CATERPILLAR®

SENR3598-10

Specification

3606 and 3608 Engines

S/N: 8RB1-UP

Use the bookmarks for navigation inside of the manual

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Specifications
3606 and 3608 Engines
Media Number -SENR3598-10 Publication Date -01/11/2008 Date Updated -05/11/2008

i02509989

Engine Design

SMCS - 1000

S/N - 8RB1-UP

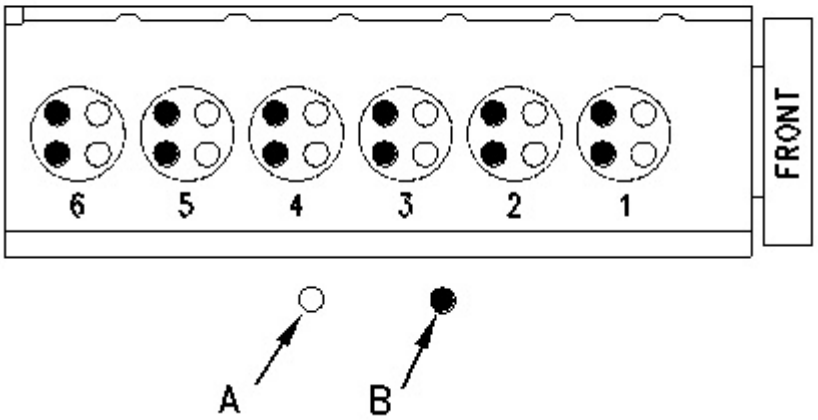

Illustration 1 g00572932

Engine design

(A) Inlet valve

(B) Exhaust valve

Number and arrangement of cylinders ... In-line 6

Valves per cylinder

Inlet valves ... 2

Exhaust valves ... 2

Displacement ... 110.8 L (6764 cu in)

Bore ... 280 mm (11.0 inch)

Stroke ... 300 mm (11.8 inch)

Compression ratio ... 13:1

Combustion ... Direct Injection

Firing order

Standard rotation CCW ... 1-5-3-6-2-4
Reverse rotation CW ... 1-4-2-6-3-5

Valve lash

Inlet ... 0.60 mm (.024 inch)

Exhaust ... 1.00 mm (0.040 inch)

When the crankshaft is viewed from the flywheel end, the crankshaft rotates in the following direction.

Standard rotation ... Counterclockwise

Reverse rotation ... Clockwise

Note: The front end of the engine is opposite the flywheel end of the engine. The left side and the right side of the engine are determined from the flywheel end. The number 1 cylinder is the front cylinder.

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i01130383

Fuel Injection Lines

SMCS - 1252

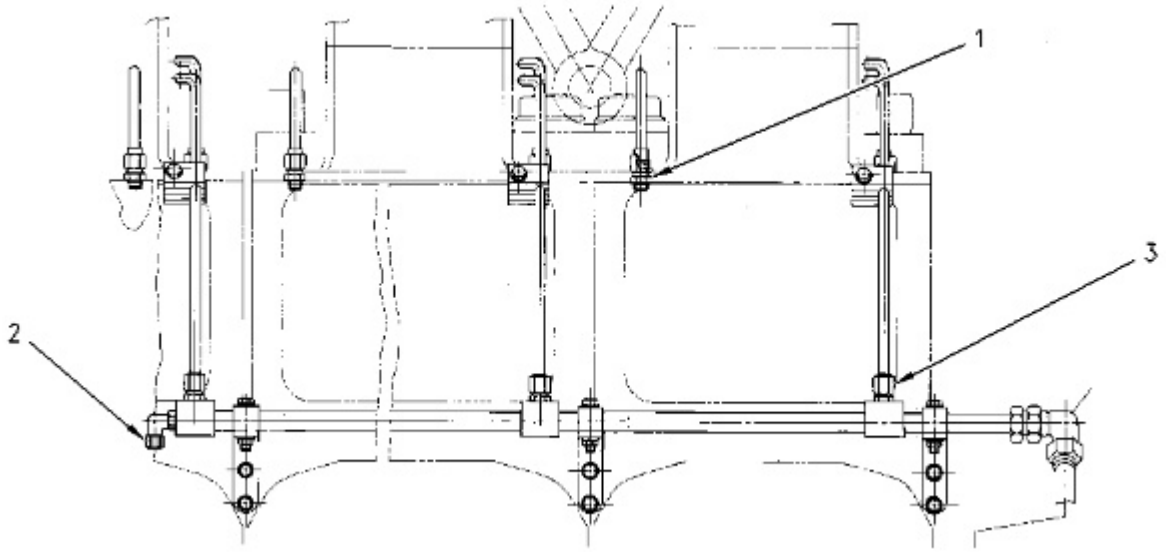

Illustration 1 g00526749

(1) Tighten the connector to the following torque. ... 105 ± 10 N·m (75 ± 7 lb ft)

(2) Tighten the cap assembly to the following torque. ... 105 ± 10 N·m (75 ± 7 lb ft)

(3) Tighten the seal connector to the following torque. ... 105 ± 10 N·m (75 ± 7 lb ft)

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Shutoff (Energize to Run)

SMCS - 7418

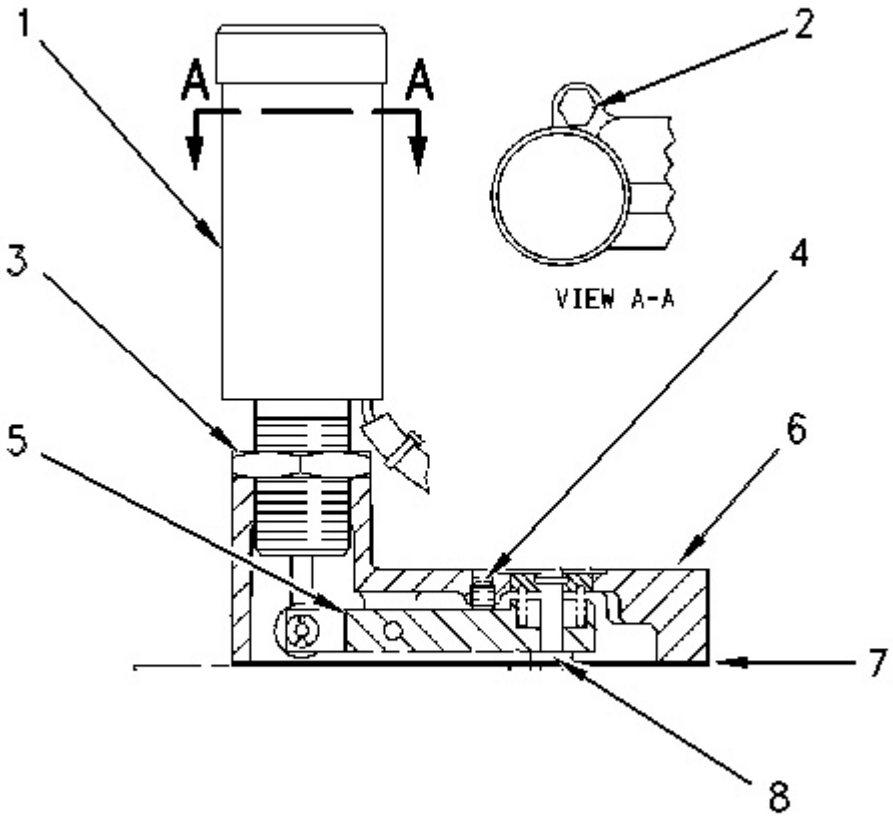

Illustration 1 g00527991

(1) **7W-5295** Solenoid

Operating voltage ... 64 to 76 VDC
Coil resistance at a temperature of 25 °C (77 °F) ... 382 to 466 ohms
Duty ... Continuous

7W-5968 Solenoid

Operating voltage ... 24 to 32 VDC
Coil resistance at a temperature of 25 °C (77 °F) ... 37.8 to 46.2 ohms
Duty ... Continuous

(2) Torque for three mounting bolts ... 10 ± 1 N·m (89 ± 9 lb in)

(3) Torque for locknut ... 68 ± 7 N·m (50 ± 5 lb ft)

(4) Setscrew

(5) Lever

(6) Housing

(7) Gasket

(8) Plunger

Use the following procedure to adjust the plunger (8) .

1. Hold housing (6) against gasket (7) on a flat surface.
2. Adjust setscrew (4) until the setscrew just makes contact with lever (5) .
3. Turn setscrew (4) counterclockwise.

   Number of turns ... 1/4 turn
4. Energize solenoid (1) .
5. Turn solenoid (1) clockwise until the solenoid stops.
6. Turn the solenoid clockwise.

   Number of turns ... 1/4 turn
7. Tighten the locknut (3) .

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Shutoff (Energize to Shutdown)

SMCS - 7418

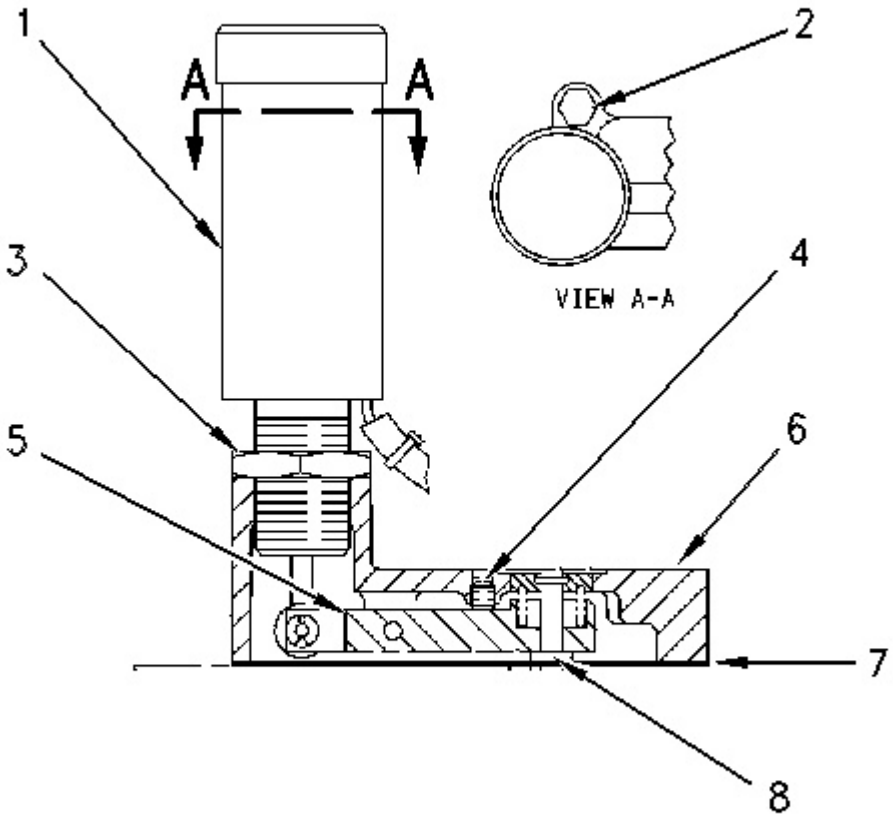

Illustration 1 g00527991

(1) Solenoid

7W-5294 Solenoid

Type ... Pull
Duty ... Intermittent
Operating voltage ... 64 to 76 VDC
Coil resistance at a temperature of 25 °C (77 °F) ... 382 to 466 ohms

7W-5295 Solenoid

Type ... Push
Duty ... Continuous
Operating voltage ... 64 to 76 VDC
Coil resistance at a temperature of 25 °C (77 °F) ... 382 to 466 ohms

7W-5967 Solenoid

Type ... Pull
Duty ... Intermittent
Operating voltage ... 24 to 32 VDC
Coil resistance at a temperature of 25 °C (77 °F) ... 40.2 to 49.2 ohms

7W-5968 Solenoid

Type ... Push
Duty ... Continuous
Operating voltage ... 24 to 32 VDC
Coil resistance at a temperature of 25 °C (77 °F) ... 37.8 to 46.2 ohms

(2) Mounting bolts

Torque ... 10 ± 1 N·m (89 ± 9 lb in)

(3) Locknut

Torque ... 68 ± 7 N·m (50 ± 5 lb ft)

(4) Setscrew

(5) Lever

(6) Housing

(7) Gasket

(8) Plunger

Use the following procedure to adjust the plunger.

1. Hold housing (6) against gasket (7) on a flat surface.
2. Adjust setscrew (4) until plunger (8) just makes contact with the flat surface.
3. Turn setscrew (4) counterclockwise.

   Number of turns ... 1/4 turn

4. Turn solenoid (1) clockwise until the solenoid stops.
5. Back out the solenoid assembly (1).

   Number of turns ... 1 turn

6. Tighten the locknut (3) .

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i01047670

Fuel Shutoff

SMCS - 1704

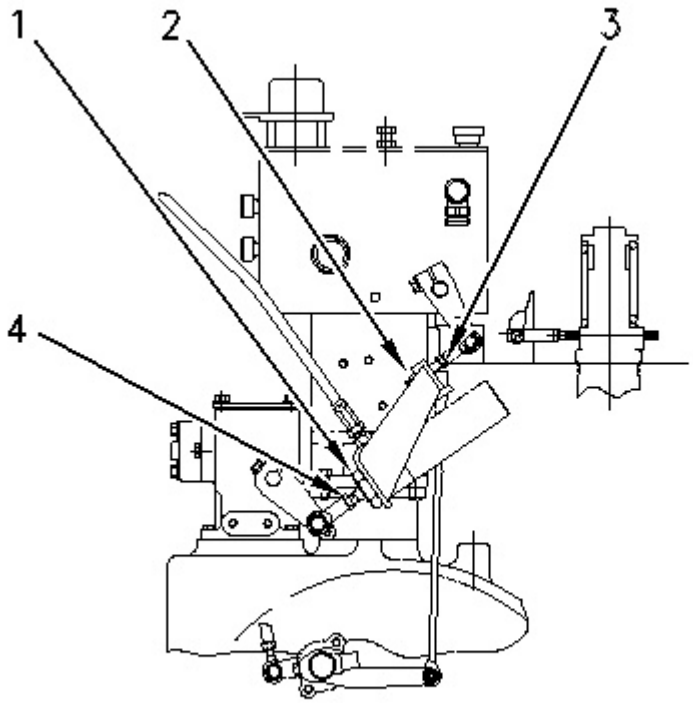

Illustration 1 g00542848

(1) Tighten the nut to the following torque. ... 1000 ± 125 N·m (740 ± 90 lb ft)

(2) Tighten the nut to the following torque. ... 25 ± 6 N·m (18 ± 4 lb ft)

(3) Tighten the nut to the following torque. ... 25 ± 6 N·m (18 ± 4 lb ft)

(4) Tighten the nut to the following torque. ... 60 ± 12 N·m (40 ± 8 lb ft)

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i00637255

Fuel Filter Housing

SMCS - 1262

S/N - -

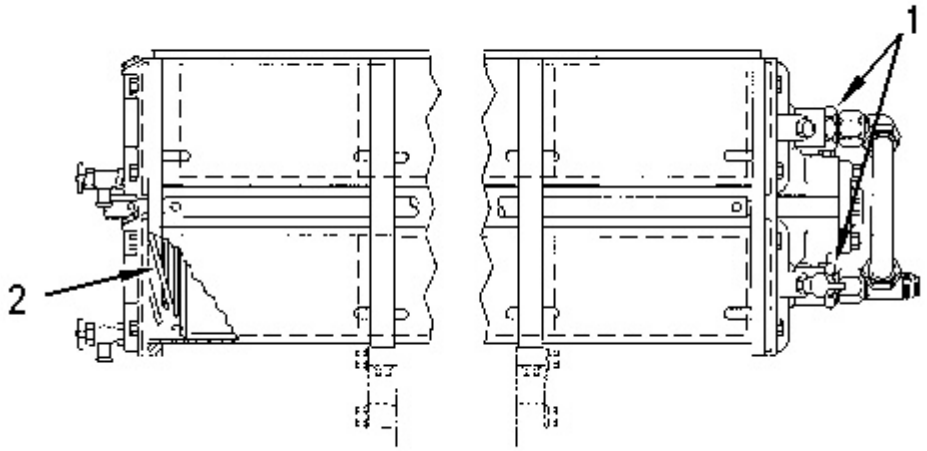

Illustration 1 g00286930

Front View

(1) Install the check valves so that the arrows point in the direction of fuel flow.

(2) **2W-6862** Spring

Length under test force ... 33.5 mm (1.32 inch)
Test force ... 222 ± 18 N (50 ± 4 lb)
Free length after test ... 87.88 mm (3.460 inch)

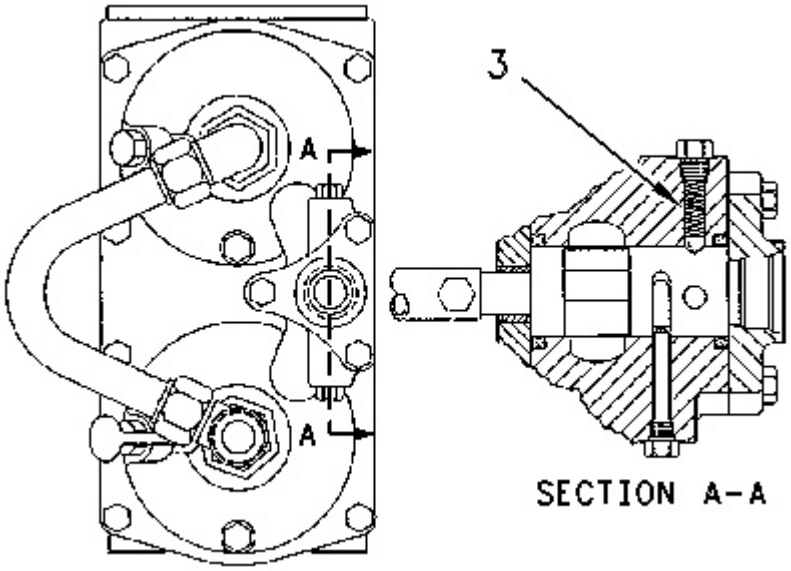

Illustration 2 g00286932

End View

(3) **7C-0807** Spring

Length under test force ... 24.46 mm (0.963 inch)
Test force ... 140 ± 11 N (32 ± 3 lb)
Free length after test ... 33.21 mm (1.307 inch)

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i01426567

Fuel Transfer Pump

SMCS - 1256

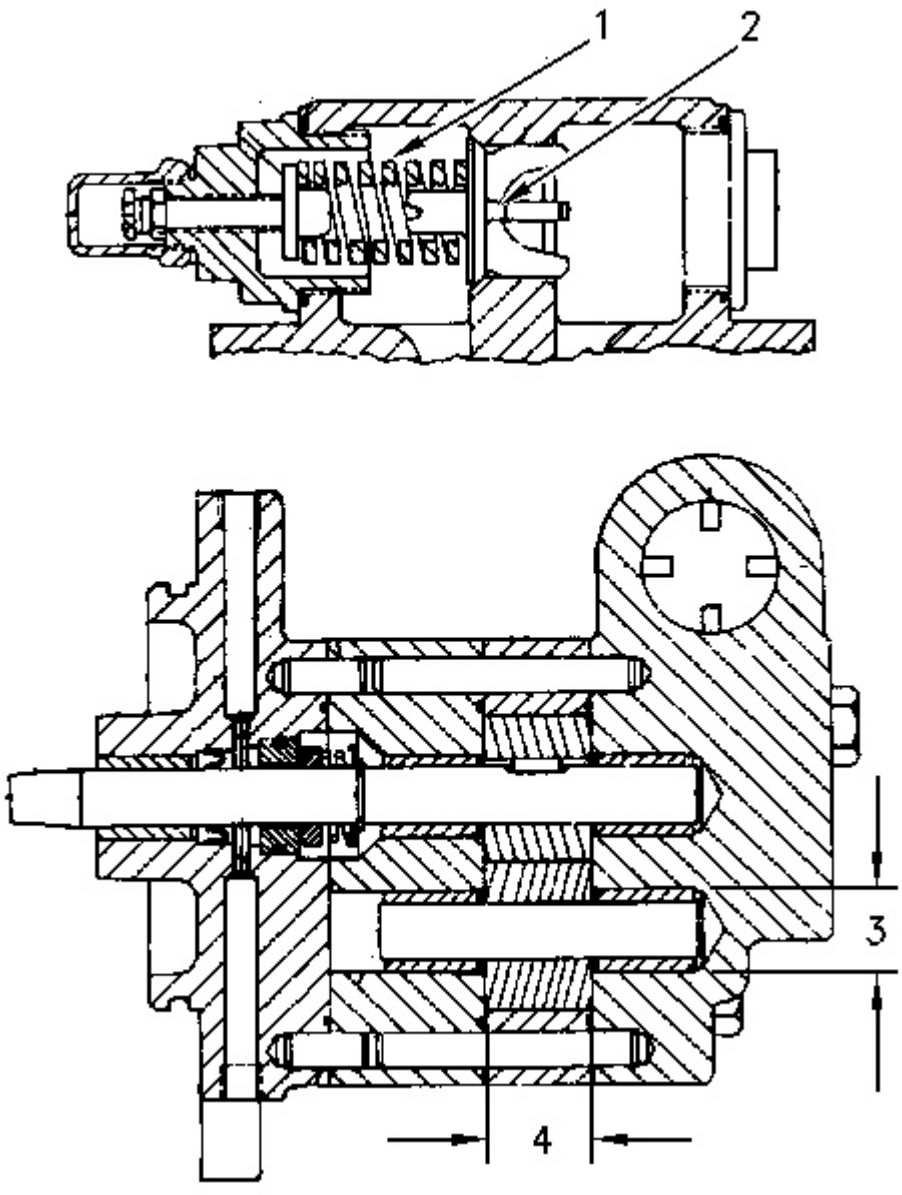

Illustration 1 g00514632

(1) **4W-7991** Spring

Free length of spring ... 57.1 mm (2.25 inch)
Outside diameter ... 31.7 mm (1.25 inch)

(2) Relief valve

(3) Diameter of shafts ... 15.869 ± 0.006 mm (0.6248 ± 0.0002 inch)

Bore in bearings for shafts ... 15.951 mm (0.6280 inch)

(4) Width of gears ... 29.224 ± 0.006 mm (1.1505 ± 0.0002 inch)

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i01002929

Fuel Injector Mechanism

SMCS - 1102; 1290

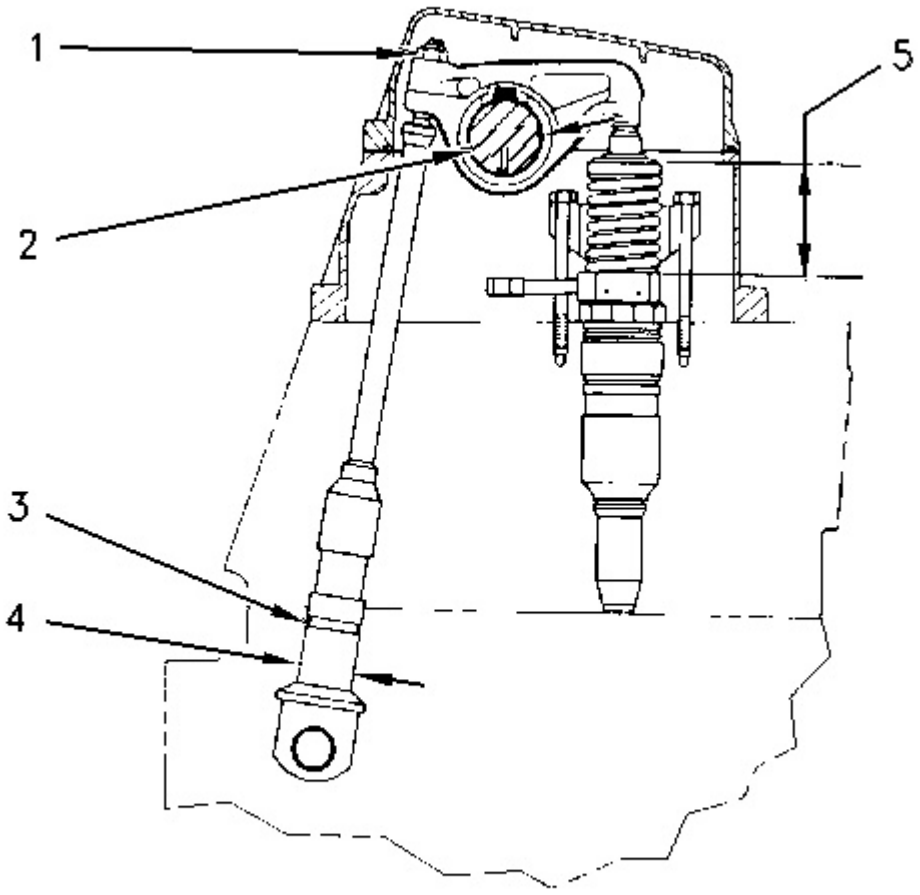

Illustration 1 g00514176

(1) Torque for the locknut on the rocker arm adjustment screw ... 200 ± 25 N·m (150 ± 18 lb ft)

(2) The diameter of the rocker arm shaft ... 69.900 ± 0.015 mm (2.7520 ± 0.0006 inch)

Bore in the bearing for the rocker arm shaft ... 70.000 ± 0.015 mm (2.7559 ± 0.0006 inch)

(3) Guide springs must not be used again. Always install new guide springs.

(4) Diameter of the lifter ... 55.900 ± 0.010 mm (2.2008 ± 0.0004 inch)

Bore in the guide for the lifter ... 56.000 ± 0.020 mm (2.2047 ± 0.0008 inch)

(5) The fuel timing dimension is set by a gauge. See the information plate on the engine for the correct fuel setting dimension.

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i01220769

Fuel Injector - Distillate Fuel

SMCS - 1290

S/N - -

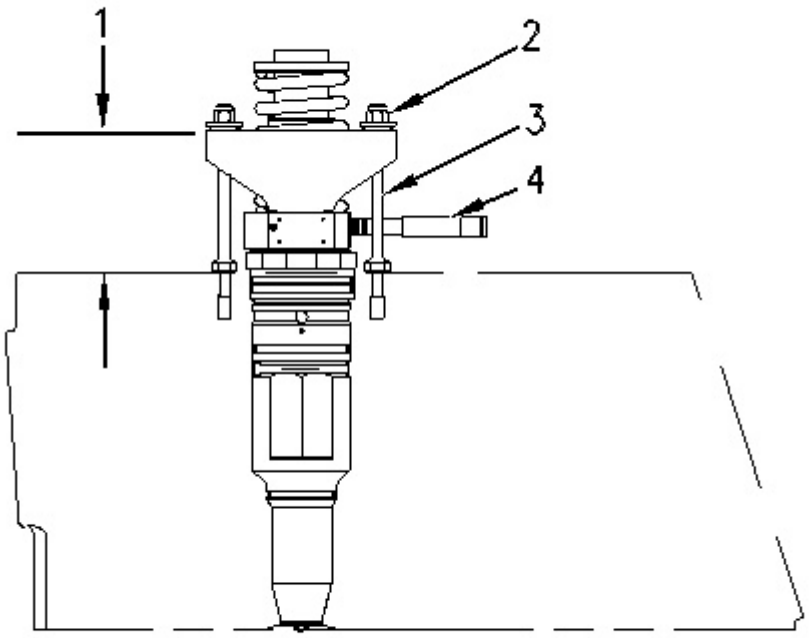

Illustration 1 g00569480

(1) The top surface of the clamp must be parallel to the top surface of the cylinder head to the following tolerance. ... 2.0 mm (0.08 inch)

(2) Locknuts that hold the clamp are tightened to the following torque. ... 35 ± 5 N·m (26 ± 4 lb ft)

(3) Studs are screwed into the cylinder head with the following torque. ... 50 ± 5 N·m (37 ± 4 lb ft)

(4) Fuel injector rack

Use the following procedure in order to install the fuel injector.

1. Put **1P-0808** Grease in the bore of the cylinder head for lubrication of the O-ring seals.
2. Put the fuel injector in the bore of the cylinder head. Use the bolts and the clamp to push the injector into the correct position.

   Note: DO NOT tap on the top surface of the fuel injector in order to force the fuel injector into the cylinder head.
3. Tighten the studs (3) to the cylinder head.
4. Tighten the locknuts (2) that hold the clamp to the specified torque.
5. After the clamp is tightened, the rack (4) must move freely.

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i01226223

Fuel Injector - Heavy Fuel Oil

SMCS - 1290

S/N - -

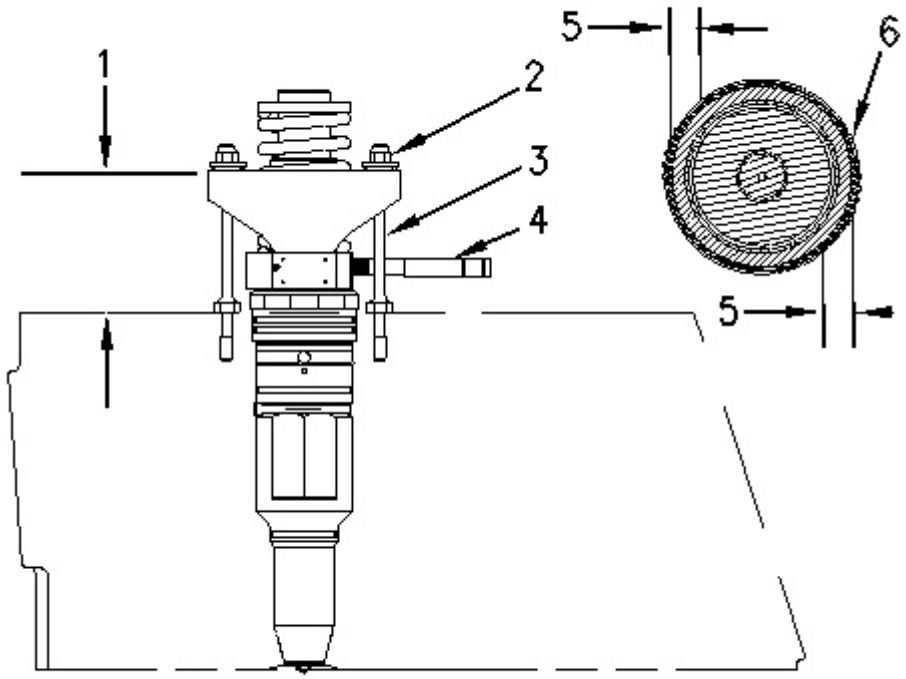

Illustration 1 g00526352

(1) The top surface of the clamp must be parallel to the top surface of the cylinder head to the following tolerance. ... 2.0 mm (0.08 inch)

(2) Locknuts that hold the clamp are tightened to the following torque. ... 35 ± 5 N·m (26 ± 4 lb ft)

(3) Studs are screwed into the cylinder head with the following torque. ... 50 ± 5 N·m (37 ± 4 lb ft)

(4) Fuel injection rack

(5) Coolant ports within the cylinder head

(6) Seal.

Use the following procedure in order to install the fuel injection pump.

1. Put **1P-0808** Multipurpose Grease in the bore of the cylinder head for lubrication of the O-ring seals.

   Note: The serrated portion of seal (6) must not line up with the flat surface on the fuel injection pump. The serrated portion of seal (6) must not line up with the coolant port in cylinder head (5) .

2. Put the fuel injector in the bore of the cylinder head. Use the bolts and the clamp to push the injector into the correct position.

   Note: DO NOT tap on the top surface of the fuel injection pump in order to force the injector into the cylinder head.

3. Tighten studs (3) to the cylinder head.

4. Tighten locknuts (2) that hold the clamp to the specified torque.

5. After the clamp is tightened, rack (4) must move freely.

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i01130458

Fuel Pressure Control Valve - Heavy Fuel Oil

SMCS - 1715

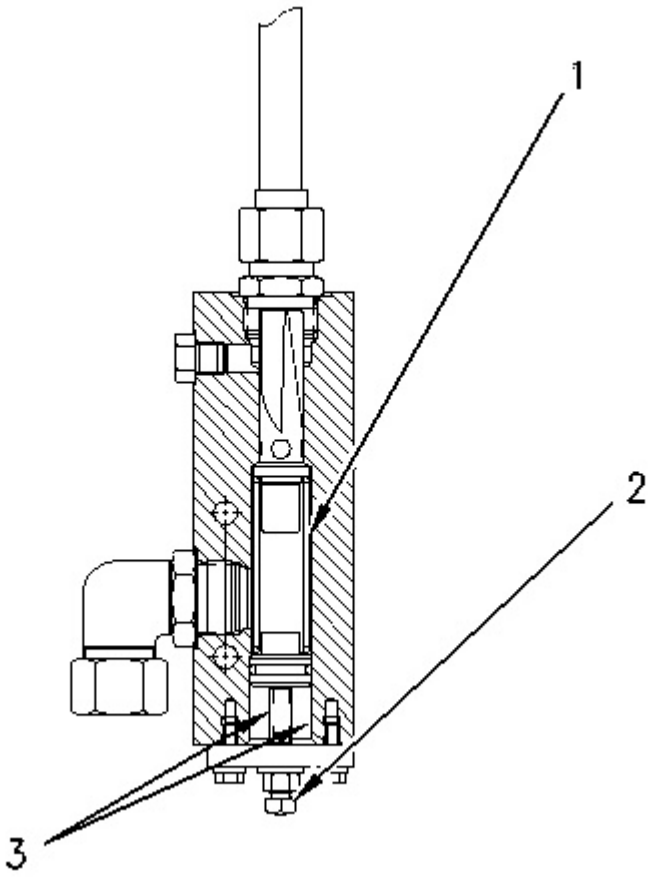

Illustration 1 g00287263

(1) **5T-2760** Spring

Length under test force ... 56.0 mm (2.20 inch)
Test force ... 159 N (35 lb)
Free length after test ... 77.0 mm (3.03 inch)
Outside diameter ... 24.0 mm (0.95 inch)

(2) Set the adjusting bolt in order to provide the following fuel pressure. ... 595 ± 95 kPa (85 ± 14 psi)

(3) Lubricate the threads of adjusting bolt (2) and the bore of the valve body with **1P-0808** Multipurpose Grease after you install the retainer and the seal.

Diesel Engines

ABS	Agco-Sisu
Akasaka	Baudouin
BMW	Bukh
Caterpillar	CHN 25/34
Cummins	Daihatsu
Detroit	Deutz
Doosan-Daewoo	Fiat
Ford	GE
Grenaa	Guascor
Hanshin	Hatz
Hino	Honda
Hyundai	Isotta
Isuzu	Iveco
John-Deere	Kelvin
Kioti	Komatsu
Kubota	Liebherr
Lister	Lombardini
MAK	MAN B&W
Mercedes	Mercruiser
Mirrlees BS	Mitsubishi
MTU	MWM
Niigata	Paxman
Perkins	Pielstick
Rolls / Bergen	Ruggerini
Ruston	Scania
Shibaura	Sisu-Valmet
SKL	Smit-Bolnes
Sole	Stork
VM-Motori	Volvo
Volvo Penta	Westerbeke
Wichmann	Yanmar

Machinery

ABG	Airman
Akerman	Ammann
Astra	Atlas Copco
Atlas Weyha.	Atlet
Bell	Bendi
Bigjoe	Bobcat
Bomag	BT
Carelift	Case
Caterpillar	Cesab
Challenger	Champion
Claas	Clark
Combilift	Crown
Daewoo-Doosan	Demag
Deutz-Fahr	Dressta

Machinery

Drott	Dynapack
Extec	Faun
Fendt	Fiat
Fiatallis	Flexicoil
Furukawa	Gehl
Genie	Grove-gmk
Halla	Hamm
Hangcha	Hanix
Hanomag	Hartl
Haulpack	Hiab
Hidromek	Hino truck
Hitachi	Hyster
Hyundai	IHI
Ingersoll-rand	JCB
JLG	John-Deere
Jungheinrich	Kalmar
Kato	Kioti
Kleeman	Kobelco
Komatsu	Kramer
Kubota	Lamborghini
Landini	Liebherr
Linde	Link-belt
Manitou	Massey-Ferg.
Mccormick	MDI-Yutani
Mitsubishi	Moxy
Mustang	Neusson
New-Holland	Nichiyu
Nissan	OK
OM-Pimespo	others-tech
Pel-Job	PH-mining
Poclain	Powerscreen
Same	Samsung
Sandvik	Scania
Schaefer	Schramm
Sennebogen	Shangli
Shibaura	Steiger
Steinbock	Steyr
Still	Sumitomo
Super-pac	Tadano
Takeuchi	TCM
Terex	Toyota
Valpadana	Venieri
Versatile	Vogele
Volvo	Weidemann
Wirtgen	Yale
YAM	Yanmar