# 2. A CAUTION: When installing the original clutch pressure plate on 5.4L and 6.8L applications, reset the wear indicator before installing the clutch pressure plate on the flywheel.

Reset the wear indicator.

- 1. Using a suitable press and adapter, press downward on the fingers until the adjusting ring moves freely.
- 2. Rotate the adjusting ring counterclockwise to compress the tension springs. Hold the adjusting ring in this position.
- 3. Release the pressure on the fingers. The adjusting ring will now stay in the reset position.



- 3. Position the clutch disc on the flywheel and the special tool in pilot bearing to align the clutch disc.
  - Use tool 308-090 for 5-speed applications, and tool 308-421 for 6-speed applications.
    - The 5.4L/6.8L engines accept a 1 1/4" input shaft.
    - The 7.3L engines accept a 1 3/8" input shaft.



4. NOTE: Align the index marks if installing the original clutch pressure plate and flywheel.

Install the clutch pressure plate.

- 1. Position the clutch pressure plate on the dowels.
  - The diesel engine flywheel has two dowels. The gasoline engine flywheel has three dowels.
- 2. Using the special tool, align the clutch disc and the pressure plate.
- 3. Install the bolts and tighten in a star pattern sequence.
- 4. Remove the special tool.



- 5. Install the transmission. For additional information, refer to <u>Section 308-03A</u> (5-speed) or <u>Section 308-03B</u> (6-speed).
- 6. Test the system for normal operation.

# **Pilot Bearing**

Special Tool(s)

	Impact Slide Hammer 307-005 (T59L-100-B)
ST1187-A	
4	Pilot Bearing Replacer 308-105 (T85T-7137-A)
ST1470-A	
	Puller 308-001 (T58L-101-B)
ST1282-A	

Removal

1. Using the special tools, remove the transmission input shaft pilot bearing (7120), and discard it.



## Installation

### 1. **A** CAUTION: Never install a used transmission input shaft pilot bearing.

**NOTE:** The new transmission input shaft pilot bearing is pre-greased and does not require additional lubrication.

Using a soft-face hammer and the special tool, install the new transmission input shaft pilot bearing.



# Flywheel

### Removal

- 1. Prepare the vehicle for flywheel removal.
  - 1. Remove the Transmission. For additional information, refer to <u>Section 308-03A</u> (Model S5-47ZF Transmission) or <u>Section 308-03B</u> (ZF 6-Speed Transmission).
  - 2. Remove the clutch pressure plate and disc. For additional information, refer to <u>Clutch Disc</u> <u>and Pressure Plate</u> in this section.
- 2. Remove the flywheel.
  - 1. Remove the bolts. Install the guide studs.
  - 2. Remove the bolts.
  - 3. Remove the reinforcing ring (7.3L), and the flywheel and ring gear assembly.
  - 4. Remove the guide studs.





#### Installation

- 1. Install the flywheel.
  - 1. Install the guide studs.
  - 2. Install the flywheel and ring gear assembly, and the reinforcing ring (7.3L).
  - 3. Install the bolts.
  - 4. Remove the guide studs. Install and tighten the bolts to specification.





2. Restore the vehicle to operating condition.

- 1. Install the clutch disc and pressure plate. For additional information, refer to <u>Clutch Disc and</u> <u>Pressure Plate</u> in this section.
- 2. Install the transmission. For additional information, refer to <u>Section 308-03A</u> (Model S5-47ZF Transmission) or <u>Section 308-03B</u> (ZF 6-Speed Transmission).

## **Flywheel Ring Gear**

#### Removal

▲ WARNING: Carry out this procedure only if experienced with acetylene torches and equipped with the correct equipment. Failure to follow these instructions may result in personal injury.

- 1. Remove the clutch pressure plate (7563) and the clutch disc (7550). For additional information, refer to <u>Clutch Disc and Pressure Plate</u> in this section.
- 2. Remove the flywheel (6375). For additional information, refer to Flywheel in this section.
- 3. A WARNING: Wear asbestos gloves and use tongs when handling the hot flywheel and flywheel ring gear (6384). Failure to follow these instructions may result in personal injury.

▲ CAUTION: Do not heat the flywheel ring gear above 278°C (500°F). Use heat indicating crayons to prevent overheating.

**A** CAUTION: Keep the torch moving to prevent hot spots.

**A** CAUTION: Tap evenly around the ring gear to prevent binding.

Remove the flywheel ring gear from the flywheel.

- 1. Heat the entire flywheel ring gear evenly.
- 2. Using a brass drift and a hammer, drive the flywheel ring gear from the flywheel.



#### Installation

▲ WARNING: Carry out this procedure only if experienced with acetylene torches and equipped with the correct equipment. Failure to follow these instructions may result in personal injury.

1. A WARNING: Wear asbestos gloves and use tongs when handling the hot flywheel and ring gear. Failure to follow these instructions may result in personal injury.

▲ CAUTION: Do not heat the flywheel ring gear above 278°C (500°F). Use heat indicating crayons to prevent overheating.

**A** CAUTION: Keep the torch moving to prevent hot spots.

Heat the entire flywheel ring gear evenly.

2. A WARNING: Wear asbestos gloves and use tongs when handling the hot flywheel and ring gear. Failure to follow these instructions may result in personal injury.

▲ CAUTION: The bevel on the ring gear must face the rear of the flywheel.

# ▲ CAUTION: Tap evenly around the ring gear to prevent binding.

Using a brass drift and a hammer, install the flywheel ring gear.



- 3. Install the flywheel (6375). For additional information, refer to <u>Flywheel</u> in this section.
- 4. Install the clutch disc and pressure plate. For additional information, refer to <u>Clutch Disc and Pressure</u> <u>Plate</u> in this section.

SECTION 308-02: Clutch Controls SPECIFICATIONS

1999 F-Super Duty 250-550 Workshop Manual

**General Specifications** 

Item	Specification
Clutch System	
Clutch Control	Hydraulic
System Adjustment	Automatic
Clutch Pedal Type	Suspended
Clutch Pedal Travel mm (in) (5.4L/6.8L)	166-177 (6.5-7)
Clutch Pedal Travel mm (in) (7.3L)	201-203 (7.9-8.0)
Fluid	
Ford High Performance DOT 3 Motor Vehicle Brake Fluid C6AZ-19542-AB	ESA-M6C25-A
Lubricant	
Premium Long-Life Grease XG-1-C, XG-1-K	ESA-M1C75-B

**Torque Specifications** 

Description	Nm	lb-ft
Clutch Pedal Support Bracket Nut	25	18

# SECTION 308-02: Clutch Controls DESCRIPTION AND OPERATION

# 1999 F-Super Duty 250-550 Workshop Manual

# **Clutch Controls**



Item	Part Number	Description
1	7C522	Clutch master cylinder assembly
2	7A564	Slave cylinder
3	7C534	Clutch pedal position switch
4	7B633	Clutch pedal and support bracket

The hydraulic clutch system adjusts automatically to compensate for clutch disc wear.

SECTION 308-02: Clutch Controls DIAGNOSIS AND TESTING

1999 F-Super Duty 250-550 Workshop Manual

# **Clutch Controls**

Refer to Section 308-00.