

Date 1-1-89

## MC-9 MAINTENANCE MANUAL

# SECTION 5

# CLUTCH

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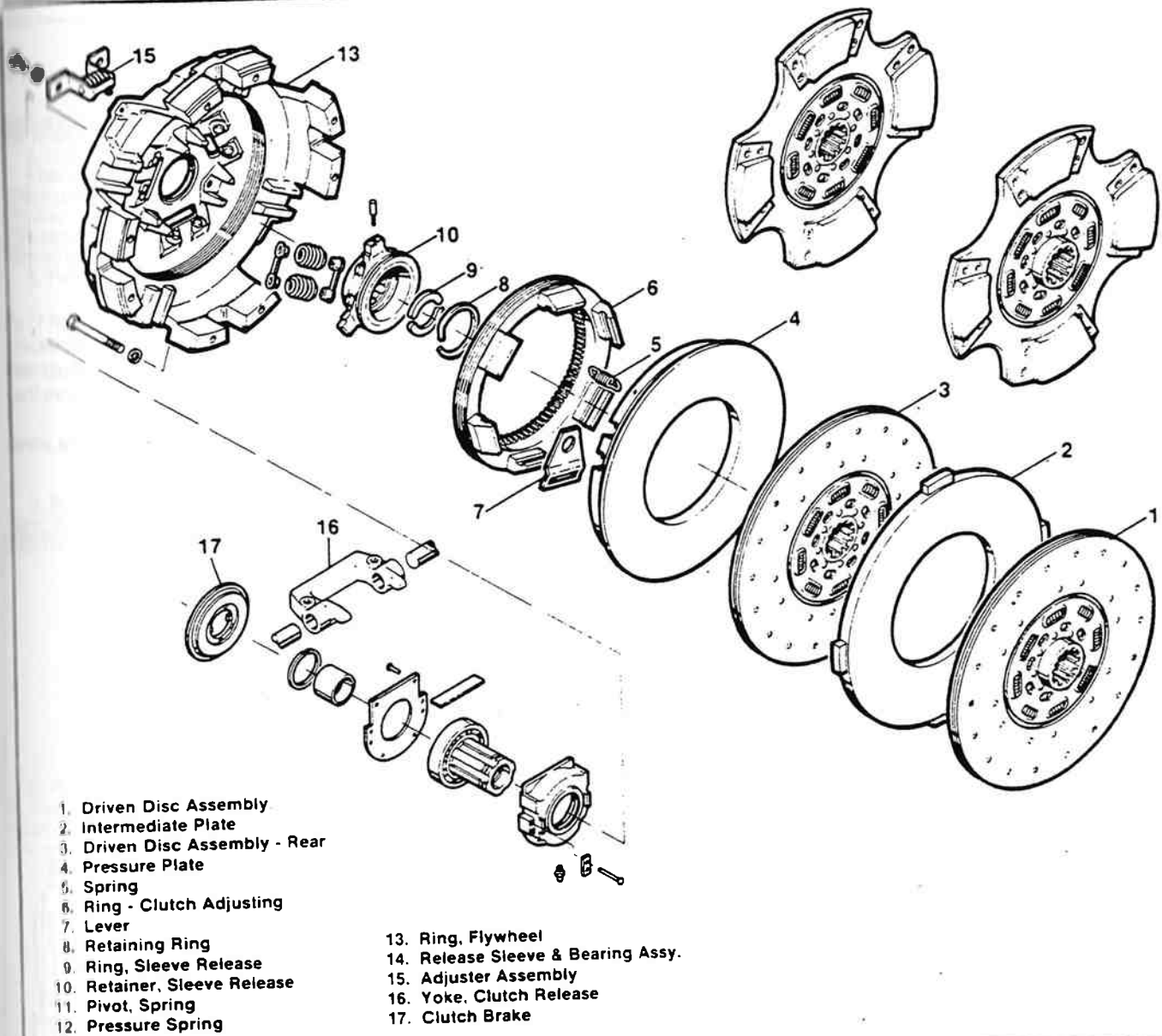


Figure 5-1. Clutch for 5-Speed Manual Transmission.

## CLUTCH

The clutch used with the 5-speed manual transmission is a 15 $\frac{1}{2}$ " dry disc 2-plate model. It is a pull type design with riveted organic facings on driven discs (except with 8V92 — ceramic facings are used). An integral self-adjusting mechanism checks for plate wear each time the clutch is actuated. Manual adjustment can be made on board by turning the adjusting ring (No. 6, figure 5-1) which is accessible through the inspection plate located on the clutch housing.

## CLUTCH LINKAGE ADJUSTMENT

With the engine and transmission installed, make the final adjustment of the clutch and linkage as follows.

1. Establish 8.5" (215.9 mm) height between clutch pedal and coach floor (figure 5-2).
2. Connect all front end linkage as shown.
3. Connect rear linkage and adjust clutch rod ends to maintain a 3°-5° (approx.) over center position for the clutch cross shaft levers. Lever travel must be equidistant on either side of vertical position.

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4. Place a 1" (25.4 mm) spacer between the clutch pedal and the coach floor.

5. Depress clutch pedal until contact is made with 1" (25.4 mm) spacer and hold until adjustments of clutch brake and release bearing are made.

6. With a .0015" (.038 mm) strip gauge or equivalent between braking surface of the release bearing and clutch brake, adjust the linkage rod until a slight pull is required to remove the strip gauge. (Three people are required for steps 5 and 6.)

7. Tighten locking nut on adjusting screw.

## WITH ALL ADJUSTMENTS COMPLETED, THE FOLLOWING DIMENSIONS SHOULD BE ESTABLISHED

1. .500" (12.7 mm) between release bearing and clutch brake with clutch pedal released.

2. Approx. .125" (3.175 mm) free travel between release

yoke fingers and release bearing wear pads.

3. Between 1.5" and 2" (38.1-50.8 mm) free movement at the top of the clutch pedal travel.

4. At 1" (25.4 mm) from the floor clutch pedal actuates the clutch brake.

**NOTE: All above dimensions must be met to ensure clutch life.**

## CLUTCH BRAKE ADJUSTMENT

Check the clutch brake clamping force. It should start 1" off the floor. Adjustment is achieved by increasing or decreasing free travel with adjustment bolt on activating lever. Adjustment is very sensitive and should not affect free travel by more than 1/16".

Reinstall inspection plate, tighten all jam nuts, and install "E" clips on shafts and pins.

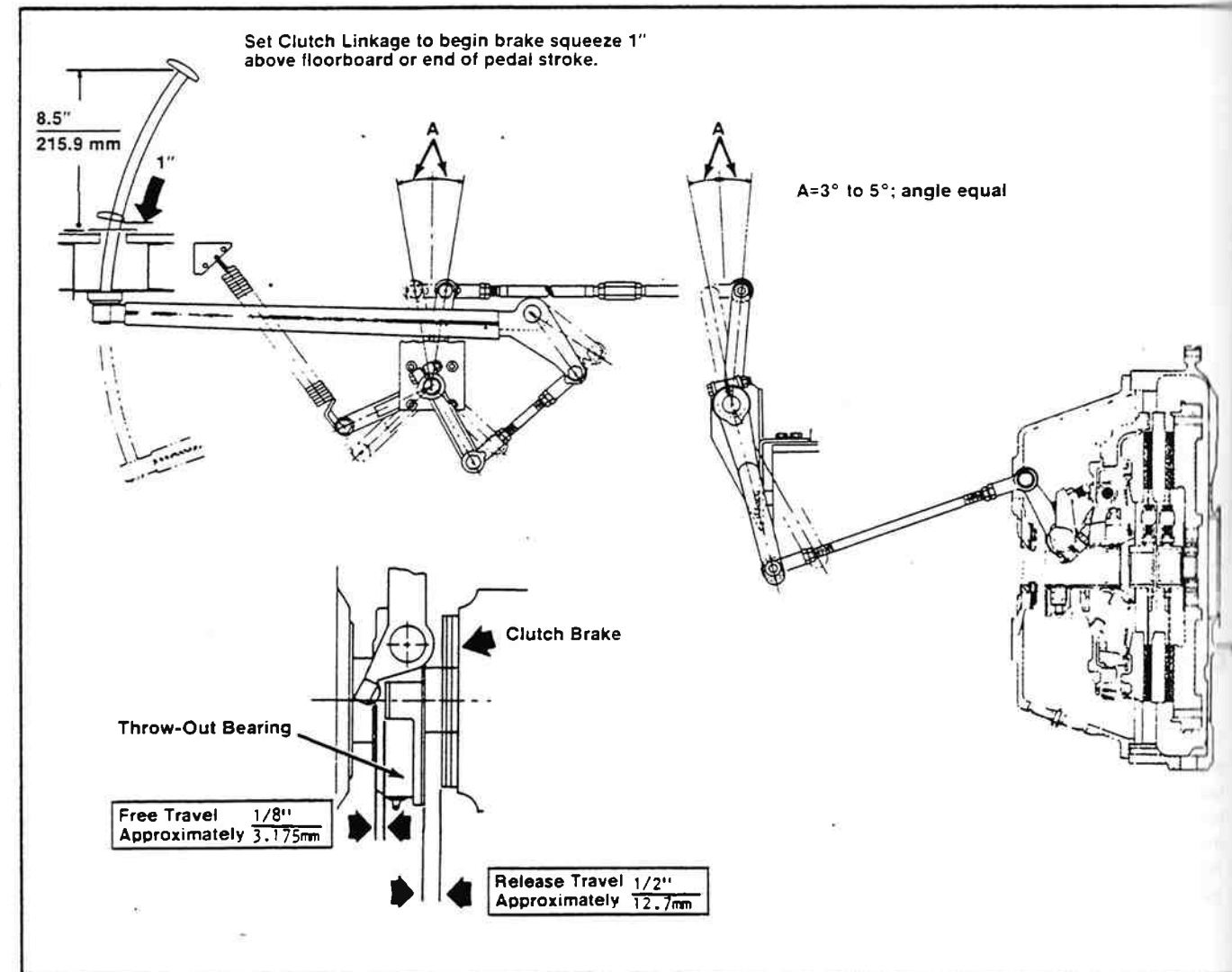


Figure 5-2. Clutch Linkage Adjustment - 5-Speed Manual Transmission.

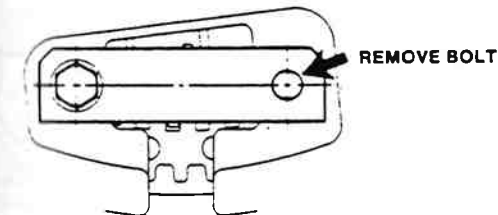
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## CLUTCH ADJUSTMENT

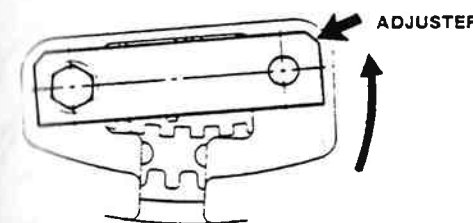
**NOTE: Before installation or removal of clutch, check the following.**

1. Do not remove shipping block until clutch is mounted.
  2. Lubricate release bearing; block release bearing to parallel release position any time clutch is removed from flywheel.
  3. Linkage must have 5/8" (15.9 mm) yoke travel capability.
- After installation adjust clutch linkage to ensure that clutch brake actuation occurs when the pedal is 1" (25.4 mm) above the floorboard. If free pedal is less than 1" (25.4 mm), manual adjustment is required. To obtain initial free pedal, see following.

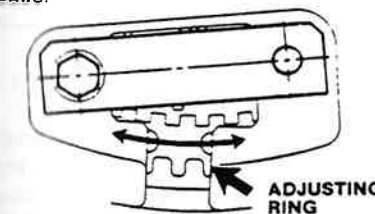
A. Remove right bolt. Loosen left bolt one turn.



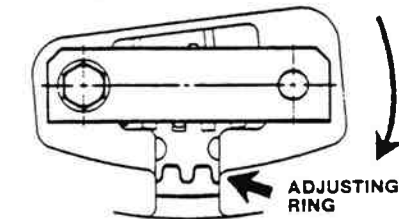
B. Rotate adjuster upward. This will disengage worm gear from the adjusting ring to allow manual adjustment. Hold adjuster disengaged and tighten left bolt.



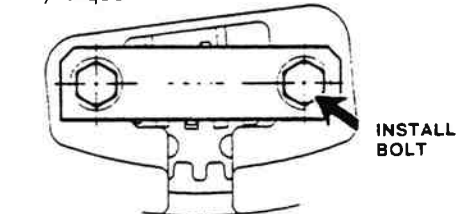
C. Rotate adjusting ring until approximately 1/2" (38.1 mm) of free pedal is acquired. — pedal must be down. Rotate clockwise to increase free pedal, counterclockwise to decrease.



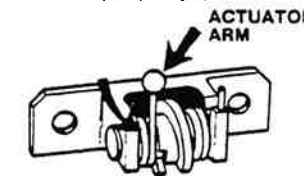
D. Loosen left bolt, rotate adjuster assembly downward to engage worm with adjusting ring teeth. Adjusting ring may have to be rotated slightly to allow worm to mesh.



E. Install right bolt and tighten both bolts to 25-30 lbs. ft. (34-47 Nm) torque.



F. Visually check to see if actuator arm is inserted into release sleeve retainer. (This can be accomplished through bell housing inspection opening.) The adjuster assembly spring will move back and forth if actuator arm is inserted into release sleeve retainer as the pedal is stroked several times. (Spring will move only one time if arm is not inserted.) If the adjuster assembly is not installed properly, proceed to Step 3G.



G. If for any reason the adjuster assembly is removed from the cover assembly for general inspection or replacement, the ball end of the actuator arm must be inserted into the hole of the release sleeve retainer. To insert the ball end into the release sleeve retainer hole, the simplest method is to have the clutch in the release position, pedal down. Let pedal up and adjuster bracket will move toward flywheel ring of cover assembly. Complete installation by installing adjuster bolts.

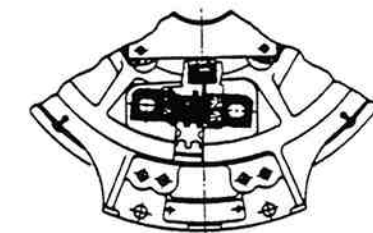


Figure 5-3. Clutch Adjustment Procedures.

## CLUTCH REPAIR (CLIP AND PIN LEVER TYPE)

1. Prior to actual clutch removal, assemble a clutch disc aligning tool to the driven disc and release bearing assembly.

**NOTE: Two 3/4" (19 mm) blocks of wood must be inserted between the clutch release bearing housing and clutch flywheel**

**ring as the clutch mounting bolts are loosened around the flywheel. These blocks will relieve the heavy internal spring load, preventing cocking and bending within the clutch and ensure easy removal of remaining mounting bolts. See figure 5-4.**