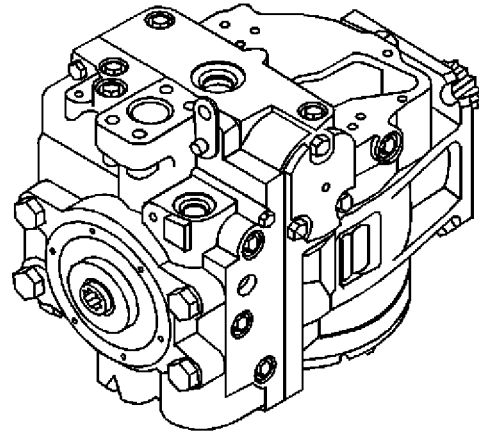


6. Remove charge pump cover.



N49055 -UN-04FEB97

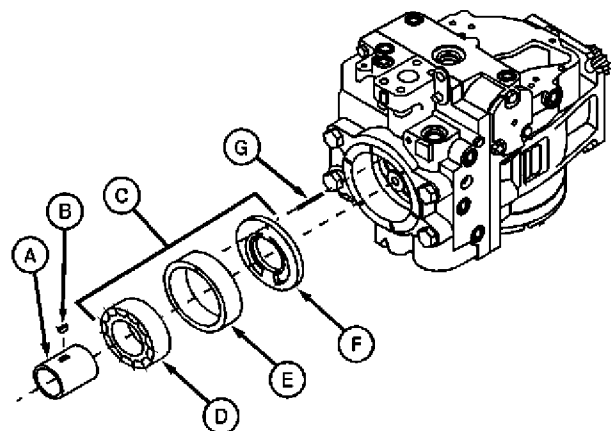
NX1688,5006,9 -19-16MAY97

7. Remove shaft (A) and key (B).

8. Remove gerotor (D), eccentric ring (E), port plate (F) and alignment pin (G).

9. Inspect parts for abnormal wear, damage or foreign material. Replace parts as needed.

- A—Shaft
- B—Key
- C—Charge Pump
- D—Gerotor
- E—Eccentric Ring
- F—Port Plate
- G—Alignment Pin



N49056 -UN-24JAN97

NX1688,5006,10 -19-19JUN97

10. Install port plate (F) and eccentric ring (E).

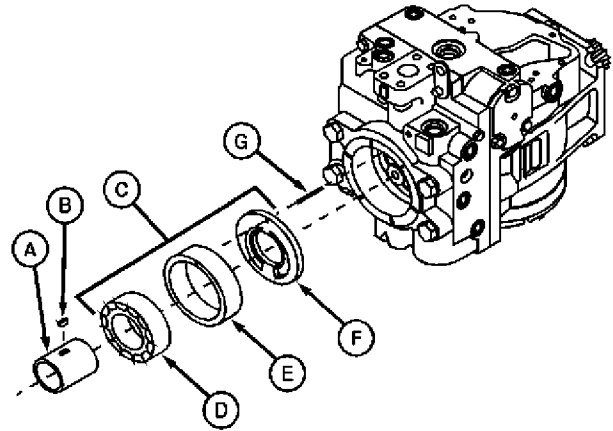
**NOTE:** The charge pump rotation is determined by the orientation of the gerotor assembly outer eccentric ring and location of alignment pin in the end cap.

11. Install alignment pin (G) to properly orientate the port plates and outer eccentric ring.

12. Apply a small quantity of petroleum jelly to I.D., O.D. and side faces of gerotor (D).

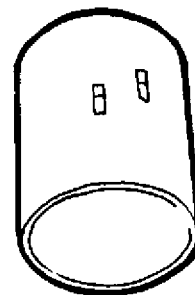
13. Install gerotor assembly.

A—Shaft  
B—Key  
C—Charge Pump  
D—Gerotor  
E—Eccentric Ring  
F—Port Plate  
G—Alignment Pin



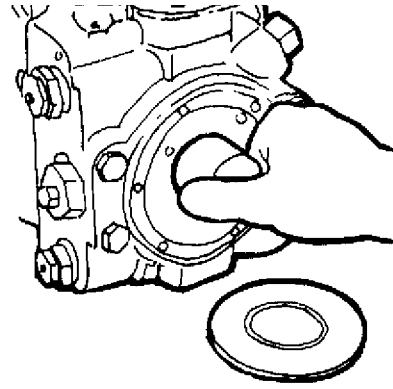
NX1688,5006,11B-19-03FEB97

14. Install drive key into the rear keyway (with identifier groove) of charge pump shaft.



NX1688,5006,12A-19-03FEB97

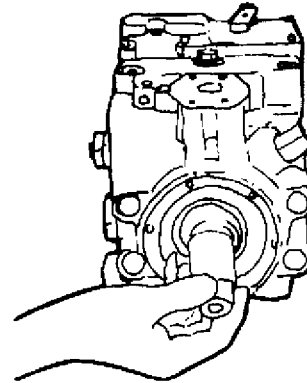
15. Install charge pump shaft. The internally splined end of shaft must engage main pump shaft.



NX1688,5006,13A-19-03FEB97

N48493 -UN-05APR95

16. Install auxiliary drive coupling onto pump drive shaft spline (small outer diameter of coupling must be toward rear of pump).

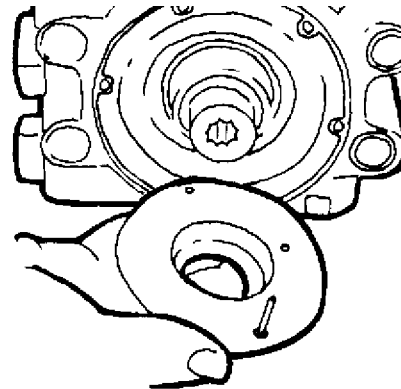


NX1688,5006,14A-19-03FEB97

N48494 -UN-05APR95

17. Carefully remove alignment pin from charge pump parts.

18. Apply petroleum jelly to pin and then install in charge pump cover, then align with charge pump parts.



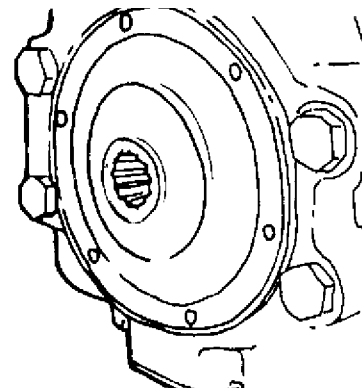
NX1688,5006,15A-19-03FEB97

N48495 -UN-05APR95

19. Apply petroleum jelly to O-ring and install around pump cover.

**IMPORTANT:** Charge pump cover can be installed two ways. Always install cover with small through hole oriented towards the charge inlet port. Failure to do so will result in loss of charge pressure.

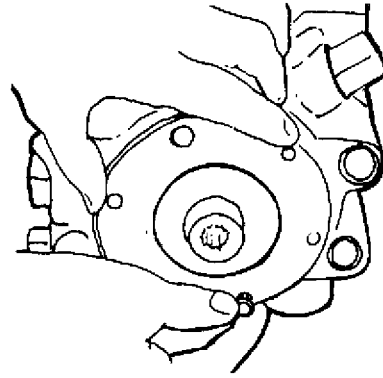
20. Install cover, aligning pin with hole in valve plate.



NX1688,5006,16A-19-03FEB97

N48496 -UN-05APR95

21. Install cover retainer and six screws. Tighten screws to 14 N·m (10 lb-ft).

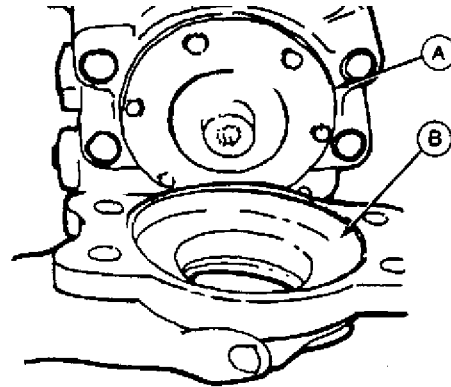


NX1688,5006,17A-19-24JUN97

N48497 -UN-05APR95

22. Apply petroleum jelly to new O-ring (A) and install around cover retainer.

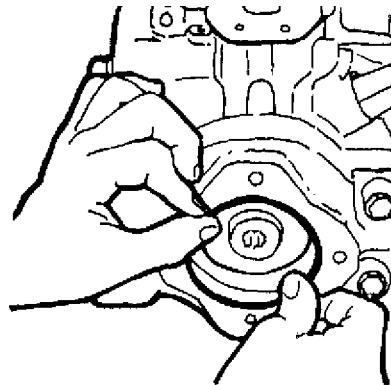
23. Install mounting pad adapter (B). Tighten mounting screws to 258 N·m (190 lb-ft).



NX1688,5006,18A-19-24JUN97

N48498 -UN-05APR95

24. Apply petroleum jelly to new O-ring and install inside mounting.



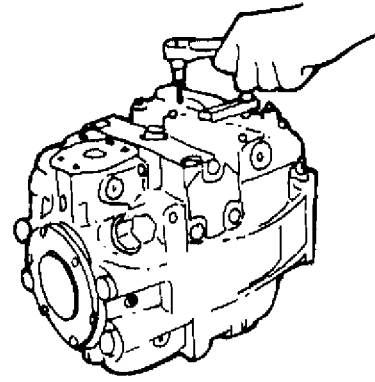
NX1688,5006,19A-19-24JUN97

N48499 -UN-05APR95

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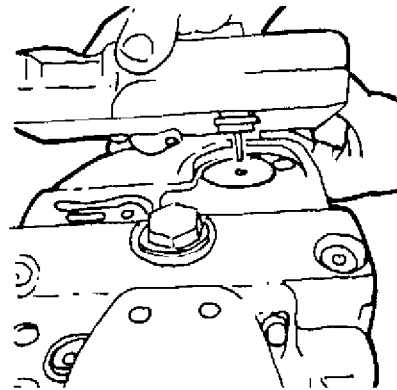
## REMOVE AND INSTALL HYDROSTATIC PUMP CONTROL VALVE

1. Thoroughly clean external surfaces prior to removing control valve.
2. Remove eight mounting screws using 5 mm hex wrench.
3. Remove control valve and gasket from pump housing.
4. Replace control valve.



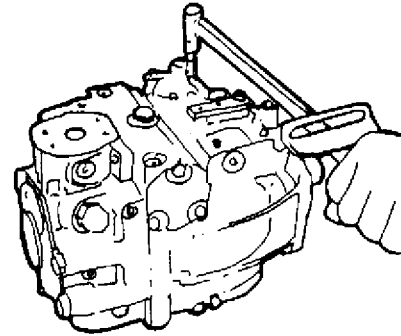
NX1586,5006,AB -19-27APR95

5. Install a new gasket on pump housing.
  6. Make sure control valve orifice check valve and spring are in their proper positions.
  7. Engage control linkage pin with mating hole in swashplate link.
  8. Set control valve in place on pump housing.
  9. Check control valve pin engagement by moving the control valve lever in both directions.
- Proper engagement will be indicated by centering torque as lever is moved from neutral position.
  - Non-engagement is indicated by lack of centering torque as lever is moved. If this condition exists, remove control valve and repeat Steps 7 through 9.



NX1586,5006,AC -19-03FEB97

10. Align control valve and gasket with mounting holes.
11. Install eight screws. Tighten to 16 N·m (12 lb-ft) torque.
12. Adjust the neutral start switch. (See Adjust Hydrostatic Safety Start Switch in Section 250.)



NX1613,5006,AD1-19-14JUL97

N48502 -UN-05APR95

## REMOVE AND INSTALL CONTROL VALVE NEUTRAL START SWITCH

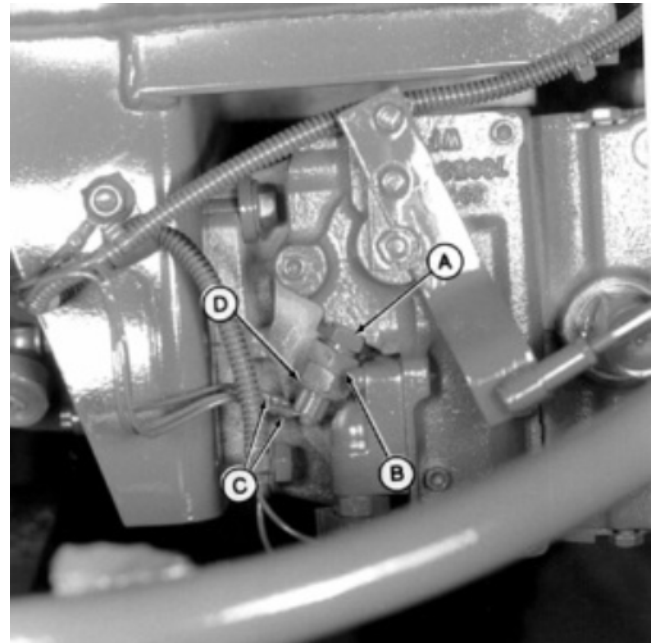
*NOTE: Neutral start switch replacement can be made with pump mounted on machine.*

**IMPORTANT:** Do not disturb any locknuts or adjustments on the neutral start switch other than those described. Disturbing other components may result in the machine starting when hydrostatic pump is out of neutral position.

1. Disconnect wires (C) from neutral start switch.

**IMPORTANT:** Do not allow the special lock nut (A) on eccentric plug to turn when loosening the switch lock nut. Turning these parts may change other critical switch adjustments.

2. Using two wrenches, hold switch stationary while loosening the lock nut (B).
3. Remove switch (D).
4. Install new switch into special lock nut finger tight. Leave switch lock nut loose.
5. Adjust neutral start switch. (See Adjust Hydrostatic Safety Start Switch in Section 250.)



A—Special Lock Nut  
B—Lock Nut  
C—Wires  
D—Switch

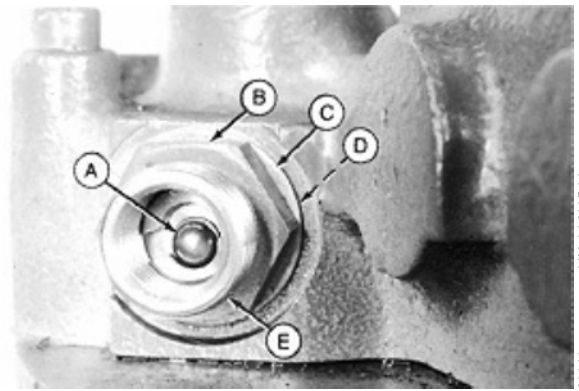
N42174QQ -UN-23JAN97

NX1613,5006,B -19-14JUL97

## ADJUST CONTROL VALVE ECCENTRIC PLUG

**NOTE:** Eccentric plug needs adjustment if the neutral start switch cannot be adjusted.

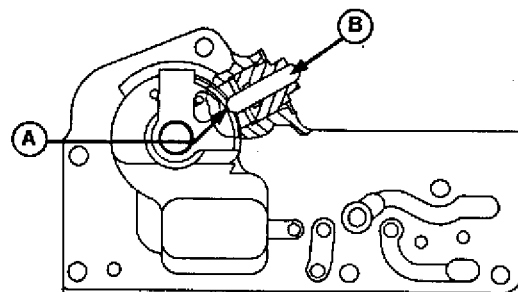
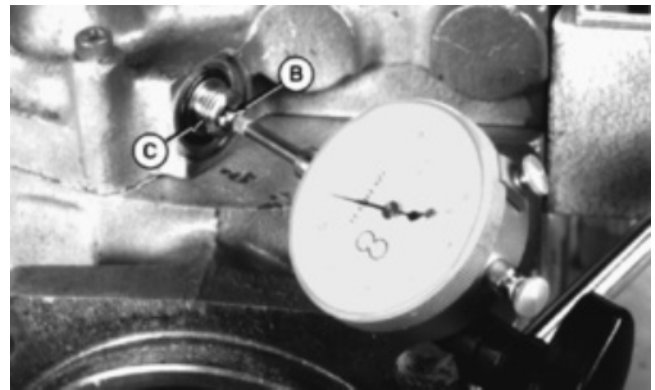
1. Remove neutral start switch. (See Remove and Install Control Valve Neutral Start Switch in this group.)
2. Remove locknut (B) and washer (C).
3. Remove eccentric plug (E) and O-ring (D).
4. Remove neutral start switch pin (A).
5. Inspect parts for damage. Replace as necessary.



A—Neutral Start Switch Pin  
B—Locknut  
C—Washer  
D—O-Ring  
E—Eccentric Plug

NX1688,5010,Q -19-14JUL97

6. Install plug approximately six turns into housing.
7. Move control lever (C) to neutral position. Push pin (B) into cam slot (A).
8. Install dial indicator on pin end with pin fully seated.
9. Rotate control lever. Note reading of dial indicator.
10. Turn plug (in or out) a small amount. Note reading of dial indicator with pin fully seated.
11. Continue adjusting plug until the greatest amount of lift is recorded on the dial indicator.
12. Remove dial indicator.



NX1688,5010,1A -19-24JUN97

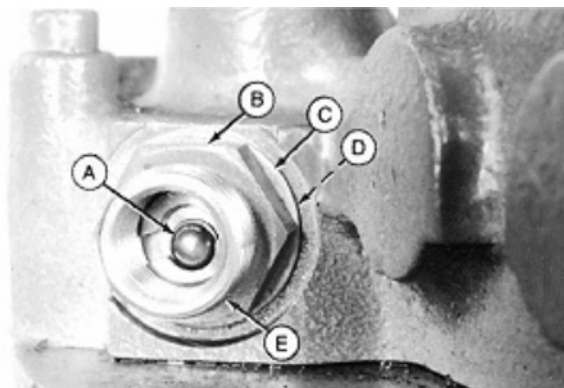
13. Install a new O-ring (D), washer (C) and lock nut (B). Check that washer is seated on plug shoulder.

**NOTE:** For complete information on making fabricated tool, see procedure in Section 399.

14. Use DFNX65-A1 Eccentric Plug Adjustment Tool to hold plug (E) while tightening lock nut to 27 N·m (20 lb-ft).

15. Check pin (A) lift using dial indicator to verify plug did not move while tightening lock nut.

16. Install neutral start switch. (See Remove and Install Control Valve Neutral Start Switch in this group.)



A—Pin  
B—Lock Nut  
C—Washer  
D—O-Ring  
E—Plug

NX1613,25020,7A-19-14JUL97

N44955 -UN-21AUG92

## DISASSEMBLE HYDROSTATIC DRIVE PUMP

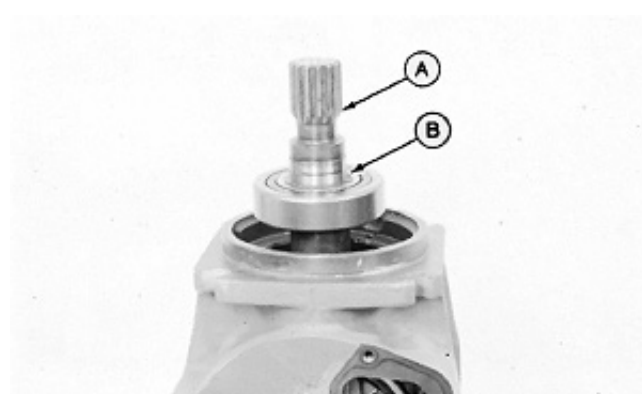
**NOTE:** Prior to beginning repair, remove the following items (see instructions in this group):

- Auxiliary mounting pad
- Charge pump
- Control valve
- Filter and mounting
- Cartridge valves
- Shaft seal

NX1688,5010,6 -19-10FEB97

**NOTE:** Bearing O.D. is slip fit in housing bore. If shaft and bearing stick in housing, lightly tap end of shaft with a soft mallet to free bearing.

1. Remove shaft and bearing assembly (A).
2. Remove snap ring (B) and press shaft out of bearing.



NX1688,5010,7 -19-10FEB97

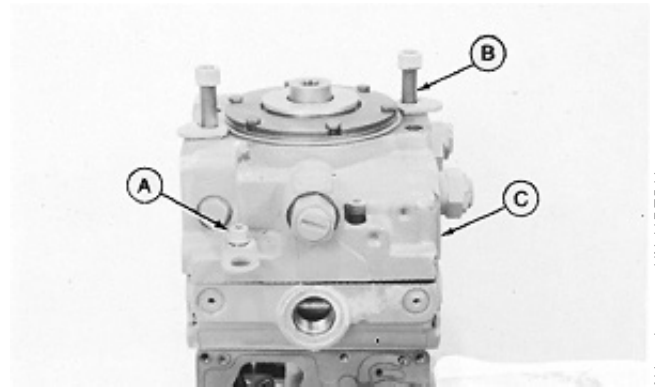
N45552 -UN-13DEC93





**CAUTION:** End cap assembly is under spring pressure. Hold assembly in place when removing cap screws to avoid injury.

3. Temporarily install two of the large end cap screws to hold end cap against spring pressure while small screws are removed.
4. Place pump on work surface with end cap up.
5. Remove small cap screws (A).
6. Remove large cap screws (B).
7. Remove end cap (C).

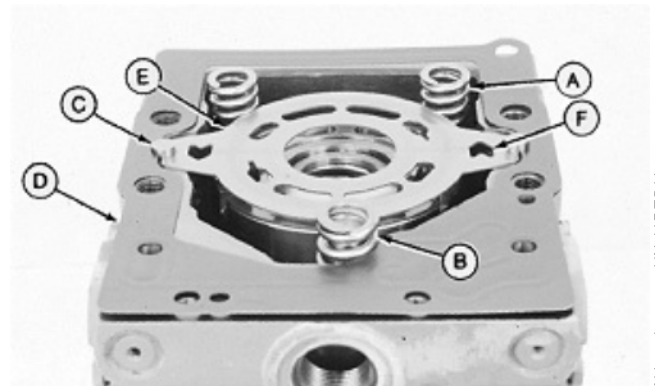


N45553 -UN-13DEC93

NX1688,5010,8 -19-24JUN97

8. Remove swashplate leveler spring shims from spring pockets in end cap.
9. Remove dual swashplate leveler springs (A).
10. Remove swashplate hold down spring (B).
11. Remove gasket (D), alignment pins (C), and valve plate (E), noting direction of arrows (F).

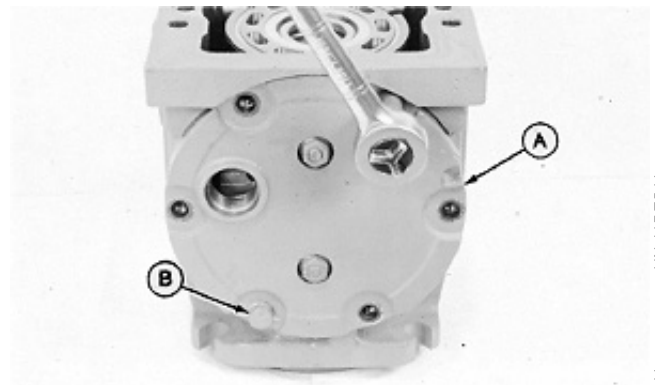
A—Leveler Spring (2 Used)  
 B—Hold Down Spring  
 C—Alignment Pin (2 Used)  
 D—Gasket  
 E—Valve Plate  
 F—Arrow



N45554 -UN-13DEC93

NX1688,5010,9 -19-10FEB97

12. Put an alignment mark across side cover (A) and housing to aid in assembly.
13. Remove six cap screws (B) and cover.



N45555 -UN-13DEC93

NX1688,5010,10 -19-24JUN97



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