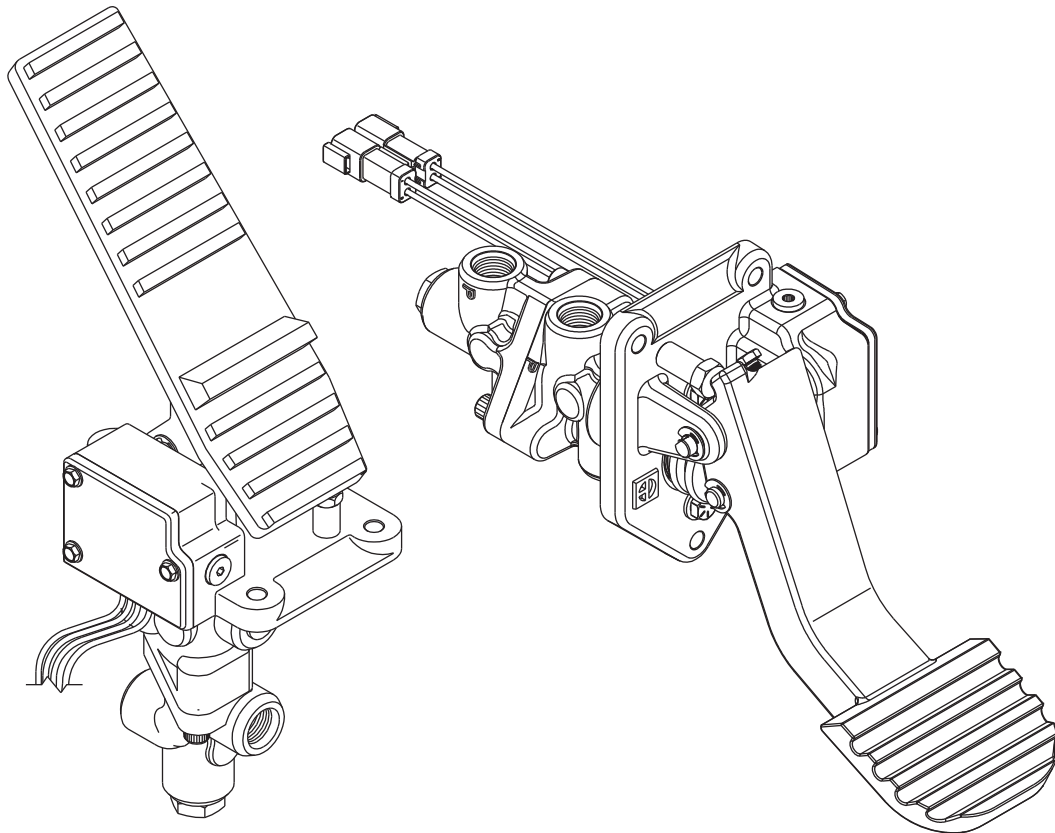


Pedal Assembly for Power Brake Valves Service Instructions

TABLE 1

Caterpillar Part Number	Pedal and Base Assembly Number	Repair Kit Number
139-5349	151-5593	151-5595
149-1907	151-5593	151-5595
156-1590	156-1591	151-5595
156-1697	156-1698	151-5595
167-7822	151-5593	151-5595
196-7296	229-6197	229-6198
280-2445	306-6563	306-6561
291-8382	305-2217	305-2153
331-0704	353-5262	353-5303
396-2095	323-5262	353-5303



NOTE

This literature services more than one model. The components shown in Figures 1, 2, 3, and 4 may appear different than what is found on your pedal assembly.

DISASSEMBLY

(Refer to Figures 1, 2, 3, and 4)

NOTE: To prevent contamination to the valve or hydraulic system, thoroughly clean pedal assembly, valve and surrounding area of all dirt, grease, oil, etc. before servicing.

1. Remove machine screws (1), cover (2) and seal (3) from base (7).
2. Remove screw (13) and e-ring (14). **NOTE: Not all models use e-ring (14).**
3. Carefully remove shaft assembly (4) while separating pedal assembly (8) from base (7).
NOTE: Spring on shaft assembly (4) must be partially compressed while removing shaft assembly (4). Be extremely careful not to damage switches.
4. Remove one e-ring (9) from pin (12) and remove pin (12) and cam (11) from pedal assembly (8). See FIGURE 1.
5. Remove bushing (10) from cam (11).
6. Remove bushing (15) from base (7).
7. Using a pointed tool, remove o-ring (6) from groove in base (7). See FIGURE 4.
8. Bushing (5) may either be a one piece or two piece bushing. In either case, bushing (5) was assembled with Loctite on the outside diameter of the bushing. It may be necessary to apply heat to the bushing in order to soften the Loctite for disassembly. Carefully work bushing (5) from bore in base (7). Carefully clean the bore of excess Loctite.
NOTE: Protect the harness wires in base (7) from damage while heating bushing (5).
9. Remove plug (16) from base (7). Remove o-ring (17) from plug (16).

3. Carefully work new bushing (15) into bore.
4. Evenly install new bushing (10) in cam (11).
5. Install pin (12) and cam (11) on pedal assembly (8). Install new e-ring (9) on pin (12).
6. Carefully install new shaft assembly (4). Note direction of shaft assembly (4). Make sure spring on shaft assembly (4) is properly positioned and does not impede seating of shaft assembly. Spring on shaft assembly (4) must remain in slot of the cam on shaft assembly (4) during assembly. See Figure 3. **NOTE: Be extremely careful not to damage switches.**
7. Be sure pedal assembly is equally spaced between ears of base (7), moves freely and is in an upright position. Install e-ring (14). Install new screw (13) so it contacts the flat on shaft assembly (4) and torque 7.0-7.7 N·m (62-68 lb·in). See Figure 3. **NOTE: Not all models use e-ring (14).**
8. Install new seal (3), cover (2) and machine screws (1). Torque machine screws 1.1-1.7 N·m (10-15 lb·in).
9. Install new o-ring (17) on plug (16). Install plug (16) in base (7) and torque 13.6-19.0 N·m (10-14 lb·ft).
10. Refer to switch adjustment instructions on pages 4 and 5.

- Items included in Repair Kit
- * Not used on all models

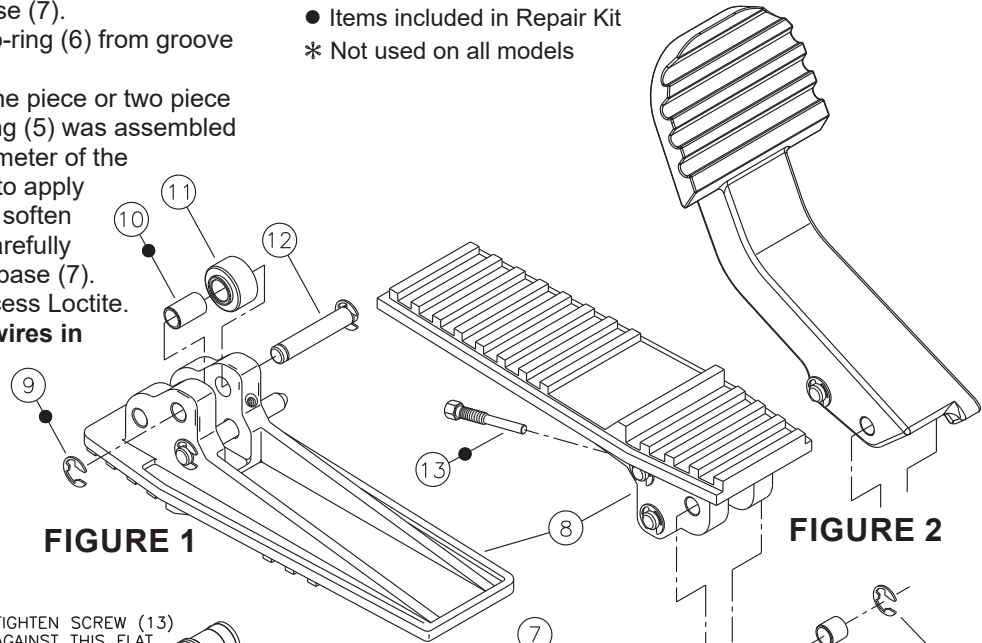


FIGURE 1

FIGURE 2

ASSEMBLY

(Refer to Figures 1, 2, 3, and 4)

1. Lubricate new o-ring (6) with light oil and install in base (7).
2. Apply a small amount of Loctite 609 or equivalent to outside diameter of bushing (5). Carefully work new bushing (5) into bore.

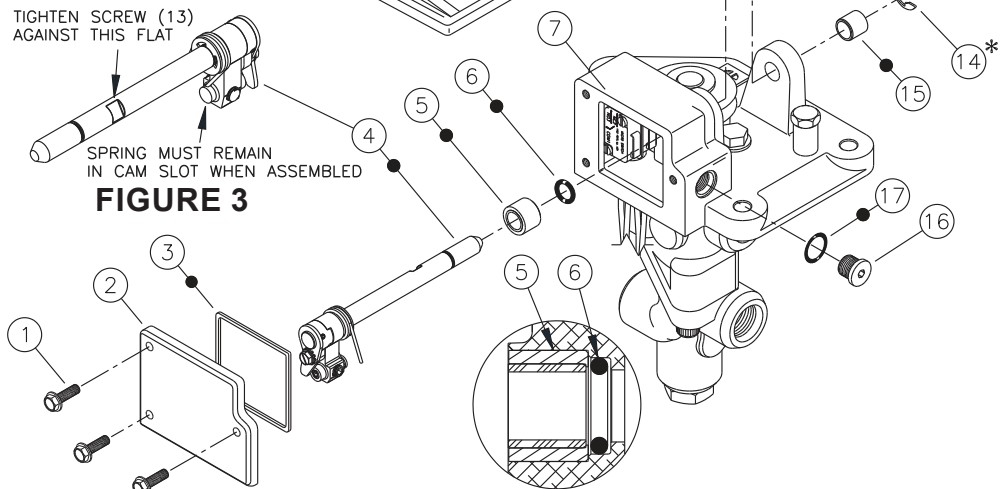


FIGURE 3

FIGURE 4

Stop Lamp Switch Adjustment

(Refer to Figure 5)

NOTE

The adjustment for the stop lamp switch has been correctly preset at assembly. However, the following procedure should be used if the switch requires service.

NOTE

Both the neutralizer switch and the stop lamp switch are positioned immediately next to each other in the left pedal assembly. Both switches share the same mounting screws and therefore, both switches must be installed when making an adjustment to either switch. The stop lamp switch is located near cover (3).

1. Disconnect receptacle assembly (6) from the wire harness assembly.
2. Connect an ohmmeter (or continuity tester) to Pin 2 and Pin 3 of receptacle assembly (6). With pedal assembly (1) in the retracted position (fully released), the ohmmeter should indicate an open (infinite) circuit condition.
3. With pedal assembly (1) in the retracted position (fully released), depress the pedal assembly until dimension (A) is obtained. Dimension (A) equals approximately 6.0-16.0 mm (0.24-0.63 in).
4. The ohmmeter should now indicate a closed (shorted) circuit condition, and an audible "click" should be heard which indicates the switch has been actuated.

NOTE

Do NOT make the mistake of only listening for the audible "click" sound because both the transmission neutralizer switch and stop lamp switch make the same sound and should be set to actuate at approximately the same time.

If the previous steps do not indicate a closed circuit, proceed with the following steps.

5. Remove three screws (2) and cover (3).
6. Loosen screw (4) and rotate cam (5) approximately one-half degree and retighten screw (4).

NOTE

Rotating cam (5) clockwise increases dimension A.
Rotating cam (5) counterclockwise decreases dimension A.

7. Repeat steps 3, 4, and 6 until the desired result is obtained.
8. Torque screw (4) 1.13-1.70 N·m (10-15 lb-in) after adjustment is made.
9. Replace cover (3) and three screws (2).

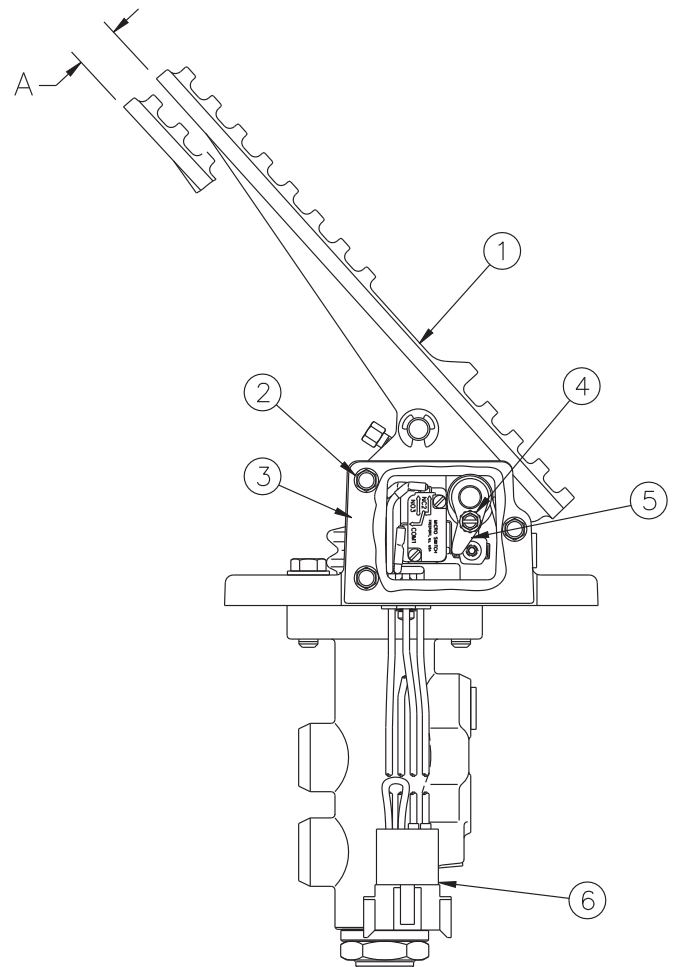
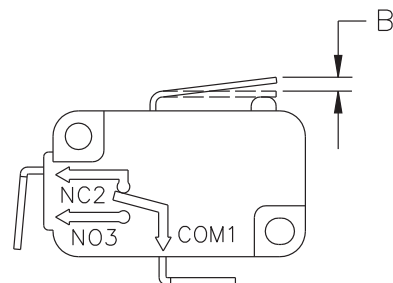


FIGURE 5

Stop Lamp Switch



Momentary on, normally closed contacts are held open in assembly
 Distance to actuate switch (dimension B) 1.52 mm
 (0.06 in) maximum
 Actuating force. 1.60 N (0.36 lb)

Neutralizer Switch Adjustment

(Refer to Figure 6)

NOTE

The adjustment for the neutralizer switch has been correctly preset at assembly. However, the following procedure should be used if the switch requires service.

NOTE

Both the neutralizer switch and the stop lamp switch are positioned immediately next to each other in the left pedal assembly. Both switches share the same mounting screws and therefore, both switches must be installed when making an adjustment to either switch. The stop lamp switch is located near cover (3).

1. Disconnect receptacle assembly (4) from the wire harness assembly (not shown).
2. Connect an ohmmeter (or continuity tester) to Pin 1 and Pin 4 of receptacle assembly (4). With pedal assembly (1) in the retracted position (fully released), the ohmmeter should indicate a closed (shorted) circuit condition.
3. With pedal assembly (1) in the retracted position (fully released), depress the pedal assembly until dimension (C) is obtained. Dimension (C) equals approximately 6.0-16.0 mm (0.24-0.63 in).
4. The ohmmeter should now indicate an open (infinite) circuit condition, and an audible "click" should be heard which indicates the switch has been actuated.

NOTE

Do NOT make the mistake of only listening for the audible "click" sound because both the transmission neutralizer switch and stop lamp switch make the same sound and should be set to actuate at approximately the same time.

If the previous steps do not indicate an open circuit, proceed with the following steps.

5. Remove plug (3) and insert a 3.13 mm (0.125 in) hex wrench in screw (3).

NOTE

Rotating screw (5) clockwise increases the value of dimension C. Rotating screw (3) counterclockwise decreases the value of dimension C.

6. Rotate the wrench in one-quarter turn increments and repeat steps 3 and 4 until the desired result is obtained.
7. Install plug (2) and torque 5.65-7.91 N·m (50-70 lb·in).

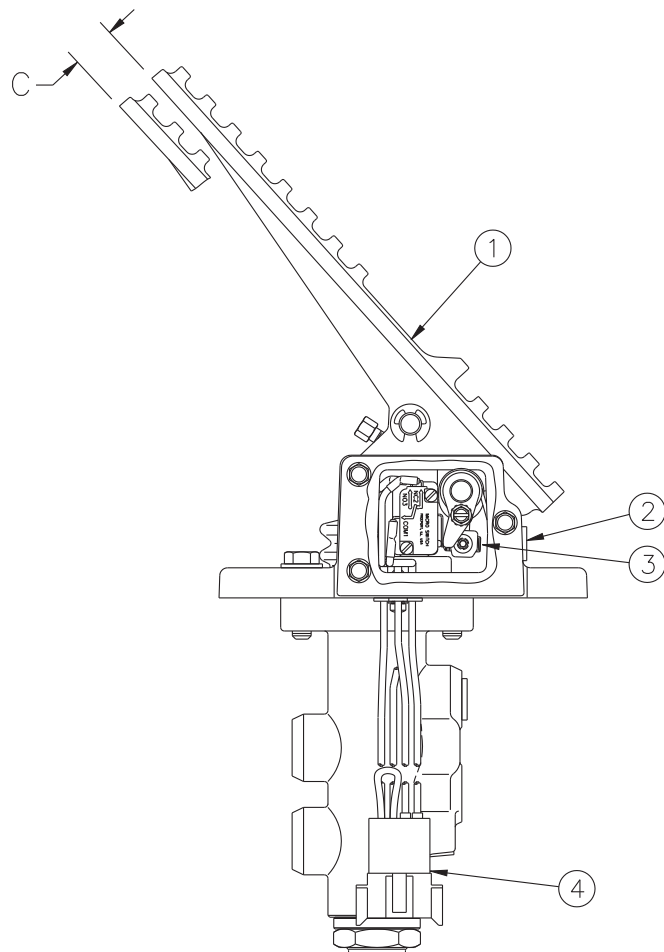
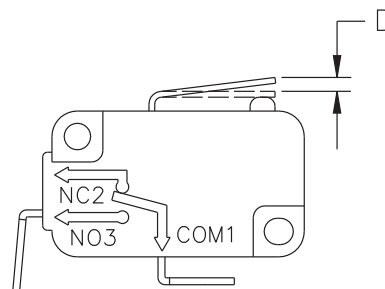


FIGURE 6

Neutralizer Switch



Momentary on, normally open contacts are held closed in assembly
 Distance to actuate switch (dimension D) 1.52 mm
 (0.06 in) maximum
 Actuating force. 1.60 N (0.36 lb)