

Product: EXCAVATOR

Model: 215B EXCAVATOR 2XC

Configuration: 215B EXCAVATOR 2XC00001-UP (MACHINE) POWERED BY 3204 ENGINE

## Disassembly and Assembly 215B & 225 HYDRAULIC PUMP AND MOTORS (PISTON TYPE)

Media Number -SEN3248-00

Publication Date -01/10/1985

Date Updated -11/10/2001

### Pump

SMCS - 5070-016; 5070-015

### Disassemble Pump

Tools Needed		A	B	C	D	E	F	G
8T0643	Bolt (M10 x 1.5 - 80 mm long)	2						
8B7548	Push-Puller Assembly		1		1			1
8B7552	Threaded Rod [5/8"-18 x 305 mm (12 in.) long]		1					
1B4206	Nut (5/8"-18)		1					
5P4808	Cap		2					
8B7550	Leg		2					
8T9165	Angle Block (Large)*		1					
8T9166	Angle Block (Small)*		1					
8T9161	Adapter (12 mm)*		1		1			
8T9164	Plate-removal*		1					
8T0289	Bolt (M5 x 0.8 - 20 mm long)		7					
8T4185	Bolt (M10 x 1.5 x 50 mm long)			2				
8H0660	Bearing Puller					1		
5P4758	Pliers						1	
1P1861	Pliers							

Tools Needed		H
8B7548	Push-Puller Assembly	1
8T9162	Adapter (10 mm)*	1

\*These tools will be available 7/86.

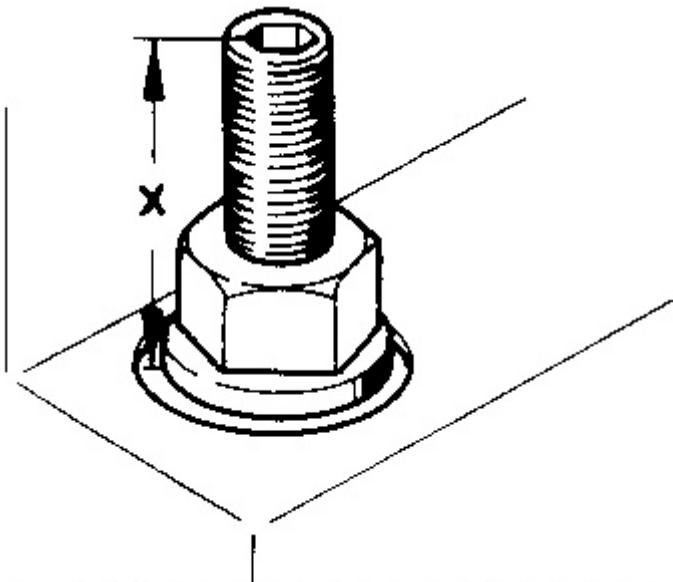
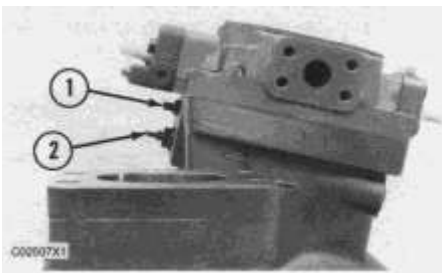
START BY:

a. remove pump

1. Cover all pump openings, and clean the outside of the pump thoroughly.

### NOTICE

**There are four external adjustment screws on this pump. All four adjustment screws have protective covers to prevent tampering or accidental adjustment. The covers will be destroyed and will need to be replaced if they are removed. The covers should be removed only when necessary for proper pump disassembly. Changes should be made to the adjustment screws only by trained personnel or poor vehicle performance will result.**



2. Remove the plastic covers from power adjustment screw (2) and torque adjustment screw (1).

3. Measure the height (dimension X) of torque adjustment screw (1) from the machined surface under the locking nut to the top of the screw. Record the dimension.
4. Measure the height of power adjustment screw (2) from the pump housing surface to the top of the screw. Record the dimension.

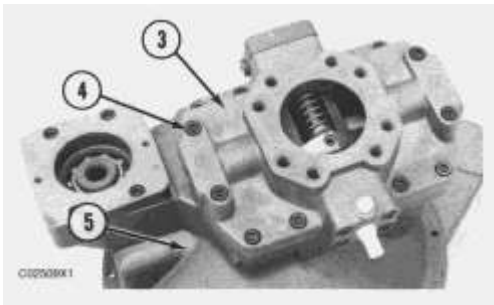
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### NOTICE

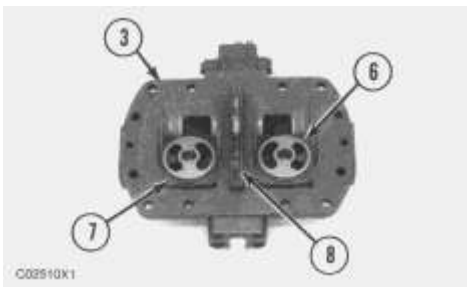
**Do not loosen power adjustment screw (2) or the jam nut. Remove only the threaded sleeve that the power adjustment screw threads into, and the adjustment will not be lost.**

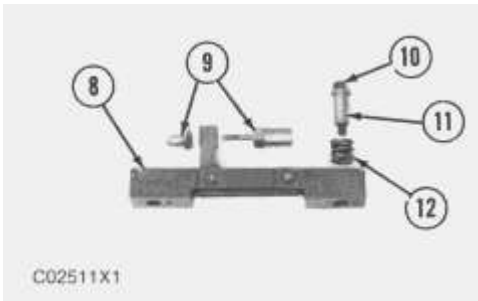
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5. Remove the threaded sleeve on power adjustment screw (2). Use a magnet, and remove the spring and spring seat from the pump housing. When the threaded sleeve is removed, the entire power adjustment screw assembly can be removed from the pump housing without changing the adjustment.
6. Loosen the jam nut for torque adjustment screw (1) 1/2 of a revolution. Remove the torque adjustment screw from the pump housing. The adjustment screw can be replaced into its original position at assembly by using the measurement that was determined in Step 4.



7. Put alignment marks on control housing (3) and pump housing (5) for correct assembly.
8. Remove 12 bolts (4) that hold the control housing to the pump housing.
9. Remove control housing (3) from pump housing (5). It may be necessary to carefully pry the control housing off of the two alignment dowels that are between the two housings.
10. Clean the gasket from control housing (3) and pump housing (5).



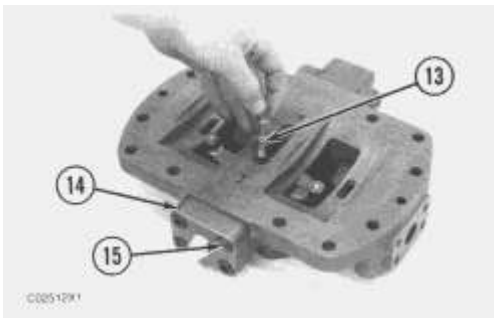


**11.** Put identification marks on control housing (3) and two control plates (6) and (7). Also put marks on the control plates to indicate the correct position of the dampening slots.

**12.** Remove control plates (6) and (7) from the control housing.

**13.** Remove bolt (10), spacer (11), and spring (12) that hold control lever assembly (8) to the control housing. Also, remove the spring under the other end of the control lever assembly. Bolt (10) was installed with thread lock, so it may be difficult to remove.

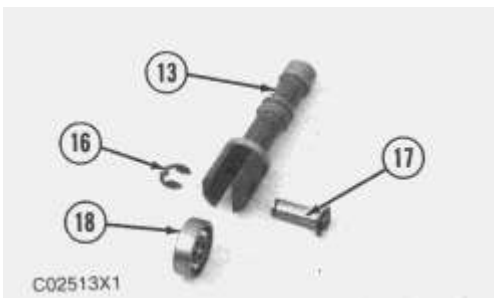
**14.** Remove spring seat (9) from control lever assembly (8).



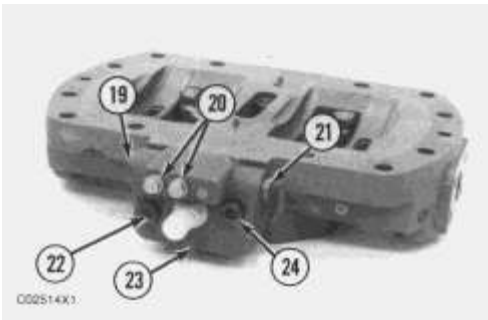
**15.** Remove control spool and roller assembly (13).

**16.** Put alignment marks on maximum angle stop housing (14) and the control housing for assembly purposes.

**17.** Remove four bolts (15) and maximum angle stop housing (14) from the control housing. Remove the two O-ring seals from maximum angle stop housing (14).



**18.** Remove retaining ring (16) from control spool and roller assembly (13). Remove shaft (17) and roller bearing (18).



19. Remove plugs (19) and (21). Remove the inner and outer pressure averaging valve spools behind plug (19).

20. Remove two plugs (20). Remove the relief valve and spring behind each plug. Remove the O-ring seals on plugs (20).

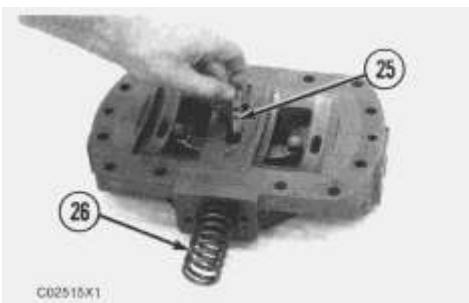
21. Put alignment marks on pressure averaging valve housing (23) and the control housing for assembly purposes.



**There is spring pressure behind pressure averaging valve housing (23) which may cause the assembly to fly apart when the two bolts are removed. To prevent possible personal injury, longer bolts should be used to release the spring pressure.**

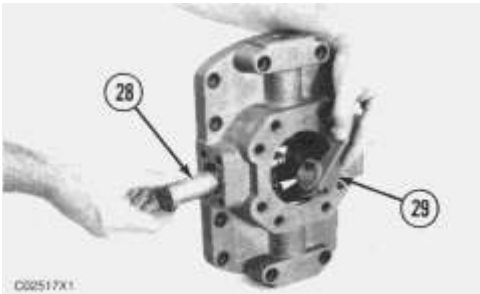
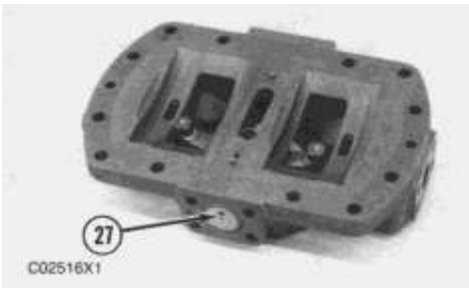
22. Remove one bolt (22), and install one bolt from tooling (A). Remove bolt (24), and install the other bolt from tooling (A). Loosen the two bolts from tooling (A) evenly, and release the spring pressure behind pressure averaging valve housing (23).

23. Remove tooling (A), and remove pressure averaging valve housing (23). Remove the three O-ring seals from the housing.



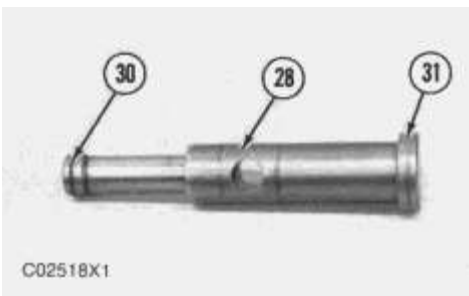
24. Remove control spool bushing (25).

25. Remove spring (26) from the control cover.



26. Note the location of pilot oil bore hole (27) in the end of the control piston. Put identification marks on the control piston for assembly purposes.

27. Hold swivel fork (29) in position, and remove control piston (28). Remove swivel fork (29).

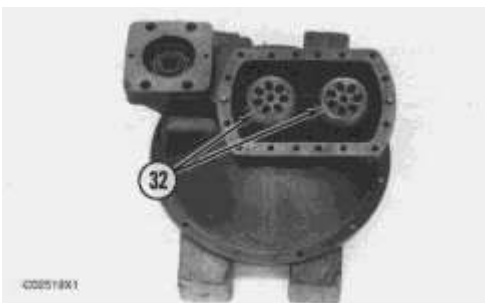


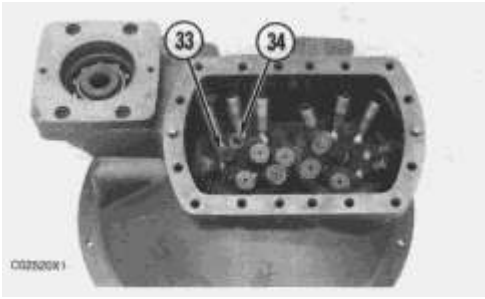
## **WARNING**

**Piston rings (30) and (31) may break apart during removal from the pistons. If the rings are to be removed, wear eye protection to prevent possible personal injury from flying parts.**

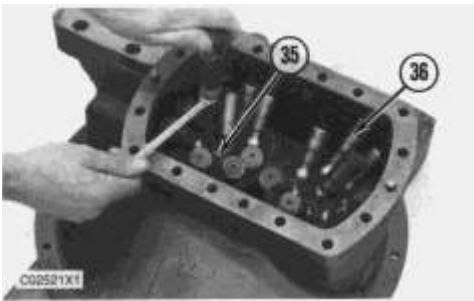
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28. Remove piston rings (30) and (31) from control piston (28).



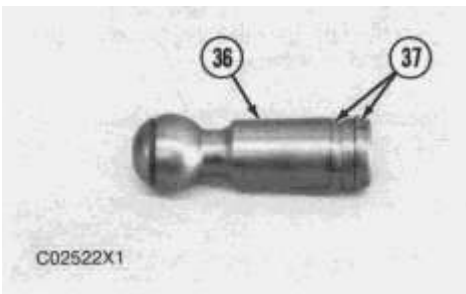


29. Remove two cylinder blocks (32) by pulling straight up. When each cylinder block is removed, the spring collar and the Bellville washers will most likely fall out of the center pin hole. Make sure that one spring collar (33) and four Bellville washers (34) are retrieved from the housing when each cylinder block is removed. Check the center pin hole in the cylinder block if all the parts did not fall out.



30. Remove 28 screws (35) that hold both retainer plates to the drive gears. The screws were installed with thread lock so they will be difficult to remove. Impact the screw heads first to break the seal, and remove by using additional leverage on the screwdriver as shown.

31. Remove the two retainer plates, 14 pistons (36) and the two center pins from the drive gear and bearing assembly.



**! WARNING**

**Piston rings (37) may break apart during removal from the pistons. If the rings are to be removed, wear eye protection to prevent possible personal injury from flying parts.**



32. Use a screwdriver, and remove piston rings (37) from pistons (36).

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