FORM NO. 3314-126

TORO®

PART NO. 13-8689

INSTALLATION INSTRUCTIONS

HYDRAULIC UPDATE KIT

GROUNDSMASTER 580 D

RIGHT SIDE OF MACHINE

1. Loosen wheel lug nuts (Fig. 1).

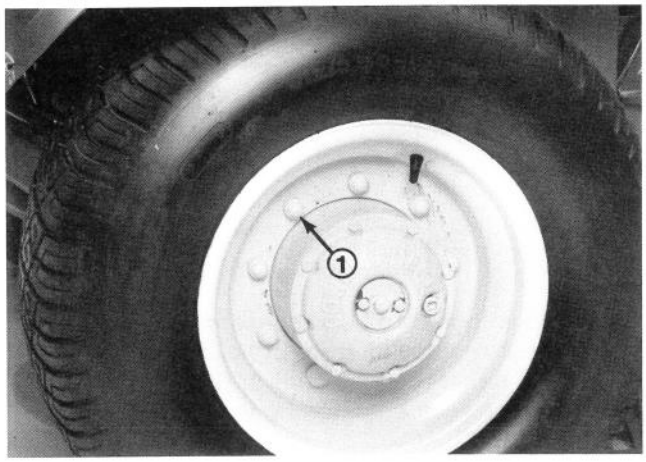


Figure 1

1. Wheel lug nut

2. Jack up machine and support with jack stands of proper capacity.

3. Remove wheel lug nuts and remove wheel.

NOTE: Put a drain pan below planetary wheel drive to catch oil. If oil has not been drained, approximately 8 oz. of oil will drain out as wheel drive is pulled away from hydraulic motor coupling.

4. Remove eight (8) capscrews and lockwashers securing planetary wheel drive to brake housing (Fig. 2). Pull wheel drive out approximately 1/2 in. and allow oil to drain out.

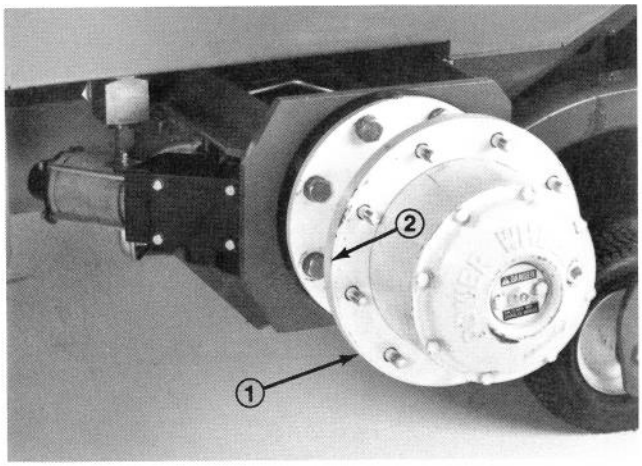


Figure 2

1. Planetary wheel drive *2. Mounting capscrews*

5. Remove planetary wheel drive (Fig. 3).

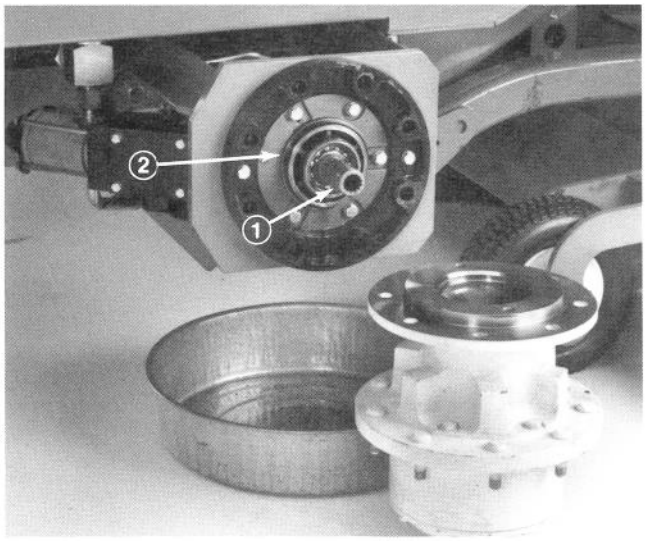


Figure 3

1. Hydraulic motor coupling *2. O-Ring*

6. Remove drain plug from bottom of hydraulic tank and drain oil from right side of tank.

7. Disconnect, remove and discard hydraulic tube running from bulkhead to elbow fitting on wheel motor (Fig. 4).

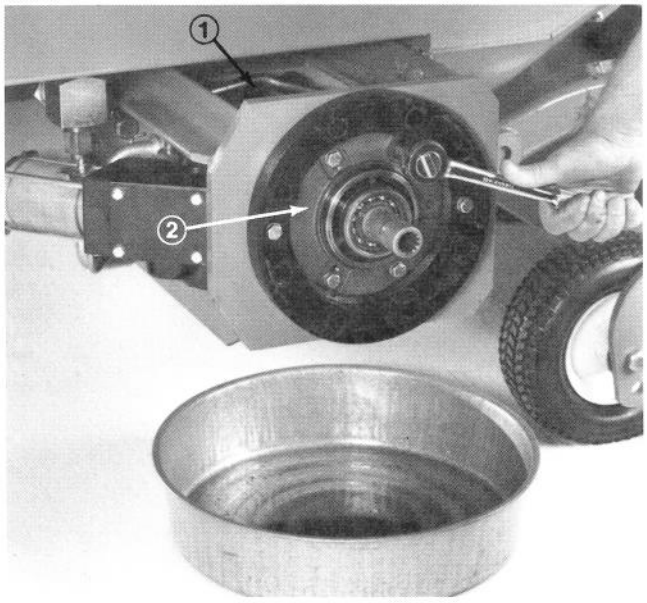


Figure 4

1. Hydraulic tube *2. Brake housing cap*

NOTE: If seal replacement is not required, proceed to step 15. (Refer to service bulletin #10 for additional information)

8. Remove four (4) capscrews and lock washers from brake housing cap (Fig. 4).

9. Remove brake housing cap and outer brake disc (Fig. 5).

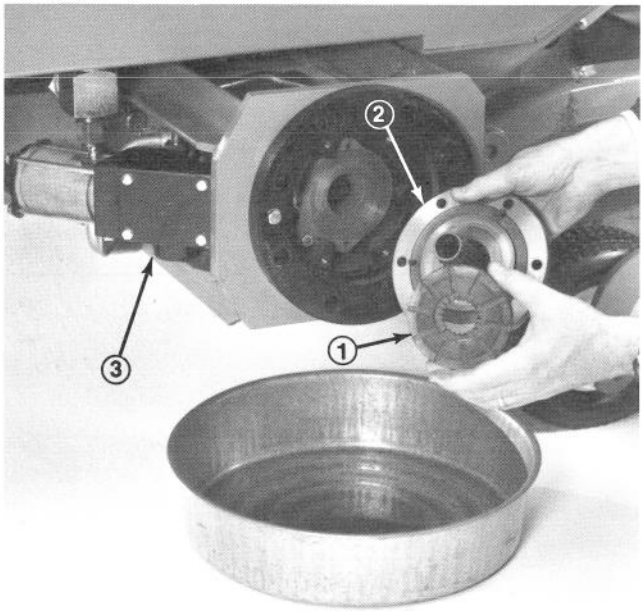


Figure 5

1. Outer brake disc
2. Brake housing cap
3. Actuator housing cover

10. Remove four (4) capscrews and remove cover from brake actuator housing (Fig 5).

11. Remove cotter key and clevis pin to disconnect brake cable clevis (Fig 6).

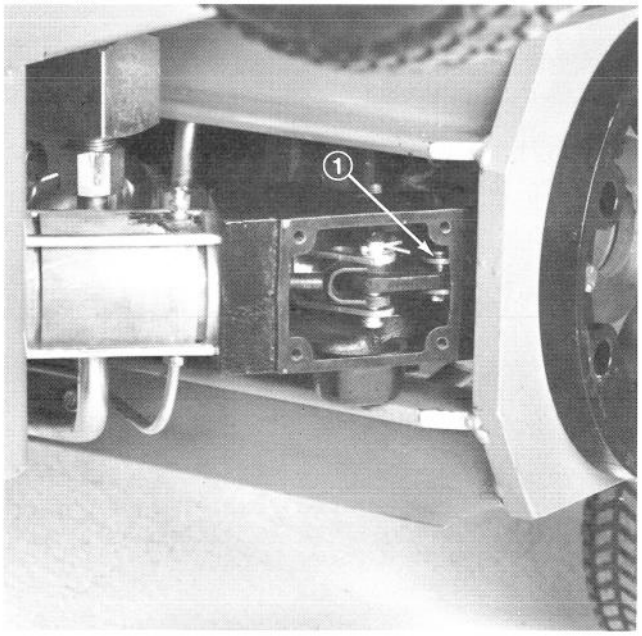


Figure 6

1. Brake cable clevis

12. Remove brake actuating disc assembly and inner brake disc (Fig. 7).

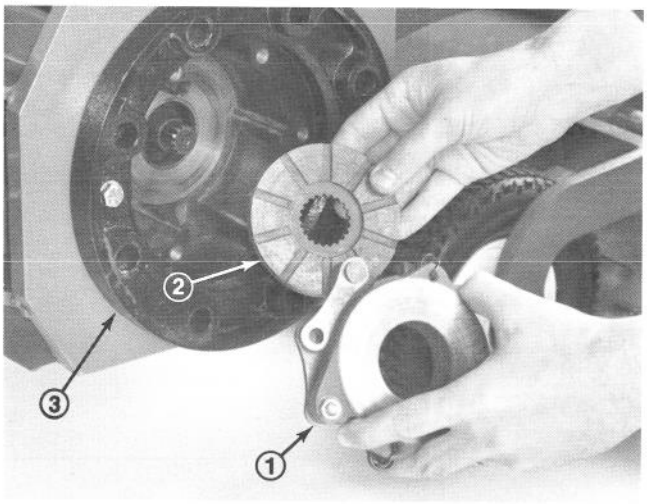


Figure 7

1. Actuating disc assembly
2. Inner brake disc
3. Brake housing

13. Remove four allen head capscrews to disconnect brake actuator housing from brake housing (Fig. 8). Be careful not to damage the brake tube line when moving the brake actuator housing away from the brake housing.

Note: Removing one of the allen head capscrews will require the use of a special tool. This tool can be made by cutting off a short section of allen wrench. Insert the short piece of allen wrench into the capscrew head and remove the capscrew by turning the short section of allen wrench with a combination wrench.

14. Support hydraulic wheel motor with blocks to keep weight off hydraulic lines and remove two (2) capscrews, lockwashers and flat washers securing motor to brake housing (Fig. 7).

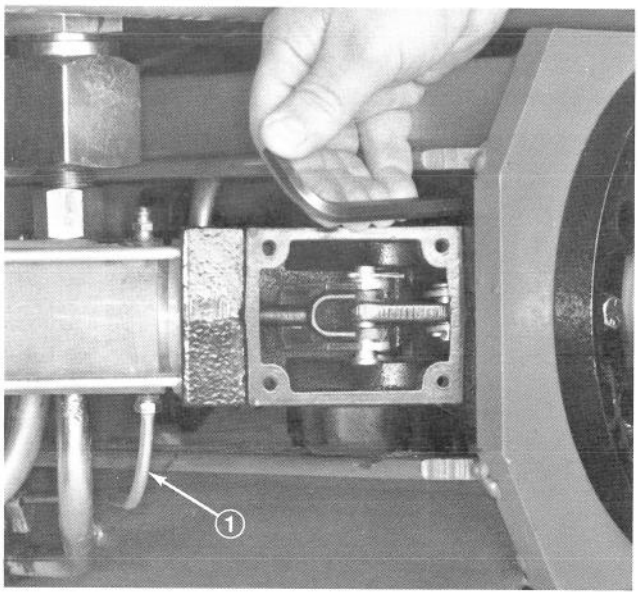


Figure 8

1. Brake tube line

15. Remove two (2) capscrews and lockwashers securing brake housing to frame. If replacing the seal, remove brake housing (Fig. 9)

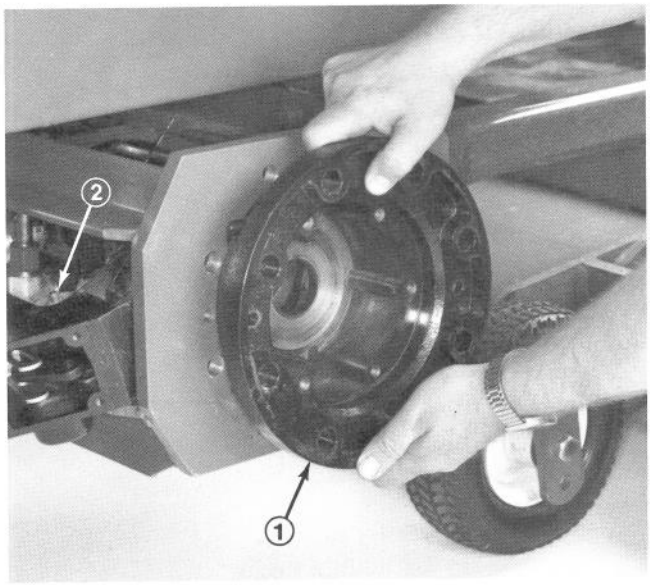


Figure 9

1. Brake housing *2. Elbow fitting*

16. Maneuver wheel motor or motor assembly to gain access to elbow fitting. Remove and discard elbow fitting from wheel motor and replace with tee fitting supplied in kit (Fig. 9).

Note: If seal replacement is not required, proceed to step 21.

17. Remove the retaining ring from the wheel motor housing and carefully remove the seal from the housing bore (Fig. 10).

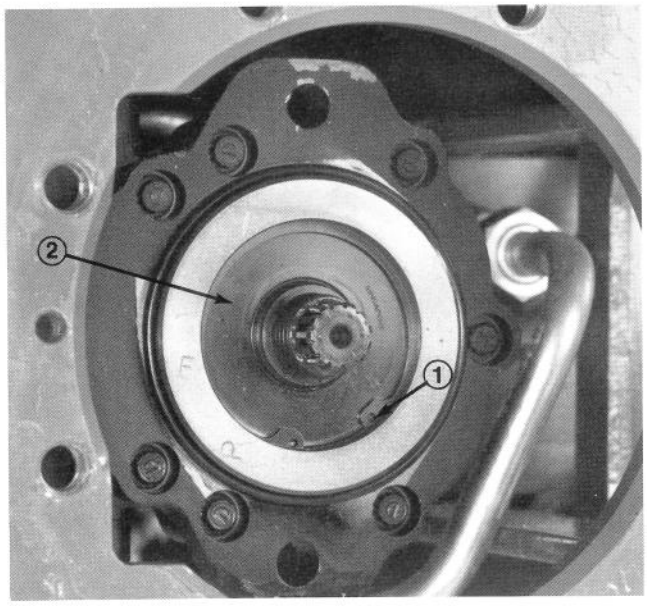


Figure 10

1. Retaining ring
2. Shaft seal

Note: The face of the seal may be punctured with a sharp instrument (such as a screwdriver) to aid in prying the seal out, or a slide hammer type puller may be used to remove the seal. Care must be taken so as not to damage the housing bore or shaft. Once removed the seal is not reusable.

Important: Prior to installing the new seal, inspect the sealing area on the shaft for rust, wear or contamination. Polish the sealing area on the shaft if necessary.

18. Wrap the spline end of the shaft with thin plastic to prevent damage to the seal lip during installation. Lubricate the inside diameter of the new seal with petroleum jelly.

19. Slide the new seal over the shaft and press it into the housing bore. Be careful not to damage seal.

Note: A seal installer tool can be made to aid in installing the seal. Dimensions for this tool are shown in fig. 11.

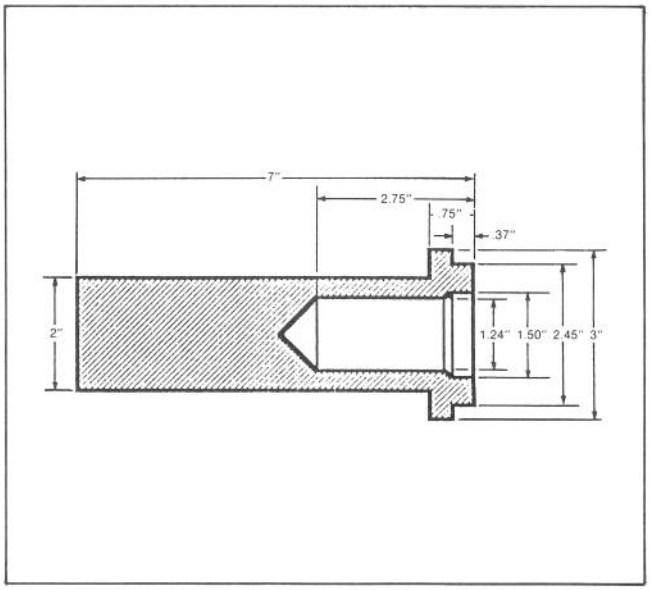


Figure 11

20. Reinstall retaining ring to wheel motor housing.

21. Reinstall brake housing to frame.

22. Install new tube (Part no. 76-4460) to bulkhead and tee fitting previously installed on wheel motor .

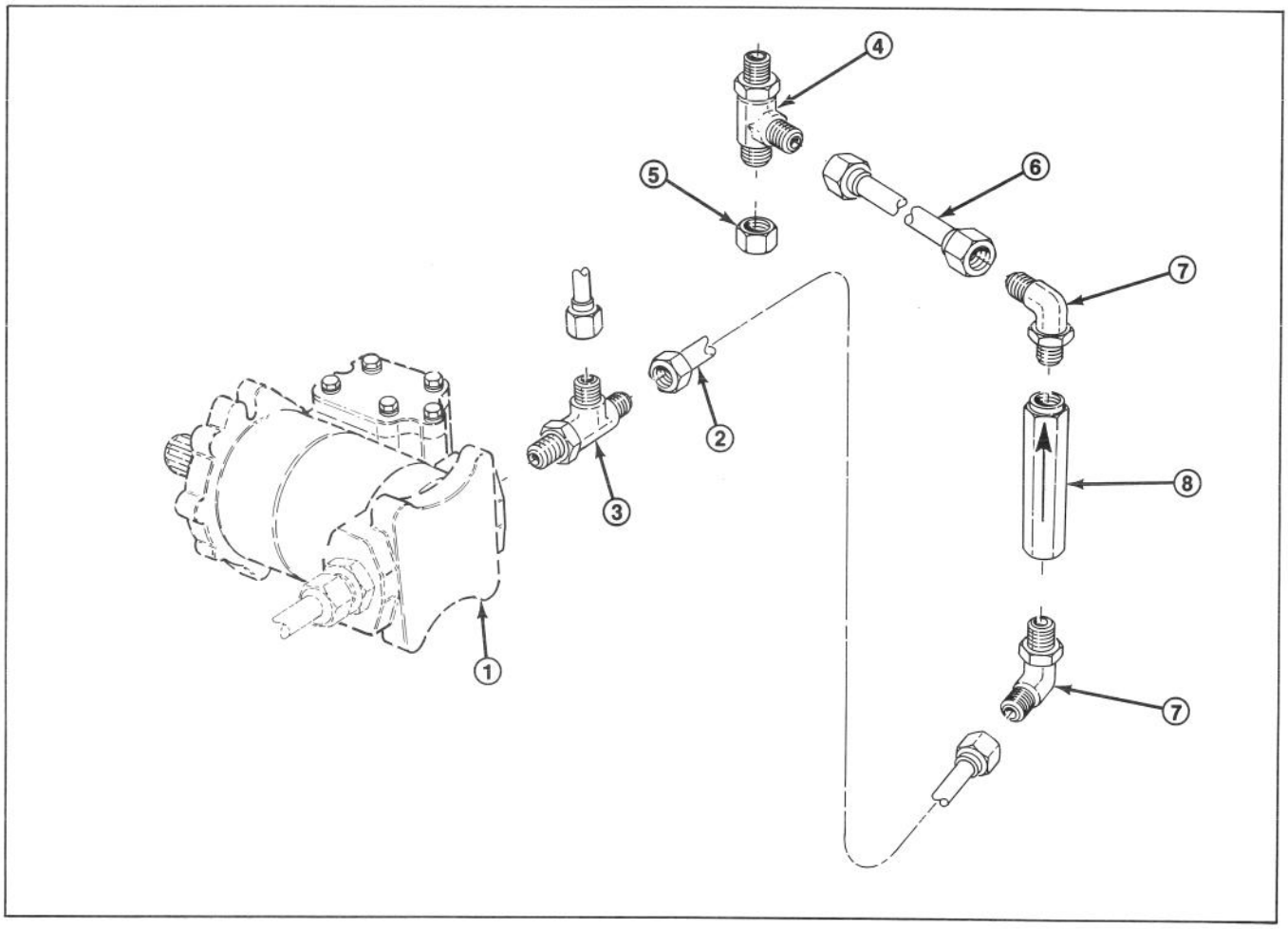


Figure 12

1. *Wheel motor*
2. *Hydraulic tube*
3. *Tee fitting*
4. *Tee fitting (hydraulic tank)*
5. *Cap*
6. *Short tube*
7. *Elbow fitting*
8. *Check valve*

23. Loosely install new tee fitting and cap to hydraulic tank fitting where drain plug was previously removed.

24. Install new short tube (Part No. 76-4450) to tee fitting secured to tank fitting (Fig. 12).

25. Mount an elbow fitting (Fig. 12) to bottom of check valve (supplied in kit) and tighten.

Note: Arrow on check valve points to top end of valve.

26. Loosely install another elbow fitting (Fig. 12) to top end of check valve. Do not tighten at this time.

27. Loosely secure top check valve fitting to new short tube.

28. Loosely secure bottom check valve fitting to new motor tee fitting with remaining tube (Part no. 76-4440) (Fig. 12). Tighten all fittings.

29. Reinstall brakes.

30. Adjust brakes as follows:

A. Use a 3/8 in. drive 9/16 in. deep well socket wrench to tighten adjusting nut on end of actuator until brakes are tight (Fig. 13).

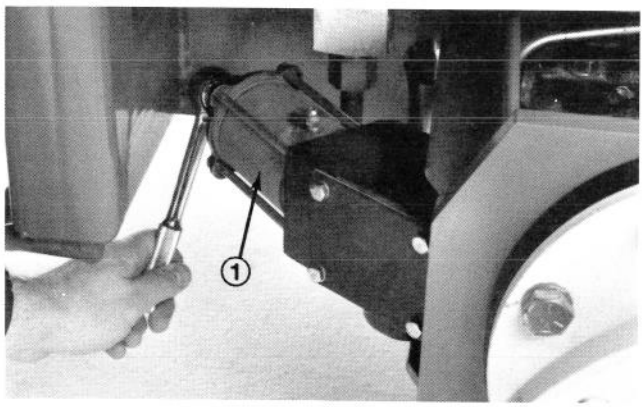


Figure 13

1. *Actuator*

B. Put a mark on the socket so you can count the number of rotations. Loosen the adjusting nut three (3) complete turns.

31. Check steering/parking brake and adjust if there is more than one (1) in. of "free travel". Free travel is the distance the brake pedal moves before braking resistance is felt (Fig. 14). Adjust as follows:

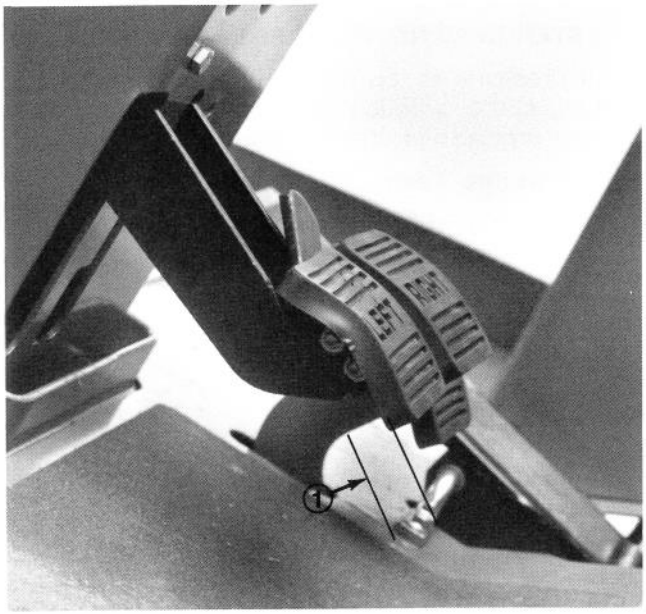


Figure 14

1. Free travel

32. Disengage the lock arm from the left brake pedal so both pedals operate independently.

33. To reduce free travel of brake pedals, tighten the brakes.

A. Loosen the top jam nut on threaded end of brake cable (Fig. 15).

Figure 15

1. Jam nuts

B. Tighten bottom jam nut to move cable down until brake pedals have 1/2 - 1 in. of free travel.

C. Tighten top jam nut after brakes are adjusted correctly.

34. Reinstall planetary wheel drive.

Note:. Before installing planetary wheel drive make sure o-ring is installed on brake housing cap. Replace o-ring if damaged.

NOTE: It will be necessary to rotate wheel drive when installing to align splines on input shaft with hydraulic motor coupling.

IMPORTANT: Check planetary wheel drive oil level and add correct oil as necessary.

35. Reinstall wheel.

IMPORTANT: Tighten wheel lug nuts in a crossing pattern to a torque of 60 - 70 ft-lb.

LEFT SIDE OF MACHINE (This section required only if replacing seal)

1. Repeat procedure on left side of machine omitting steps 6, 7, 16 and 22 thru 28.

CHECK COUNTERBALANCE

1. Remove control housing panel exposing counterbalance manifold assembly (Fig. 16)

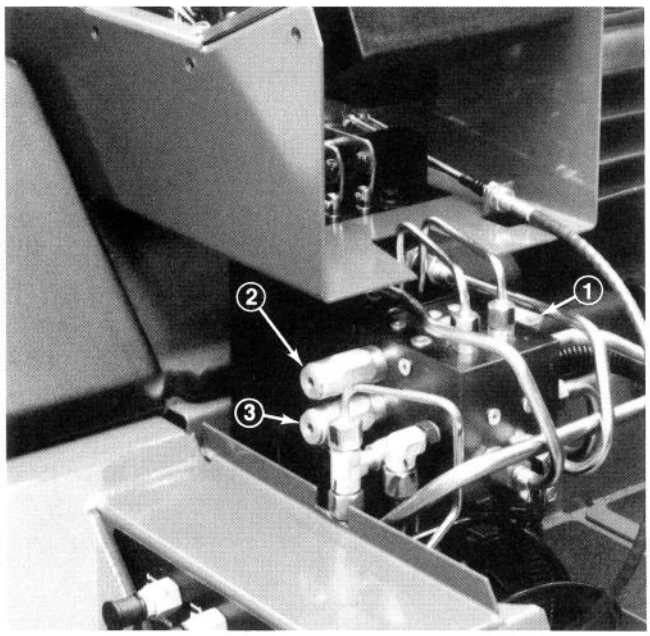


Figure 16

1. Counter balance relief valve
2. "Traction Plus" relief valve
3. Shift cartridge valve

2. Remove and discard shift cartridge valve from counterbalance manifold assembly (Fig. 16) and replace with new shift cartridge supplied in kit.

3. Refill hydraulic tank per instructions in Operator's Manual. Check for leaks and recheck oil level.

NOTE: Hydraulic oil must be at operating temperature for these tests or pressure reading will be too high.

IMPORTANT: To prevent damage to gauge, raise all decks before connecting 1,000 psi gauge to LIFT test port.

Counterbalance Pressure Test:

1. Connect a 1,000 psi gauge to LIFT test port (Fig. 17).

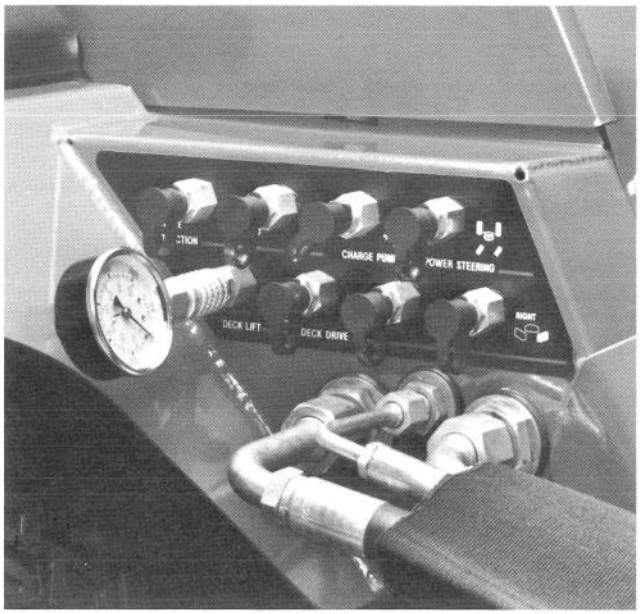


Figure 17

2. Start the engine and move the throttle to full speed (2,500 rpm).

TEST READING TO BE 400 + 25 - 0 PSI:

3. If pressure is too high or too low, remove cap and adjust the counterbalance relief valve screw until correct pressure is attained (Fig. 16).

"Traction Plus" Pressure Test:

1. Connect a 1,000 psi gauge to LIFT test port (Fig. 17).

2. Start the engine and move throttle to full speed (2,500 rpm). Move GROUND SPEED switch to HIGH RANGE.

3. Engage service brake, momentarily push traction pedal forward and read the gauges.

TESTER READING TO BE 600 + 50 - 0 PSI:

4. If pressure as too high or too low, remove cap and adjust the "traction plus" relief valve screw until correct pressure is attained (Fig. 16).

Shift Pressure Test:

1. Connect a 1,000 psi gauge to LIFT test port (Fig. 17). Connect a 5,000 psi gauge to TRACTION FORWARD test port (Fig.18).

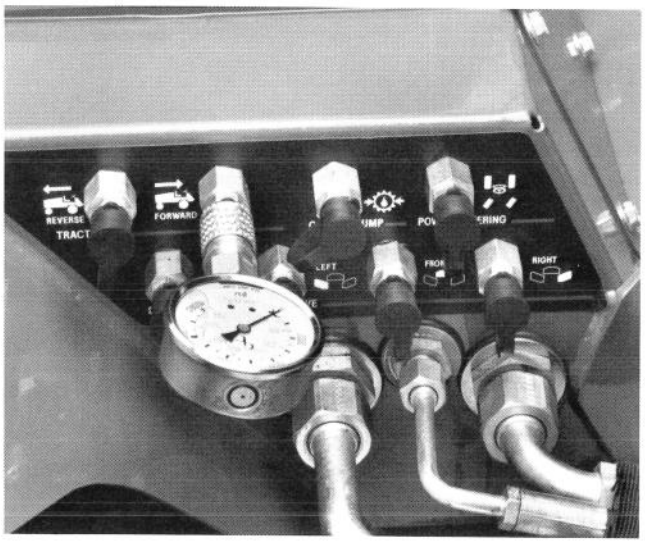


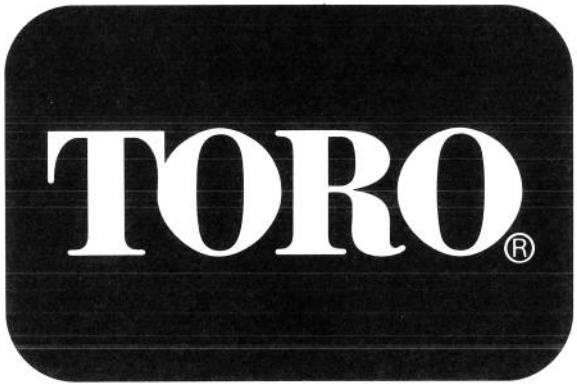
Figure 18

2. Start the engine and move throttle to full speed (2,500 rpm). Move GROUND SPEED switch to HIGH RANGE.

3. While watching gauges, engage service brake and slowly push traction pedal forward. Note pressure at TRACTION PORT when pressure at LIFT port shifts from 400 to 600 psi.

TESTER READING TO BE 2,000 + 50 - 0 PSI:

4. If shift pressure is too high or too low, remove cap and adjust the shift cartridge screw until correct shift pressure is attained (Fig. 16).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