

PARTS & SERVICE NEWS

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(C)

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SUBJECT: N14 STC HOT/HARD START KIT

PURPOSE: To facilitate N14 STC start when engine is hot.

APPLICATION: PC600LC-6 Excavator Serial Number 10001 and UP
TD25G Crawler Tractor Serial Number P072038 and UP
WA500-1LE Wheel Loader Serial Number A61002 and UP
WA500-3LE Wheel Loader Serial Number A70001 and UP

FAILURE CODE: A7N6NA

DESCRIPTION:

This Parts & Service News introduces the N14 Step Timing Control (STC) Hot/Hard Start Kit. There have been field reports that the N14 STC engines are having difficulty starting; this condition typically occurs after an engine is shut off and heat soaks for 5 to 20 minutes. When the operator tries to restart the engine, the engine fails to turn over. The operator has to reset the keyswitch and turn the key again to start the engine.

As the engine heat soaks, the fuel trapped in the fuel rail lines heats up and expands. The expanding fuel has **only** one place to go -- through an open injector. The fuel enters the cylinder and vaporizes. The starter can **not** overcome the increased cylinder pressure caused by the vaporized fuel, causing the engine **not** to turn over. A second attempt by the operator is normally successful in starting the engine.

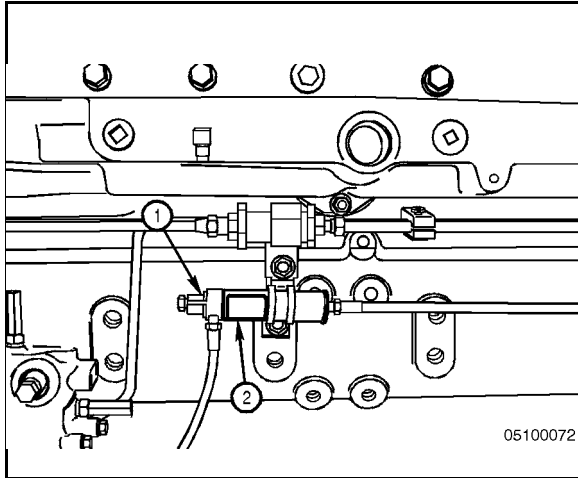
NOTE: Applications that have check valves installed in the fuel supply lines and the fuel return line are susceptible to the hot/hard start condition.

The fuel reservoir (accumulator) is plumbed-in parallel to the fuel rail. After the engine is shut down and is subject to the heat-soak mentioned above, the expanding fuel trapped in the fuel rail lines fills the fuel reservoir instead of being forced through an open injector.

The hot/hard start kit, Part Number 1315 156 H91, has been released and is available at the Parts Distribution Center (PDC). The kit includes the following parts:

HOT/HARD START KIT COMPONENTS	
6733-71-5510	ELBOW, MALE ADAPTER
124-01-55120	CLIP
1240 101 H1	PLUG, PIPE
1315 157 H1	FUEL RESERVOIR (ACCUMULATOR)
1315 158 H1	ELBOW, MALE UNION (NON-CENTRY® FUEL PUMPS)
NOT USED IN KOMATSU MACHINES	ELBOW, MALE UNION (CENTRY® FUEL PUMPS)
1315 159 H1	FLEXIBLE HOSE (SHORT HOSE)
1315 160 H1	FLEXIBLE HOSE (LONG HOSE)
6216-84-9510	CLIP

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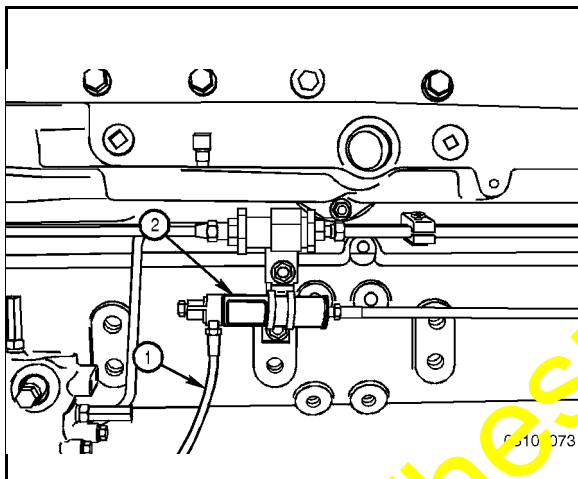


Installation Instructions

Accumulator assembly before installation

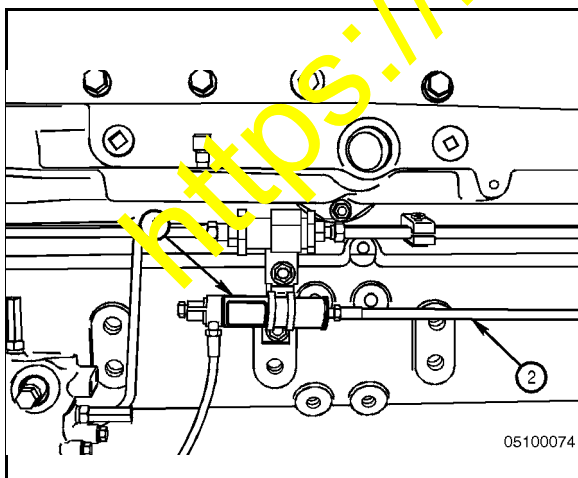
1. Insert the pipe plug (1) into the threaded hole at the threaded end of the accumulator (2). Tighten the plug.

Torque Value: 15 N•m (120 in-lb)



2. Install the short hose (1) into the threaded hole located in the shoulder area of the threaded end of the accumulator (2). Tighten the hose.

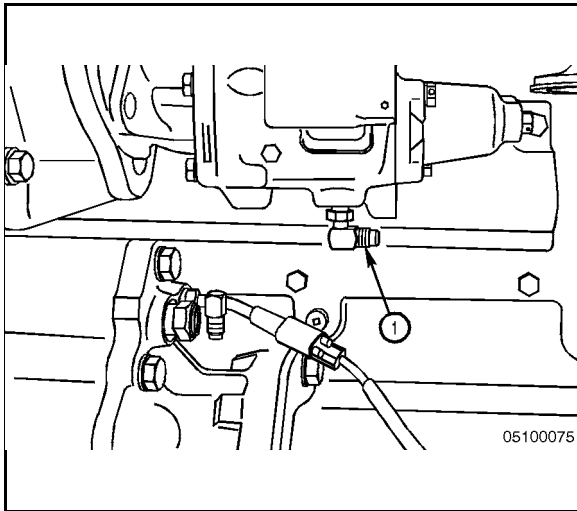
Torque Value: 15 N•m (120 in-lb)



3. Install the long hose (2) into the remaining threaded hole in the accumulator (1). Tighten the hose.

Torque Value: 15 N•m (120 in-lb)

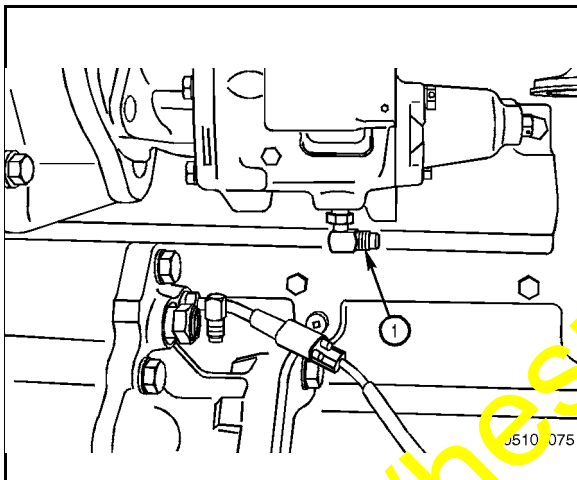
NOTE: The accumulator and hose assembly **must** be assembled before installation on the engine.



Engine Preparation

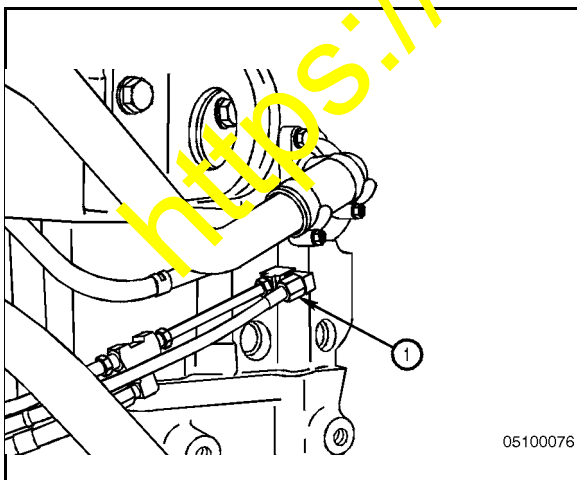
1. Remove the outboard plug on the bottom side of the fuel pump.
2. Install the nut end of the male union elbow (1) into the bottom of the fuel pump. Use of the correct male union elbow is required (non-CENTRY® pump).

Note: Tighten the elbow so the fitting is facing toward the back of the engine.

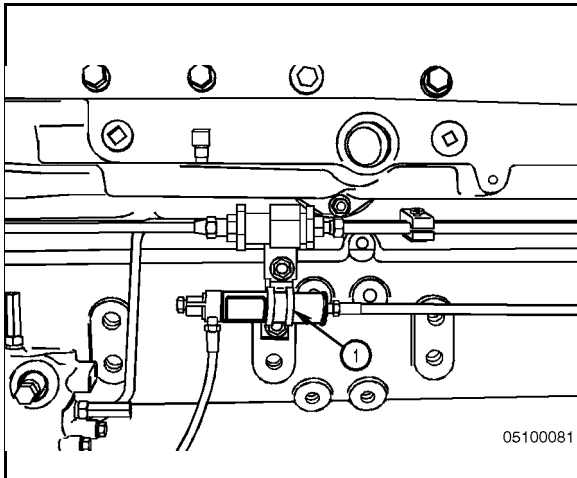


Torque Value

non-CENTRY® 10 to 11 N•m
(90 to 100 in-lb)

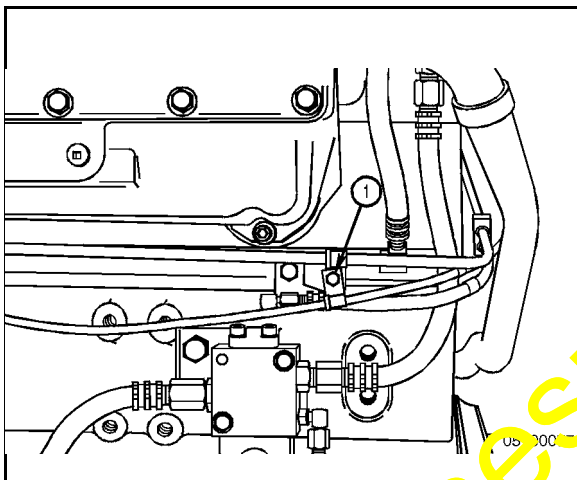


3. Remove the plug located in the fuel tubing elbow at the rear cylinder head of the engine.
4. Install the male adapter elbow (1) into the threaded hole of the fuel tubing elbow, and tighten the elbow so it is oriented at 235°.

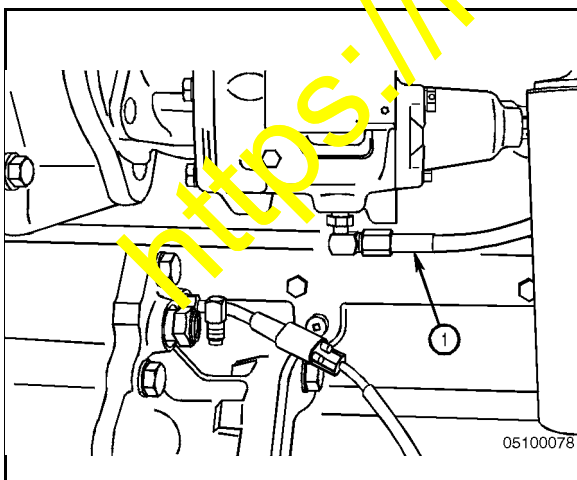


Accumulator and hose assembly engine mounting

1. Attach the p-clip, Part Number 6216-84-9510, (1) onto the accumulator. The clip is mounted onto the fuel supply check valve bracket. The mounting bracket bolt will need to be removed and reinstalled to attach the p-clip. Leave the bolt temporarily loose.

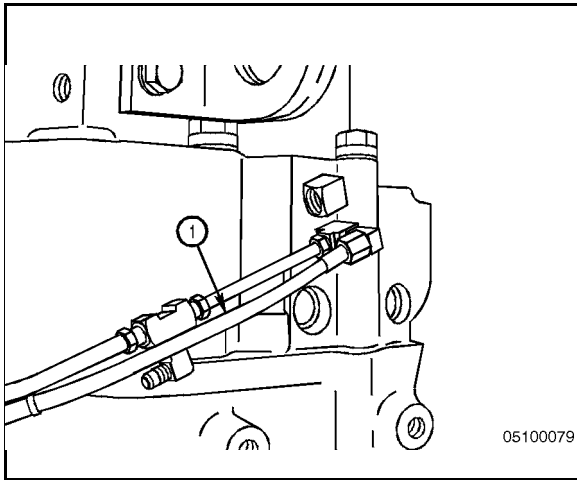


2. Attach the p-clip, Part Number 124-01-55110, (1) onto the long hose. Mount the p-clip onto the engine by attaching it to the bracket above the STC control valve. Leave the clip temporarily loose.



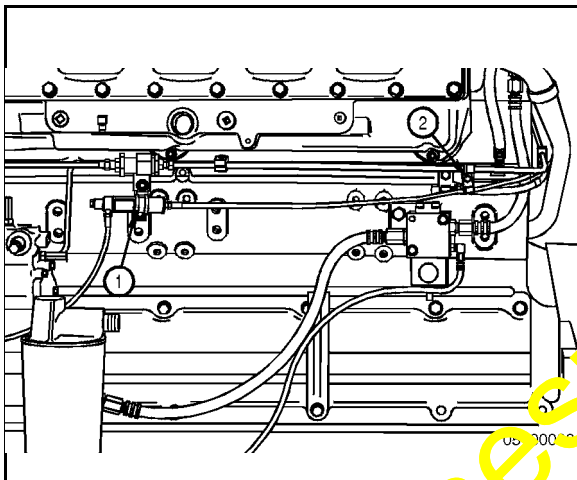
3. Attach the short hose (1) to the fitting on the fuel pump and tighten.

Torque Value: 15 to 17 N•m
(135 to 150 in-lb)



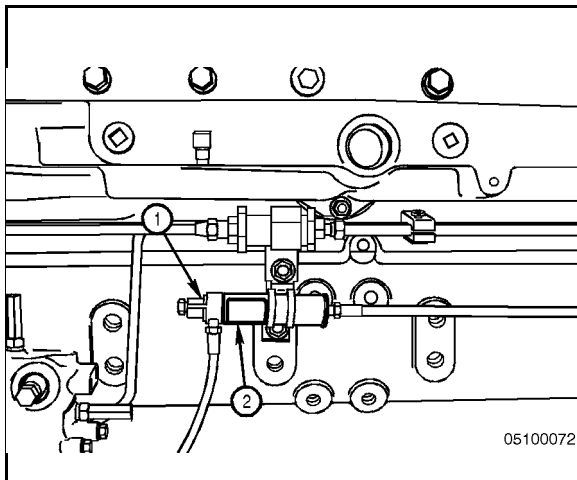
4. Attach the long hose (1) to the fitting in the fuel rail line and tighten.

Torque Value: 15 to 17 N•m
(135 to 150 in-lb)



5. Tighten both p-clips (1) (2) to the engine.

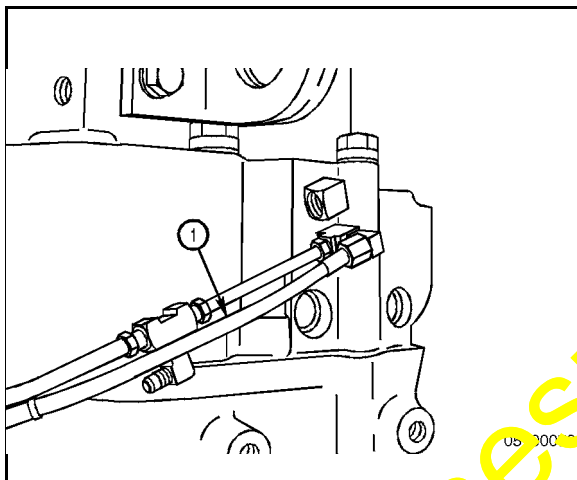
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Purge Air from the System

1. Start engine and allow it to arrive at a stable idle.
2. Carefully loosen the pipe plug (1) from the accumulator (2) until a small, steady stream of fuel leaks around the plug.
3. Tighten the plug.

Torque Value: 15 N•m (120 in-lb)



4. Carefully loosen the braided steel hose (1) at the fitting on the rear cylinder head. Loosen only enough to get a small, steady stream of fuel.
5. Tighten the hose at this fitting.

Torque Value: 6.5 to 7.3 N•m
(58 to 65 in-lb)

Purging the air from the system is now complete.

NOTE: This is a product improvement and is **not** subject to campaign.