



Service Repair Manual

Model

426C BACKHOE LOADER

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Product: BACKHOE LOADER

Model: 426C BACKHOE LOADER 7WN

Configuration: 426C Backhoe Loader Center Pivot, Single Tilt 7WN00939-01099 (MACHINE) POWERED BY 3054 Engine

Disassembly and Assembly Alternator - Bosch K1/N1

Media Number -SEN3685-02

Publication Date -01/09/2013

Date Updated -16/09/2013

i05060896

Alternator - Disassemble

SMCS - 1405-015

Disassembly Procedure

Start By:

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

Note: The Disassembly and Assembly that follows is of a K1, 12V 7T-2876 Charging Alternator Gp. The other alternators are similar.

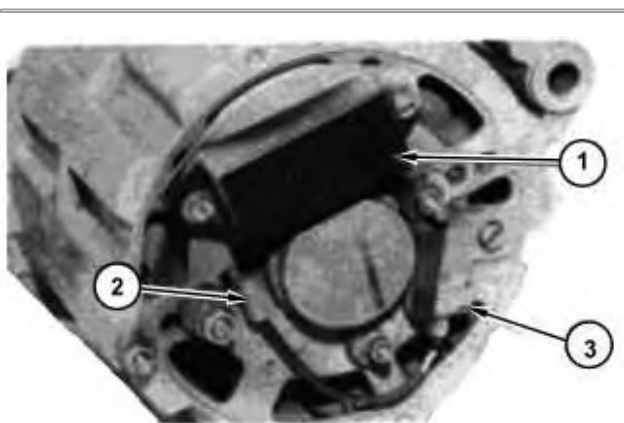


Illustration 1

g03228038

- (1) Regulator
- (2) Capacitor lead
- (3) Capacitor

1. Remove the two screws and regulator (1) .

2. Disconnect capacitor lead (2) from the back of the alternator. Remove the screw and capacitor (3) .



Illustration 2

g03228056

(4) Pulley

(5) Fan

3. Remove the pulley nut, washer, pulley (4), fan (5), and the key from the rotor shaft.

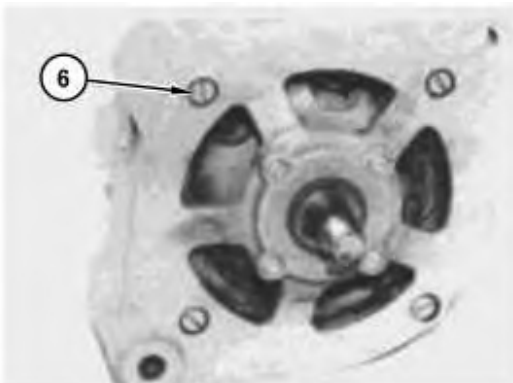


Illustration 3

g03228057

(6) Screws

4. Mark the front and rear frame assemblies for proper assembly. Remove four screws (6) (one has a nut on it on the back of the alternator).
 5. Separate the front frame and rotor assembly from the rear frame and stator assembly. Watch for the wave washer, at the back of the rear frame assembly, to fall out.
-

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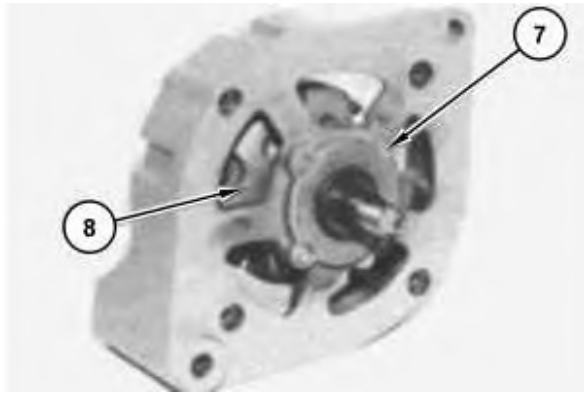


Illustration 4

g03228058

(7) Screws

(8) Rotor

6. Remove four screws (7), and rotor (8) from the front frame.

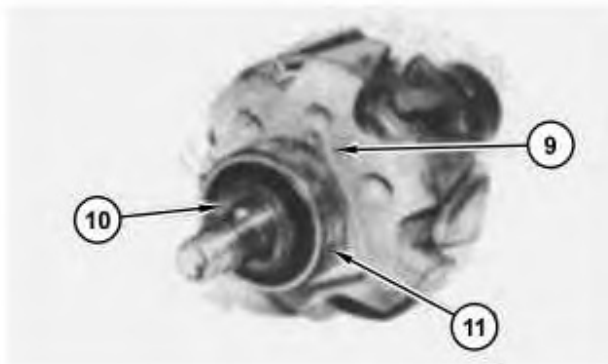


Illustration 5

g03228059

(9) Bearing cover

(10) Spacer

(11) Front bearing

7. Remove spacer (10), and front bearing (11), with a suitable puller. Remove bearing cover (9) from the rotor (8) .

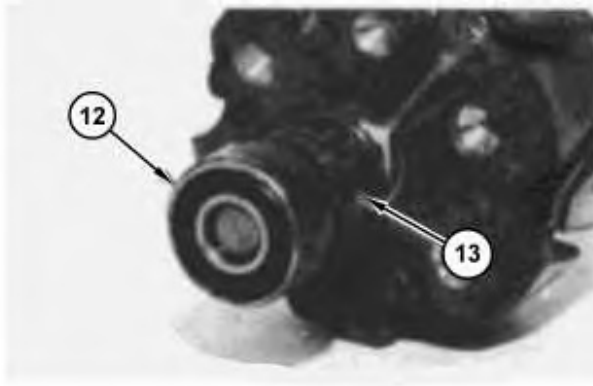


Illustration 6

g03228076

(12) Rear bearing

(13) Slip ring

8. Remove the rear bearing (12) with a suitable puller. Unsolder both rotor winding leads from slip ring (13). Remove slip ring (13) with a suitable puller.

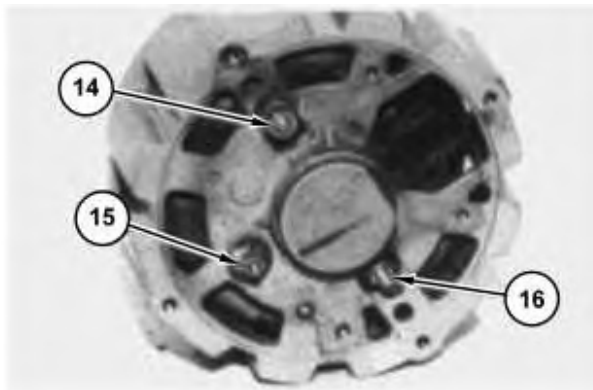


Illustration 7

g03228080

(14) terminal nuts

(15) terminal nuts

(16) terminal nuts

9. Remove terminal nuts (14), (15), and (16). Remove all of the washers and insulators.
-



Illustration 8

g03228097

(17) Screws

10. Remove three screws (17). Remove the stator and rectifier assembly from the rear frame. Remove the remaining insulators from the terminal studs.

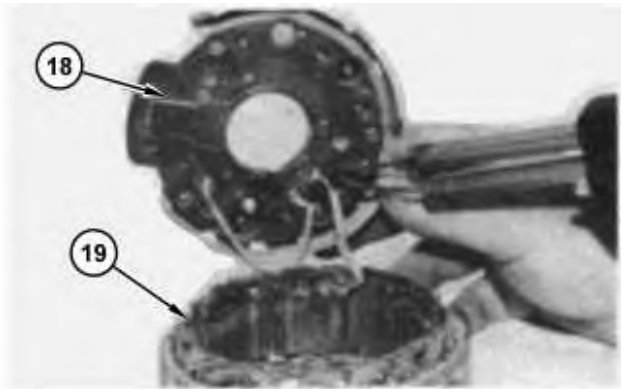


Illustration 9

g03228116

(18) Rectifier

(19) Stator

11. Unsolder the three stator leads and separate rectifier (18) from stator (19) .
-

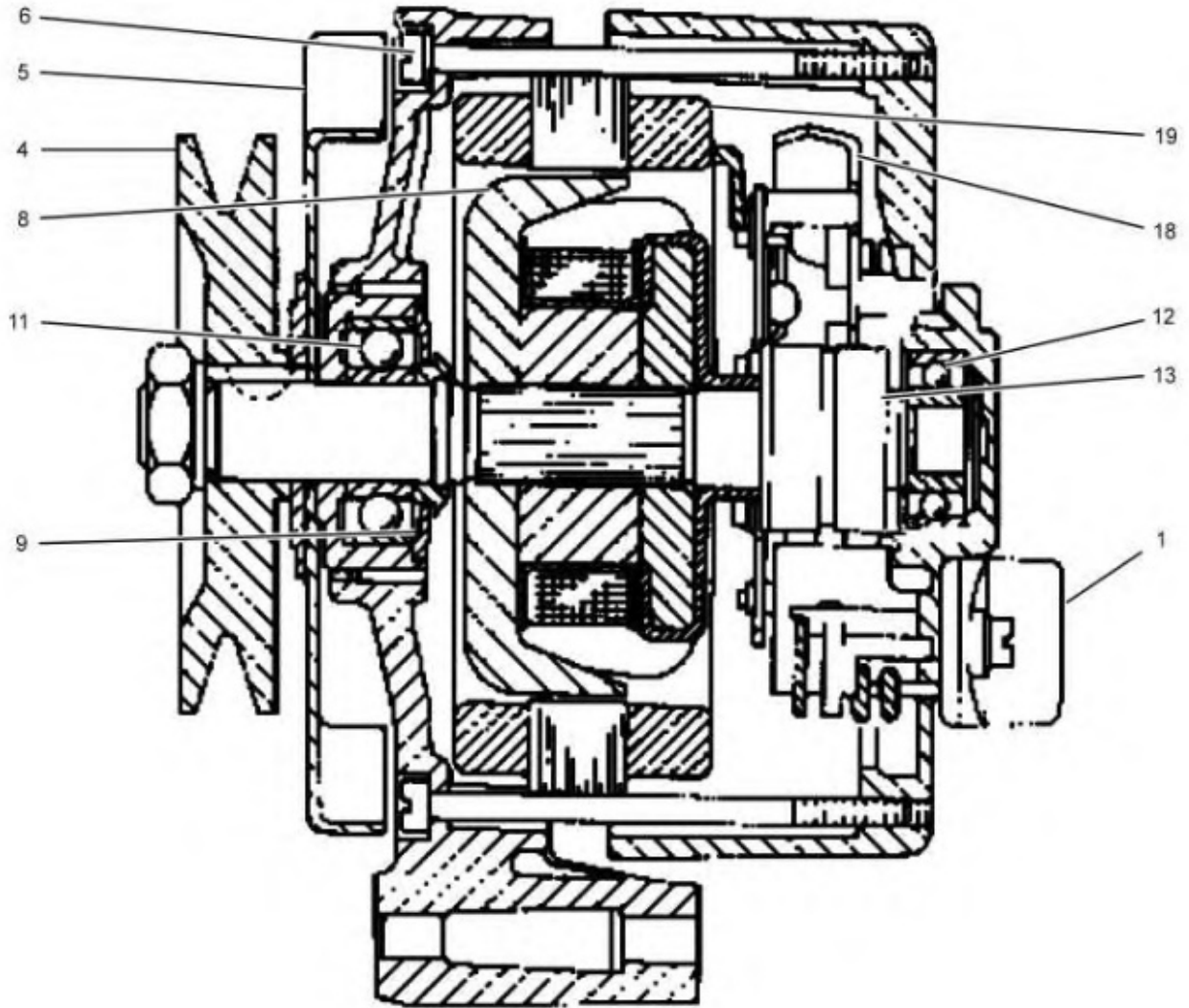


Illustration 10

g03228119

K1 Alternator

(1) Regulator

(4) Pulley

(5) Fan

(6) Screws

(8) Rotor

(9) Bearing cover

(11) Front bearing

(12) Rear bearing

(13) Slip ring

(18) Rectifier

(19) Stator

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Product: BACKHOE LOADER

Model: 426C BACKHOE LOADER 7WN

Configuration: 426C Backhoe Loader Center Pivot, Single Tilt 7WN00939-01099 (MACHINE) POWERED BY 3054 Engine

Disassembly and Assembly Alternator - Bosch K1/N1

Media Number -SEN3685-02

Publication Date -01/09/2013

Date Updated -16/09/2013

i05064230

Alternator - Assemble

SMCS - 1405-016

Assembly Procedure

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 problems in the future. Inspect all parts. If any parts are worn or damaged, use new parts for replacement.

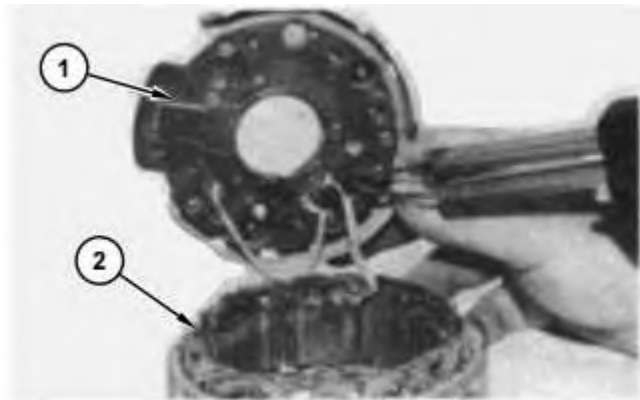


Illustration 1

g03230839

(1) Rectifier

(2) Stator

1. Connect and solder the stator leads to the positive (+) diodes of rectifier (1) .

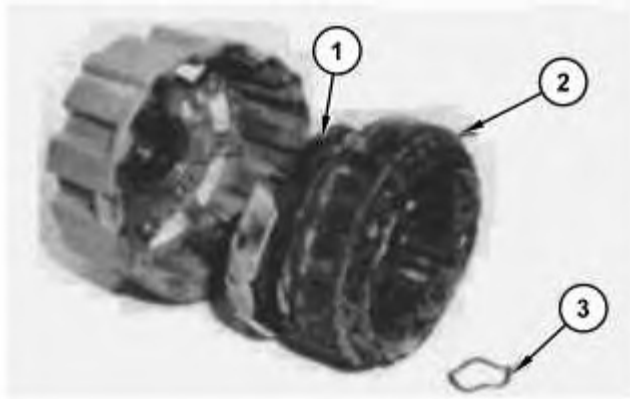


Illustration 2

g03230840

- (1) Rectifier
- (2) Stator
- (3) Position wave washer

2. Position the insulators on the rectifier terminal studs. Position rectifier (1), and stator (2) into the rear frame, and install the three screws. Install the terminal insulators, washers, and nuts. Position wave washer (3) into the bearing bore of the rear frame.

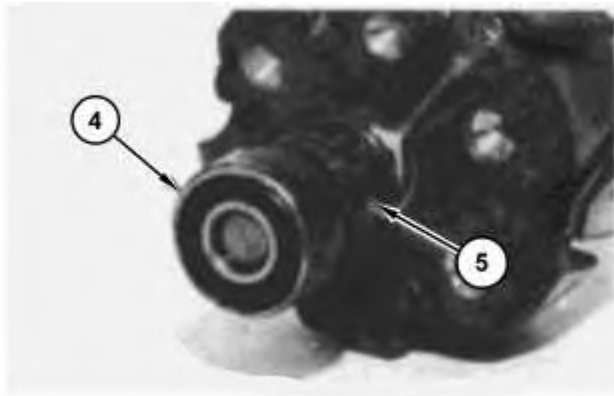


Illustration 3

g03230842

- (4) Rear bearing
- (5) Slip ring

3. Install slip ring (5) on the rotor. Connect and solder the rotor leads to the slip ring (5). Install rear bearing (4) .
-

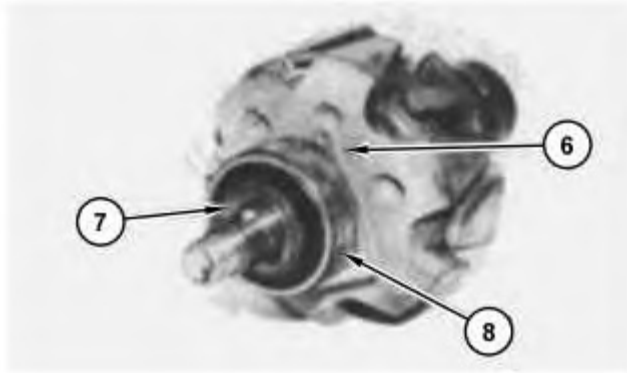


Illustration 4

g03230845

- (6) Bearing cover
- (7) Spacer
- (8) Front bearing

4. Install bearing cover (6), front bearing (8), and spacer (7) on the rotor.

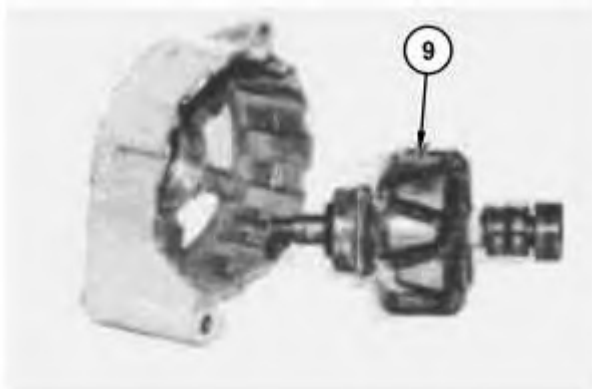


Illustration 5

g03230846

- (9) Rotor

5. Install rotor (9) and the four screws into the front frame.

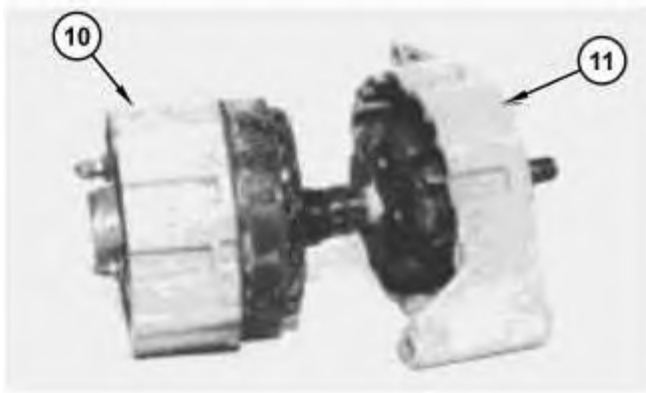


Illustration 6

g03230848

(10) Stator assembly

(11) Rotor assembly

6. Assemble front frame and rotor assembly (11) into rear frame and stator assembly (10). Make sure that the wave washer is fixed in the rear frame bearing bore. Align the front and rear frame marks made at disassembly for correct assembly. Install the four screws.

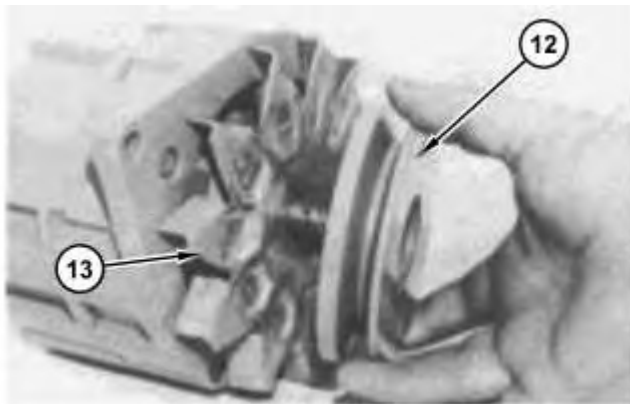


Illustration 7

g03230896

(12) Pulley

(13) Fan

7. Install the key, fan (13), pulley (12), washer, and pulley nut. Tighten the nut to a torque of:

3E-7295 Charging Alternator Gp, and **9X-0341** Charging Alternator Gp ... $70 \pm 5 \text{ N}\cdot\text{m}$ ($52 \pm 4 \text{ lb ft}$)

8C-5535 Charging Alternator Gp, **7T-2876** Charging Alternator Gp, **2Y-4212** Charging Alternator Gp, and **2Y-8310** Charging Alternator Gp ... $35 \pm 10 \text{ N}\cdot\text{m}$ ($26 \pm 7 \text{ lb ft}$)

9W-3043 Charging Alternator Gp ... $50 \pm 5 \text{ N}\cdot\text{m}$ ($37 \pm 4 \text{ lb ft}$)

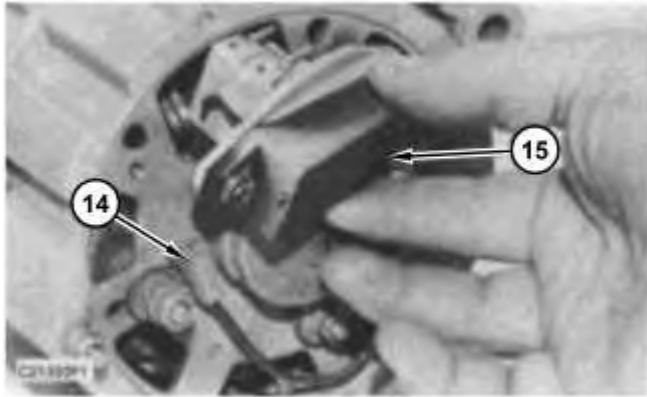


Illustration 8

g03230899

(14) Capacitor lead

(15) Regulator

8. Install the capacitor and connect capacitor lead (14) to the back of the alternator.

9. Install regulator (15) .

End By: Install the alternator on the machine. Refer to Disassembly and Assembly, "Alternator - Install" for the machine that is being serviced.

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Product: BACKHOE LOADER

Model: 426C BACKHOE LOADER 7WN

Configuration: 426C Backhoe Loader Center Pivot, Single Tilt 7WN00939-01099 (MACHINE) POWERED BY 3054 Engine

**Disassembly and Assembly
3054 Engine for Caterpillar Built Machines**

Media Number -SEN6241-13

Publication Date -01/08/2008

Date Updated -04/08/2008

i01080593

Engine Design

SMCS - 1000

Type 1 Engines and 9RM Engines

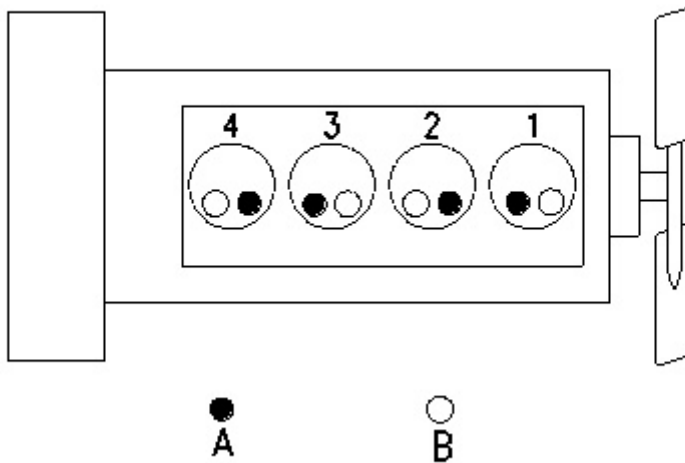


Illustration 1

g00296342

Cylinder and valve location for Type 1 engines and 9RM engines

(A) Exhaust valves

(B) Inlet valves

Note: Type 1 engines can be identified in two ways. The first method refers to Illustration 1. When the valve cover is removed, look at the cylinder head valves. Type 1 engines have two exhaust valves in a row and two inlet valves that are in a row.

The second method does not require the removal of the valve cover. Refer to the inlet manifold and the exhaust manifold. Type 1 engines have two exhaust ports in a row and two inlet ports that are in a row.

Type ... Four cylinder and four stroke

Combustion system ... Direct injection

Nominal Bore ... 100 mm (3.937 inch)

Stroke ... 127 mm (5.00 inch)

Capacity ... 4 liters (243 in³)

Compression Ratio ... 16:1

Number of cylinders ... 4

Arrangement of cylinders ... in-line

Firing Order ... 1, 3, 4, 2

Valve Lash

Inlet valve ... 0.20 mm (.008 inch)

Exhaust valve ... 0.45 mm (.018 inch)

When the crankshaft is viewed from the front of the engine, the crankshaft rotates in the following direction: ... Clockwise

When the camshaft is viewed from the front of the engine, the camshaft rotates in the following direction: ... Clockwise

Note: The front end of the engine is opposite the flywheel end. The left side and the right side of the engine are viewed from the flywheel end. The No. 1 cylinder is the front cylinder.

Type 2 Engines and 7BJ Engines

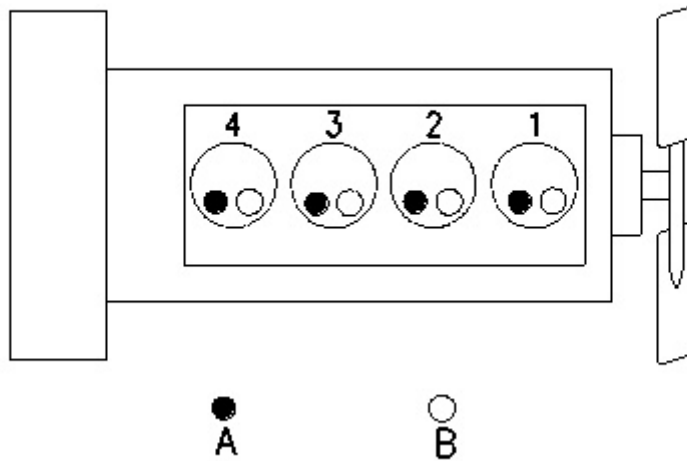


Illustration 2

g00296424

Cylinder and valve location for Type 2 engines and 7BJ engines

(A) Exhaust valves

(B) Inlet valves

Note: Type 2 engines can be identified in two ways. The first method refers to Illustration 2. When the valve cover is removed, look at the cylinder head valves. Type 2 engines alternate the exhaust valves and the inlet valves.

The second method does not require the removal of the valve cover. Refer to the inlet manifold and the exhaust manifold. Type 2 engines alternate the exhaust ports and the inlet ports.

Type ... Four cylinder and four stroke

Combustion system ... Direct injection

Nominal Bore ... 100 mm (3.937 inch)

Stroke ... 127 mm (5.00 inch)

Capacity ... 4 liters (243 in³)

Compression Ratio ... 17.25:1

Number of cylinders ... 4

Arrangement of cylinders ... in-line

Firing Order ... 1, 3, 4, 2

Valve Lash

Inlet valve ... 0.20 mm (.008 inch)

Exhaust valve ... 0.45 mm (.018 inch)

When the crankshaft is viewed from the front of the engine, the crankshaft rotates in the following direction: ... Clockwise

When the camshaft is viewed from the front of the engine, the camshaft rotates in the following direction: ... Clockwise

Note: The front end of the engine is opposite the flywheel end. The left side and the right side of the engine are viewed from the flywheel end. The No. 1 cylinder is the front cylinder.

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Product: BACKHOE LOADER

Model: 426C BACKHOE LOADER 7WN

Configuration: 426C Backhoe Loader Center Pivot, Single Tilt 7WN00939-01099 (MACHINE) POWERED BY 3054 Engine

Disassembly and Assembly 3054 Engine for Caterpillar Built Machines

Media Number -SEN6241-13

Publication Date -01/08/2008

Date Updated -04/08/2008

i01068011

Fuel Filter Base - Remove and Install

SMCS - 1262-010

Removal Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

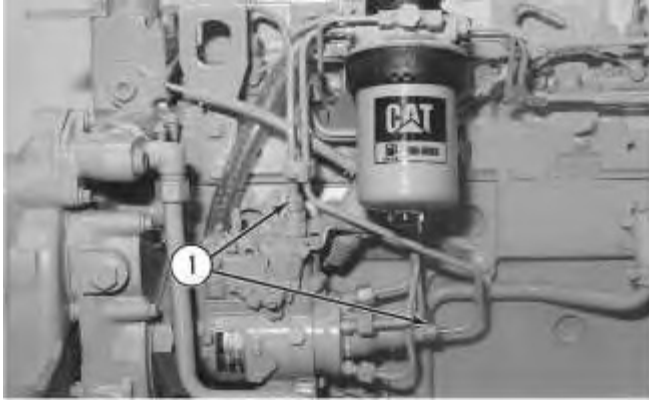


Illustration 1

g00556872

Typical example

1. Disconnect two fuel lines (1) at the fuel injection pump.
2. Cap the lines or plug the lines immediately.

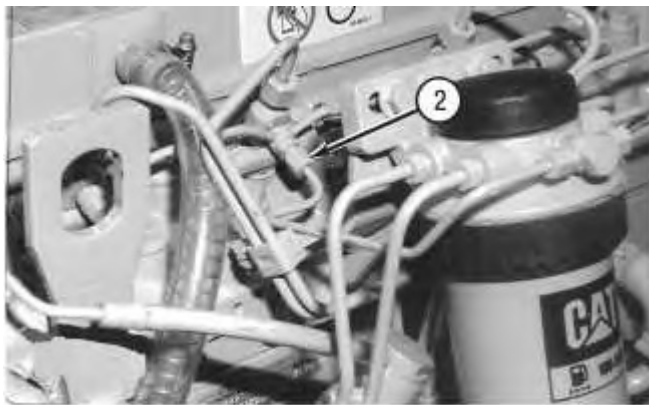


Illustration 2

g00556873

Typical example

3. Disconnect fuel return line (2) .
 4. Cap the lines or plug the lines immediately.
-

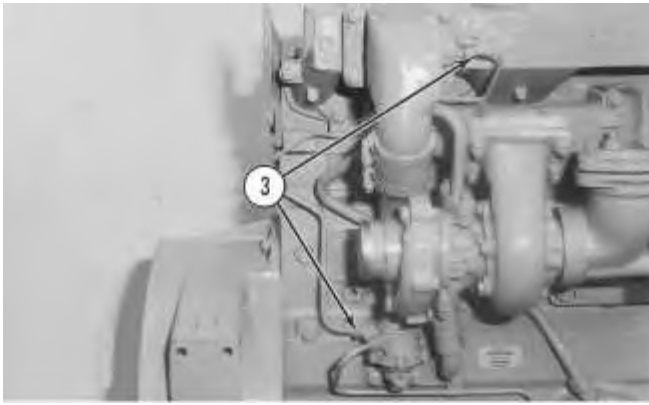


Illustration 3

g00556874

Typical example

5. Disconnect two fuel lines (3) .
6. Cap the lines or plug the lines immediately.

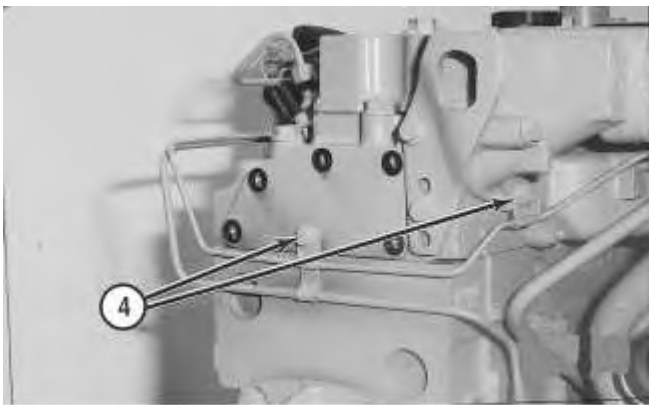


Illustration 4

g00556875

Typical example

7. Remove three bolts (4) that hold two fuel lines (3) on the rear of the engine.
-

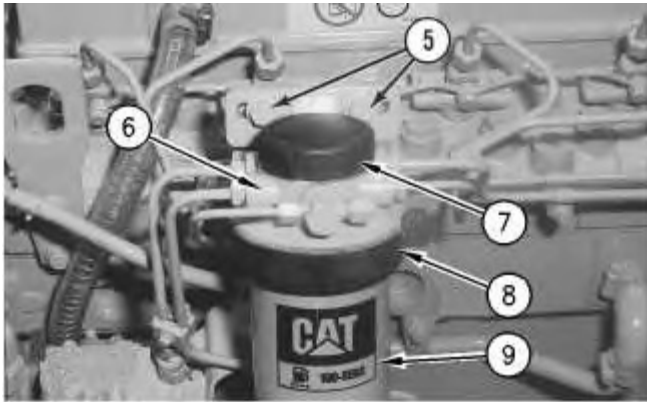


Illustration 5

g00556876

Typical example

8. Remove two bolts (5) .
9. Remove fuel filter base (6) .

Note: Use the following steps in order to remove fuel filter (9). The fuel filter assembly has a bayonet type lock ring that allows the fuel filter to drain into the canister for easy removal.

- a. Remove cap (7). Remove the top plate, the O-ring, and the bayonet type lock ring from fuel filter (9). This will allow fuel to flow into the canister of the fuel filter.
- b. Turn collar (8) in the counterclockwise direction in order to remove fuel filter (9) .
- c. Pull fuel filter (9) from fuel filter base (6) .

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

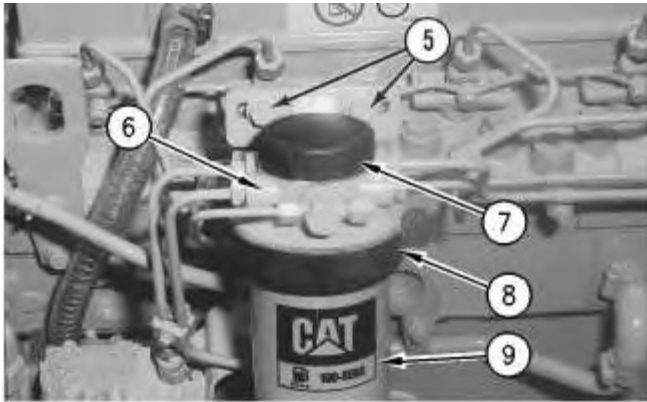


Illustration 6

g00556876

Typical example

1. Install fuel filter base (6) on the engine.
2. Install two bolts (5) .

Note: If the fuel filter was removed, use the following steps to install the fuel filter.

- a. Replace the seal on fuel filter base (6) .
- b. Insert fuel filter (9) in fuel filter base (6) .
- c. Install collar (8). Turn the collar in the clockwise direction in order to lock fuel filter (9) in place.
- d. Install the bayonet type lock ring, the O-ring, and the top plate in fuel filter (9). Install cap (7) .

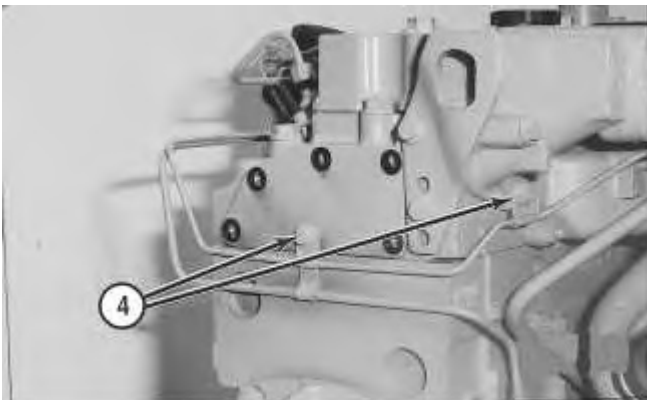


Illustration 7

g00556875

Typical example

3. Install three bolts (4) that hold the fuel lines to the rear of the engine.

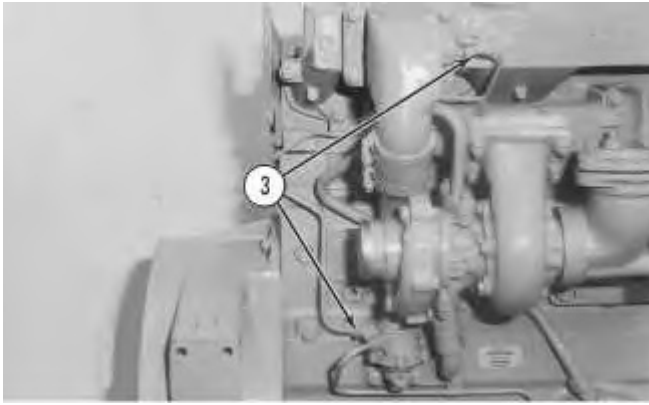


Illustration 8

g00556874

Typical example

4. Connect two fuel lines (3) .

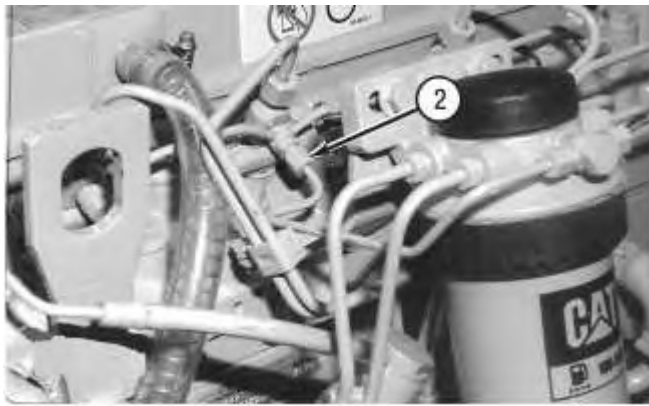


Illustration 9

g00556873

5. Connect fuel return line (2) .
-

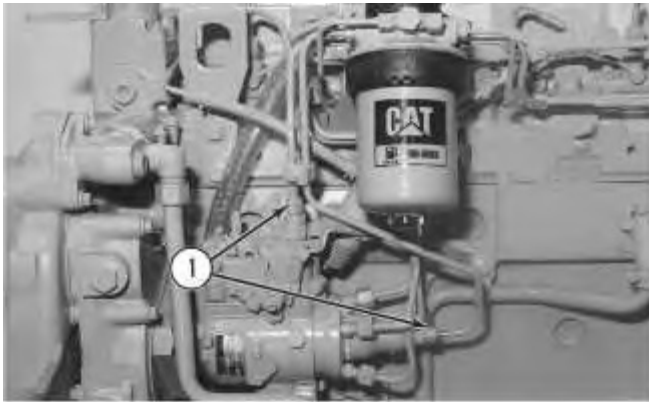


Illustration 10

g00556872

Typical example

6. Connect two fuel lines (1) at the fuel injection pump.

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Product: BACKHOE LOADER

Model: 426C BACKHOE LOADER 7WN

Configuration: 426C Backhoe Loader Center Pivot, Single Tilt 7WN00939-01099 (MACHINE) POWERED BY 3054 Engine

Disassembly and Assembly 3054 Engine for Caterpillar Built Machines

Media Number -SEN6241-13

Publication Date -01/08/2008

Date Updated -04/08/2008

i01164521

Fuel Transfer Pump - Remove

SMCS - 1256-011

Removal Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

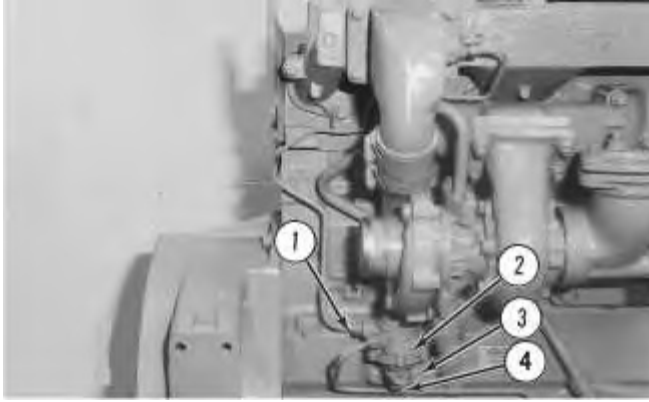


Illustration 1

g00543616

Typical example

1. Disconnect two fuel lines (1) from fuel transfer pump (2). Plug all openings immediately.
2. Remove four bolts (3) that mount fuel transfer pump (2) to the cylinder block.
3. Remove two lock plates (4) .
4. Remove fuel transfer pump (2) and the gasket.

Note: If the fuel transfer pump is difficult to remove, rotate the crankshaft until the rocker arm of the fuel transfer pump is not under pressure.

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Product: BACKHOE LOADER

Model: 426C BACKHOE LOADER 7WN

Configuration: 426C Backhoe Loader Center Pivot, Single Tilt 7WN00939-01099 (MACHINE) POWERED BY 3054 Engine

Disassembly and Assembly 3054 Engine for Caterpillar Built Machines

Media Number -SEN6241-13

Publication Date -01/08/2008

Date Updated -04/08/2008

i01183553

Fuel Transfer Pump - Disassemble

SMCS - 1256-015

Disassembly Procedure

Start By:

- A. Remove the fuel transfer pump. Refer to Disassembly and Assembly, "Fuel Transfer Pump - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

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Dispose of all fluids according to local regulations and mandates.



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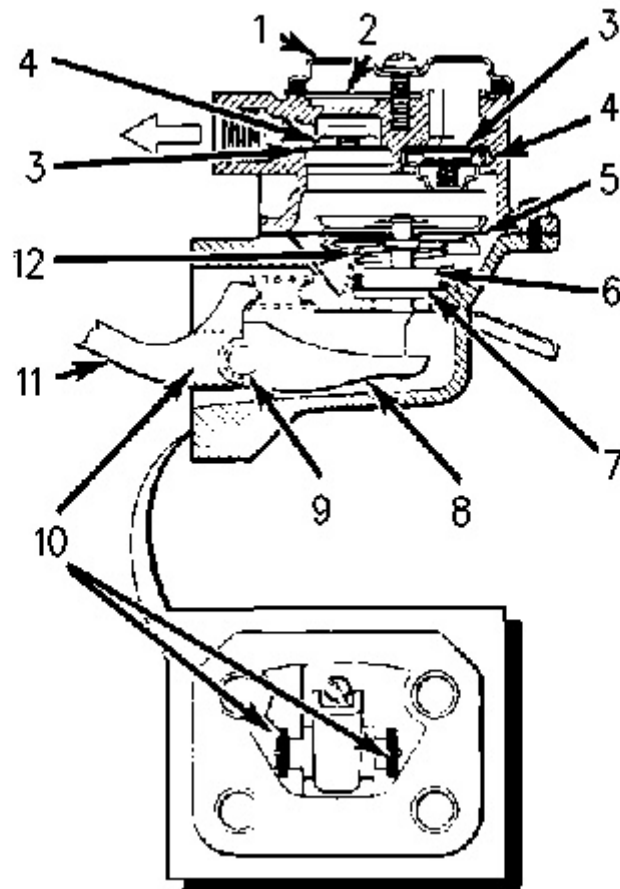


Illustration 1

g00544796

1. Place an identification mark on each half of the fuel transfer pump for the assembly procedure.
2. Remove the screw that holds cover (1) .
3. Remove cover (1) and the gasket.
4. Remove gauze (2) .
5. Remove the screws that hold the two halves of the fuel transfer pump together.
6. Rotate diaphragm assembly (5) at 90 degrees in order to remove the pull rod from link arm (8) .
7. Remove diaphragm assembly (5) .
8. Remove stem seal (6), spring seat washer (7), and diaphragm spring (12) from the pull rod.

Note: Diaphragm assembly (5) and the pull rod are not serviced parts.

9. Use a suitable lever in order to remove valves (4) and seat washers (3). The valves are pried in.

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