit solution to seep into bearing and destroy the lubricant. Soaking driven plate in cleaning solution would damage the facings.

1. *Flywheel and Pressure Plate.* Examine friction surfaces of flywheel and pressure plate for scoring or roughness. Slight roughness may be smoothed with fine emery cloth, but if surface is deeply scored or grooved the part should be replaced.

2. *Clutch Driven Plate.* Inspect driven plate for condition of facings, loose rivets, broken or very loose torsional springs, and flattened cushion springs.

If facings are worn down near rivets or are oily, the plate assembly should be replaced. A very slight amount of oil on clutch facings will cause clutch grab and chatter. A large amount of oil on facings will cause slippage. Removal of oil by

solvents or by buffing is not practical since oil will continue to bleed from facing material when hot.

When oil is found on driven plate facings, examine transmission drain-back hole, pilot bushing, engine rear main bearing and other points of oil leakage.

Test the fit of driven plate hub on transmission main drive gear for any easy sliding fit.

Regardless of whether the old plate or a new one is to be installed, the plate should be checked for run-out. This check can be made by following steps outlined in Figures 71-6 and 71-7.

3. *Bearings* Inspect clutch throw-out bearing for scoring or excessive wear on front contact face. Test for roughness of balls and races by pressing and turning front race slowly. Inspect main drive gear pilot bushing in crankshaft. If bushing is rough or worn it should be replaced.

#### c. Lubrication of Clutch

1. Very sparingly apply wheel bearing lubricant in pilot bushing in crankshaft.

**NOTE: If too much lubricant is used, it will run out on face of flywheel when hot and ruin the driven plate facings.**

2. Make sure that splines in the driven plate hub are clean and apply a light coat of wheel bearing lubricant. Apply a light coat of wheel bearing lubricant on transmission drive gear splines. Slide driven plate over transmission drive gear several times. Remove driven plate and wipe off all excess lubricant pushed up by hub of plate.

**NOTE: Driven plate facings must be kept clean and dry.**

3. Fill groove in throw-out bearing with wheel bearing lubricant. Make certain transmission front bearing retainer is clean and apply a light coat of wheel bearing lubricant.

Slide throw-out bearing over transmission retainer several times. Remove throw-out bearing and wipe off all excess lubricant pushed up by hub of bearing.

4. Clean and apply wheel bearing lubricant to ball stud in flywheel housing and to the seat in clutch fork.

5. Check clutch pilot bearing for excessive wear or damage. If replacement is necessary, remove bearing with Puller J-1448. For installation use Driver J-1522.

**NOTE: Very sparingly apply wheel bearing lubricant in pilot bushing. If too much lubricant is used, it will run out on face of flywheel when hot and ruin the driven plate facings.**

**d. Installation of Clutch (Refer to Figures 71-1, 71-2, 71-4 and 71-5)**

1. If the pressure plate was disassembled, follow steps a and b.

a. Install the pressure plate in the cover assembly, lining up the groove on the edge of the pressure plate with the groove on the edge of the cover.

b. Install pressure plate retracting springs and drive-strap to pressure plate bolts and lock washers and tighten to 16 lb.ft. torque. The clutch is now ready to be installed.

2. Install the pressure plate and driven plate. Support both assemblies with a spare main drive gear.

**NOTE: Be sure to align marks on clutch cover with the mark made on the flywheel at disassembly.**

3. Install all bolts so that clutch is drawn in place square with flywheel. Each bolt must be drawn one turn at a time to avoid bending the clutch cover flange. Torque bolts to 30-40 lb.ft.

4. Lubricate the ball stud and clutch fork with wheel bearing lubricant and install clutch fork.

**NOTE: Check and insure that fork retaining spring is tight on pivot ball stud.**

5. Lubricate the recess on the inside of the throw-out bearing collar.

**CAUTION: Be careful not to use too much lubricant.**

6. Install throw-out bearing assembly.

7. Install flywheel housing.

**CAUTION: Insure that dowel pins are in place in crankcase.**

**NOTE: Make certain throw-out bearing is seated in clutch fork.**

8. Install transmission.

9. Connect and adjust clutch linkage. See paragraph 71-2.



## DIVISION IV TROUBLE DIAGNOSIS

### 71-5 CLUTCH TROUBLE DIAGNOSIS

Symptom and Probable Cause	Probable Remedy
<p><b>FAILS TO RELEASE (PEDAL PRESSED TO FLOOR-SHIFT LEVER DOES NOT MOVE FREELY IN AND OUT OF REVERSE GEAR)</b></p> <ul style="list-style-type: none"> <li>a. Improper linkage adjustment.</li> <li>b. Improper pedal travel.</li> <li>c. Loose linkage.</li> <li>d. Faulty pilot bearing.</li> <li>e. Faulty driven plate.</li> <li>f. Fork off ball stud.</li> <li>g. Clutch driven plate hub binding on main drive gear spline.</li> </ul>	<ul style="list-style-type: none"> <li>a. Adjust linkage.</li> <li>b. Trim bumper stop and adjust linkage.</li> <li>c. Replace bushings.</li> <li>d. Replace bearing.</li> <li>e. Replace driven plate.</li> <li>f. Install properly.</li> <li>g. Repair or replace main drive.</li> </ul>
<p><b>SLIPPING</b></p> <ul style="list-style-type: none"> <li>a. Improper adjustment (no lash).</li> <li>b. Oil soaked driven plate.</li> <li>c. Worn facing or facing torn from driven plate.</li> <li>d. Warped pressure plate or flywheel.</li> <li>e. Weak diaphragm spring.</li> <li>f. Driven plate not seated in.</li> <li>g. Driven plate overheated.</li> </ul>	<ul style="list-style-type: none"> <li>a. Adjust linkage.</li> <li>b. Install new driven plate and correct oil leak at its source.</li> <li>c. Replace driven plate.</li> <li>d. Replace same.</li> <li>e. Replace cover assembly.</li> <li>f. Make 20-50 normal starts.</li> <li>g. Allow to cool-Check lash.</li> </ul>
<p><b>GRABBING</b></p> <ul style="list-style-type: none"> <li>a. Oil on facing or burned or glazed facings.</li> <li>b. Worn splines on main drive gear.</li> <li>c. Loose engine mountings.</li> <li>d. Warped pressure plate or flywheel.</li> <li>e. Burned or smeared resin on flywheel or pressure plate.</li> </ul>	<ul style="list-style-type: none"> <li>a. Install new driven plate.</li> <li>b. Replace transmission main drive gear.</li> <li>c. Tighten or replace mountings.</li> <li>d. Replace pressure plate or flywheel.</li> <li>e. Sand off if superficial, replace burned or heat checked parts.</li> </ul>

**DIVISION IV TROUBLE DIAGNOSIS****71-5 CLUTCH TROUBLE DIAGNOSIS (Cont'd.)**

Symptom and Probable Cause	Probable Remedy
<p><b>RATTLING — TRANSMISSION CLICK</b></p> <p>a. Clutch fork loose on ball stud or in bearing groove.</p> <p>b. Oil in driven plate damper.</p> <p>c. Driven plate damper spring failure.</p>	<p>a. Check ball stud and retaining spring and replace if necessary.</p> <p>b. Replace driven plate.</p> <p>c. Replace driven plate.</p>
<p><b>THROW-OUT BEARING NOISE WITH CLUTCH FULLY ENGAGED</b></p> <p>a. Improper adjustment.</p> <p>b. Throw-out bearing binding on transmission bearing retainer.</p> <p>c. Insufficient tension between clutch fork spring and ball stud.</p> <p>d. Fork improperly installed.</p> <p>e. Weak linkage return spring.</p>	<p>a. Adjust linkage.</p> <p>b. Clean, relubricate, check for burrs, nicks, etc.</p> <p>c. Replace fork.</p> <p>d. Install properly.</p> <p>e. Replace spring.</p>
<p><b>NOISY</b></p> <p>a. Worn throw-out bearing.</p> <p>b. Fork off ball stud (Heavy clicking).</p>	<p>a. Replace bearing.</p> <p>b. Install properly.</p>
<p><b>PEDAL STAYS ON FLOOR WHEN DISENGAGED</b></p> <p>a. Bind in linkage.</p> <p>b. Spring weak in pressure plate.</p> <p>c. Weak linkage return spring.</p>	<p>a. Lubricate and free up linkage.</p> <p>b. Replace.</p> <p>c. Replace.</p>
<p><b>HIGH PEDAL EFFORT</b></p> <p>a. Bind in linkage.</p> <p>b. Driven plate worn.</p>	<p>a. Lubricate and free up linkage.</p> <p>b. Replace driven plate.</p>