



# Service Repair Manual

## **Models**

301.5 301.6 301.8

Mini Hydraulic Excavator

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Product: MINI HYD EXCAVATOR

Model: 301.8 MINI HYD EXCAVATOR BFA

Configuration: 301.5 301.6 301.8 Mini Hydraulic Excavator BFA00001-UP (MACHINE) POWERED BY 3003 Engine

## **Disassembly and Assembly 3003, 3013, 3014 and 3024 Engines for Caterpillar Built Machines**

Media Number -SEN5027-05

Publication Date -01/05/2005

Date Updated -16/05/2005

i01112109

# **Fuel Injection Lines - Remove and Install**

SMCS - 1252-010

## **Removal Procedure**

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### **NOTICE**

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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### **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.**

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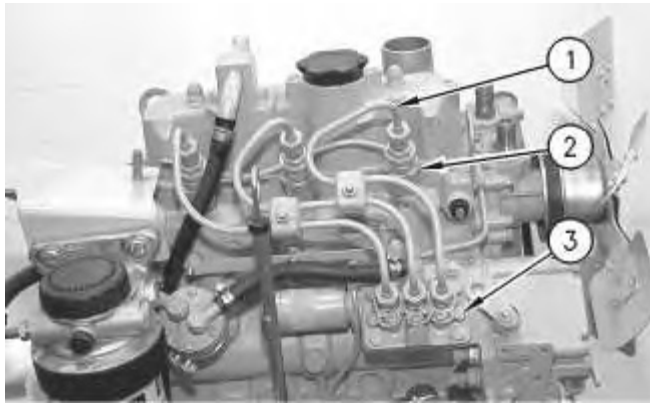


Illustration 1

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1. Disconnect fuel injection lines (1) from fuel injection nozzles (2) .

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### NOTICE

**Do not let the tops of fuel nozzles turn when the fuel line nuts are loosened or tightened.**

**The nozzles will be damaged if the top of the nozzle turns in the body.**

**The engine will be damaged if a defective fuel injection nozzle is used because the shape of fuel (spray pattern) that comes out of the nozzles will not be correct.**

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2. Disconnect fuel injection lines (1) from fuel injection pump (3). Cap all openings or plug all openings immediately.
3. Remove fuel injection lines (1) from the engine as a unit.

## Installation Procedure

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### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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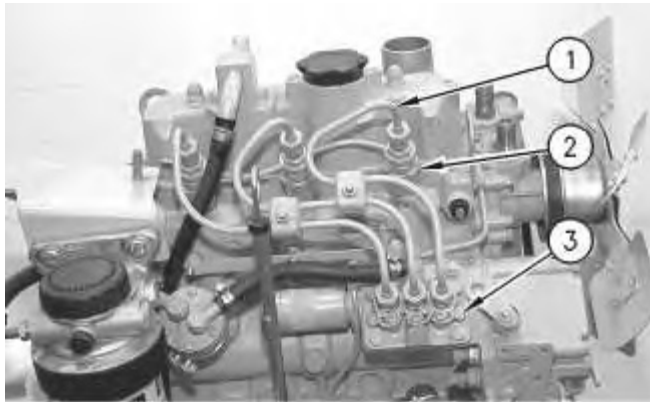


Illustration 2

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1. Install fuel injection lines (1) on the engine as a unit.

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## NOTICE

**Do not let the tops of fuel nozzles turn when the fuel line nuts are loosened or tightened.**

**The nozzles will be damaged if the top of the nozzle turns in the body.**

**The engine will be damaged if a defective fuel injection nozzle is used because the shape of fuel (spray pattern) that comes out of the nozzles will not be correct.**

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2. Connect fuel injection lines (1) to fuel injection pump (3). Tighten the fuel injection line nuts to the following torque:  
  
3003 Engine ... 22 N·m (16 lb ft)  
3013, 3014, and 3024 Engines ... 20 N·m (15 lb ft)
3. Connect fuel injection lines (1) to fuel injection nozzles (2). Tighten the fuel injection line nuts to the following torque:  
  
3003 Engine ... 22 N·m (16 lb ft)  
3013, 3014, and 3024 Engines ... 20 N·m (15 lb ft)
4. Prime the fuel system. Refer to Testing and Adjusting, "Fuel System - Prime" for more information.

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## **Disassembly and Assembly**

### **3003, 3013, 3014 and 3024 Engines for Caterpillar Built Machines**

Media Number -SEN5027-05

Publication Date -01/05/2005

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i01428959

## **Fuel Shutoff Solenoid - Remove and Install**

SMCS - 1259-010

### **Removal Procedure**

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#### **NOTICE**

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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#### **NOTICE**

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**Dispose of all fluids according to local regulations and mandates.**

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**Note:** Disconnect all electrical connections to the fuel shutoff solenoid before proceeding. Mark all connections for later installation.

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