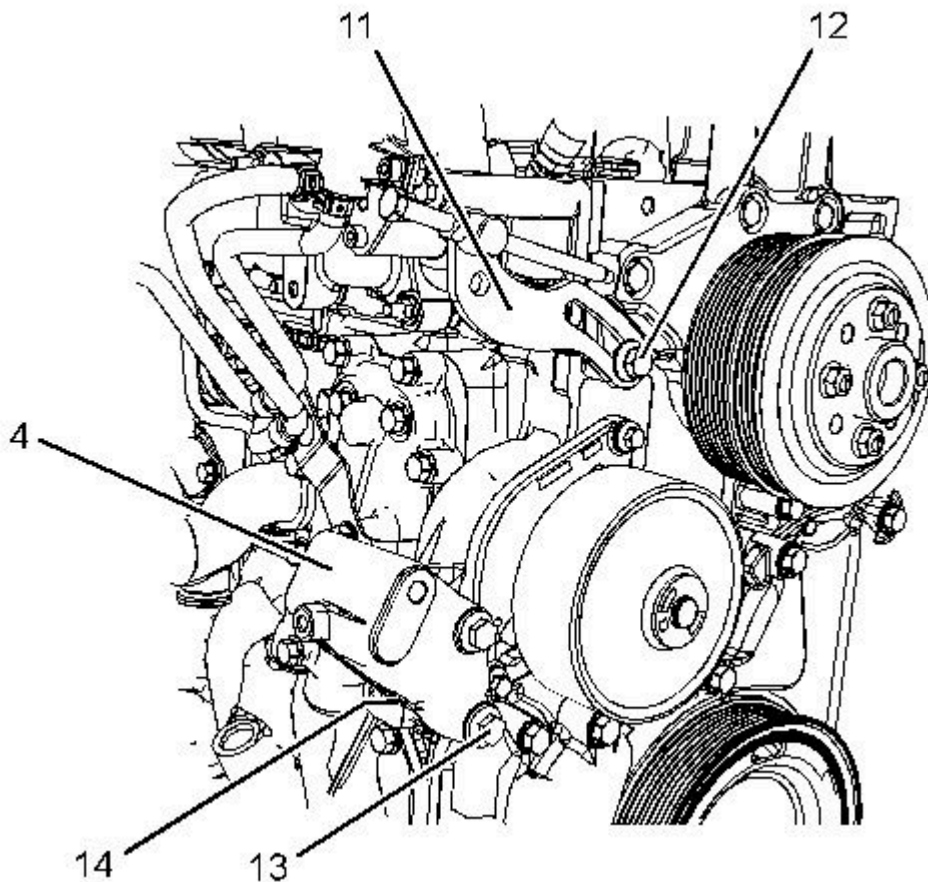


Alternator - Install

SMCS - 1405-012

Installation Procedure

1. Ensure that all components are clean and free from wear and damage. If necessary, replace any components that are worn or damaged.
2. If necessary, follow Step 2.a through Step 2.g in order to install alternator bracket (4) and tensioner (11) onto the cylinder block.



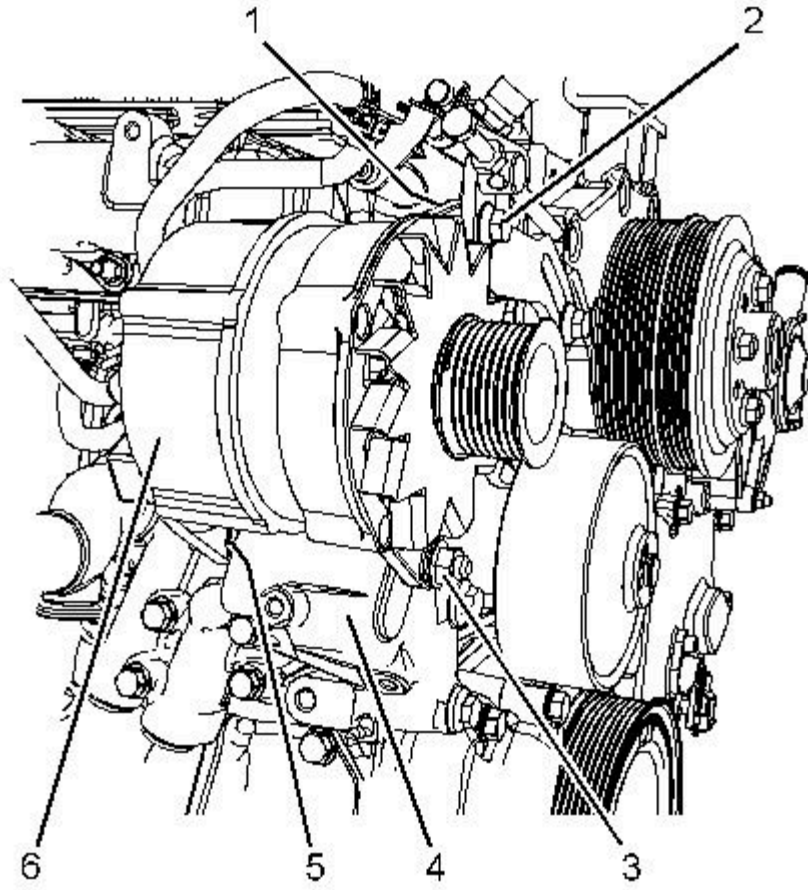


Illustration 2

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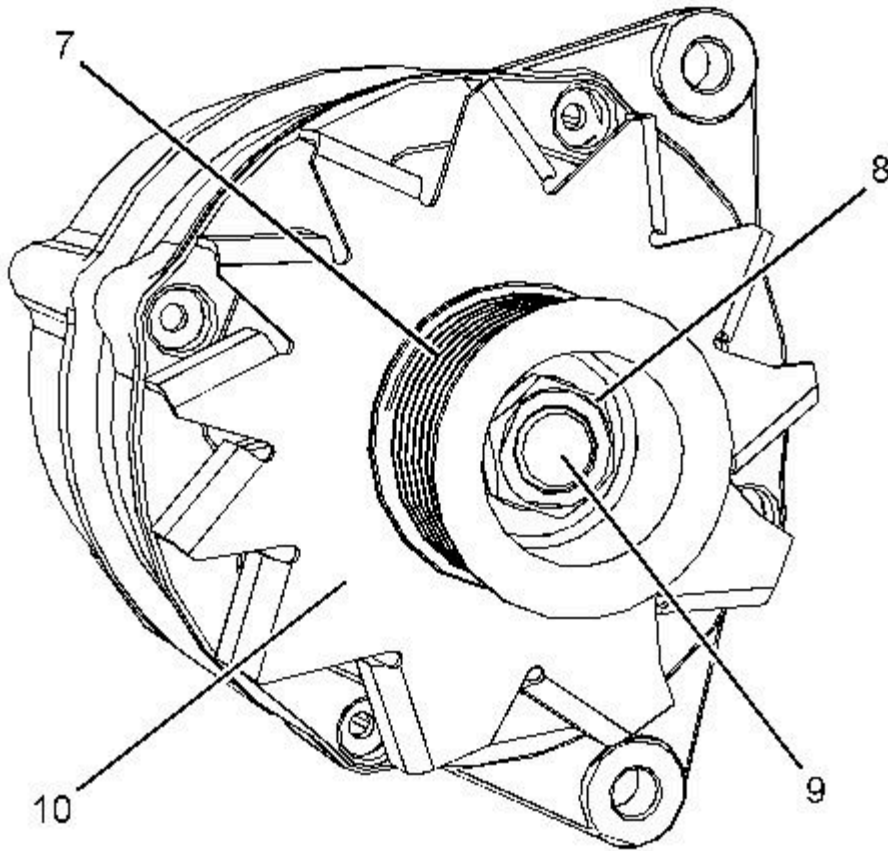


Illustration 3

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- a. Position bracket (4) onto the cylinder block.
 - b. Install bolts (13) to bracket (4) finger tight.
 - c. If necessary, install bolt (14) to the coolant tube assembly.
 - d. Tighten bolts (13) to a torque of 50 N·m (37 lb ft).
 - e. Tighten bolts (14) to a torque of 25 N·m (221 lb in).
 - f. Position tensioner (11) onto the fan drive assembly.
 - g. Install bolt (12) to tensioner (11) finger tight.
3. If necessary, follow Step 3.a through Step 3.f in order to install pulley (8) to alternator (2).

Note: Either of Tooling (A) may be required in order to carry out the installation of the alternator pulley.

- a. Place alternator (6) in a suitable support.
- b. Ensure that fan (10) is correctly oriented.
- c. Install fan (10) to shaft (9).

- d. Ensure that pulley (7) is correctly oriented.
 - e. Install pulley (7) and a new nut (8) to alternator shaft (9).
 - f. Position a cranked ring spanner onto nut (9). Use a suitable tool in order to turn the shaft of the alternator in a counterclockwise direction. Tighten the nut to the correct torque. Refer to Specifications, "Alternator" for the correct torque.
4. Position the alternator onto bracket (4) and tensioner (11).
 5. Install bolt (5) (not shown) and nut (3) finger tight.
 6. Install bolt (2) and nut (1) (not shown) finger tight.
 7. Install a new alternator belt. Refer to Disassembly and Assembly , "Alternator Belt - Remove and Install" for the correct procedure.
 8. Tighten the nut and bolt (2) to a torque of 50 N·m (37 lb ft).
 9. Tighten nut and bolt (5) to a torque of 50 N·m (37 lb ft).
 10. Connect the wiring harness assembly to the alternator. Refer to Specifications, "Alternator" for the correct torque.
 11. Turn the battery disconnect switch to the ON position.
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Electric Starting Motor - Remove and Install

SMCS - 1453-010

Removal Procedure



Accidental engine starting can cause injury or death to personnel working on the equipment.

To avoid accidental engine starting, disconnect the battery cable from the negative (-) battery terminal. Completely tape all metal surfaces of the disconnected battery cable end in order to prevent contact with other metal surfaces which could activate the engine electrical system.

Place a Do Not Operate tag at the Start/Stop switch location to inform personnel that the equipment is being worked on.

1. Turn the battery disconnect switch to the OFF position.
 2. Place identification marks on the harness assembly that is connected to the electric starting motor and the solenoid.
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