# SECTION : 206-04 Rear Disc Brake

## VEHICLE APPLICATION : 2008.0 Falcon

## CONTENTS PAGE

## SPECIFICATIONS

**General Specifications**

| Description | Specification |
|---|---|
| Rear disc brake minimum thickness[a] | 14.5mm |
| **Lubricants** | |
| High melting point grease | Dow Corning 44/Niglube Rx2 |
| **Pad** | |
| Lining wear limit | 1.0mm |
| Material | JB INF85 FF |

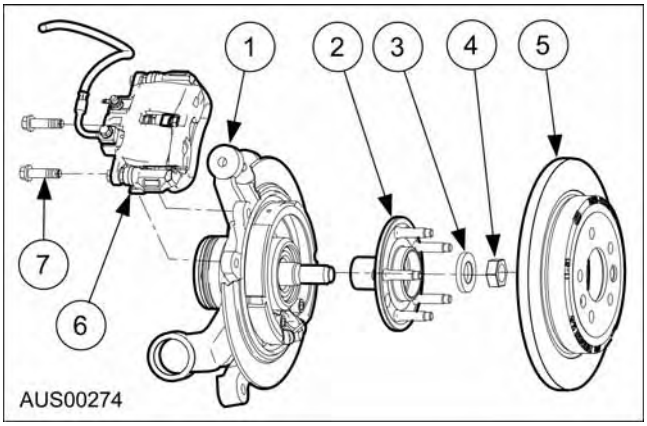
**Torque Specifications**

| Description | Nm |
|---|---|
| Rear Caliper Anchor to Axle Housing or Suspension Knuckle | 103 ± 16 |
| Rear Caliper Housing to Anchor (Guide Pin Bolts) | 31 ± 3 |
| Rear Brake Hose to Caliper (Banjo Bolt) | 13 ± 1 |
| Splash Shield to Rear Axle Housing | 11 ± 1.1 |

## DESCRIPTION AND OPERATION

# Rear Disc Brake

### Rear Disc Brake System Components



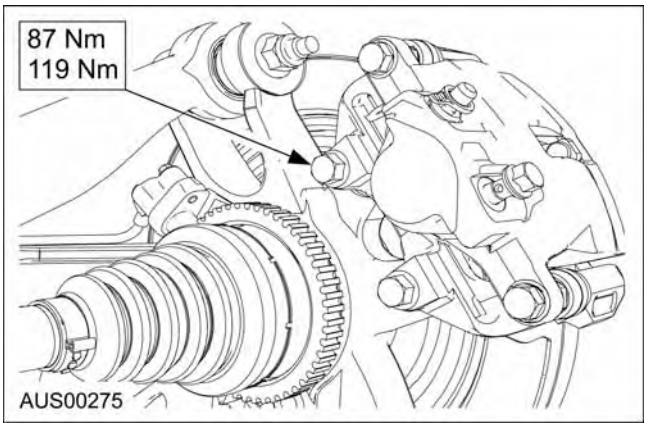

| Item | Description |
|---|---|
| 1 | Knukle |
| 2 | Wheel hub |
| 3 | Washer |
| 4 | Nut |
| 5 | Rotor |
| 6 | Brake Caliper |
| 7 | Bolt |

The rear wheel disc brake assembly consists of a rotor mounted on the outer face of the axle shaft flange and a single piston floating head caliper. A splash shield, used primarily to prevent road contaminants from contacting the inboard rotor and pad surface is also mounted on the anchor bracket.

The outboard rotor and pad surfaces are protected by the road wheel.

### Service Brake

When the brake pedal is applied, brake fluid is displaced into the caliper bore moving the piston outward. This action forces the inner pad assembly against the rotor. The resultant reaction forces the caliper body and outboard pad assembly inward against the rotor. Braking torque is transferred from the outer and inner pad assemblies to the caliper mounting bracket. When the brake pedal is released, the piston seal retracts the piston a small amount allowing the pads to release the clamping force.




### Parking Brake

The parking brake utilizes a cable operated rear drum system. For additional information, refer to Section 206-05

## DIAGNOSIS AND TESTING

## Brake Calipers

Refer to Section 206-00

### Inspection

1. Clean all residue from disc pad guide surfaces on anchor bracket and caliper housing assembly.
   **NOTE:** Always replace both axle caliper pads as a set.
2. Inspect inner and outer pads. Lining wear limit is 1.0 mm.
3. Inspect anchor bracket. Replace anchor bracket if corroded, worn or damaged.
4. Clean piston, housing and bleed screw. Use only clean denatured alcohol for cleaning. Dry, filtered compressed air should be used to dry all components and blow out all passages in the caliper housing and bleed screw. Care should be taken to keep alcohol and debris away from eyes.

   **CAUTION: All components must be kept away from any type of mineral oil as it will damage rubber components.**
5. Inspect piston. Replace piston if scoring, nicks, corrosion, wear or damage is evident.
6. Inspect housing. Replace housing if bore is scored, corroded, worn or damaged.
7. Lubricate seal and housing bore with silicone grease or brake fluid.
8. Lubricate piston with brake fluid.

## REMOVAL AND INSTALLATION

### Brake Caliper Body

**Removal**

**NOTE:** Where the use of brake fluid is required, use only new, clean fluid to the correct specification, from a sealed container.

1. Raise the vehicle and remove the wheel.
2. Use wheel nut to hold disc in place.
3. Remove banjo bolt and hose end. Discard washers. Plug housing inlet port and hose end to prevent contamination ingress or fluid loss.
4. Remove guide pin bolts (items 1 and 2) and discard.

**Installation**

1. Place caliper housing assembly into its operating position. If springs are sticking through caliper housing inspection hole, lift caliper housing and make necessary corrections to ensure springs are fully retained by housing.
2. Install new guide pin bolts.
3. Assemble banjo bolt, washers and hose end then screw into housing inlet port. Torque guide bolts to 28-34 Nm. Torque banjo bolt to specification.

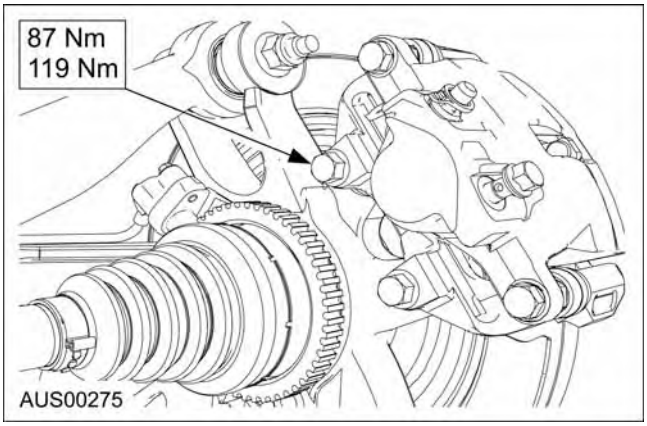
**NOTE:** Ensure hose is engaged to bracket prior to fitment of banjo bolt. Check routing for correct clearance on completion.

4. Bleed brakes ensuring that fluid reservoir is not emptied. Start engine and pump brake pedal slowly and firmly three times to ensure piston and disc pads resume normal operational position. Torque bleed screw to 9-14 Nm. Check for fluid leakage and rectify if any found. Check fluid level in master cylinder reservoir and fill to specified level with new brake fluid.
   **NOTE:** All hardware must be correctly installed and torqued to specification.
5. Install wheel and torque nuts to specification.

### Brake Caliper Assembly

**Removal and Installation**

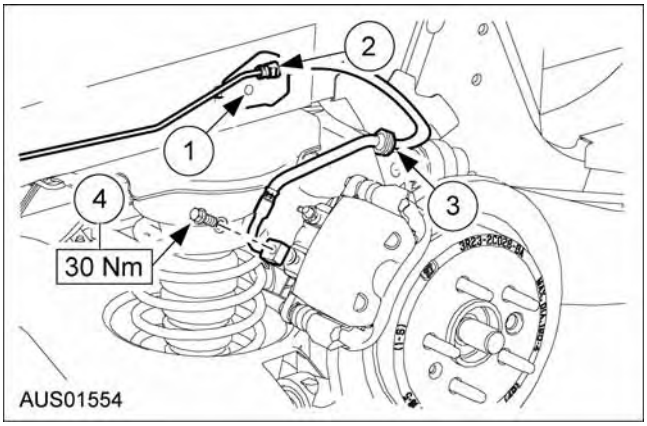
1. Repeat steps 1 & 2 of brake caliper body removal.
2. Remove caliper mounting bolts.




3. Lift caliper free of rotor.
4. To install reverse steps 1-3.

### Rear Brake Hose

**Removal**



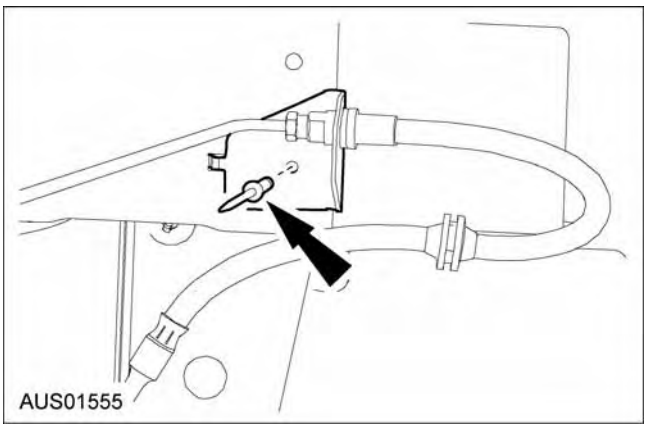

| Item | Description |
|---|---|
| 1 | Rivot |
| 2 | Rear Tube Connection |
| 3 | Grommet |
| 4 | Banjo Bolt |

1. Disconnect rear brake tube connection.
2. Drill out rivot.
3. Remove grommet.
4. Remove banjo bolt.

## REMOVAL AND INSTALLATION (Continued)

**Installation**

1. Install high tensile rivot.




2. Connect tube to hose end.
3. Install hose grommet into bracket.
4. Install banjo bolt through hose and into caliper.
   **NOTE:** Ensure hose is engaged to bracket prior to fitment of banjo bolt. Check routing for correct clearance on completion.

   **NOTE:** Ensure fitment of new copper washers.

## Brake Pads

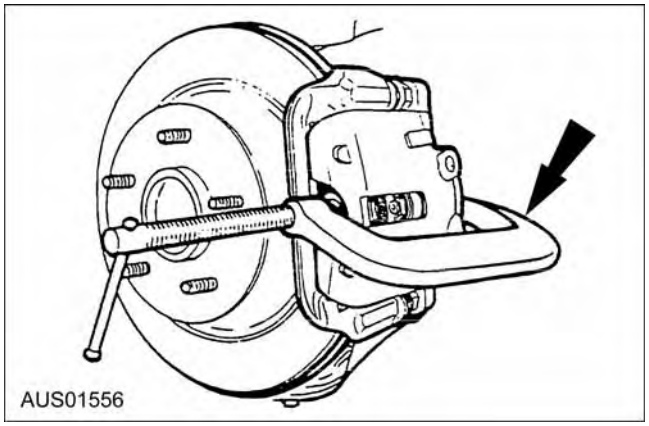
**WARNING: Although original equipment pad material is asbestos free. If non genuine pads are used, the following applies:**

1. Asbestos fiber dust may be present on brake and clutch assemblies and is hazardous to health if inhaled.

2. Brake and clutch assemblies should be cleaned using a vacuum cleaner recommended for use with asbestos fibers such as a brake/clutch/service vacuum. The bag must be labeled per OSHA instructions, sealed, and the trash hauler notified as to the bag's contents.

3. If the vacuum suitable for asbestos is not available, cleaning should be done wet. If dust generation is still possible, technicians should wear government-approved toxic dust purifying respirators. Failure to follow these instructions may result in personal injury.

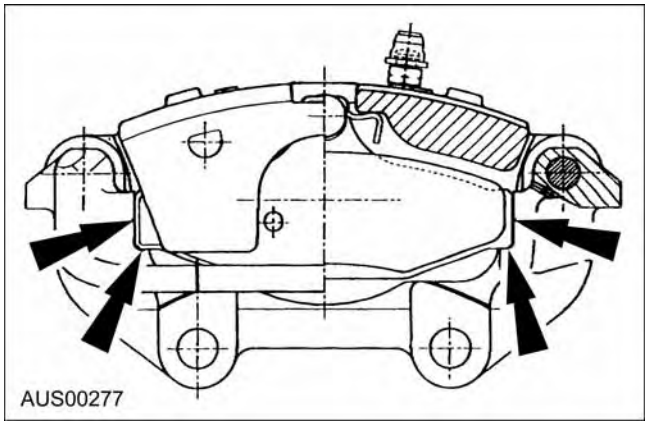
1. Siphon approximately two-thirds of the total fluid capacity from the master cylinder reservoir. Discard the fluid (different to front brake).
2. Raise the vehicle and remove wheels.
3. Install two wheel nuts to retain rotor.
4. Position a C-clamp so that one end rests on rear of caliper housing and the other end against outer disc pad. Tighten clamp until piston bottoms in base of caliper housing.




5. Remove and discard upper guide pin bolt.
6. Rotate caliper housing about lower caliper mounting bolt and guide pin. Be careful not to strain hose.
7. Remove inner and outer pads.
   **NOTE:** Always replace both axle caliper pads as a set.
8. Clean all residue from disc pad guide surfaces on anchor bracket and caliper housing.
9. Inspect guide pins for free movement in anchor bracket. Replace guide pins or boots if corroded or damaged.

**Installation**

1. Install new pads on anchor bracket. Apply approximately 0.1 gram of AKB-100 grease (or equivalent) to pad abutment surfaces on the anchor bracket.




2. Rotate caliper housing into its operating position.
3. If springs are sticking through caliper housing inspection hole, lift caliper housing and make necessary corrections to ensure springs are fully retained by housing.
4. Install new upper guide pin bolt and torque to 28-34 Nm.

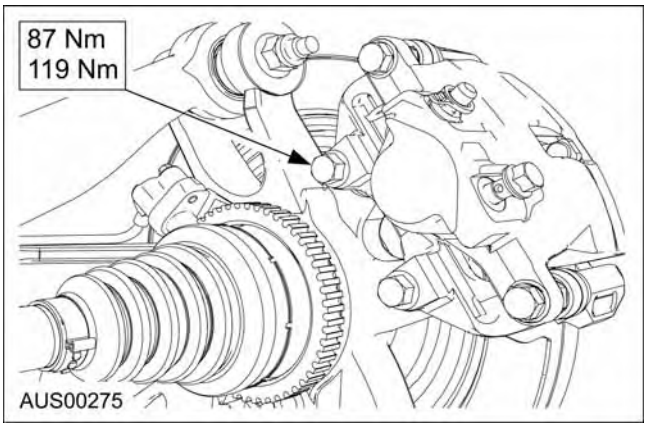
## REMOVAL AND INSTALLATION (Continued)

5. Top up master cylinder.
6. Start engine and pump brake pedal slowly and firmly three times to ensure piston and disc pads resume normal operating position.
7. Check for fluid leakage and rectify if any found. Check fluid level in master cylinder reservoir and fill to specified level with new brake fluid.
8. Remove nuts retaining rotor and install wheels.
9. Lower vehicle and torque wheel nuts to specification.

## Brake Disc

**Removal**

1. Raise the vehicle and remove the rear wheels.
2. With the park brake control released disconnect the park brake cable at the equalizer.




3. Disconnect the cable from the levers.
4. Remove the caliper head attaching bolts and remove the caliper assembly from the rotor and mounting bracket.

   ⚠ **CAUTION: Do not allow the caliper to hang from the hydraulic line.**
5. Remove the screw securing the rotor to the axle flange and remove the rotor (for beam axle only).

**Installation**

1. . Position the rotor on the axle flange, ensuring that all mounting surfaces are clean and free from contamination which could cause possible disc run-out. Install the securing screw.
2. Position the caliper correctly over the rotor and slide straight into location until caliper head bolt holes align with their respective holes in the mounting bracket.
3. Install caliper mounting bolts and torque to specification.
4. Connect the park brake cables to the levers and the equalizer. Adjust the park brake as described in Section 206-05

## Beam Axle Brake Disc

**Removal**

1. Raise the vehicle.
2. Wipe all dirt and grease from the brake pipe union and disconnect the union.
3. Detach the flexible hose from the splash shield bracket and plug the pipe and hose.
4. Remove the three screws attaching the splash shield to the axle flange.

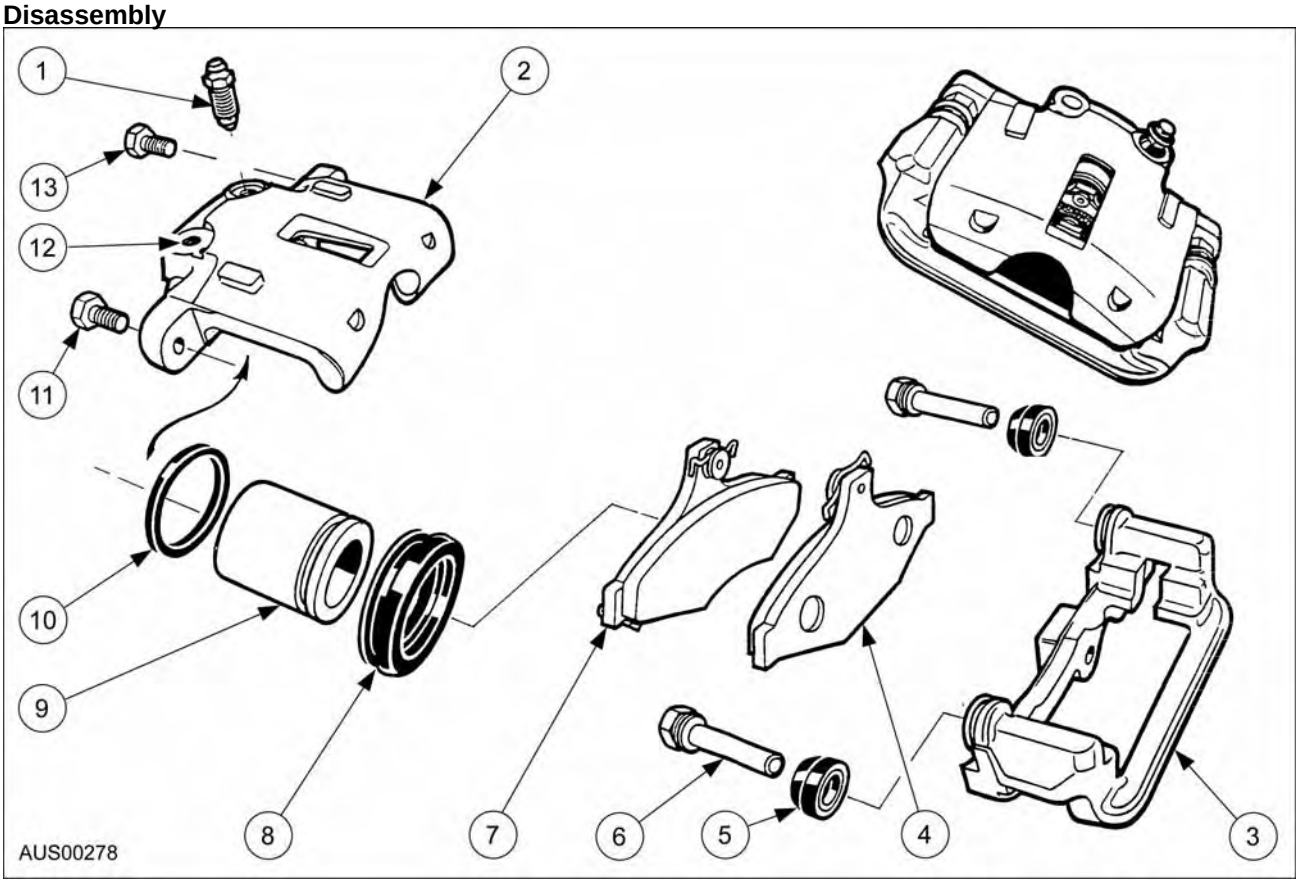
**Installation**

1. Position the splash shield and install the attaching screws.
2. Fit the flexible hose to the splash shield bracket and secure it with the locknut.
3. Remove the dust plugs and fit the pipe to the hose.
4. Bleed the brakes as described in Section 206-00
5. Lower the vehicle.

## DISASSEMBLY AND ASSEMBLY

## Brake Caliper

**Disassembly**




| Item | Description |
|---|---|
| 1 | Bleed Screw |
| 2 | Caliper Housing |
| 3 | Anchor Bracket |
| 4 | Outer Disc Pad |
| 5 | Boot |
| 6 | Guide Pin |
| 7 | Inner Disc Pad |
| 8 | Boot |
| 9 | Piston |
| 10 | Seal |
| 11 | Lower Mounting Bolt |
| 12 | Inlet Port |
| 13 | Upper Guide Pin Bolt |

1. Remove brake caliper as described in this section.
2. Remove housing assembly (item 9), guide pins (items 3 and 4) and boots (items 5 and 6). Discard boots. Plug anchor bracket (10) colette pinholes (A) to prevent contamination ingress.
3. Remove disc pads (items 7 and 8).
4. Remove piston (item 12). Pack a clean shop towel between piston and housing finger then apply low air pressure at housing inlet port to remove piston.

   **⚠ CAUTION: Apply light air pressure initially and progressively increase until piston is forced out of bore. While removing piston keep hands away from piston/housing region to avoid personal injury, as the piston may develop considerable force due to air pressure.**
5. Remove boot and seal using a small, pointed tool as per Section 206-03 Be careful not to damage the bore or seal groove. Discard.
6. Remove bleed screw (item 15) and dust cover (item 16). Discard dust cover.

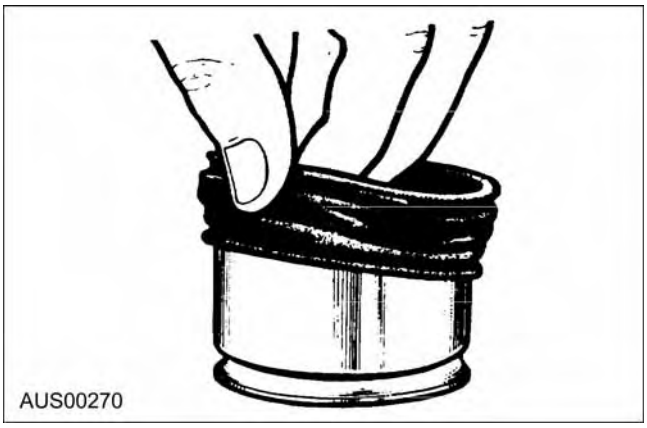
**Assembly**

1. Lubricate seal (item 13) and housing bore with silicone grease or brake fluid.
2. Lubricate piston with brake fluid.
3. Install new seal (item 13) into housing bore seal groove and ensure that it is not twisted.

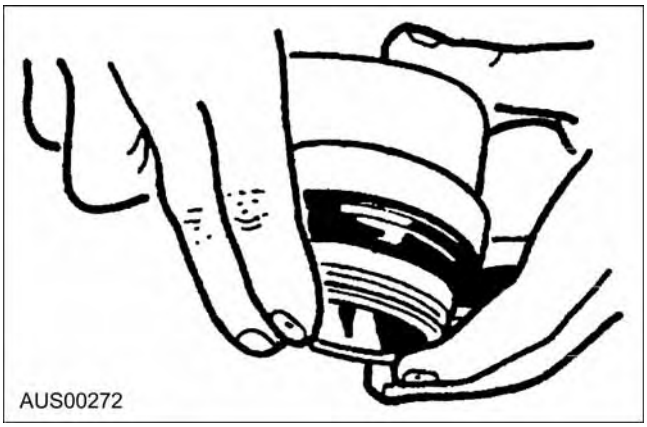
**NOTE:** Ensure hose is engaged to bracket prior to fitment of banjo bolt. Check routing for correct clearance on completion.

## DISASSEMBLY AND ASSEMBLY (Continued)

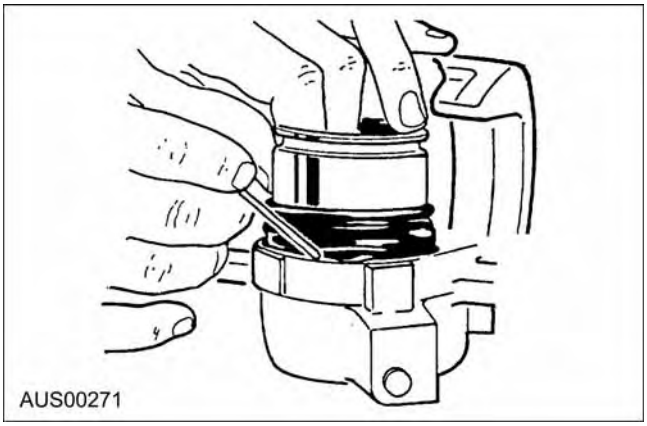
4. Install new boot (item 14) and piston. Install boot over open end of piston and feed along piston length towards closed end. Fully extend boot away from piston closed end with boot still on piston ground surface. Install boot into housing bore boot groove and ensure full engagement.




5. Slowly enter piston into bore by hand, then apply steady pressure by hand to piston and press until piston is fully seated in the bore. This process will ensure that boot and seal are correctly positioned in conjunction with no piston/housing bore scoring.




6. Inspect piston and boot. Check that boot is properly engaged in piston groove correctly.




7. Assemble dust cover and bleeder screw, then screw into housing.

8. Install disc pads on anchor bracket with outer disc pad with clip-on insulator toward caliper housing finger and inner disc pad with lining wear sensor toward caliper piston.