



Technical Service Bulletin

Technical Service Bulletin: TSB200234	Released Date: 25-Feb-2022
New Electronic Fuel Lift Pump for Extended Life	

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Warranty Statement

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

Contents

Product Affected

- QST30 CM552*
- QST30 CM552 CM850*

*Product affected **only** applies to electronic fuel priming system or EFSS.

Issue

Symptoms:

- Low power
- Engine cranks but will not start
- Rough engine idle
- Fault Code 583

Failure Mode:

Low power, inability to start, rough idle, and FC583 are caused by a malfunctioning lift pump which is caused by high pressure from the fuel system and or high restriction in fuel filters. The restriction causes high current and voltage divide between both pumps so one pump operates with more current and or voltage than other pump. Over working one pump versus other causes high brush and commutator wear that eventually leads to fuel lift pump and or relay malfunction.

Root Cause:

Fuel restriction causes high current and voltage divide between both fuel lift pumps. With the fuel restriction, the fuel lift pump operates with more current and or voltage than the other fuel lift pump. Over working one fuel lift pump versus other pump causes high brush and

commutator wear that eventually leads to fuel lift pump and or relay malfunction.

Verification

- Verify the presence of symptoms listed above.
- Follow published troubleshooting to verify if fuel lift pumps and relay are working properly.

Resolution

- If fuel lift pump has been found to have malfunctioned, order new fuel lift pump kit. See Table 1 below for part number information.
- The new fuel lift pump system is different than the existing fuel lift pump configuration. Removal of all existing fuel lift pump equipment is necessary. See corresponding Service Manual. Reference Procedure 005-045 in Section 5. Do **not** remove existing fuel filter head bracket
- Follow the steps in the Service Instructions section below to install the new fuel lift pump kit.

Service Instructions

1. Prior to setting fuel filter head assembly to bracket, verify both wiring harnesses (Figure 1, Item 1) are routed through the harness channel (Figure 1, Item 2) to prevent wiring harness pinching and or damage.



Figure 1, Wiring Harness and Channel.

2. Install fuel filter head assembly, place under fuel filter bracket, and hand start four mounting capscrews through fuel filter bracket to fuel filter head.

Note : Existing middle cap screw omitted in the new assembly.

3. Torque capscrews.

Torque Value: 66 n•m [49 ft-lb]

4. Connect fuel lines (Figure 2, Item 1) and (Figure 2, Item 2) to fuel filter head assembly. See corresponding Service Manual. Reference Procedure 005-045 in Section 5.

Torque Value: 40 n•m [30 ft-lb]

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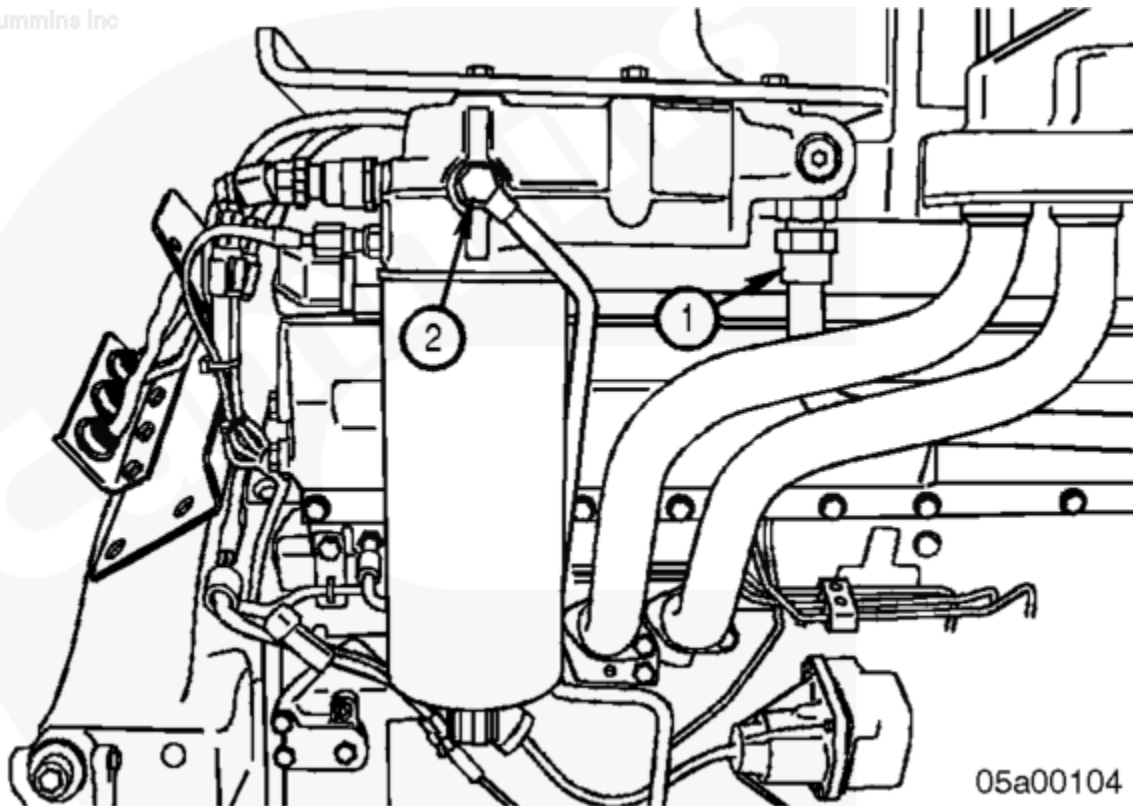


Figure 2, Fuel Lines Connected to Fuel Filter Head Assembly.

5. Install spin on fuel filter. See corresponding Service Manual. Reference Procedure 006-015 in Section 6.

6. Add and connect wiring harness extension to relay harness pigtail connectors (Figure 3, Item 1) and fuel filter head assembly connectors.

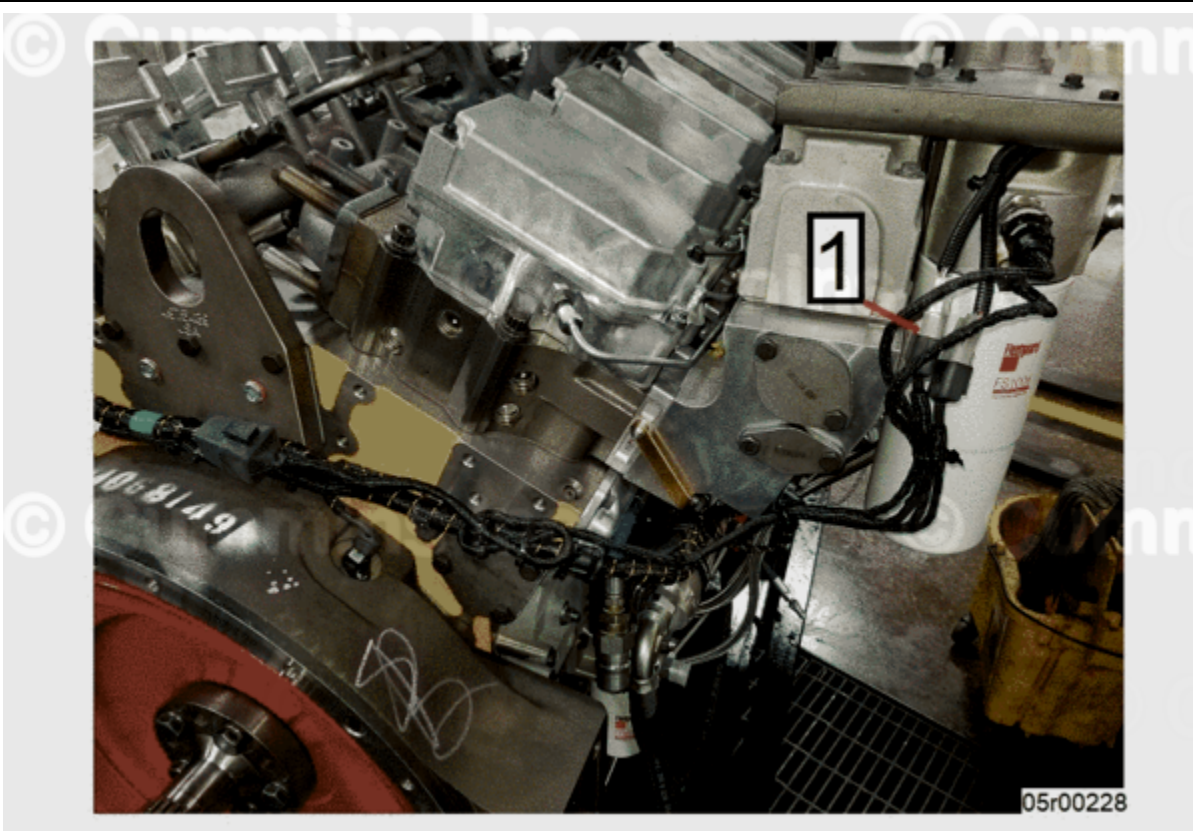


Figure 3, Wiring Harness Extension Connected.

7. Hold clip and insert 5 mm [1/4 in] longer capscrew (Figure 4, Item 1) provided from kit and install in the intake manifold cover plate or return line bottom threaded hole.

Torque Value: 65 n•m [48 ft-lb]

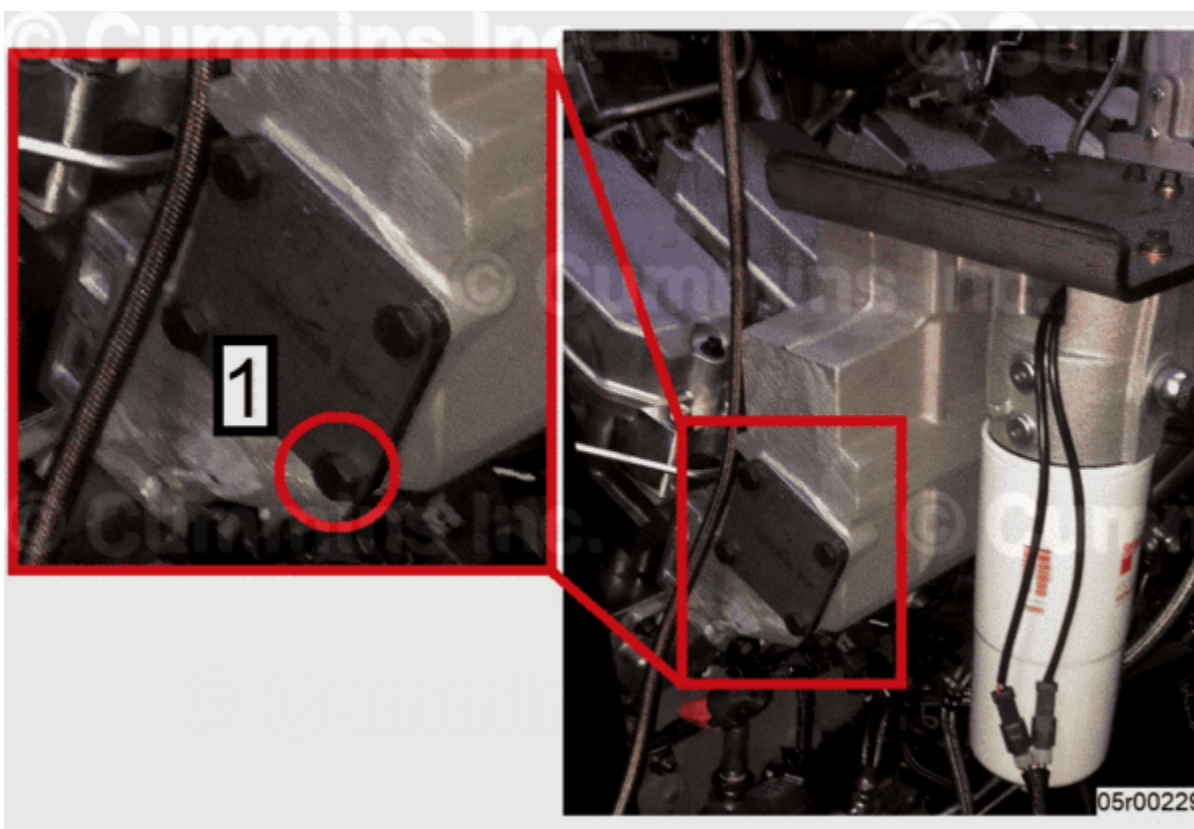


Figure 4, Capscrew Installed in Intake Manifold Cover Plate.

8. Install zip tie/clip to extension wiring harness and attach to intake manifold cover plate or return line flange to bottom capscrew clip installed from Step 7.
9. Install threaded plugs (Figure 5, Item 1) into fuel filter head assembly if the unit does not have temperature and pressure sensors installed from the previous setup. If temperature and pressure sensors (Figure 5, Item 2) are present, install sensor in the appropriate area.

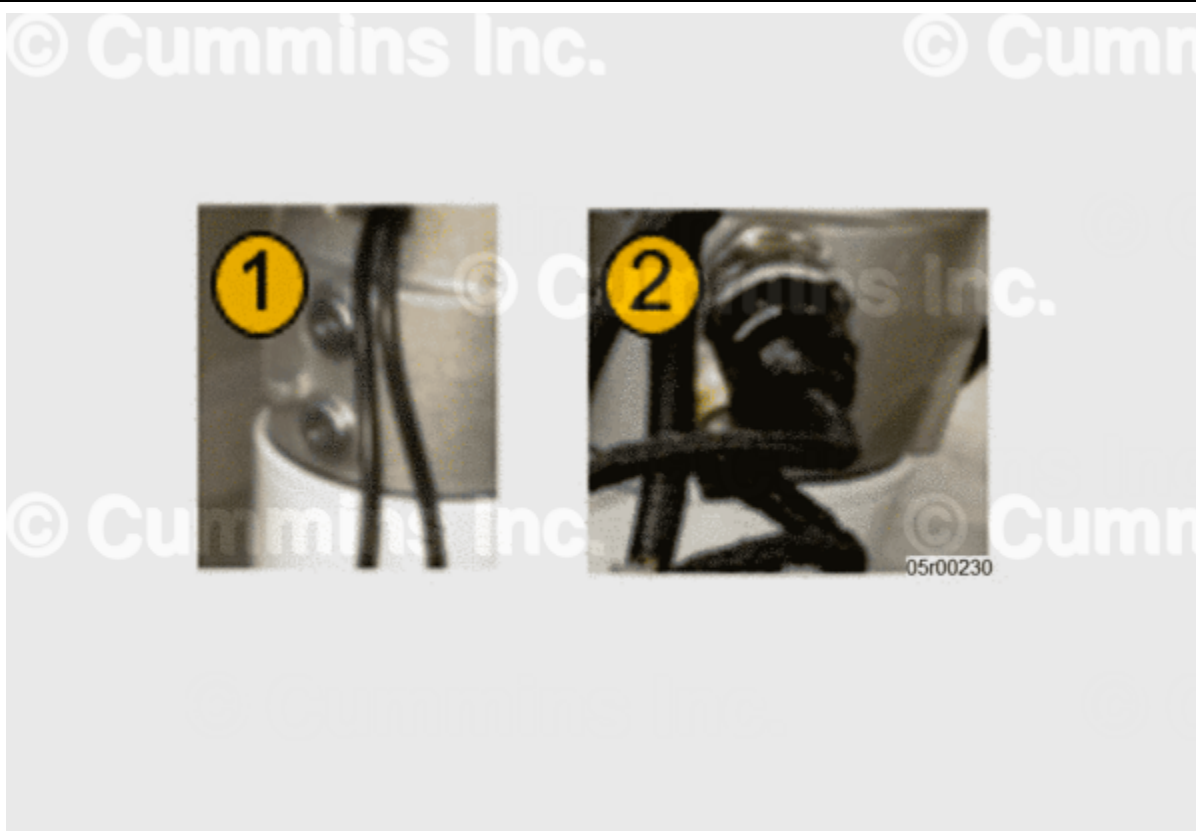


Figure 5, Threaded Plugs and Temperature and Pressure Sensors.

10. Torque plugs and or temperature pressure sensors.

Torque Value: 4 n•m [113 in-lb]

11. Operate engine.

12. If engine does **not** operate normally, there may be air in the fuel system. See corresponding Service Manual. Reference Procedure 006-003 in Section 6.

Service Parts Availability

Service parts are available. See Table 1 below for part numbers.

Table 1, Service Parts

Part Description	Order Quantity	Quantity/ Engine	Existing Part Number	Obsolete	Supersede	New Part Number
Kit, Fuel Pump (Conversion)	1	1	-	No	No	5593523
Head, Fuel Filter	-	1	4975410**	Yes	Yes	5593523

Table 1, Service Parts

Part Description	Order Quantity	Quantity/ Engine	Existing Part Number	Obsolete	Supersede	New Part Number
Head, Fuel Filter	-	1	4975766**	Yes	No	5593523
Head, Fuel Filter	-	1	-	No	No	5483701
Harness, Pump Power	-	1	-	No	No	5483702
Pump, Fuel Transfer (kit, pump, isolators quantity 1)	-	2	4975617**	Yes	Yes	5593523
Pump, Fuel Transfer (Replacement for Part Number 5593523) (kit, pump, isolators, seals quantity 1)	1	2	5483862	No	No	5593524
Isolator, Vibration	-	1 per pump	-	No	No	5483744
Isolator, Vibration	-	1 per pump	4067902	No	No	--
Head, Fuel Pump	-	1	4067844**	Yes	No	5593523
Head, Fuel Pump	-	1	-	No	No	5483705

Table 1, Service Parts

Part Description	Order Quantity	Quantity/ Engine	Existing Part Number	Obsolete	Supersede	New Part Number
Plug, Threaded	-	1	3046202	No	No	--
Clamp, Wire Tie	1	2	-	No	No	3076301
Dowel, Pin	-	2	3093784	No	No	--
Seal, O Ring	-	4	3916284	No	No	--
Screw, Hex Flange Head Capscrew	-	2	3925344	No	No	--
Isolator, Vibration	-	2	4067903	No	No	--
Adapter, Filter Head	-	1	4068105	No	No	--
Seal, O Ring	-	4	4954442	No	No	--
Union, Male	-	1	5483747	No	No	--
Bracket, Wiring Retainer	-	1	-	No	No	4295618
Screw, Hexagon Head Capscrew	-	1	-	No	No	3064106
Plug, Threaded	-	2	-	No	No	3678921
Relay	1	1	3658780	No	No	--
**Part no longer in production. Will need to purchase fuel pump conversion kit, Part Number 5593523, to upgrade to 24v fuel lift pump.						

Part Compatibility

Only pressure and temperature sensor, and fuel filter head mounting bracket/support is compatible with the new fuel filter head.

Part Inventory Action

Use existing part number inventory before using the new part number.

Customer Communication

Table 3 below is a chart for expected life and when new fuel lift pumps should be replaced within maintenance intervals for all applications. Note the change out intervals as stated below are **only** a recommendation to eliminate or reduce possible down time in between required service intervals.

Table 2, Recommended Fuel Lift Pump Maintenance Interval

Duty/Application	Recommended Change Out Interval [hours]
PowerGen -Prime	6,000
PowerGen- Continuous	4,000
Industrial – Mining/ Construction/ Oil/Gas	4,000
Industrial Locomotive	6,000

Production Status

Implemented for production. See Table 3.

Table 3, Production Information

ESN First	Build Date ¹	Plant
37283065	20 October 2020	Seymour Engine Plant
¹ Engine build date can be found on the engine dataplate.		

Document History

Date	Details
2020-12-2	Module created.
2021-10-5	Removed Priming from document title.

Date	Details
2022-1-24	Updated Table 1.
2022-2-23	Updated Table 1 to include mention of fuel pump conversion kit, Part Number 5593523.

Last Modified: 25-Feb-2022
