CATERPILLAR®

Service Repair Manual

Model

245 EXCAVATOR

Product: EXCAVATOR
Model: 245 EXCAVATOR 95V
Configuration: 245 EXCAVATOR 95V00471-UP (MACHINE) POWERED BY 3406 ENGINE

Disassembly and Assembly
26SI Series Alternator
Media Number -RENR1252-01 **Publication Date -01/10/1999** **Date Updated -09/10/2001**

i01167081

Alternator - Disassemble

SMCS - 1405-015

Disassembly Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	6V-7070	Digital Multimeter	1
B		Variable Power Supply	1

Start By:

A. Remove the alternator. Refer to Disassembly and Assembly, "Alternator - Remove" for the machine that is being serviced.

Note: Cleanliness is an important factor. Before the disassembly procedure, the exterior of the component should be thoroughly cleaned. This will help to prevent dirt from entering the internal mechanism.

1. Remove the pulley nut, the washer, the pulley, and the fan.

Illustration 1 g00627790

2. Remove 4 screws (1). Remove plate (2) .

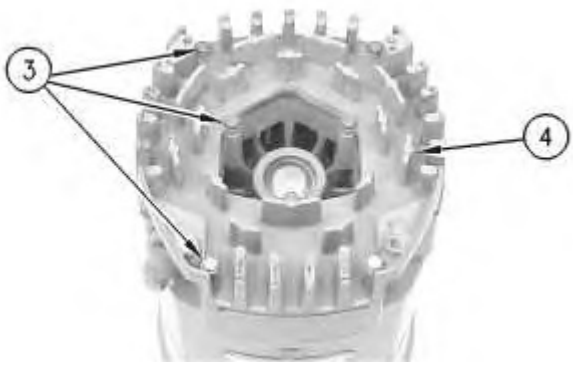

Illustration 2 g00627792

3. Remove 7 screws (3). Remove cover (4) .

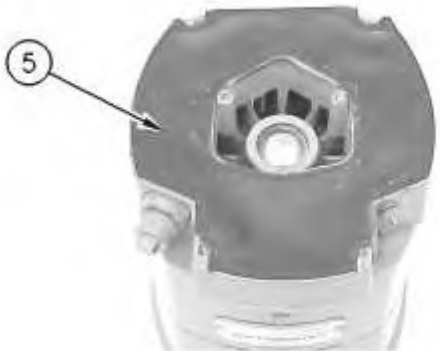

Illustration 3 g00627794

4. Remove gasket (5) .

Illustration 4 g00627796

5. Remove 2 insulated screws (6). Remove the 3 leads.

   Note: The regulator and the mounting plate are coated with dielectric grease. If the grease is removed, reapply the grease.

6. Remove nut (7) .

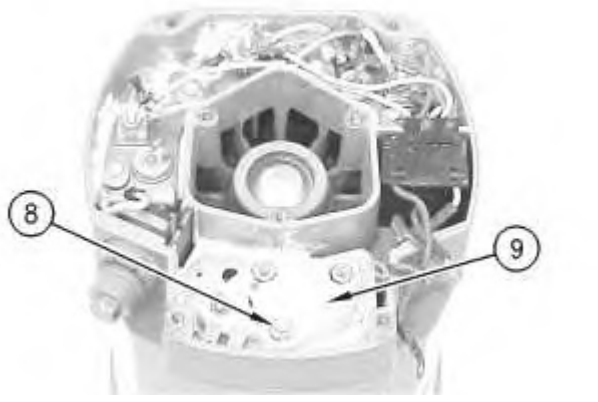

Illustration 5 g00627804

7. Remove grounded mounting screw (8) .
8. Remove regulator (9) .

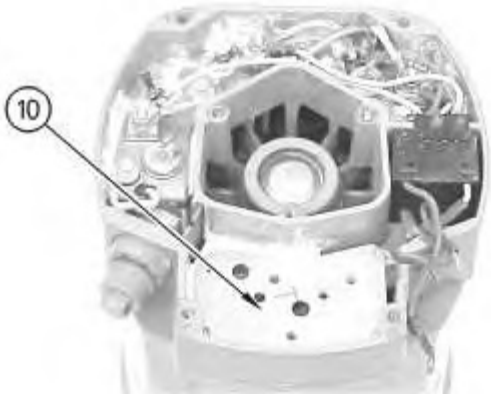

Illustration 6 g00627808

9. Remove mounting plate (10). The mounting plate may be stuck to the regulator.

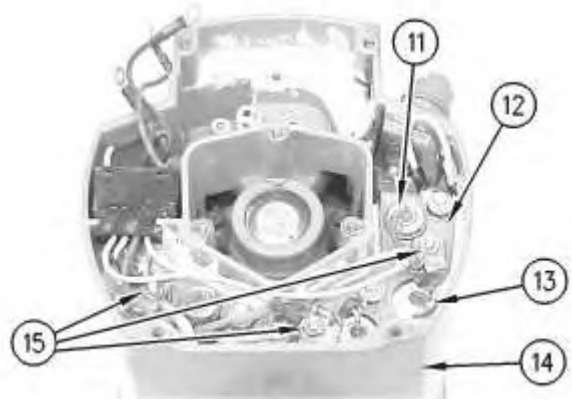

Illustration 7 g00627810

Note: The 3 output diodes (11) are located in heat sink (12). These diodes are identical in polarity. Diode (11) has red insulation on the wire. The 3 ground diodes (13) are located in housing (14). These diodes are identical in polarity. Diode (13) has black insulation on the wire.

10. Remove 3 nuts (15). Disconnect 3 stator phase leads. Disconnect 3 phase leads. Disconnect 6 diode leads.

Table 2

Alternator Ground	Current Flow of the Output Diodes	Current Flow of the Ground Diodes
Negative	Lead to the Heat Sink	Housing to the Lead
	Red Wire	Black Wire

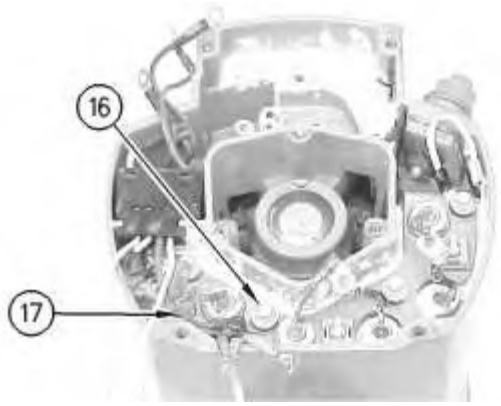

Illustration 8 g00627820

11. Remove the screw and insulator (16). Disconnect capacitor lead (17) .

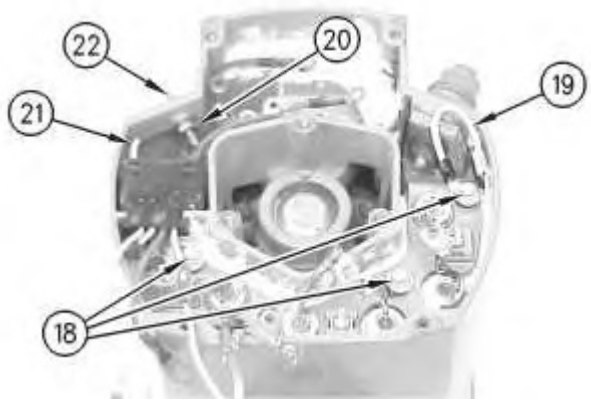

Illustration 9 g00627832

12. Remove the 3 screws and insulators (18). Disconnect wire (19) .
13. If the "R" terminal is used, remove the following components: nut (20), lead (21), the washer and terminal (21) .

Illustration 10 g00627840

14. Remove screw (23) and remove diode trio (24) .
15. Remove the nut and washer (25). Remove insulator (26). Remove alternator output terminal (27) .
16. Remove separator (28) .

Illustration 11 g00627853

Note: Many of the alternator's internal components are covered with dielectric grease. If the grease is removed, reapply the grease.

Illustration 12 g00627855

17. Remove the heat sink and diode assembly (12) from housing (14). Insulator (29) may be stuck to heat sink (12) .

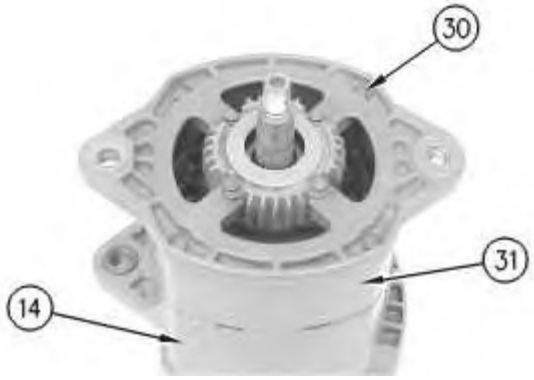

Illustration 13 g00628035

Note: Do not damage exposed stator windings or field windings. Bumping the windings or scraping the windings may break the insulation. Broken insulation may create a short circuit or a ground.

18. Remove 4 bolts (30). Carefully separate housing (31) from housing (14) .

Illustration 14 g00628037

19. Pull apart stator (32) and housing (14). Guide the stator leads and the grommet through the hole as the stator is removed from housing (14) .

Illustration 15 g00628041

20. Remove 3 screws (33). Remove the coil and support (34) from housing (14). Guide the field leads and the grommet through the hole as the coil is removed from housing (14) .

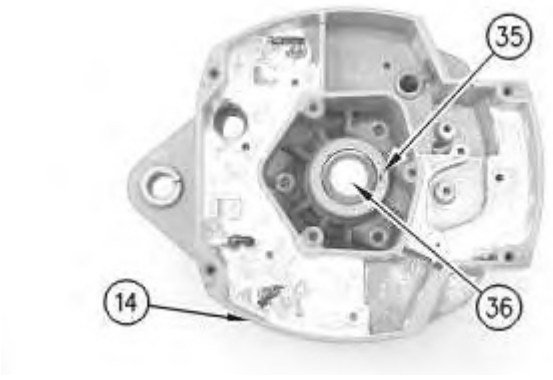

Illustration 16 g00628043

21. Position a small screwdriver in slot (35). Pry cap (36) from housing (14) .

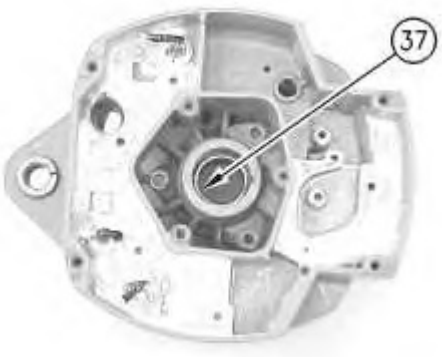

Illustration 17 g00628057

Note: Do not strike the bearing. Shocks from striking the housing can cause damage.

22. Wipe the excess grease from the bearing well. Press bearing (37) into the housing. Remove the inner race.

Illustration 18 g00628063

23. Remove 4 screws (38) from housing (31) .
24. Lift rotor (39) and bearing (40) from housing (31) .

Illustration 19 g00628067

25. Pull bearing (40) from rotor (39) .
26. Pull retainer (41) from rotor (39) .
27. Pull collar (42) from rotor (39) .

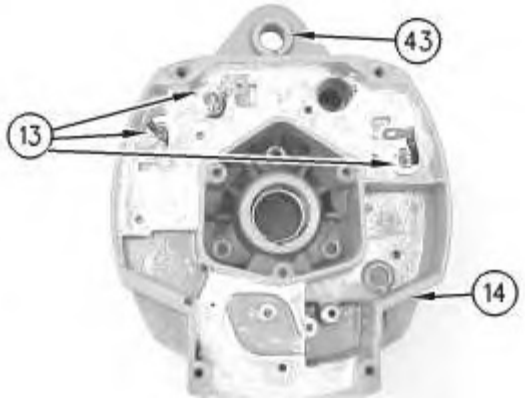

Illustration 20 g00628068

Note: Do not strike the bushing. Shocks from striking the housing can cause damage.

28. Press bushing (43) from housing (14) .

Note: Do not strike the diodes. The shock of such an impact can damage the diodes. Use proper tools in order to press or pull the diodes from the mountings. As much as 890 N (200 lb) of force may be needed to remove a diode.

29. Remove 3 diodes (13) from housing (14) .

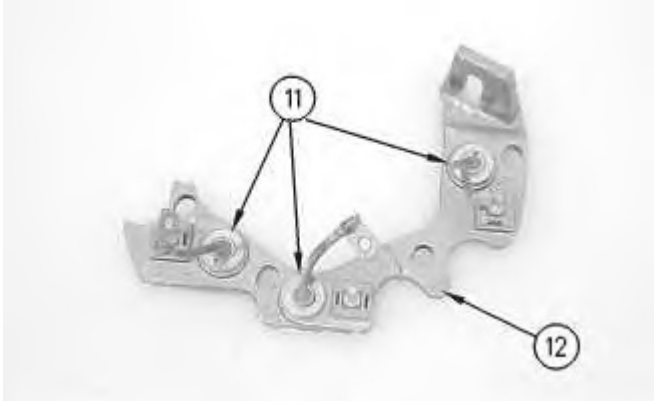

Illustration 21 g00628072

30. Remove diode (11) from heat sink (12) .

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Disassembly and Assembly
26SI Series Alternator
Media Number -RENR1252-01 **Publication Date -01/10/1999** **Date Updated -09/10/2001**

i01167078

Alternator - Assemble

SMCS - 1405-016

Assembly Procedure

Note: Cleanliness is an important factor. Before assembly, all parts should be thoroughly cleaned in cleaning fluid. Allow the parts to air dry. Wiping cloths or rags should not be used to dry parts. Lint may be deposited on the parts which may cause later trouble. Inspect all parts. If any parts are worn or damaged, use new parts for replacement.

Note: Do not strike the diodes. The shock of such an impact can damage the diodes. Use proper tools in order to press the diodes in the mountings.

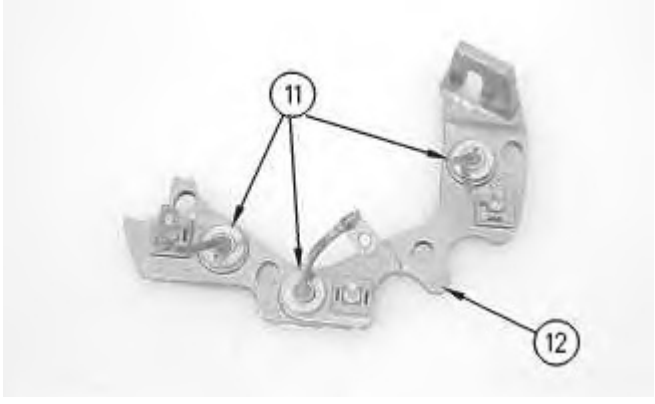


Illustration 1 g00628072

1. Install 3 diodes (11) in heat sink (12) .

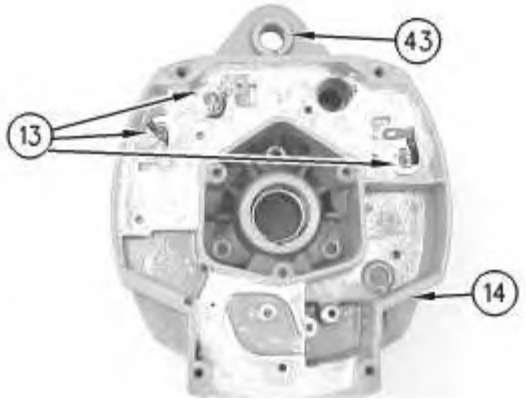


Illustration 2 g00628068

Note: Do not strike the bushing. Shocks from striking the housing can cause damage.

2. Press bushing (43) in housing (14) .
3. Install 3 diodes (13) in housing (14) .

Illustration 3 g00628067

4. Press collar (42) on rotor (39) .
5. Slide retainer (41) on rotor (39) .
6. Press bearing (40) on rotor (39) .

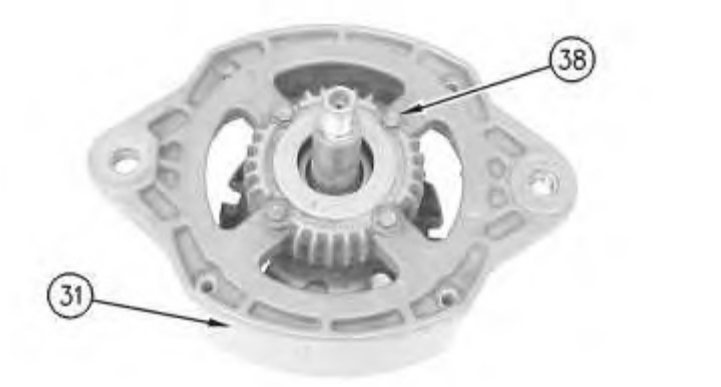


Illustration 4 g00628063

7. Press housing (31) on rotor (39) and bearing (40) .
8. Install 4 screws (38) in housing (31) .

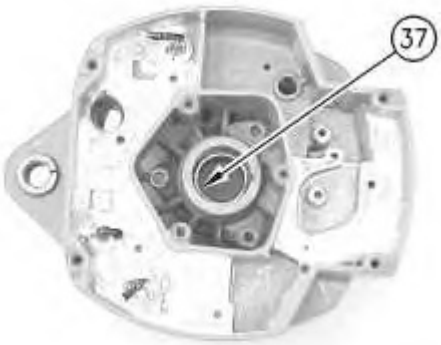


Illustration 5 g00628057

Note: Do not strike the bearing. Shocks from striking the housing can cause damage.

9. Install the inner race. Press bearing (37) into the housing.

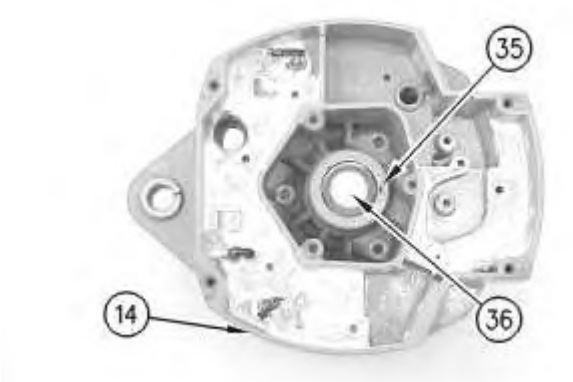


Illustration 6 g00628043

10. Press cap (36) in housing (14) .

Illustration 7 g00628041

11. Install the coil and support (34) in housing (14). Guide the field leads and the grommet through the hole as the coil is installed in housing (14). Install 3 screws (33) .

Illustration 8 g00628037

12. Press the stator (32) and housing (14) together. Guide the stator leads and the grommet through the hole as the stator is installed in housing (14) .

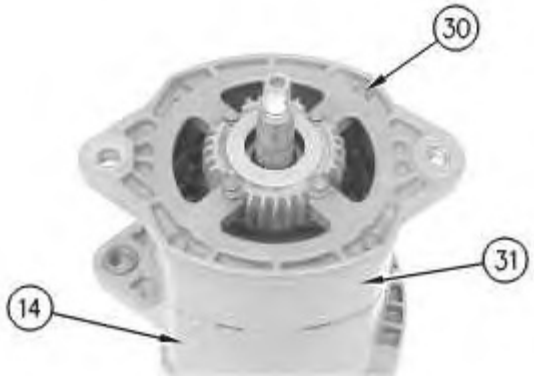


Illustration 9 g00628035

Note: Do not damage exposed stator windings or field windings. Bumping the windings or scraping the windings may break the insulation. Broken insulation may create a short circuit or a ground.

13. Join housing (31) and housing (14). Install 4 bolts (30) .

Illustration 10 g00627853

Note: Many of the alternator's internal components are covered with dielectric grease. If the grease is removed, reapply the grease.

Illustration 11 g00627855

14. Install Insulator (29). Install the heat sink and diode assembly (12) in housing (14) .

Illustration 12 g00627840

15. Install separator (28) .
16. Install alternator output terminal (27). Install insulator (26). Install the nut and washer (25) .
17. Install diode trio (24) and install screw (23) .

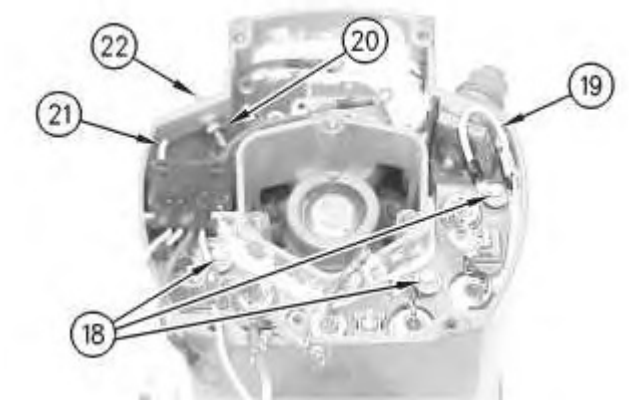


Illustration 13 g00627832

18. Install the 3 screws and insulators (18). Connect wire (19) .
19. If the "R" terminal is used, install the following components: nut (20), lead (21), the washer and terminal (21) .

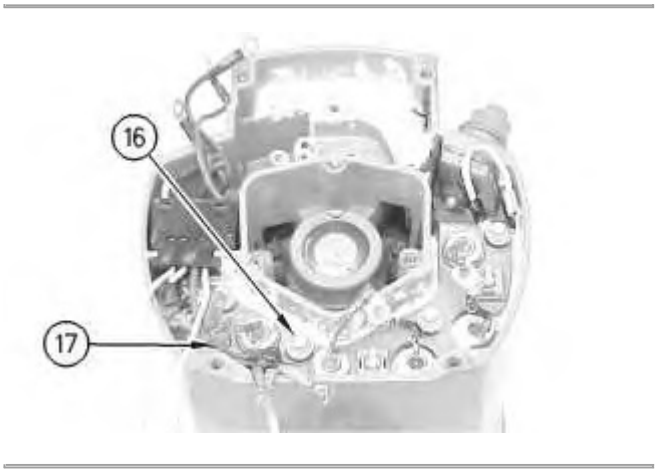


Illustration 14 g00627820

20. Install the screw and insulator (16). Connect capacitor lead (17) .

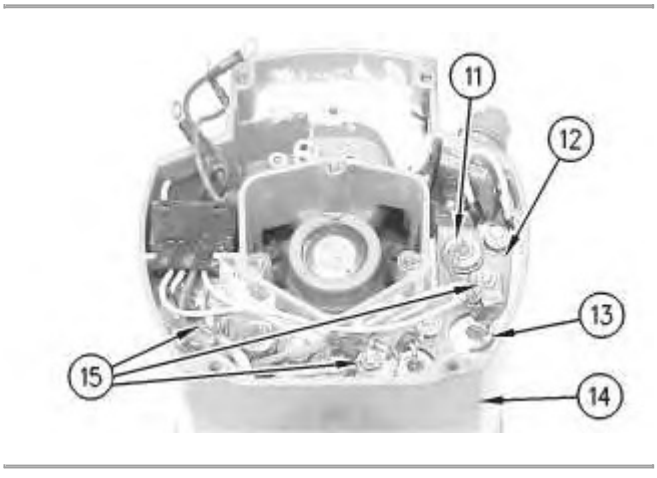


Illustration 15 g00627810

Note: The 3 output diodes (11) are located in heat sink (12). These diodes are identical in polarity. Diode (11) has red insulation on the wire. The 3 ground diodes (13) are located in housing (14). These diodes are identical in polarity. Diode (13) has black insulation on the wire.

21. Connect 6 diode leads. Connect 3 phase leads. Connect 3 stator phase leads. Install 3 nuts (15).

Table 1

Alternator Ground	Current Flow of the Output Diodes	Current Flow of the Ground Diodes
Negative	Lead to the Heat Sink	Housing to the Lead
	Red Wire	Black Wire

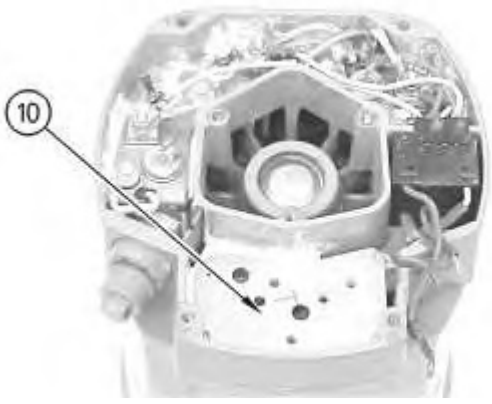


Illustration 16 g00627808

22. Install mounting plate (10).

Illustration 17 g00627804

23. Install regulator (9) .
24. Install grounded mounting screw (8) .

Illustration 18 g00627796

25. Install 2 insulated screws (6). Connect the 3 leads.

    Note: The regulator and the mounting plate are coated with dielectric grease. If the grease is removed, reapply the grease.

26. Install nut (7) and connect the wire.

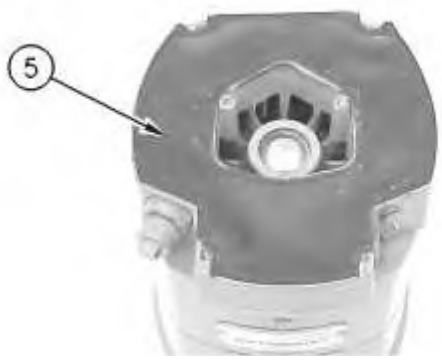


Illustration 19 g00627794

27. Install gasket (5) .

Illustration 20 g00627792

28. Position cover (4). Install 7 screws (3) .

Illustration 21 g00627790

29. Position plate (2). Install 4 screws (1) .
30. Install the fan, the pulley, the washer, and the pulley nut.

Product: EXCAVATOR
Model: 245 EXCAVATOR 95V
Configuration: 245 EXCAVATOR 95V00471-UP (MACHINE) POWERED BY 3406 ENGINE

Disassembly and Assembly
SUPPLEMENT FOR HYDRAULIC TRACK MOTOR
Media Number -SENR3402-01 **Publication Date -01/12/1987** **Date Updated -11/10/2001**

Track Motors

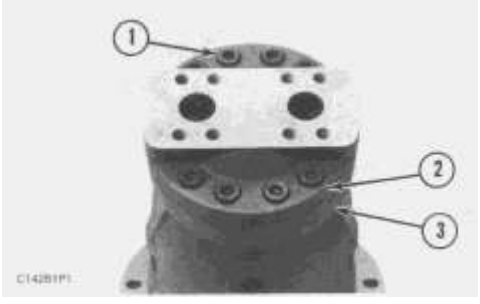
SMCS - 4351-015; 4351-016

Disassemble Motors (Track)

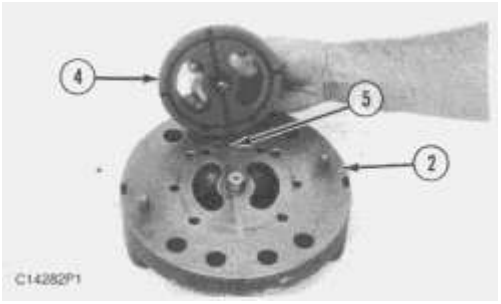
Tools Needed		A	B	C
8T4829	Bolts	2		
1U5474	Fixture		1	
1U8825	Bolts (M8 x 1.25 – 90 mm long)			4

START BY:

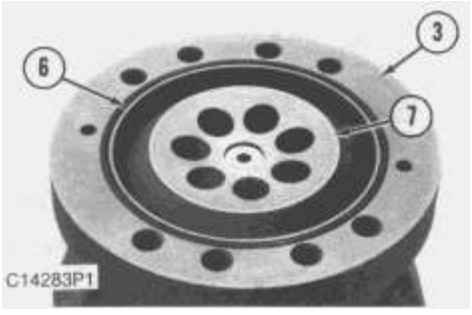
a) Remove track motors.



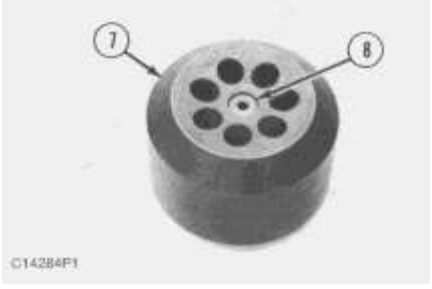
1. Put identification marks on head (2) and housing (3). Remove eight bolts (1) and head from housing. Weight of the motor is 138 kg (304 lbs.).



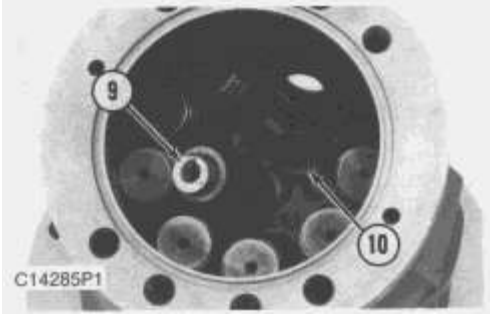
2. Remove control plate (4) from head (2). Note the location of pin (5). Grease and oil suction will be holding control plate (4) to head (2).



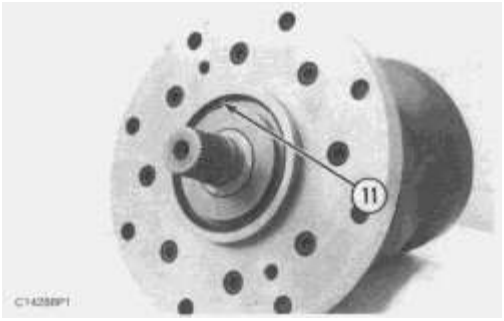
3. Remove O-ring seal (6) from housing (3). Remove cylinder barrel (7) from housing.



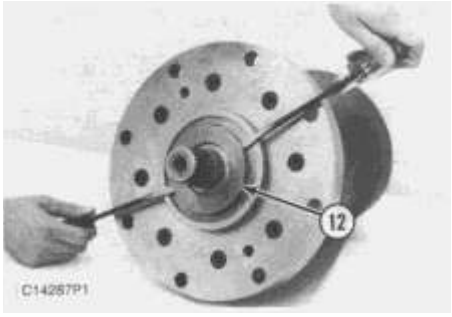
4. Remove allen head plug (8) and disc from cylinder barrel (7).



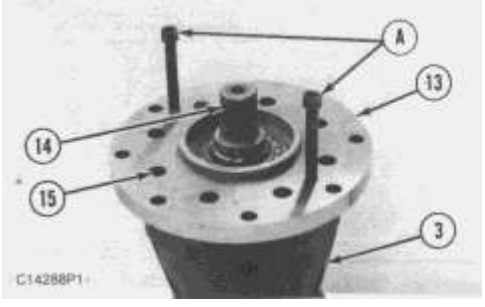
5. Remove spring (9) and shim (10) from housing.



6. Turn housing over to the drive shaft end. Remove snap ring (11).



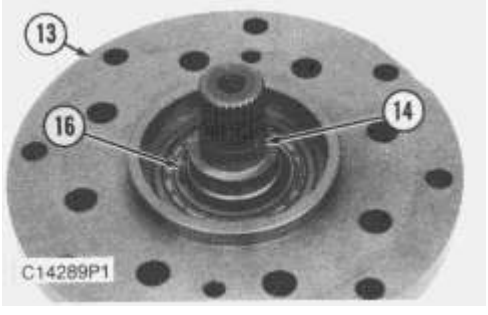
7. Use two screwdrivers and remove cover (12) and O-ring seal.



8. Put identification marks on flange (13) to housing (3). Remove eight bolts (15) from flange (13). The bolts were installed with loctite.

9. Use tooling (A) and remove flange (13) and rotary group (14) as an assembly from the pump housing. Weight of flange and rotary group 50 kg (110 lbs.)

NOTE: Use heat around housing to help remove the flange and rotary group.



10. Position flange (13) and rotary group (14) as an assembly in a press. Remove ring (16) from flange.

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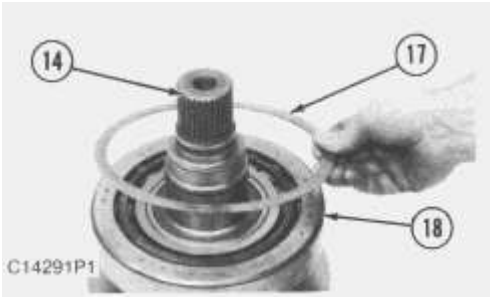
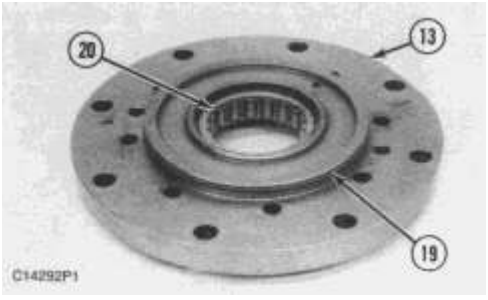
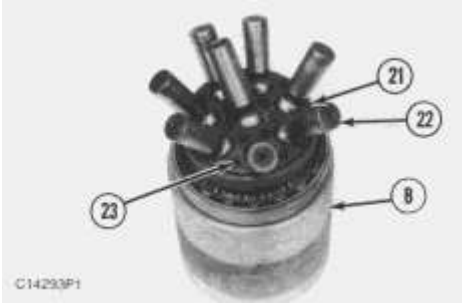


11. Press rotary group (14) through flange (13). Remove shim (17) from under the flange [laying on inner bearing race (18)].



12. Remove O-ring (19) from flange (13). Remove bearing (20).



13. Position rotary group (shaft down) along with inner bearing race on tooling (B). Remove fourteen bolts (23). Thread lock was used on the bolts at assembly. Remove plate (21) and pistons (22).

14. Remove spherical bushings (24).