

Product: MOTOR GRADER

Model: 135H MOTOR GRADER 7MM

Configuration: 135H Motor Grader 7MM00001-UP (MACHINE) POWERED BY 3116 Engine

## Disassembly and Assembly 120H & 135H MOTOR GRADERS POWER TRAIN

Media Number -SEN8543-02

Publication Date -01/09/2004

Date Updated -25/08/2009

SEN85430006

### Parking Brake

SMCS - 4267-011; 4267-012

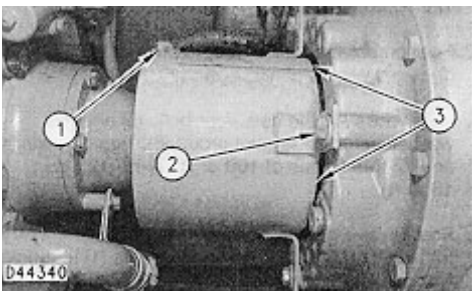
### Remove Parking Brake

Tools Needed		A
1U-9752	Transmission Jack	1

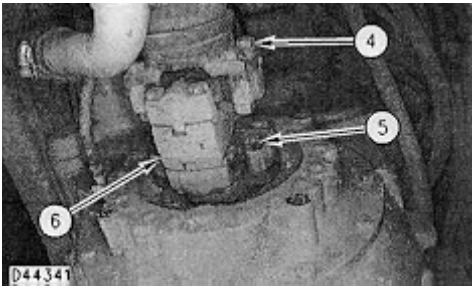
### WARNING

Be cautious of hot oil when draining the oil from the transmission and when disconnection and transmission oil lines. Hot oil can cause burns. Stay clear of any oil that may spill during disconnection of transmission oil lines or draining of oil.

1. Drain the transmission oil in a suitable container for storage or disposal. The capacity of the power train system on the 120H and 135H Motor Graders is **47 Liters (50 qt)**.



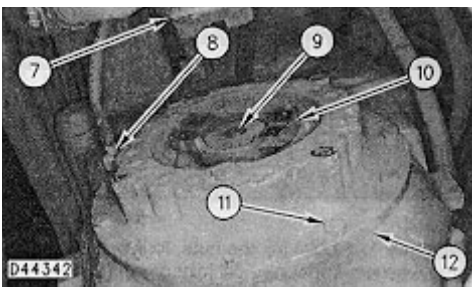
2. Remove bolts (1), the washers, bolts (2) and the washers from two guards (3). Remove two guard (3) from the front of the transmission.



3. Remove four bolts (4), the nuts, four bolts (5) and the washers from universal joint group (6). Remove universal joint group (6) from the shaft.



**Do not disconnect any air line from the machine until all the air pressure in the air tank is to zero. Release air pressure from the air tank by loosening the bleed valves. The bleed valves are underneath the rear bumper on the sides of the air tank.**



4. Release the air pressure from the air tank.

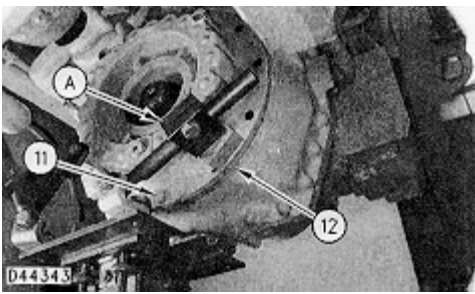
5. Disconnect air line (8) from the parking brake housing.

6. Remove bolt (9) and the washer that hold yoke (10) to the transmission shaft.

7. Remove yoke (10) and its O-ring seal from the transmission shaft.

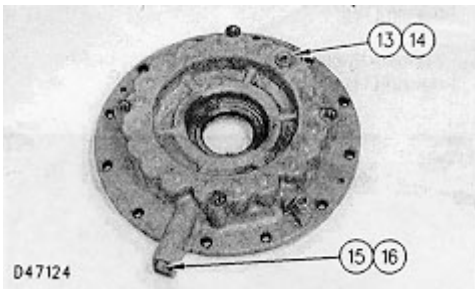
8. Remove yoke (7) from the differential.

9. Remove all but two of bolts (11) from parking brake housing (12). Leave one bolt at the top and bolt at the bottom of parking brake housing (12).



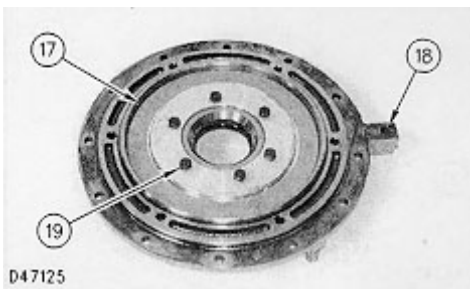
**10.** Attach Tooling (A) to parking brake housing (12).

**11.** Remove remaining bolts (11) from parking brake housing (12). Remove parking brake housing (12) from the transmission.



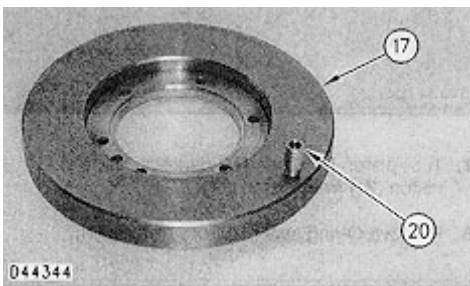
**12.** Remove plug (13) and O-ring seal (14) from parking brake housing (12).

**13.** Remove plug (15) and O-ring seal (16) from parking brake housing (12).

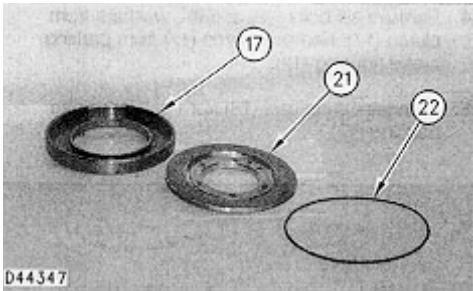
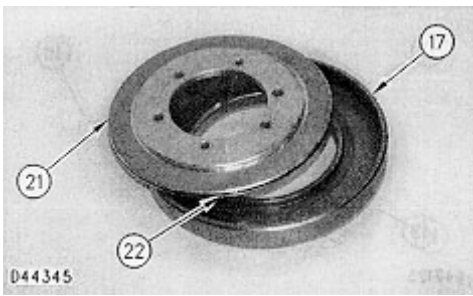


**14.** Remove six bolts (19) and the washers from piston (17). Remove piston (17) from parking brake housing (12).

**15.** Remove O-ring seal (18) from parking brake housing (12).

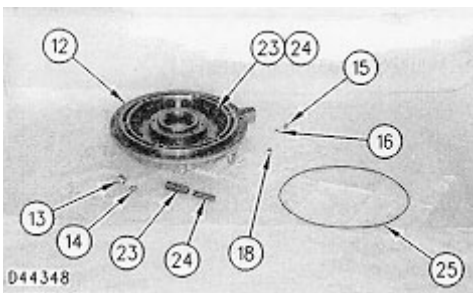


**16.** Remove plug (20) from piston (17).

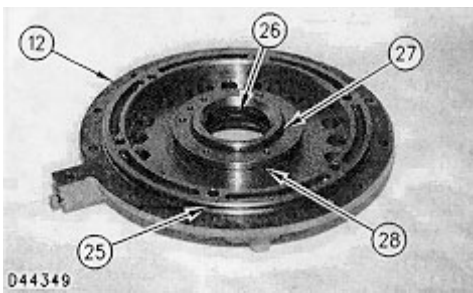


**17.** Turn piston (17) over 180 degrees. Separate piston (21) from piston (17).

**18.** Remove O-ring seal (22) from piston (21).



**19.** Remove twenty springs (23) and twenty springs (24) from parking brake housing (12).

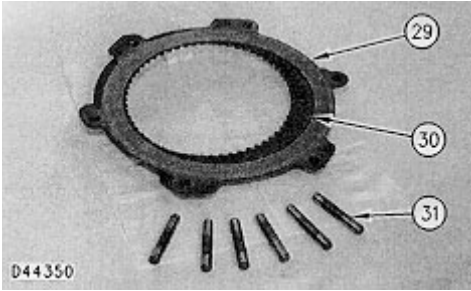
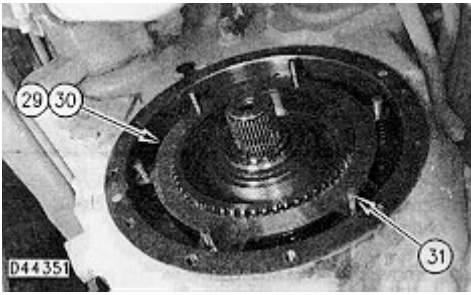


**20.** Remove O-ring seal (25) from parking brake housing (12).

**21.** Remove lip seal (26) from parking brake housing (12).

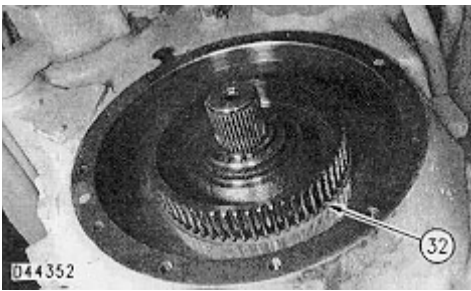
**22.** Remove O-ring seal (27) from parking brake housing (12).

**23.** Remove O-ring seal (28) from parking brake housing (12).



24. Remove six clutch plates (29) and five friction discs (30) from the transmission.

25. Remove six reaction dowels (31) from the transmission.

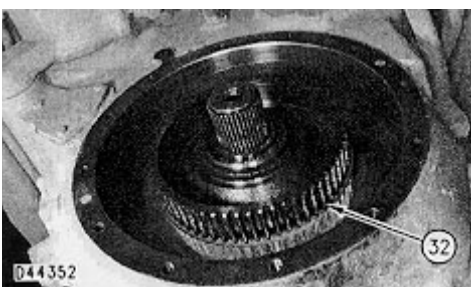


26. Remove clutch hub (32) from the transmission.

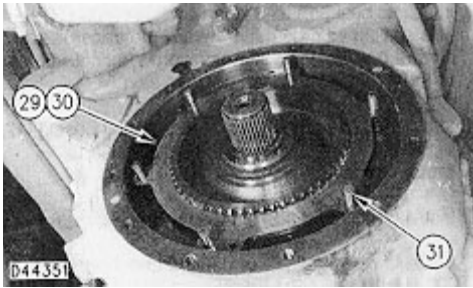
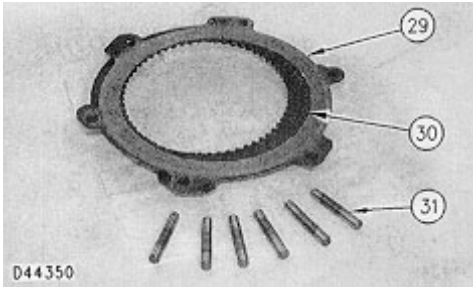
## Install Parking Brake

<b>Tools Needed</b>		<b>A</b>
1U-9752	Transmission Jack	1

**NOTE:** During the installation of the parking brake, check the condition of all of the O-ring seals used in the assembly. If any of these seals are damaged, use new parts for replacement.

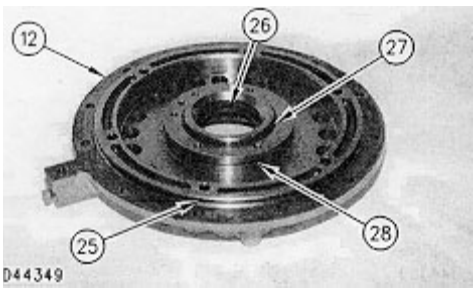


1. Install clutch hub (32) to the transmission.



2. Install six reaction dowels (31) in the transmission.

3. Starting with a clutch plate, install six clutch plates (29) and five friction disc (30) in the transmission.

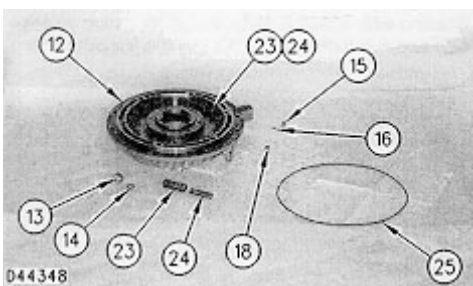


4. Install lip seal (26) to the parking brake housing (12). The sealing lip must face toward the transmission side of the parking brake housing. Lubricate the lip of the lip seal with clean transmission oil.

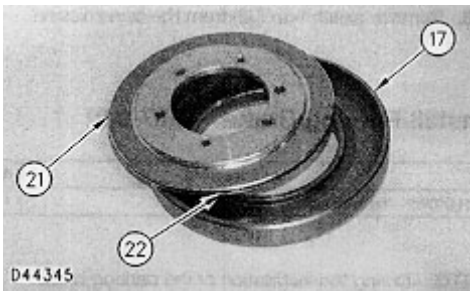
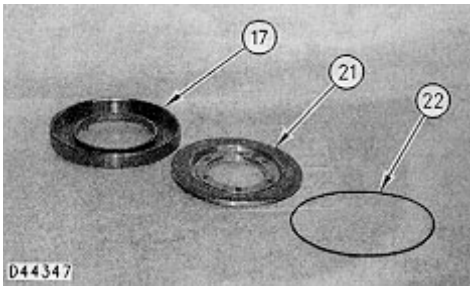
5. Install O-ring seal (27) in parking brake housing (12). Lightly lubricate O-ring seal (27) with clean transmission oil.

6. Install O-ring seal (28) in parking brake housing (12).

7. Install O-ring seal (25) to parking brake housing (12). Lightly lubricate O-ring seal (25) with clean transmission oil.

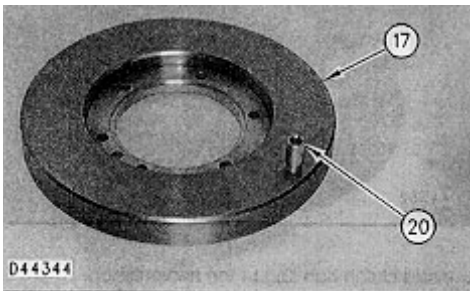


8. Install twenty springs (23) and twenty springs (24) in parking brake housing (12).

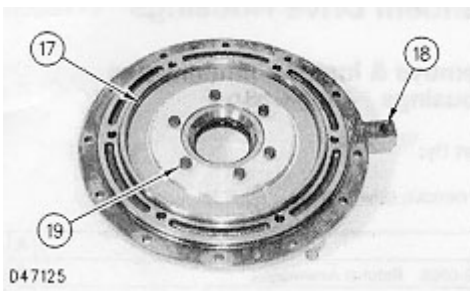


9. Install O-ring seal (22) to piston (21). Lightly lubricate O-ring seal (22) with clean transmission oil.

10. Install piston (21) in piston (17).

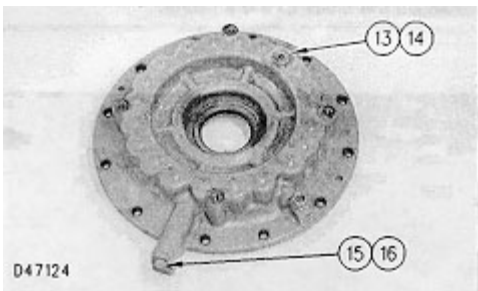


11. Install plug (20) in piston (17).



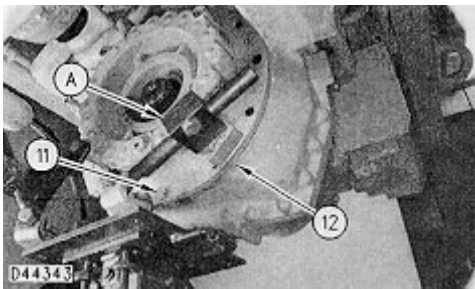
12. Install piston (17) in parking brake housing (12). Install six bolts (19) and the washers that hold piston (17) to parking brake housing (12).

13. Install O-ring seal (18) in parking brake housing (12).



14. Install O-ring seal (16) on plug (15). Install plug (15) in parking brake housing (12).

15. Install O-ring seal (14) on plug (13). Install plug (13) in parking brake housing (12).

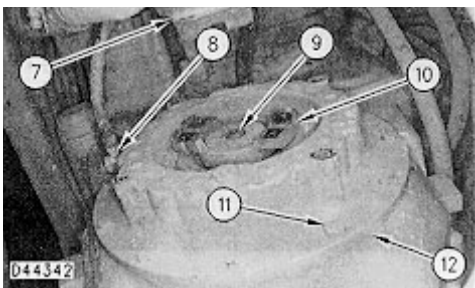


16. Install Tooling (A) to parking brake housing (12).

17. Position parking brake housing (12) to the transmission.

18. Install bolts (11) that hold parking brake housing (12) to the transmission.

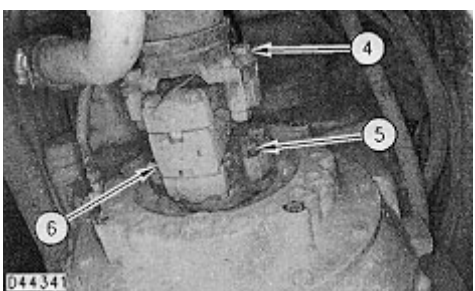
19. Remove Tooling (A) from parking brake housing (12).



20. Install yoke (10) with its O-ring seal to the transmission shaft.

21. Install bolt (9) and the washer that hold yoke (10) to the transmission shaft. Tighten bolt (9) to a torque of  $120 \pm 20 \text{ N}\cdot\text{m}$  ( $90 \pm 15 \text{ lb ft}$ ).

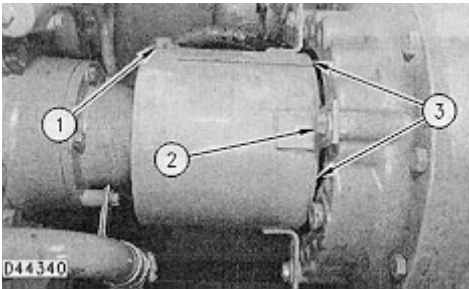
22. Install yoke (7) to the differential.





**23.** Position universal joint group (6) to the drive shaft. Install bolts (4), the nuts, bolts (5) and the washers that hold universal joint group (6) the drive shaft. Tighten bolts (4) and (5) to a torque of **160 ± 25 N·m (120 ± 18 lb ft)**.

**24.** Connect air line (8) to its fitting on parking brake housing (12).



**25.** Position two guards (3) to the front of parking brake housing (12). Install bolts and washer (1) that hold two guards (3) together. Install bolts and washers (2) that hold the guards to the front of parking brake housing (12).

**26.** Fill the transmission with oil to the proper level. Refer to the "Operations and Maintenance Manual" for the proper procedure of filling the transmission.

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