

To prevent possible injury, perform the procedure that follows before testing and adjusting the power train.

---

 **WARNING**

Personal injury can result from hydraulic oil pressure and hot oil.

Hydraulic oil pressure can remain in the hydraulic system after the engine has been stopped. Serious injury can be caused if this pressure is not released before any service is done on the hydraulic system.

Make sure all of the attachments have been lowered, oil is cool before removing any components or lines. Remove the oil filler cap only when the engine is stopped, and the filler cap is cool enough to touch with your bare hand.

---

**NOTICE**

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Caterpillar Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

---

This test checks for the proper adjustment of the front speed sensing valve's control cable.

---

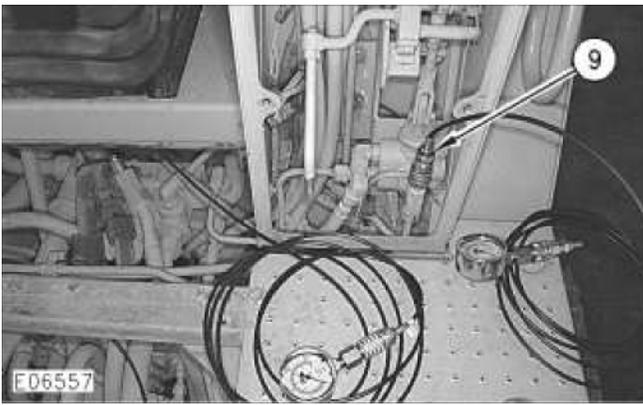


Illustration 19

g00350714

The location of the signal pressure tap

(9) Pressure tap.

1. The **8T-0855** Pressure Gauge attached to pressure tap (9) and the **9U-7400** Multitach are used to perform this adjustment procedure.

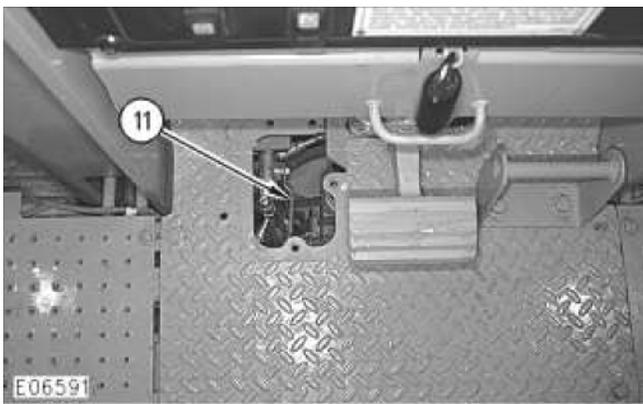


Illustration 20

g00350719

The location of the tow valve

(11) Tow valve.

**Note:** A machine that is not equipped with a DECEL pedal is shown. The tow valve is located in the same place when the machine is equipped with a DECEL pedal.

2. Place the tow valve's lever (11) in the up position.

**Note:** The spring applied parking brakes are released by oil pressure. The tow valve blocks the path of oil that releases the parking brakes. The tow valve allows the machine to be tested and adjusted while the brakes are applied.

3. Start the engine. Run the engine at low idle. Disengage the parking brake.

**Note:** Slight leakage across the tow valve may occur. If the tow valve is in the up position for an extended period of time leakage could be sufficient enough to release the parking brakes. Periodically check the parking brake's oil pressure. If the pressure exceeds 200 kPa (30 psi) the tracks may begin to move. Stop the engine. Engage the parking brake. Move the tow valve downward. Repeat steps 2 and 3.

4. Read the **9U-7400** Multitach . Ensure that the engine speed is  $800 \pm 50$  rpm. Read the pressure gauge.

a. The following machines should have a signal pressure (9) of  $1000 \pm 100$  kPa ( $145 \pm 15$  psi):

- 4KS1-794
- 5GS1-681
- 4TS1-1148
- 6BS1-635
- 4LS1-493
- 8CS1-1169
- 5HS1-839
- 6CS1-808
- 7PS1-1373

b. The following machines should have a signal pressure (9) of  $800 \pm 100$  kPa ( $116 \pm 15$  psi):

- 4KS795-UP
- 5GS682-UP
- 4TS1149-UP
- 6BS636-UP
- 4LS494-UP
- 8CS1170-UP
- 5HS840-UP
- 6CS809-UP
- 7PS1374-UP

5. Stop the engine. Engage the parking brake.

6. If the signal pressure is too high at low idle, adjust the speed sensing valve. If the signal pressure is too low at low idle, adjust the speed sensing valve.

---

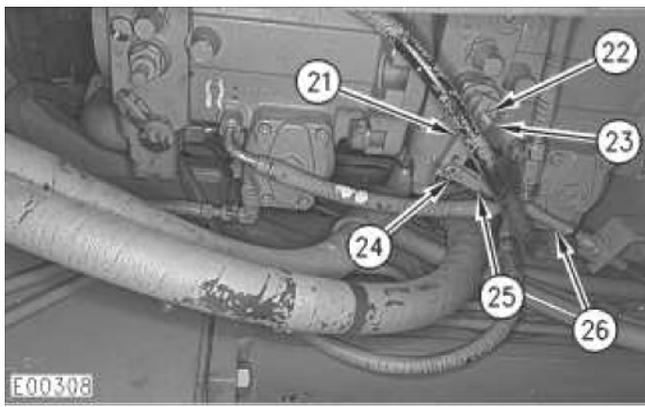


Illustration 21

g00434124

The location of the speed sensing valve

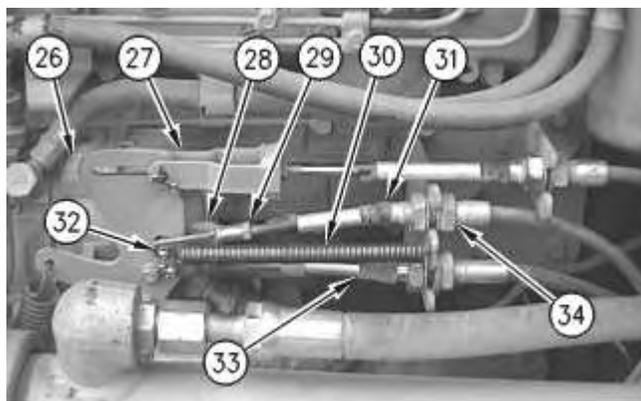
(21) Lever. (22) Locknut. (23) Adjustment screw. (24) Pin. (25) Clevis. (26) Cable.

7. Remove pin (24) and clevis (25) from lever (21) . Rotate the lever to the rear of the machine until the valve hits an internal stop.
8. Loosen locknut (22) . Turn adjustment screw (23) clockwise in order to decrease the signal pressure . Turn the adjustment screw counterclockwise in order to increase the signal pressure. Tighten the locknut (22) after the adjustment has been made.
9. Repeat steps 3 through 5.
10. Repeat Step 8 through Step 9 until the signal oil pressure is correct.
11. When the pressure is correct, reinstall the clevis (25) and the pin (24) in lever (21) . Lever (21) should not move from the stop when the clevis is installed and the pin is installed. If the lever moves, loosen the clevis locknut.
  - a. For the following machines, install pin (21) in the outer hole.
    - 4KS1-794
    - 5GS1-681
    - 4TS1-1148
    - 6BS1-635
    - 4LS1-493
    - 8CS1-1169
    - 5HS1-839
    - 6CS1-808
    - 7PS1-1373
  - b. For the following machines, install pin (21) in the middle hole.
    - 4KS795-UP

- 5GS682-UP
- 4TS1149-UP
- 6BS636-UP
- 4LS494-UP
- 8CS1170-UP
- 5HS840-UP
- 6CS809-UP
- 7PS1374-UP

**Note:** For the machines with the upper serial number break, it may be necessary to rotate the lever in order to install the pin.

12. Remove pin (24) and rotate the clevis on cable (26) . Rotate until the pin and the clevis can be installed onto the lever. Do not move the lever from the stop. Tighten the clevis locknut.




---

Illustration 22

g00589460

Location for the speed sensing valve's cable

(26) Engine governor. (27) Engine throttle cable. (28) Clevis. (29) Locknut. (30) Spring. (31) Cable to speed sensing valve. (32) Pin. (33) Decel pedal cable. (34) Locknuts.

**Note:** A machine that is equipped with a DECEL pedal is shown.

13. Start the engine and run the engine at low idle. Disengage the parking brake.
14. Read the **9U-7400** Multitach . Slowly increase the engine speed to  $2400 \pm 20$  rpm. Read the pressure gauge.
  - a. The following machines should have a signal pressure (9) of  $2625 \pm 150$  kPa ( $380 \pm 20$  psi):
    - 4KS1-794
    - 5GS1-681

- 4TS1-1148
- 6BS1-635
- 4LS1-493
- 8CS1-1169
- 5HS1-839
- 6CS1-808
- 7PS1-1373

b. The following machines should have a signal pressure (9) of  $2600 \pm 150$  kPa ( $377 \pm 22$  psi):

- 4KS795-UP
- 5GS682-UP
- 4TS1149-UP
- 6BS636-UP
- 4LS494-UP
- 8CS1170-UP

c. The following machines should have a signal pressure (9) of  $2400 \pm 150$  kPa ( $348 \pm 22$  psi):

- 5HS840-UP
- 6CS809-UP
- 7PS1374-UP

15. Return the engine to low idle. Stop the engine. Engage the parking brake.
16. If the signal pressure is too high at the rated RPM, adjust the speed sensing valve's linkage. If the signal pressure is too low at the rated RPM, adjust the speed sensing valve's linkage.
17. Ensure that the housing for cable (31) is centered in the mounting bracket prior to making any adjustments. If the threads for the cable housing are not centered in the mounting bracket, loosen the locknuts (34) .
18. Center the threads for the cable housing in the mounting bracket. Tighten the locknuts (34) .
19. Repeat steps 13 and 14. If the pressure is not correct, proceed to 20.
20. Loosen locknut (29) . Remove spring (30) from pin (32) . Remove pin (32) from clevis (28) and the governor lever. Turn clevis (28) counterclockwise in order to decrease the signal pressure. Turn the clevis clockwise in order to increase the signal pressure.

**Note:** Rotation is determined as you look toward the front of the machine.

**Note:** Place the throttle control lever into the high idle position in order to allow clevis (28) to rotate.

21. Reinstall pin (32) . Reinstall clevis (28) . Reinstall spring (30) into the pin. Tighten locknut (29) .
22. Repeat steps 13 through 15.
23. If the signal pressure is not correct, repeat steps 20 through 22 until the correct signal pressure is obtained.
24. Remove the **8T-0854** Pressure Gauge that is attached to pressure tap (7) . Remove the **8T-0855** Pressure Gauge that is attached to the rear charge pump's pressure tap (12) . Remove the **8T-0854** Pressure Gauge that is attached to the case drain pressure tap (10) .