

Product: TRACK-TYPE TRACTOR

Model: D6H II TRACK-TYPE TRACTOR 8SK

Configuration: D6H XL & D6H XR SERIES II TRACTORS / POWERSHIFT / 8SK00001-UP (MACHINE) POWERED BY 3306 ENGINE

Disassembly and Assembly D6H TRACTOR POWER TRAIN

Media Number -SEN3242-03

Publication Date -01/11/2004

Date Updated -10/01/2017

SEN32420019

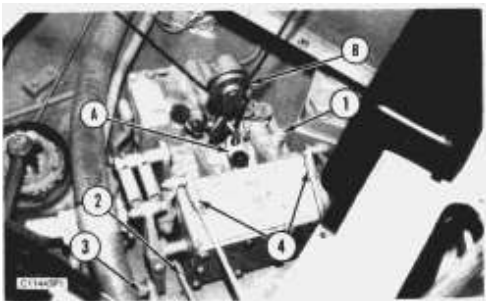
Steering Clutch And Brake Control Valve

SMCS - 4120-010; 4120-015; 4120-016

Remove And Install Steering Clutch And Brake Control Valve

Tools Needed		A	B
6V2156	Link Bracket	1	
0S1594	Bolt	1	
8M7145	Washer	1	
5P9736	Link Bracket		2
0S1585	Bolt		2
5P8245	Washer		2
8S9906	Ratchet Puller		1
	Sheave Hook from 5P9694 Ratchet Hoist		1

1. Remove the operators seat and the floor panel under the seat.



2. Disconnect brake and steering clutch control lever linkages (4) from the valve.
3. Disconnect brake pedal linkage (3) and parking brake linkage (2) from the valve.

4. Install tooling (A) onto the valve.
5. Install the 5P9736 Link Brackets [part of tooling (B)] at the rear upper corners inside the cab. Attach the 8S9906 ratchet puller and the sheave hook from the 5P9694 ratchet hoist to tooling (A) as shown.
6. Clean the dirt and debris from the valve and surrounding area.
7. Remove four bolts (1).
8. The weight of the steering and brake control valve is **43 kg (95 lb)**. Use tooling (A) and (B) and carefully remove the steering and brake control valve.
9. Remove the plate and the twelve O-ring seals that are under the steering clutch and brake control valve.

NOTE: The following steps are for installation of the steering clutch and brake control valve.

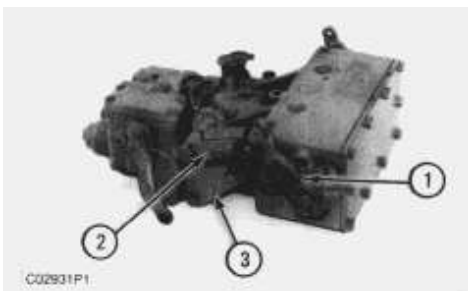
10. Put **5P0960 Multipurpose Grease** on the twelve O-ring seals and install the plate and the O-ring seals in position.
11. Use tooling (A), (B), and two 3/8 - **16 guide bolts** and put steering clutch and brake control valve in position on the plate. Install four bolts (1) and tighten them to a torque of **51 ± 4 N·m (38 ± 3 lb ft)**. Remove tooling (A) and (B).
12. Connect parking brake linkage (2), brake pedal linkage (3), and control lever linkages (4).
13. Install the floor panel and the operators seat.

Disassemble Steering Clutch And Brake Control Valve

Tools Needed		A	B	C
2P8312	Pliers	1		
6V4828	Pliers		1	
1P1853	Pliers			1

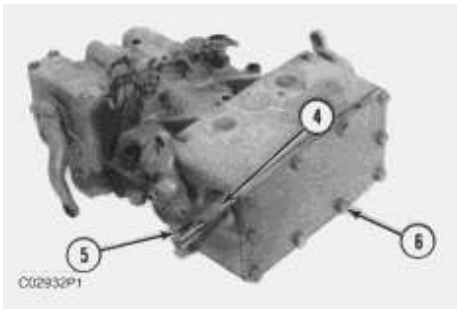
Start By:

- a. remove steering clutch and brake control valve



1. Remove two springs (2), the two bolts and bracket (3) from the valve.

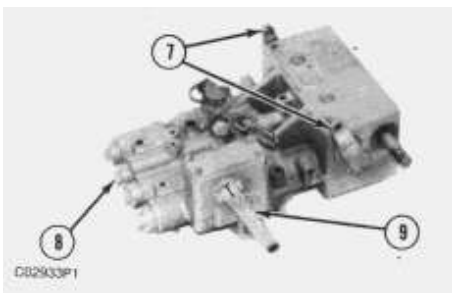
2. Loosen the bolt, and remove the bellcrank (1) from the valve.



3. Remove key (5) from the shaft.

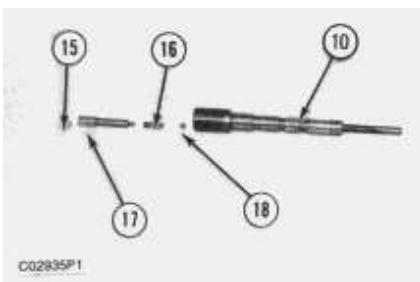
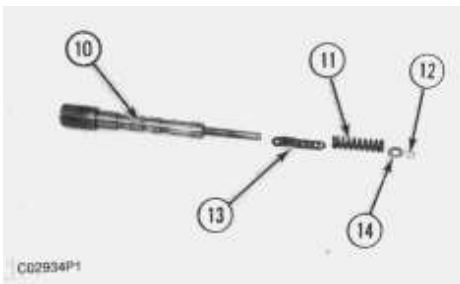
4. Use tooling (A) to remove retaining ring (4) and the washer.

5. Remove bolts (6), and remove the cover and gasket.



6. Loosen the bolts, and remove three levers (7) and (9).

7. Put identification marks on four spool assemblies (8) for assembly purposes. Remove the four spool assemblies from the valve.



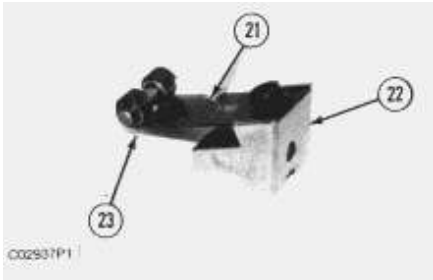
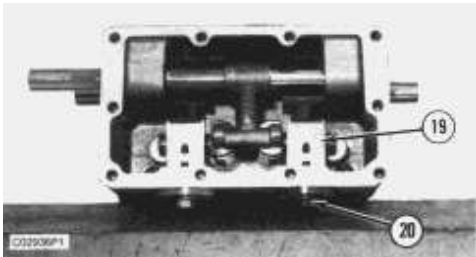
8. Use tool (B), and remove retaining ring (12) from spool assembly (10).

9. Remove washer (14), spring (11) and shims (13) from the spool assembly.

10. Use tool (C), and remove retaining ring (15) from spool assembly (10).

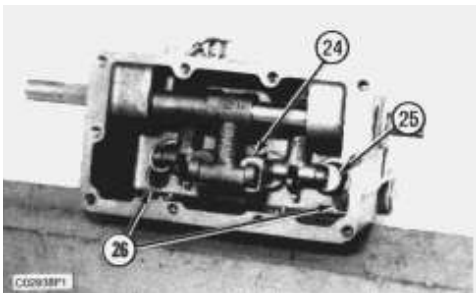
11. Remove plunger (17), spring (16), and ball (18) from the spool assembly.

NOTE: Step 8 through Step 11 should be repeated for four spool assemblies. Keep the shims (13) with their individual spool for assembly purposes.



12. Remove two bolts (20) and washers. Remove two spring assemblies (19) from the valve. Remove the O-ring seals from the washers.

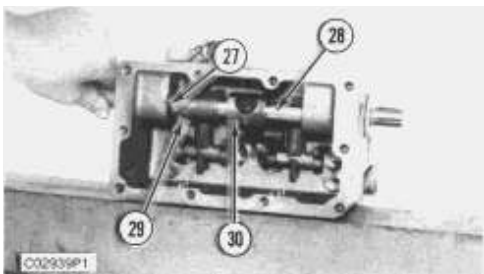
13. Remove the bolt and spring (21) from block (22). Remove the retaining rings, pin and two bearings (23).



14. Remove two bolts (26) and washers.

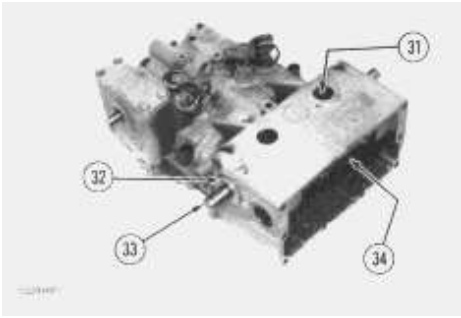
15. Remove bolt (24) and retainer.

16. Put identification marks on four plungers for assembly purposes. Remove four plungers (25) and the four springs.



17. Rotate shaft (28), and remove the bolt and washer. Remove shaft (28) from lever assembly (30), spacer (29), washer (27) and the valve body.

18. Remove the retaining rings, pin and two bearings from the lever assembly.

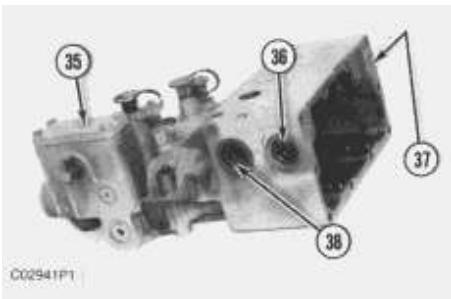


19. Remove two bolts (31) and washers from the lever assemblies.

20. Remove the key from shaft (33). Use tool (A), and remove the retaining ring and washer (32) from both sides.

21. Remove shaft (33) from two lever assemblies (34) and the valve housing.

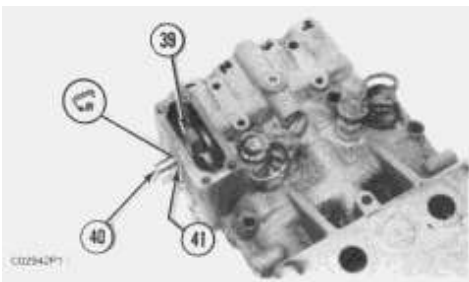
22. Remove the retaining rings, pin and two bearings from the lever assemblies.



23. Remove plug (37).

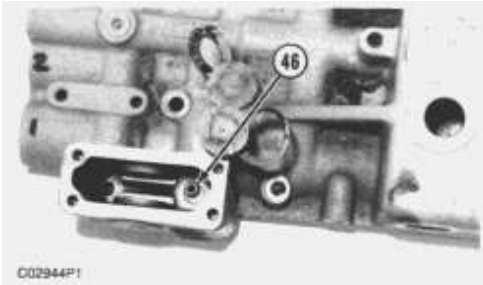
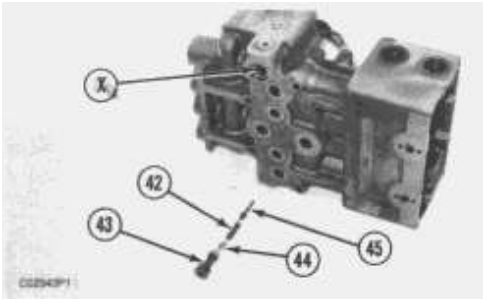
24. Remove three lip-type seals (36) and six roller bearings (38).

25. Remove the four bolts and cover (35) and gasket.



26. Remove the bolt from lever (39). Remove shaft (40) from lever (39) and the valve body. Remove lever (39) from the valve body.

27. Remove lip-type seal (41) and two bearings from the valve body.



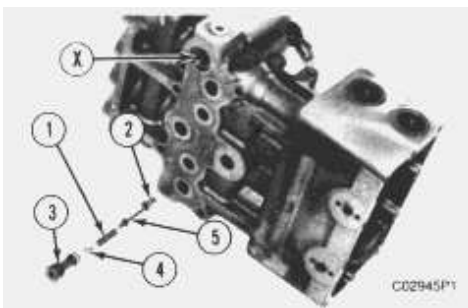
28. Remove seat (43), the two O-ring seals, valve (44), spring (42) and valve (45) from location (X) on the bottom of the valve body.

29. If necessary, carefully remove seat (46) from the valve body with a hammer and a punch.

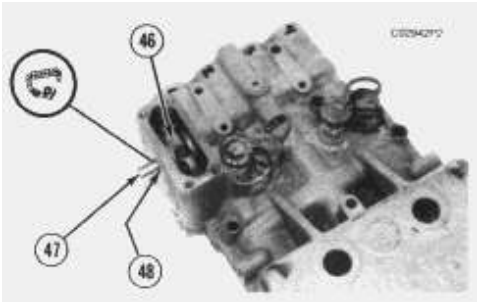
Assemble Steering Clutch And Brake Control Valve

Tools Needed		A	B	C	D
1P510	Driver Group	1			
6V4828	Pliers		1		
2P8312	Pliers			1	
1P1853	Pliers				1

1. Inspect O-ring seals and gaskets for damage, and replace if necessary. Make sure the valve bodies and all parts of the valve are clean. Put clean hydraulic oil on all of the parts.



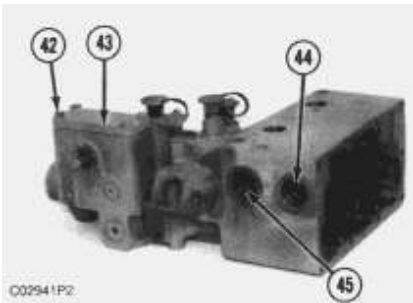
2. Install seat (2), valve (5), spring (1), valve (4) and seat (3) with two O-ring seals into location (X) in the valve body.



NOTICE

When installing the outer bearing in Step 3, use tooling (A) on the stamped end of the bearing only.

3. Use tooling (A), and install the two bearings.
4. Put **7M7260 Liquid Gasket Material** on the seal bore, and let it dry. Install lip-type seal (8) with the lip of the seal toward the inside of the valve body with tooling (A).
5. Put lever (6) into position in the valve body, and install shaft (7) into the valve body and lever (6). Install the bolt and washer into lever (6).

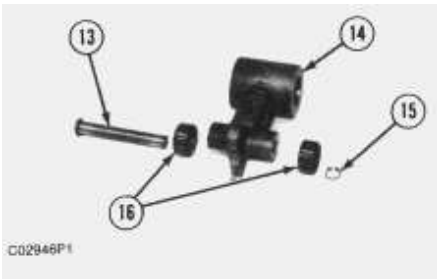


6. Put cover (9) and the gasket in position, and install the four bolts.

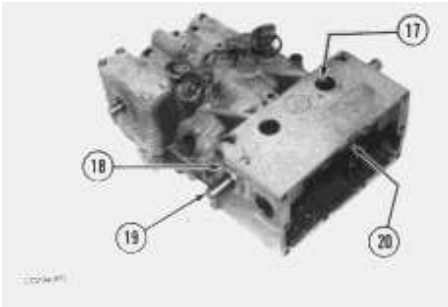
NOTICE

When installing bearings (12) in Step 7, use tooling (A) on the stamped end of the bearings only.

7. Use tooling (A), and install six bearings (12) into the valve body.
8. Put **7M7260 Liquid Gasket Material** on the plug bore, and let it dry. Use tooling (A), and install plug (11) into the valve body.
9. Put **7M7260 Liquid Gasket Material** on the seal bores, and let it dry. Use tooling (A), and install three seals (10) with the lip of the seal toward the inside of the valve body.



10. Install pin (13) into two bearings (16) and lever (14). Install retaining ring (15) onto the pin.

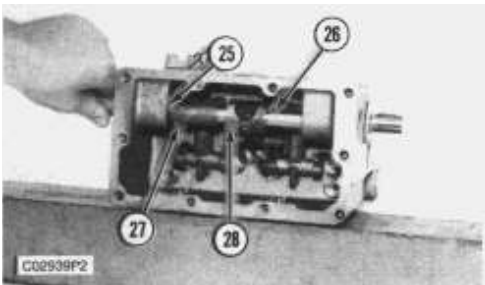
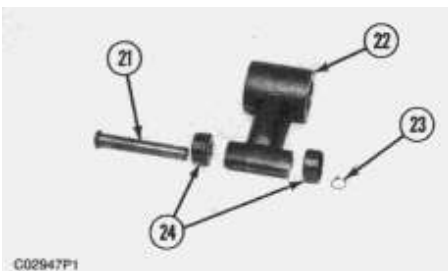


11. Put levers (20) in position in the valve body. Install shafts (19) into the valve body and lever assemblies (20).

12. Put washers (18) in position on shafts (19), and use tool (C) to install the retaining rings on the shafts.

13. Install the keys on shafts (19) both sides.

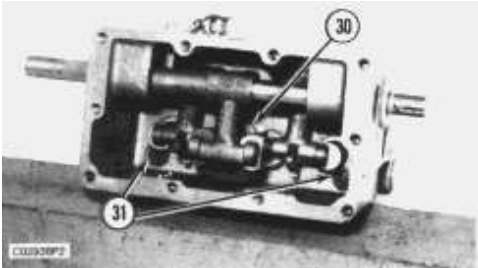
14. Rotate shafts (19) to align the holes, and install the two bolts (17) and washers.



15. Install pin (21) into two bearings (24) and lever (22). Install retaining ring (23) onto the pin.

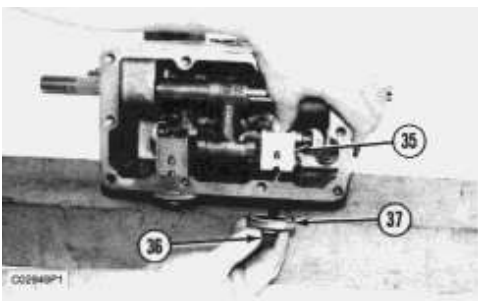
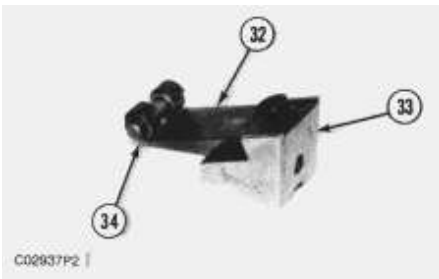
16. Put lever assembly (28) in position in the valve body, and install shaft (26) into the valve body, washer (25), spacer (27) and lever assembly (28).

17. Rotate shaft (26) to align the holes, and install the bolt and washer.



18. Install the four springs and four plungers (29) into the original location.

19. Install two bolts (31) and washers. Install bolt and retainer (30) into the valve body to hold the plungers in place.



20. Put spring (32) in position on block (33), and install the bolt and washer. Put two bearings (34) in position in the spring, and install the pin and two retaining rings.

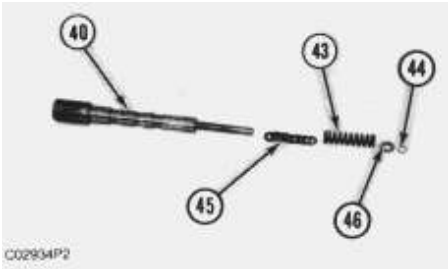
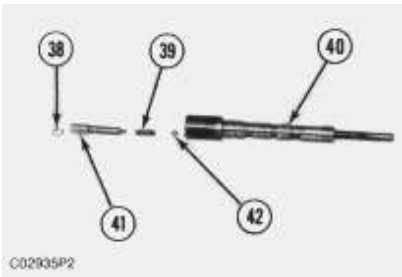
21. Put the spring assembly (35) in position in the valve body, and install bolt (36), washer and O-ring seal (37) loosely. Adjust the location of the spring assembly using the following procedure.

a. Move clutch lever assembly (20) until the roller bearing is in contact, but not depressing plunger (29).

b. Move spring assembly (35) until the pin of the spring assembly is in the front detent of clutch lever assembly (20).

c. Tighten bolt (36). Repeat the procedure for the other spring assembly.

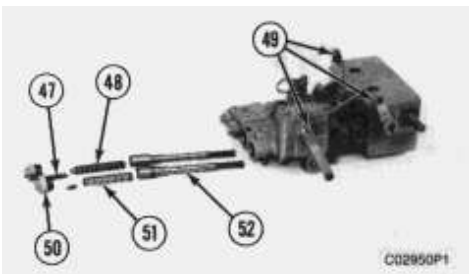
NOTE: See the Specification module, Form No. SENR4173, for additional adjustment information.



22. Install ball (42), spring (39) and plunger (41) into valve spool (40). Use tool (D), and install retaining ring (38) into the spool.

23. Install shims (45), spring (43) and washer (46) onto valve spool (40). Use tool (B), and install retaining ring (44) on the spool.

NOTE: Repeat Step 22 and Step 23 for the four valve spools.

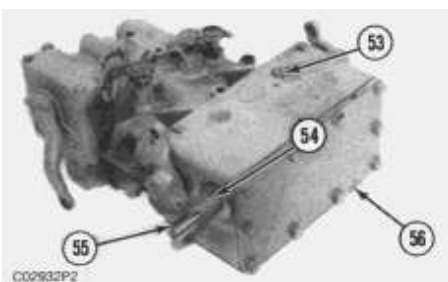


24. Install three levers (49).

25. Install four spool assemblies (52) into the valve body.

26. Install one spring (51) in the two outer valve spool locations. Install two springs (48) in the two inner valve spool locations.

27. Put the O-ring seals on plugs (50). Install shims (47) (that were originally removed) and plugs (50) into the valve body.

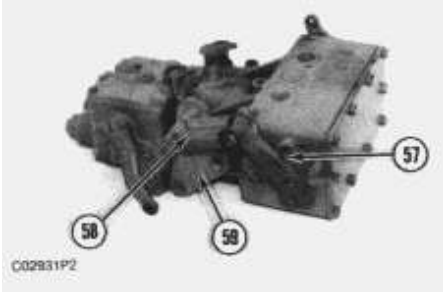


28. Put **7M7260 Liquid Gasket Material** in the two plug bores, and let it dry. Use tooling (A), and install two plugs (53) into the valve body.

29. Put cover (56) and gasket in position, and install the bolts.

30. Put washer (54) in position, and use tool (C) to install the retaining ring.

31. Install key (55) on the shaft.



32. Install bellcrank (57).

33. Put bracket (59) in position, and install the bolts. Install two springs (58).

End By:

a. install steering clutch and brake control valve.

Product: TRACK-TYPE TRACTOR

Model: D6H II TRACK-TYPE TRACTOR 8SK

Configuration: D6H XL & D6H XR SERIES II TRACTORS / POWERSHIFT / 8SK00001-UP (MACHINE) POWERED BY 3306 ENGINE

Disassembly and Assembly D6H TRACTOR POWER TRAIN

Media Number -SEN3242-03

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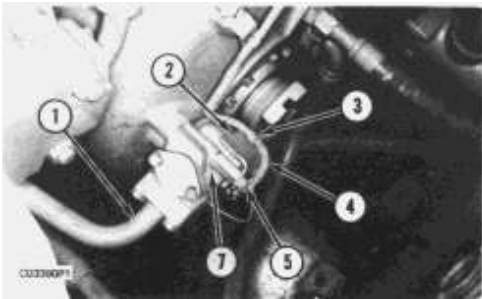
SEN32420020

Torque Converter Outlet Relief Valve

SMCS - 3133-010; 3133-017

Remove And Install Torque Converter Outlet Relief Valve

1. Remove the floor plate in cab.



2. Put identification marks on three wires (4) for correct assembly. Disconnect wires (4) from the switch and sender. Remove bolt (3) and the wire clip.
3. Remove the four bolts and disconnect tube assembly (1).
4. Remove three bolts (5), bracket (2), and the two spacers. Remove the relief valve.
5. Remove the two O-ring seals from the relief valve.
6. For installation of the relief valve, do Step 1 through Step 5 in the reverse order.

Disassemble And Assemble Torque Converter Outlet Relief Valve

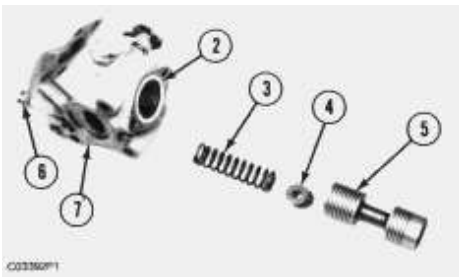
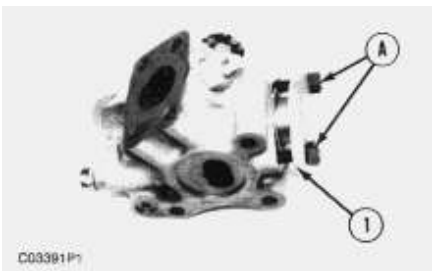
Tools Needed		A	B
0S1591	Bolt	2	
1P510	Driver Group		1

Start By:

- a. remove torque converter outlet relief valve.



There is spring pressure behind cover (1). To prevent possible personal injury, longer bolts [tooling (A)] should be used to release the spring pressure.



1. Use tooling (A) and release the spring pressure behind cover (1). Remove cover (1).
2. Remove valve spool (5), washers (4), spring (3), and O-ring seal (2) from relief valve (7).
3. Remove cover (6) and the O-ring seal. Use tooling (B) and remove the stop from the other side of the relief valve.
4. Remove the sending unit and the switch from the relief valve (7).
5. Inspect all O-ring seals and replace if necessary. Clean all parts thoroughly.
6. For assembly of the torque converter and let relief valve, do Step 1 through Step 4 in reverse order.

End By:

a. install torque converter outlet relief valve

Product: TRACK-TYPE TRACTOR

Model: D6H II TRACK-TYPE TRACTOR 8SK

Configuration: D6H XL & D6H XR SERIES II TRACTORS / POWERSHIFT / 8SK00001-UP (MACHINE) POWERED BY 3306 ENGINE

Disassembly and Assembly D6H TRACTOR POWER TRAIN

Media Number -SEN3242-03

Publication Date -01/11/2004

Date Updated -10/01/2017

SEN32420021

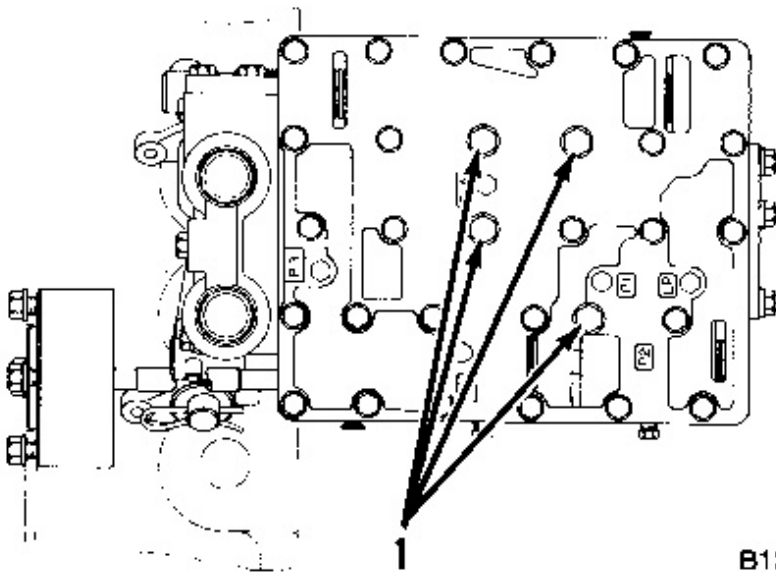
Transmission Hydraulic Control Valves

SMCS - 3167-010; 3167-015; 3167-016

Remove And Install Transmission Hydraulic Control Valves

Start By:

- a. remove priority valve



1. Loosen four bolts (1) that hold the transmission control valves to the transmission.
2. Lift the bolts high enough to clear the transmission, and wrap a rubber band around the bolts to hold them up.
3. The weight of transmission hydraulic control valves (3) is **34 kg (75 lb)**. Use two grooves, and remove the transmission hydraulic control valves from the transmission.
4. Remove two bolts (2) and the elbow and O-ring seal.
5. To install the transmission hydraulic control valves, do Step 1 through Step 4 in reverse order with the following additions.
 - a. Tighten two bolts (2) to a torque of **30 ± 4 N·m (22 ± 3 lb ft)**.
 - b. Tighten bolts (1) to a torque of **48 ± 4 N·m (35 ± 3 lb ft)**.

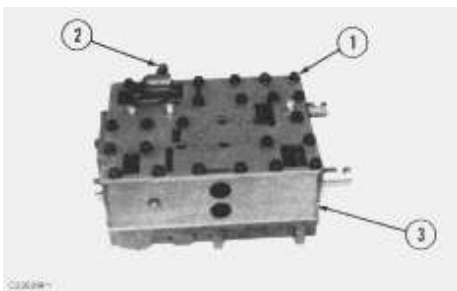
End By:

- a. install priority valve

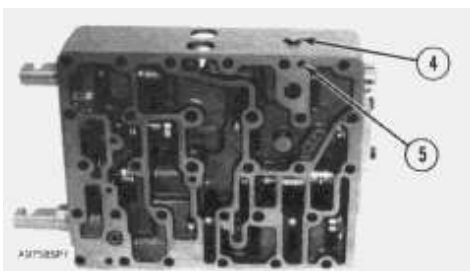
Disassemble Transmission Hydraulic Control Valves

Start By:

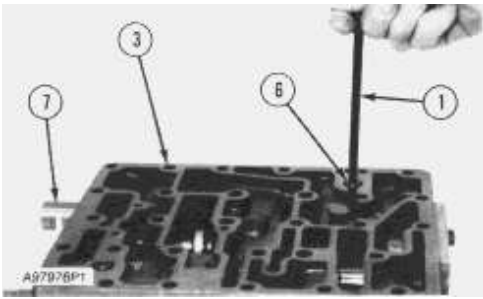
- a. remove transmission hydraulic control valves



1. Remove two bolts (2) and the elbow and O-ring seal from the plate. Remove 24 bolts (1) and the washers that hold the plate to the selector and pressure control valve.
2. Remove the plate from selector and pressure control valve (3).
3. Remove selector and pressure control valve (3) from the plate and manifold.

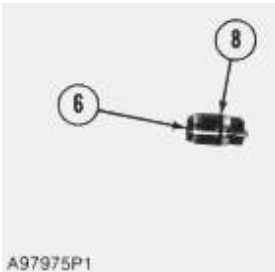


4. Disassemble selector and pressure control valve (3) as follows:
 - a. Remove pin (5) that holds stop (4) in place. Remove stop (4).

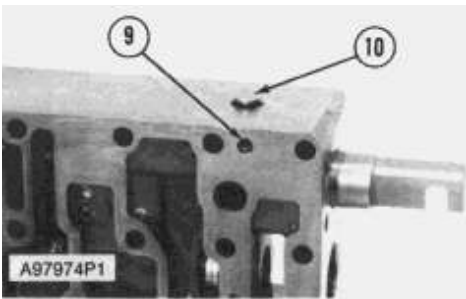


b. Use bolt (1) that was used to hold the hydraulic controls together, and remove detents (6) from each side of the selector and pressure control valve (3).

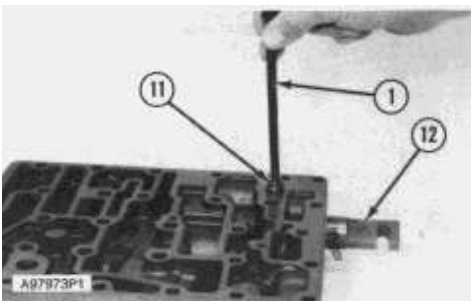
c. Remove valve spool (7).



d. Remove O-ring seals (8) from detents (6).



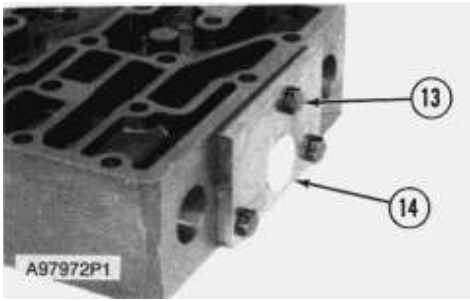
e. Remove pin (9) that holds stop (10) in place. Remove stop (10).



f. Use bolt (1) that was used to hold the hydraulic controls together, and remove detents (11) from each side of the selector and pressure control valve.

g. Remove the O-ring seals from detents (11).

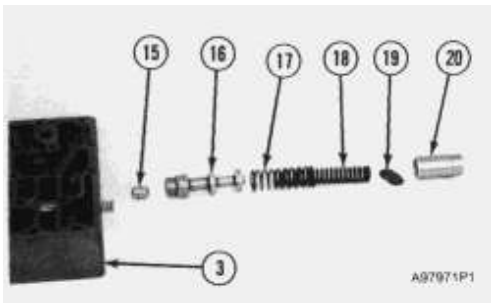
h. Remove valve spool (12).



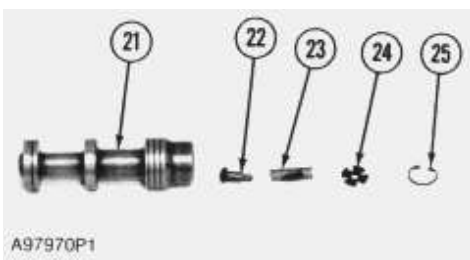
! WARNING

Cover (14) holds springs under compression. To prevent possible personal injury, loosen bolts (13) slowly and evenly to release the spring force on cover (14).

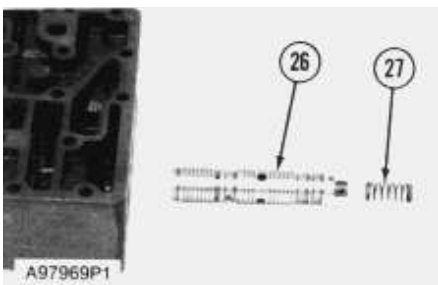
- i. Remove bolts (13) and cover (14). Remove the O-ring seals from the cover.



- j. Remove piston (20), spring (18), spring (17), valve spool assembly (16) and slug (15) from the selector and pressure control valve. Remove spacers (19) from piston (20).



- k. Remove snap ring (25), retainer (24), spring (23) and plunger (22) from valve spool (21).



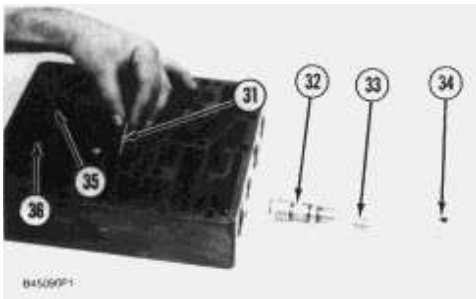
- i. Remove spring (27) and valve spool assembly (26).



WARNING

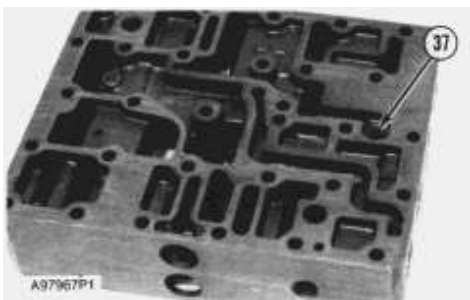
Retainer (29) holds two springs under compression. To prevent possible personal injury, be aware of this, and release the spring pressure slowly.

m. Remove snap ring (30), retainer (29) and the two springs from valve spool (28).

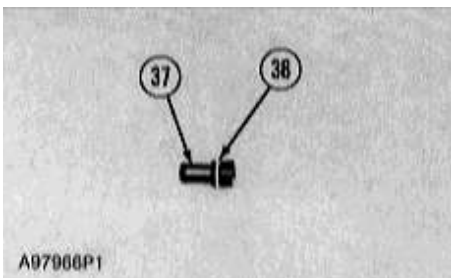


n. Remove dowel (31) from selector and pressure control valve (3). Remove stop (34), slug (33) and valve spool (32).

o. Remove two dowels (35) and (36) and the stops.



p. Remove orifice (37) from the selector and pressure control valve.



q. Remove O-ring seal (38) from orifice (37).

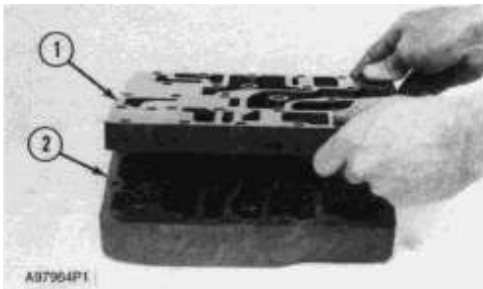
5. Remove the lower plate from the manifold.

Assemble Transmission Hydraulic Control Valves

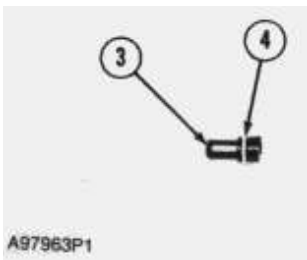
NOTICE

Do not use caustic (corrosive) materials to clean any parts in this valve group. Caustic materials will cause corrosion and damage to parts.

1. Make sure all the parts of the transmission hydraulic control valves are clean. Put clean oil on all of the parts of the valves. Inspect all O-ring seals for damage, and make replacements if needed.

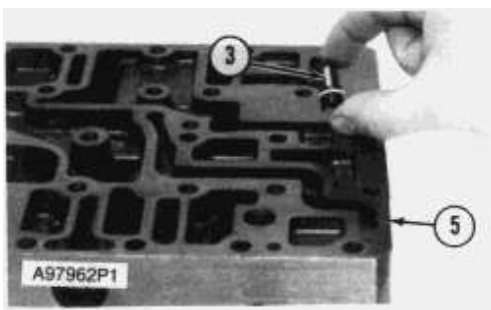


2. Put lower plate (1) on manifold (2).

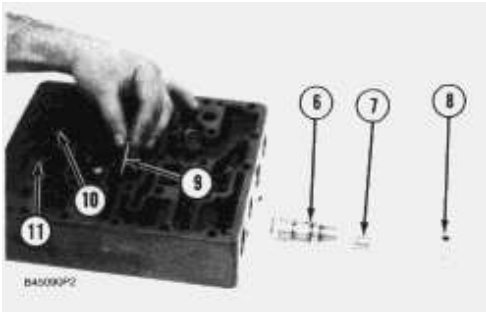


3. Assemble the selector and pressure control valve as follows:

a. Install O-ring seal (4) on orifice (3).

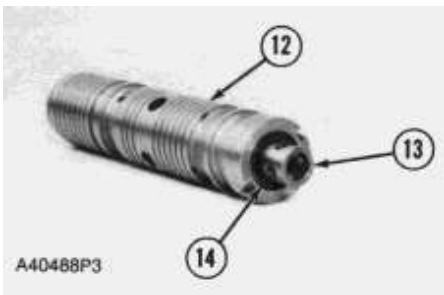


b. Install orifice (3) in selector and pressure control valve (5).

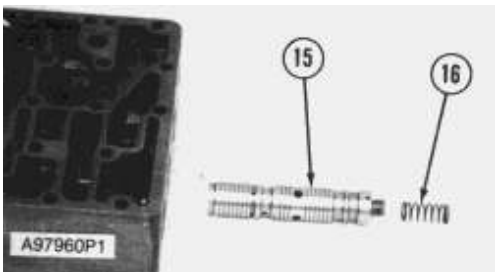


c. Install the two stops toward the end of the selector and pressure control valve. Make sure the holes in the stop are in alignment with the holes in the valve body. Install dowels (10) and (11) to hold the stops in place.

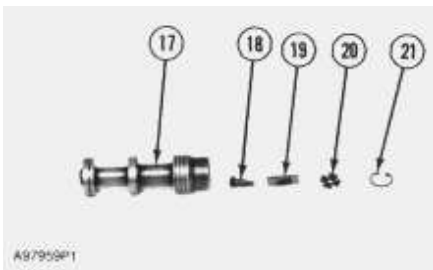
d. Install valve spool (6), slug (7) and stop (8). Make sure the hole in stop (8) is in alignment with the hole in the valve body. Install dowel (9) that holds stop (8) in place.



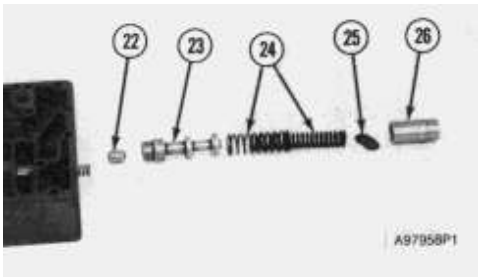
e. Install the two springs and retainer (13) in valve spool (12). Push the retainer into the valve spool, and install snap ring (14) that holds it.



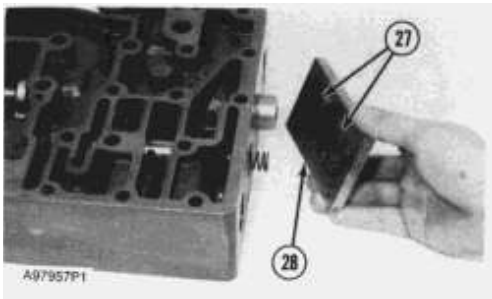
f. Install valve spool assembly (15) and spring (16) in the selector and pressure control valve.



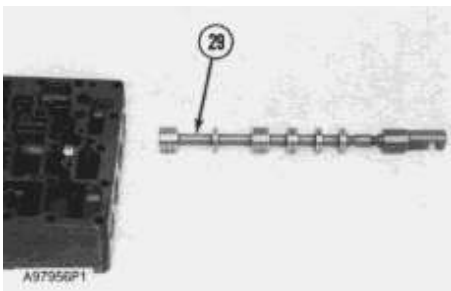
g. Install plunger (18), spring (19), retainer (20) and snap ring (21) in valve spool (17).



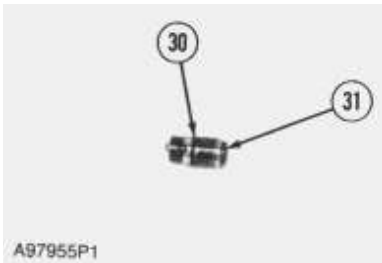
h. Install slug (22) into valve spool assembly (23). Install valve spool assembly (23), springs (24), spacers (25) and piston (26) in the selector and pressure control valve.



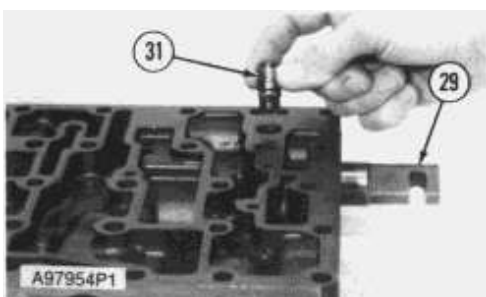
i. Install O-ring seals (27) on cover (28). Put cover (28) in position, and install the three bolts that hold it. Tighten the bolts to a torque of $30 \pm 4 \text{ N}\cdot\text{m}$ ($22 \pm 3 \text{ lb ft}$).



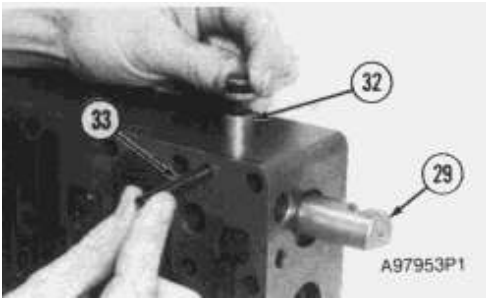
j. Install valve spool (29) in the selector and pressure control valve.



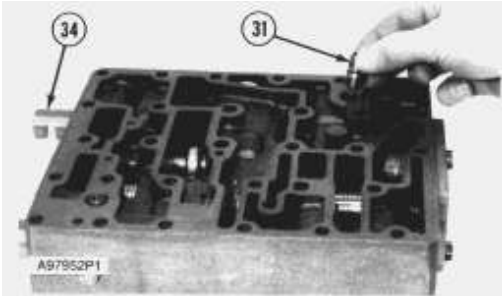
k. Install O-ring seals (30) on four detents (31).



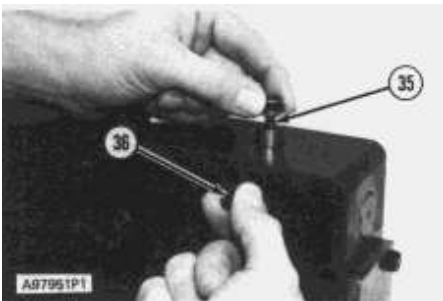
l. Install detent (31) on each side of the selector and pressure control valve for valve spool (29).



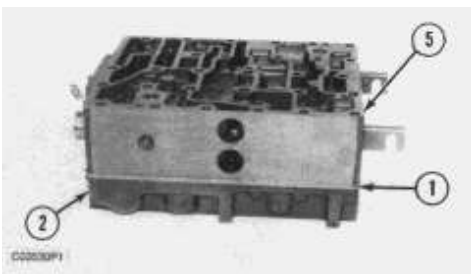
m. Install stop (32) and pin (33) that hold valve spool (29).



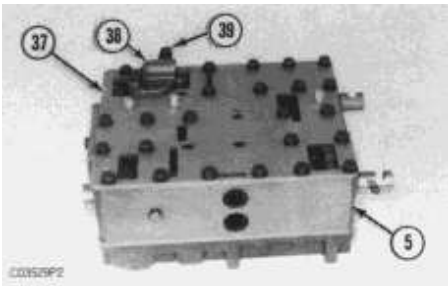
n. Install valve spool (34). Install detent (31) on each side of the selector and pressure control valve for valve spool (34).



o. Install stop (35) and pin (36) that hold valve spool (34).



4. Put selector and pressure control valve (5) in position on plate (1) and manifold (2).



5. Put plate (37) in position on selector and pressure control valve (5). Install the 24 bolts and washers that hold the transmission hydraulic control together. Tighten the bolts to a torque of **30 ± 4 N·m (22 ± 3 lb ft)**.

End By:

a. install transmission hydraulic control valves

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