

# CLUTCH

## Clutch Hydraulic

### DESCRIPTION

The hydraulic clutch control consists of the hydraulic master cylinder, slave cylinder, reservoir, and connecting hydraulic lines. The clutch disc and pressure plate are single-disc type. The clutch release bearing or bearing arm is activated by hydraulic pressure.

The pilot bearing is mounted inside the bellhousing and requires no lubrication unless the clutch assembly is serviced. The clutch linkage or pedal position requires no adjustments.

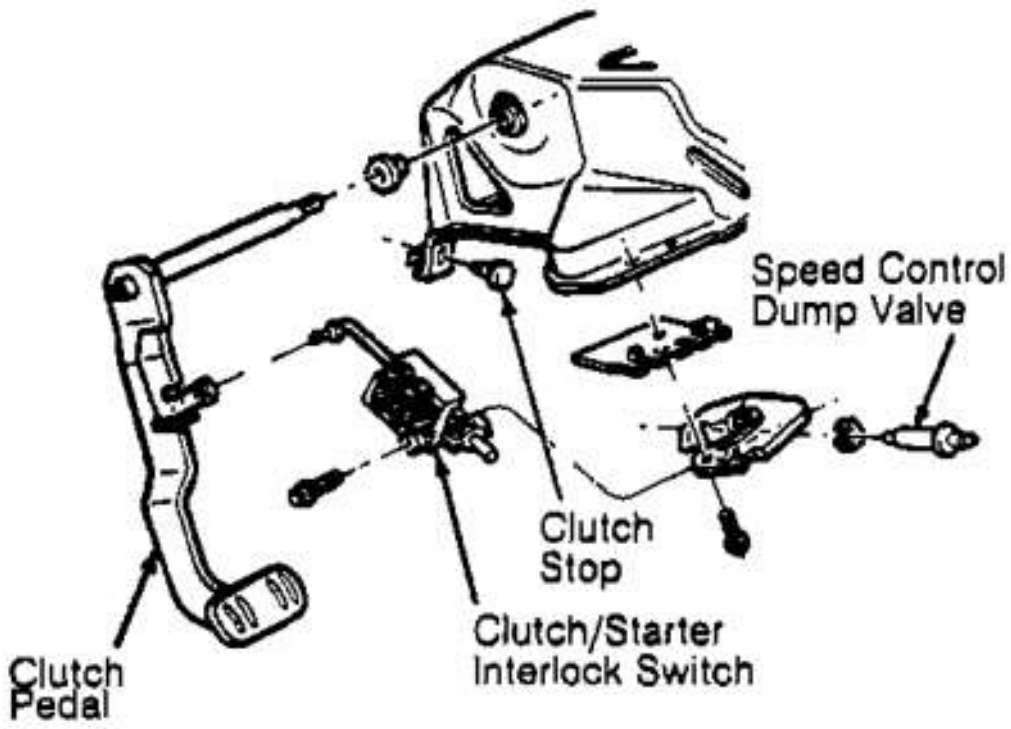
### TRANSMISSION APPLICATION

Vehicle Model	Transmission Model
Aerostar	Mazda M50D 5-Speed O/D
Bronco	
	Borg-Warner T-18 4-Speed
	Ford S5-42 ZF 5-Speed
	Mazda M50D 5-Speed O/D
Bronco II & Ranger	
2WD (2.9L)	Mitsubishi FM132 5-Speed O/D
2WD (Except 2.9L)	Mazda M50D 5-Speed O/D
4WD	Mitsubishi FM146 5-Speed O/D
"E" Series	
E350 Stripped Chassis	Ford S5-42 ZF 5-Speed
All Others	Mazda M50D 5-Speed O/D
"F" Series	
	Borg-Warner T-18 4-Speed
	Ford S5-42 ZF 5-Speed
	Mazda M50D 5-Speed O/D

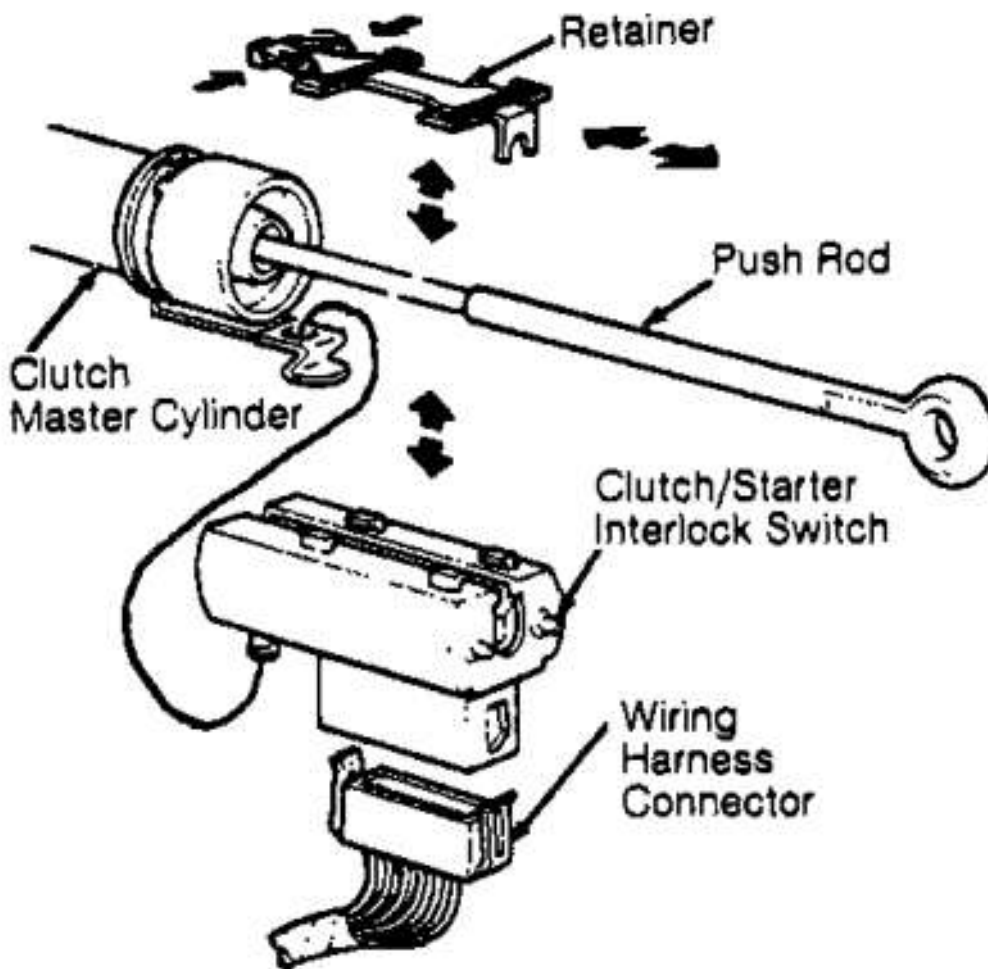
### SERVICE (IN-VEHICLE)

#### CLUTCH/STARTER INTERLOCK SWITCH

1. Disconnect wiring connector at switch by flexing retaining tab. Test electrical continuity of switch with a test light or ohmmeter. Switch should be open (infinity) when pedal is up and clutch is engaged. Switch should be closed (zero ohms) when clutch pedal is pressed to floor.
2. If switch does not operate properly, check position of self-adjusting clip. See **Fig. 1** and **Fig. 2**. Adjust switch by removing both halves of clip and positioning clip closer to switch body. Reset switch by depressing clutch pedal to floor. If switch still does not operate properly, replace switch.



**Fig. 1: Clutch/Starter Interlock Switch ("E" Series)**  
Courtesy of FORD MOTOR CO.



**Fig. 2: Clutch/Starter Interlock Switch (Except "E" Series)**  
 Courtesy of FORD MOTOR CO.

## HYDRAULIC SYSTEM BLEEDING

1. Clean area around reservoir cap. Fill reservoir with DOT 3 brake fluid. Place hose on bleeder screw to prevent brake fluid entering bellhousing. Loosen bleed screw and maintain fluid level in reservoir.
2. Fluid and bubbles will flow from hose attached to slave cylinder bleeder screw. Close bleeder screw when fluid stream is free of air bubbles. Ensure proper fluid level and install reservoir cap.
3. Place light pressure on clutch pedal and open bleeder screw. Maintain pressure until pedal contacts the floor. Close bleeder screw while pedal is fully depressed. **DO NOT** allow pedal to return before bleeder screw is fully closed. Recheck fluid level.
4. On Aerostar models, check Red supply tube for air bubbles while clutch pedal is being operated slowly. If air exists, tap on tube so air will rise to master cylinder reservoir. System should now be fully bled and working properly.

5. On all models, test system operation by starting vehicle, depressing clutch and placing gearshift in Reverse. No grinding should be heard or felt with clutch pedal within 1/2" (13 mm) of floor. If noise is heard, check for air in system. Repeat bleeding procedure if necessary.

## REMOVAL & INSTALLATION

### HYDRAULIC CLUTCH LINE

#### Removal

Depress the white retainer bushing with T88T-70522-A, or equivalent, while pulling on the line.

#### installation

Push the male connector onto the female connector of the clutch slave cylinder.

**NOTE: No loss of fluid should occur during removal and installation, and bleeding should not normally be required unless the vehicle shows signs of hard shifting and lack of clutch reserve.**

### TRANSMISSION

#### Removal (Mazda M50D 5-Speed Overdrive - Aerostar)

1. Disconnect negative battery cable from battery. Shift transmission into Neutral. Remove 4 bolts retaining boot assembly to floor. Lift boot up shift lever assembly.
2. Remove 4 bolts retaining shift lever assembly to transmission remote shift rail adapter. Remove lever, knob and boot assembly. Raise vehicle on a hoist. Disconnect starter cable and wires. Remove starter retaining bolts and remove starter.
3. Remove clip retaining tube to hydraulic clutch slave cylinder. Remove tube and fitting from slave cylinder. Cap end of tube and slave cylinder to prevent foreign object damage.
4. Disconnect back-up lamp switch, shift indicator and neutral position wires from senders on transmission. Remove cable (conventional speedometer) or disconnect wire (electronic speedometer) from fitting.
5. Scribe a mark on drive shaft and rear axle flange, marking drive shaft position for installation. Remove "U" bolts and nuts from rear axle flange. Remove drive shaft.
6. Cap transmission extension housing to prevent lubricant spillage. Remove nuts retaining insulator to crossmember. Loosen nut and washer assemblies attaching front insulators to crossmember brackets.
7. Position transmission jack under transmission. Place jack safety chain around transmission. Slightly raise transmission. Remove nuts and bolts retaining crossmember to frame. Remove crossmember.
8. Remove bolts retaining clutch housing to engine. Bring transmission rearward to separate clutch housing from dowel pins in rear of engine block. Slowly lower transmission from vehicle.

#### Installation

1. If removed, position slave cylinder over transmission input shaft with tower portion facing transmission. Position clutch housing so slave cylinder tabs align with slots in housing.
2. Install clutch housing on transmission. Install and tighten nuts to 30-40 ft. lbs. (41-54 N.m). Place transmission on transmission jack and position a safety chain around transmission case.

3. Lift transmission into position in vehicle. Ensure transmission input shaft splines engage pilot bearing in flywheel. Clutch housing must be piloted in dowel pins in engine block.

**NOTE: To prevent galvanic corrosion, use only aluminum washers when installing clutch housing to engine.**

4. Install bolts retaining clutch housing to engine block. Tighten bolts to 28-33 ft. lbs. (38-51 N.m). If removed, position insulator on transmission. Install and tighten bolts to 60-80 ft. lbs. (82-108 N.m).
5. Position crossmember in frame brackets. Install nuts and bolts and finger tighten. Lower transmission so insulator studs are piloted in proper holes in crossmember. Tighten nuts to 71-94 ft. lbs. (97-127 N.m).
6. Remove cap from extension housing. Install drive shaft, ensuring that marks scribed on drive shaft and rear axle flange are in alignment. Install "U" bolts and nuts and tighten to 96-180 INCH lbs. (11-20 N.m).
7. Install speedometer cable (conventional speedometer) or connect wire (electronic speedometer). Connect back-up lamp switch and shift indicator wire to senders on transmission. Remove cap from hydraulic clutch tube.
8. Install clip retaining tube and fitting to slave cylinder. To complete installation, reverse removal procedure.

### **Removal (Mazda M50D 5-Speed - Bronco II & Ranger)**

1. Place shift lever in "N" position. Remove boot retainer screws and bolts attaching retainer cover to gearshift lever retainer. Disconnect clutch master cylinder push rod from clutch pedal.
2. Pull gearshift lever assembly, shim and bushing straight up and away from lever retainer. Cover shift tower in extension housing with a cloth to avoid dropping foreign material into transmission.
3. Disconnect clutch hydraulic system master cylinder push rod from clutch pedal. Open hood and disconnect battery negative cable from battery terminal. Raise vehicle. Disconnect drive shaft at rear axle drive flange.
4. Pull drive shaft rearward and disconnect from transmission. Install a suitable plug in extension housing to prevent lubricant leakage. Remove clutch housing dust shield and slave cylinder and secure it at one side.
5. Remove speedometer cable from extension housing. Disconnect starter motor and back-up lamp switch wires. Place jack under engine, protecting oil pan with a wood block.
6. On 4WD vehicles, remove transfer case. Remove starter motor. Position a transmission jack under transmission. Remove bolts, lock washers and flat washers attaching transmission to engine rear plate.
7. Remove nuts and bolts attaching transmission mount and damper to crossmember. Remove nuts attaching crossmember to frame side rails and remove crossmember.
8. Lower engine jack. Work clutch housing off locating dowels and slide transmission rearward until input shaft spline clears clutch disc. Remove transmission from vehicle.

### **Installation**

To install, reverse removal procedure.

### **Removal (Mitsubishi FM132 5-Speed - Ranger 2.9L 2WD)**

1. Place gearshift selector in "N". Remove boot retainer bolts. Remove bolts attaching gearshift lever to

control housing. Pull gearshift lever assembly out of control housing. Cover opening in control housing with a cloth to prevent dirt from falling into transmission.

2. Disconnect battery negative cable from battery. Raise vehicle. Disconnect drive shaft at rear axle flange. Pull drive shaft rearward and disconnect from transmission.
3. Install a suitable plug in transmission to prevent lubricant leakage. Remove clutch housing dust shield. Disconnect hydraulic fluid line from clutch slave cylinder. Plug line to prevent fluid leakage. Disconnect speedometer from transmission.
4. Disconnect starter motor cable, back-up lamp switch wire and shift indicator switch wire. Disconnect neutral position switch (if equipped). Place jack under engine block, protecting oil pan with wood block.
5. Remove starter. Place a transmission jack under transmission. Remove bolts, lock washers and flat washers attaching transmission to engine and plate. Remove nuts and bolts attaching transmission mount and damper to crossmember.
6. Remove nuts attaching crossmember to frame side rails and remove crossmember. Lower engine jack. Work clutch housing off locating dowels and slide transmission rearward until input shaft clears clutch disc. Remove transmission from vehicle.

### **Installation**

To install, reverse removal procedure.

### **Removal (Mitsubishi FM146 5-Speed - Bronco II & Ranger 4WD)**

1. Place gearshift selector in "N". Remove boot retainer bolts. Remove bolts attaching retainer cover to gearshift lever retainer. Pull gearshift lever assembly out of transfer case adapter. Cover opening in transfer case adapter with a cloth to prevent dirt from falling into adapter.
2. Open hood and disconnect battery negative cable from battery terminal. Raise vehicle. Index rear drive shaft to front axle flange and transfer case. Disconnect drive shaft at rear axle flange. Pull rear drive shaft rearward and disconnect drive shaft from transmission.
3. Install a suitable plug in transfer case adapter to prevent lubricant leakage. Remove clutch housing dust shield. Disconnect hydraulic fluid line from clutch slave cylinder. Plug line to prevent fluid leakage. Disconnect speedometer from transfer case adapter.
4. Disconnect starter motor cable, back-up lamp switch wire and shift indicator switch wire. Disconnect neutral position switch (2.3L EFI engine). Place jack under engine block, protecting oil pan with wood block. Remove transfer case from vehicle.
5. Remove starter. Place a transmission jack under transmission. Remove bolts, lock washers and flat washers attaching transmission to engine and plate. Remove nuts and bolts attaching transmission mount and damper to crossmember.
6. Remove nuts attaching crossmember to frame side rails and remove crossmember. Lower engine jack. Work clutch housing off locating dowels and slide transmission rearward until input shaft clears clutch disc. Remove transmission from vehicle.

### **Installation**

To install, reverse removal procedure.

### **Removal (Mazda M50D 5-Speed - Bronco, "E" & "F" Series)**

1. Shift transmission into Neutral. Remove carpet or floor mat for access. Remove shifter boot retainer

screws. Slide boot up shift lever shaft. Remove shift lever retainer bolt and shift lever.

2. Raise vehicle on hoist. Disconnect speedometer cable. Disconnect back-up light switch, located on top left of transmission. Remove drain plug and drain gear oil. Install drain plug.
3. Position transmission jack under transmission. Disconnect drive shaft from extension housing and wire to one side. Disconnect clutch slave cylinder hydraulic line.
4. Remove transmission rear mount and lower retainer. Remove skid plate (if equipped). Remove catalytic converter heat shield.
5. Remove 2 upper gusset-to-frame nuts from both sides. Remove transmission-to-transmission support plate bolts on crossmember. Raise transmission with transmission jack.
6. Remove nut and bolt connecting support plate to crossmember. Remove support plate. Remove right gusset. Remove nuts and bolts holding crossmember to frame. Remove crossmember.
7. Remove transmission-to-engine block bolts. Move transmission rearward until input shaft clears flywheel. Lower transmission from vehicle.

### **Installation**

To install, reverse removal procedure.

### **Removal (Mazda M50D 5-Speed - Bronco, "E" & "F" Series 4WD)**

1. Shift transmission into Neutral. Remove carpet or floor mat for access. Remove shifter boot retainer screws. Slide boot up shift lever shaft. Remove shift lever retainer bolt and shift lever.
2. Raise vehicle on hoist. Disconnect back-up light switch, located on top left of transmission. Remove drain plugs and drain gear oil from transmission and transfer case. Install drain plugs.
3. Disconnect rear drive shaft from extension housing and wire to one side. Disconnect back-up light switch. Disconnect speedometer cable from transfer case. Remove skid plate (if equipped).
4. Position transmission jack under transfer case. Remove 6 transfer case-to-transmission bolts. Lower transfer case. Ensure transfer case shift lever clears opening in floor pan.
5. Remove transmission rear mount and lower retainer. Remove catalytic converter heat shield.
6. Remove 2 upper gusset-to-frame nuts from both sides. Remove transmission-to-transmission support plate bolts on crossmember. Raise transmission with transmission jack.
7. Remove nut and bolt connecting support plate to crossmember. Remove support plate. Remove right gusset. Remove crossmember-to-frame nuts and bolts. Remove crossmember.
8. Remove transmission-to-engine block bolts. Move transmission rearward until input shaft clears flywheel. Lower transmission from vehicle.

### **Installation**

To install, reverse removal procedure.

### **Removal (Ford S5-42 ZF 5-Speed - 2WD: Bronco, E350 & "F" Series)**

- 1) Shift transmission into Neutral. Remove carpet or floor mat. Remove ball from the upper shift lever. Remove 4 screws and remove boot and bezel assembly from transmission opening cover. Remove 2 bolts and remove upper shift lever from lower shift lever.
- 2) Raise vehicle on hoist and position safety stands under vehicle. Disconnect speedometer cable. Disconnect back-up lamp switch located at top left side of transmission. Remove drain plug and drain oil

from transmission. Position transmission jack under transmission.

3) Disconnect drive shaft and clutch linkage from transmission and wire it to one side. On "F" Series Super Duty vehicles, remove transmission parking brake from transmission. Remove transmission rear insulator and lower retainer.

4) Remove crossmember. Remove bolts that retain transmission to engine block. Move transmission to rear until input shaft clears engine flywheel. Lower transmission from vehicle.

### **Installation**

To install, reverse removal procedure.

### **Removal (Ford S5-42 ZF 5-Speed - 4WD: Bronco, E350 & "F" Series)**

1) Shift transmission into Neutral. Remove carpet or floor mat. Remove 4 screws and remove boot and bezel assembly from transmission opening cover. Remove 2 bolts and upper shift lever from lower shift lever. Raise vehicle on hoist. Remove drain plugs and drain transmission and transfer case.

2) Disconnect rear drive shaft from transfer case and wire it out of the way. Disconnect front drive shaft from transfer case and wire it out of way. Disconnect back-up lamp switch. Remove speedometer cable from transfer case. If equipped, remove skid pan from beneath transfer case.

3) Position transmission jack under transfer case. Remove 6 bolts holding transfer case to transmission and carefully lower transfer case from vehicle, using care to ensure that transfer case shift lever clears opening in floor pan.

4) Remove transmission rear insulator and lower retainer. Remove crossmember. Remove bolts that retain transmission to engine block. Move transmission to rear until input shaft clears engine flywheel housing. Lower transmission from vehicle.

### **Installation**

To install, reverse removal procedure.

### **Removal (Borg-Warner T-18 4-Speed F150/250 2WD)**

1. Remove floor mat and body floor pan cover. Remove gearshift lever shift ball and boot. Remove isolator pad. Raise vehicle on hoist. Remove drain plug and drain transmission.
2. Install drain plug. Position transmission jack under transmission. Disconnect speedometer cable. Disconnect back-up light switch connector from rear of gearshift housing cover.
3. Disconnect drive shaft or coupling shaft. Disconnect clutch linkage from transmission and wire it aside.
4. Remove transmission-to-engine block bolts. Move transmission to rear until input shaft clears clutch housing. Lower and remove transmission.

### **Installation**

To install, reverse removal procedure.

### **Removal (Borg-Warner T-18 4-Speed - Bronco 4WD)**



1. Remove floor mat and body floor pan cover. Place shift lever in Reverse position. Remove gearshift cover. Remove insulator and dust cover.
2. Remove transfer case shift lever, shift ball and boot. Raise vehicle on hoist. Remove drain plug and drain transmission and transfer case. Disconnect rear and front drive shafts and wire them aside.
3. Remove shift link from transfer case. Remove speedometer cable. Position transmission jack under transfer case. Remove 6 transfer case-to-transmission bolts. Remove transfer case.
4. Remove 8 rear support-to-transmission bolts. Position transmission jack under transmission. Remove rear support bracket brace. Remove 4 transmission-to-bellhousing bolts. Remove transmission.

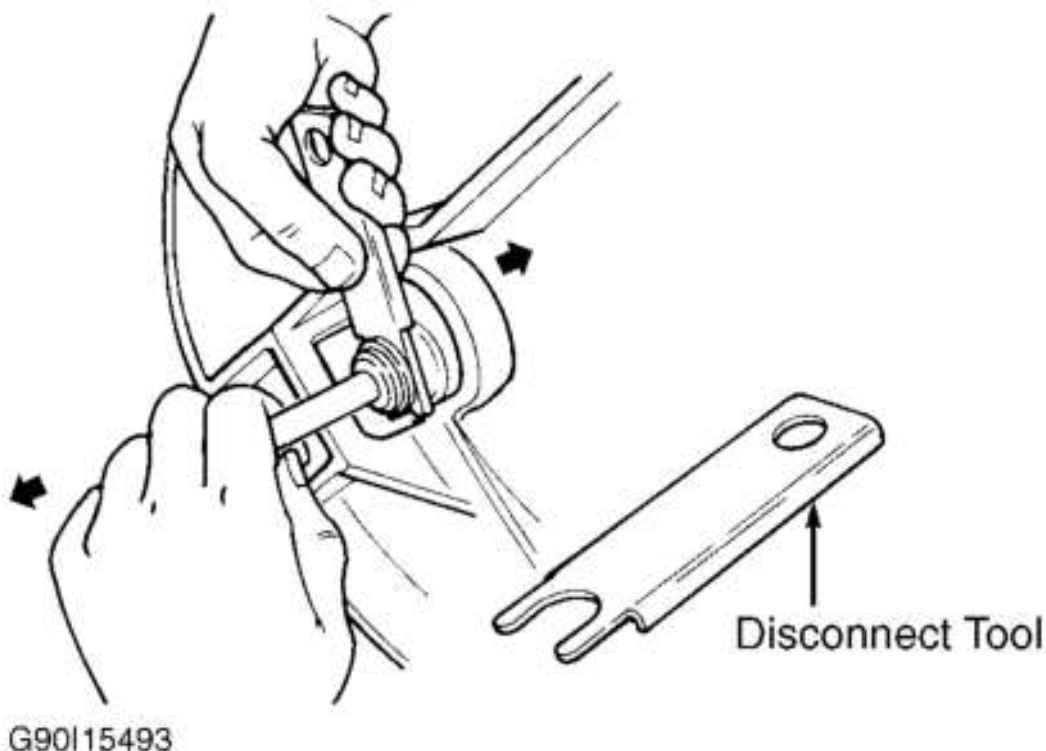
## Installation

To install, reverse removal procedure.

## CLUTCH DISC & PRESSURE PLATE

### Removal

Disconnect negative battery cable. Disconnect clutch master cylinder push rod. Raise vehicle and remove starter. Using Disconnect Spanner (T88T-7052-A) remove hydraulic line from slave cylinder by sliding plastic sleeve toward slave cylinder while pulling on fluid line. See **Fig. 3**. Remove transmission. Place reference mark on pressure plate and flywheel for reassembly reference. Loosen pressure plate-to-flywheel bolts evenly until springs are expanded. Remove pressure plate and clutch disc.



**Fig. 3: Clutch Slave Cylinder Quick-Disconnect Hydraulic Line Removal**

Courtesy of FORD MOTOR CO.

### **Installation**

1. Clean pressure plate and flywheel surface with alcohol base solvent. Place clutch disc on flywheel. Align disc center with pilot bearing using old input shaft or clutch pilot shaft. Place pressure plate on flywheel and align reference mark.
2. Tighten bolts evenly in a crisscross sequence. Remove clutch pilot shaft. Reverse removal procedure to complete installation.

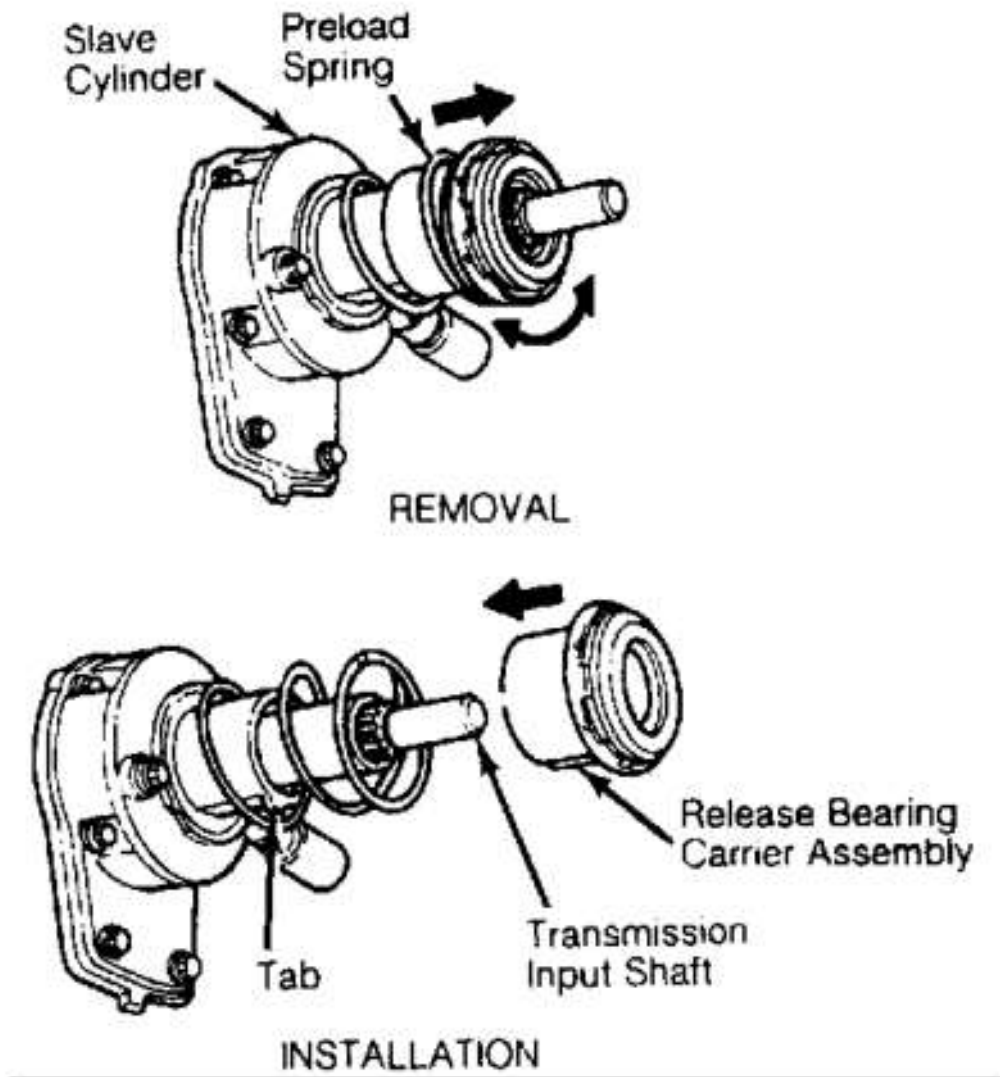
## **CLUTCH RELEASE BEARING**

### **Removal**

Twist release bearing and carrier assembly until resistance is felt. Turning assembly further will allow the preload spring to push bearing assembly from the slave cylinder. See **Fig. 4**.

### **Installation**

Prior to installation, lubricate bearing bore and bearing carrier with multipurpose grease. Install release bearing assembly to clutch slave cylinder by pushing into place.



**Fig. 4: Servicing Clutch Release Bearing**  
Courtesy of FORD MOTOR CO.

## CLUTCH PILOT BEARING

### Removal

Remove transmission, pressure plate, and clutch disc. Use Impact Slide Hammer Puller (T58L-101-B) to remove pilot bearing.

### Installation

Lightly coat crankshaft bore with lithium-based grease. Using Bearing Driver (T71P-7137-H) and Adapter (T74P-7137-A), install pilot bearing with seal toward transmission. Install clutch disc, pressure plate, and

transmission.

**NOTE:** Use Adapter (T74P-7137-C) on 3.0L engine.

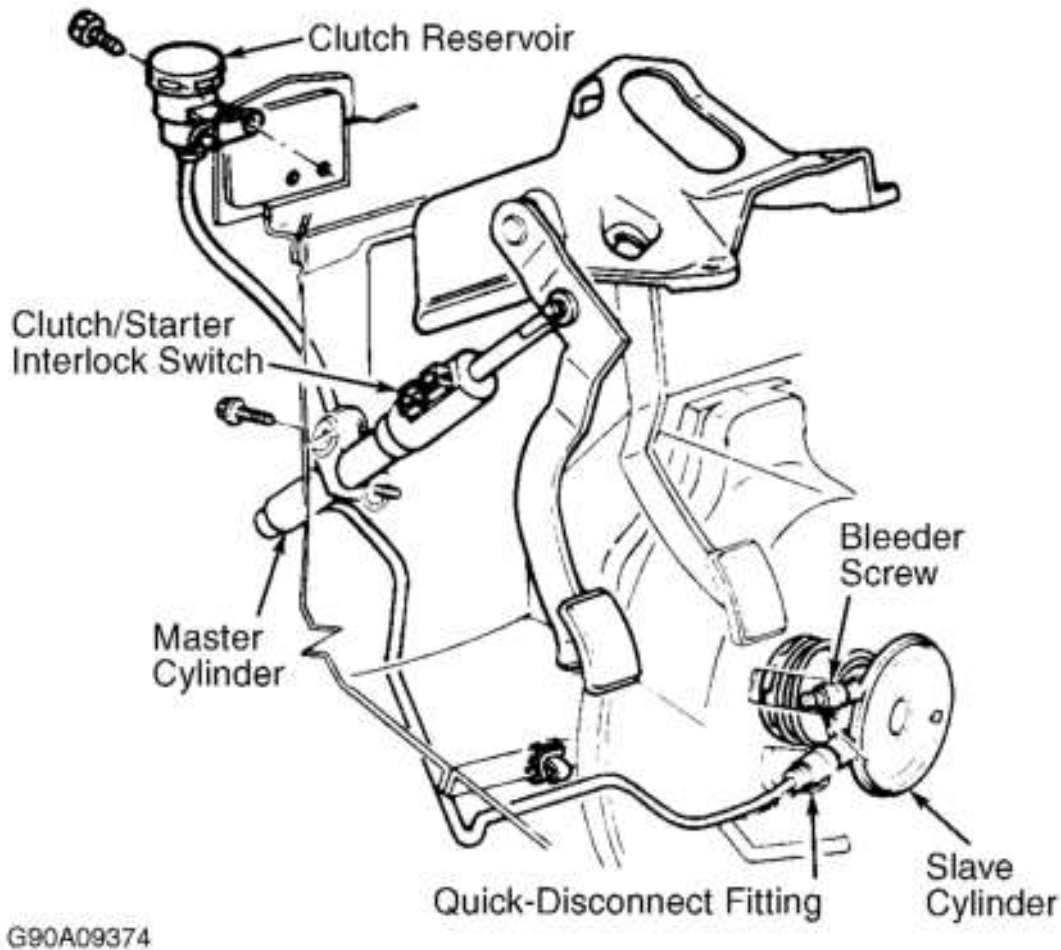
## **CLUTCH HYDRAULIC SYSTEM**

**NOTE:** On all models, disconnect master cylinder push rod if slave cylinder is to be disconnected from release lever or bearing. Permanent damage to slave cylinder will occur if master cylinder is activated with slave cylinder disconnected.

### **Removal**

1. Note position of clutch pedal push rod. Disconnect master cylinder push rod from clutch pedal by prying retainer bushing and push rod off shaft. Remove clutch/starter interlock switch. Refer to **SERVICE (IN-VEHICLE)** in this article.
2. Remove reservoir from cowl access cover or from bracket. Using Disconnect Spanner (T88T-7052-A), remove hydraulic line from slave cylinder by sliding plastic sleeve toward slave cylinder while pulling on line. See **Fig. 5**.
3. Remove clutch master cylinder retaining nuts and remove master cylinder. On "F" Series and Bronco, when master cylinder studs are free of dash panel, rotate cylinder 105 degrees counterclockwise to permit interlock switch to clear dash panel.
4. On all models, remove master cylinder, reservoir and hydraulic line. Plug lines. Remove transmission and bellhousing. Note position of slave cylinder and remove from bellhousing.

**NOTE:** For 2.9L 4WD models, bellhousing must be removed with the transmission.



**Fig. 5: Typical Internal Slave Cylinder Hydraulic Clutch System**  
 Courtesy of FORD MOTOR CO.

### Installation

1. Install slave cylinder. Ensure slave cylinder is properly engaged in notches of clutch housing. Install transmission and bellhousing. Insert master cylinder push rod through opening in firewall.
2. Ensure push rod is located on correct side of clutch pedal. Attach master cylinder to firewall. Insert hydraulic line and fitting in clutch slave cylinder. Install fluid reservoir on access cover.
3. Install push rod on clutch pedal. Bleed hydraulic system. See **HYDRAULIC SYSTEM BLEEDING** under SERVICE (IN-VEHICLE) in this article. Depress clutch pedal at least 10 times to check for proper release and smooth operation.

## CLUTCH PEDAL

### Removal & Installation (Aerostar, Bronco II & Ranger)

1. Disconnect push rod from clutch pedal. Disconnect clutch/starter interlock switch from pedal. Remove retainer clip from pedal shaft.
2. On Bronco II and Ranger, remove left kick panel. Remove parking brake assembly and secure away

from work area. On all models, remove pedal and shaft assembly from bracket.

3. Remove bushings from bracket. Remove retainer clip from end of clutch pedal shaft. Remove clutch pedal and shaft from mounting bracket.
4. To install, reverse removal procedure. Inspect and lubricate bushings with a light film of SAE 30 engine oil. Replace bushings if worn.

**NOTE: When clutch pedal shaft is removed from bracket, the brake pedal, bushings and spring washer will fall.**

### **Removal & Installation (Bronco, "E" & "F" Series)**

1. On "F" Series and Bronco, disconnect clutch pedal retracting spring from clutch pedal and bracket. On Econoline models, disconnect barbed retainer bushing on the clutch/starter interlock switch rod from clutch pedal.
2. On all models, remove retainer clip from end of clutch pedal shaft. Remove clutch pedal and shaft from mounting bracket.
3. To install, reverse removal procedure. Compress retracting spring in a vise and secure with a wire until it is in place. Inspect and lubricate bushings with a light film of SAE 30 engine oil or replace bushings.

## **ADJUSTMENTS**

### **CLUTCH MASTER CYLINDER PUSH ROD LENGTH ADJUSTMENT**

#### **Bronco, "E" & "F" Series**

1. Ensure attaching nut on left side of clutch pedal is tight. Remove clutch master cylinder push rod from the cross shaft lever pin. If push rod is in alignment with the cross shaft lever pin, adjustment is okay.
2. If push rod is not in alignment with the cross shaft lever pin, reinstall push rod to the cross shaft lever pin. Pump clutch pedal several times to reset position of shaft to the pedal slot.
3. Remove clutch master cylinder push rod from lever pin and evaluate alignment. If push rod is aligned with pin, adjustment is complete. If the 2 components are still not in alignment, replace cross shaft lever.

### **CLUTCH RELEASE BEARING TRAVEL MEASUREMENT**

#### **Externally Mounted Slave Cylinder**

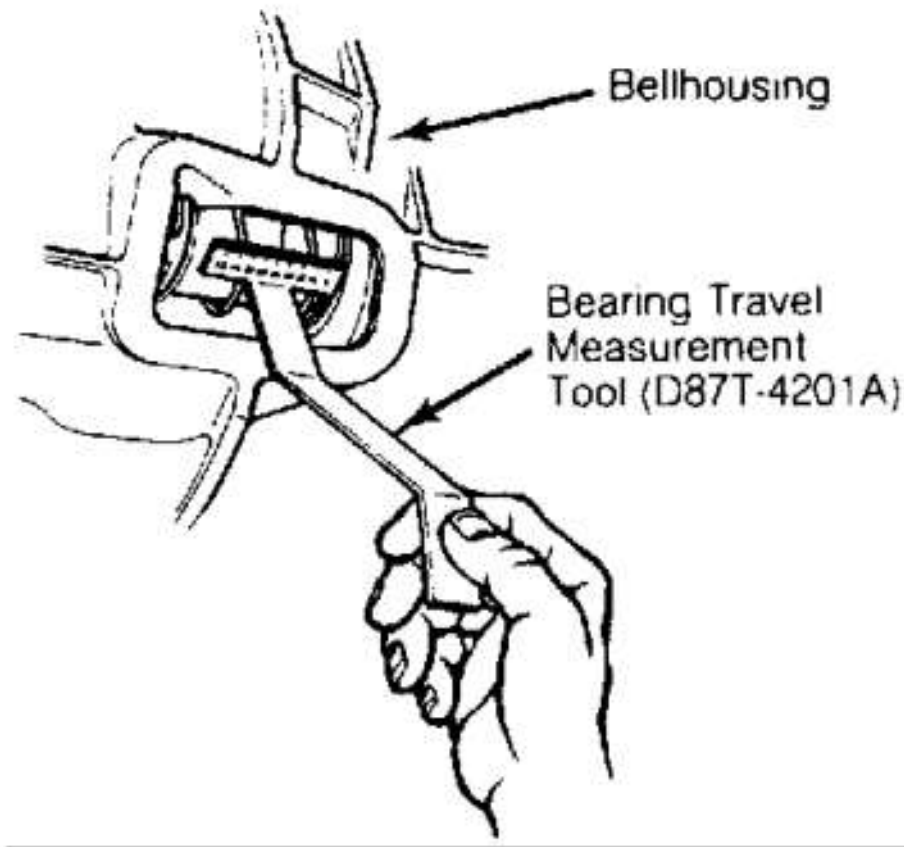
1. Remove slave cylinder dust shield. With clutch pedal fully depressed, measure external slave cylinder push rod travel.
2. Push rod should travel a minimum of 0.53" (13.5 mm). **DO NOT** replace clutch hydraulic system if measurement exceeds specification. If slave cylinder travel is less than specification, check hydraulic reservoir fluid level.

#### **Internally Mounted Slave Cylinder**

1. Remove rubber plug from inspection port in transmission bellhousing. Position Bearing Travel Measurement Tool (D87T-4201A) through the opening and against slave cylinder. See **Fig. 6**.
2. Using rear edge of Black plastic bearing retainer as an indicator, take a reading with clutch pedal fully

up. With clutch pedal fully depressed, take another measurement.

3. Difference between the 2 readings is total bearing travel. If bearing travel is greater than 0.295" (7.49 mm), replace pressure plate and or clutch disc.
4. If bearing travel is less than 0.295" (7.49 mm), inspect hydraulic system for leaks. Repair leak. If no leak is found, bleed system. See **HYDRAULIC SYSTEM BLEEDING** under SERVICE (IN-VEHICLE) in this article. Recheck bearing travel after repairs have been completed.



**Fig. 6: Measuring Clutch Release Bearing Travel**

Courtesy of FORD MOTOR CO.

## TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Bellhousing-To-Engine Bolt	
4.9L, 5.0L & 5.8L	40-50 (54-68)
7.3L & 7.5L	35-50 (48-68)
All Others	28-38 (38-52)

Insulator-to-Crossmember Bolts	
Aerostar, Bronco II & Ranger	71-94 (96-127)
All Others	
2WD	50-70 (68-95)
4WD	35-45 (47-63)
Insulator-To-Transmission Bolt	
60-80 (82-109)	
Master Cylinder-To-Firewall Nut	
15-20 (20-27)	
Pressure Plate-To-Flywheel Bolt	
4.9L, 5.0L & 5.8L	
10" Clutch	20-27 (27-37)
11" Clutch	20-29 (27-39)
7.3L & 7.5L	15-20 (20-27)
All Others	15-24 (20-33)
PTO Cover Bolt	
25-35 (35-47)	
Slave Cylinder-To-Clutch Housing Bolt.	
15-20 (20-27)	
Starter-To-Bellhousing Bolt	
15-20 (20-27)	
Transmission-To-Bellhousing Nut	
Aerostar, Bronco II & Ranger	30-40 (41-54)
All Others	35-50 (48-68)