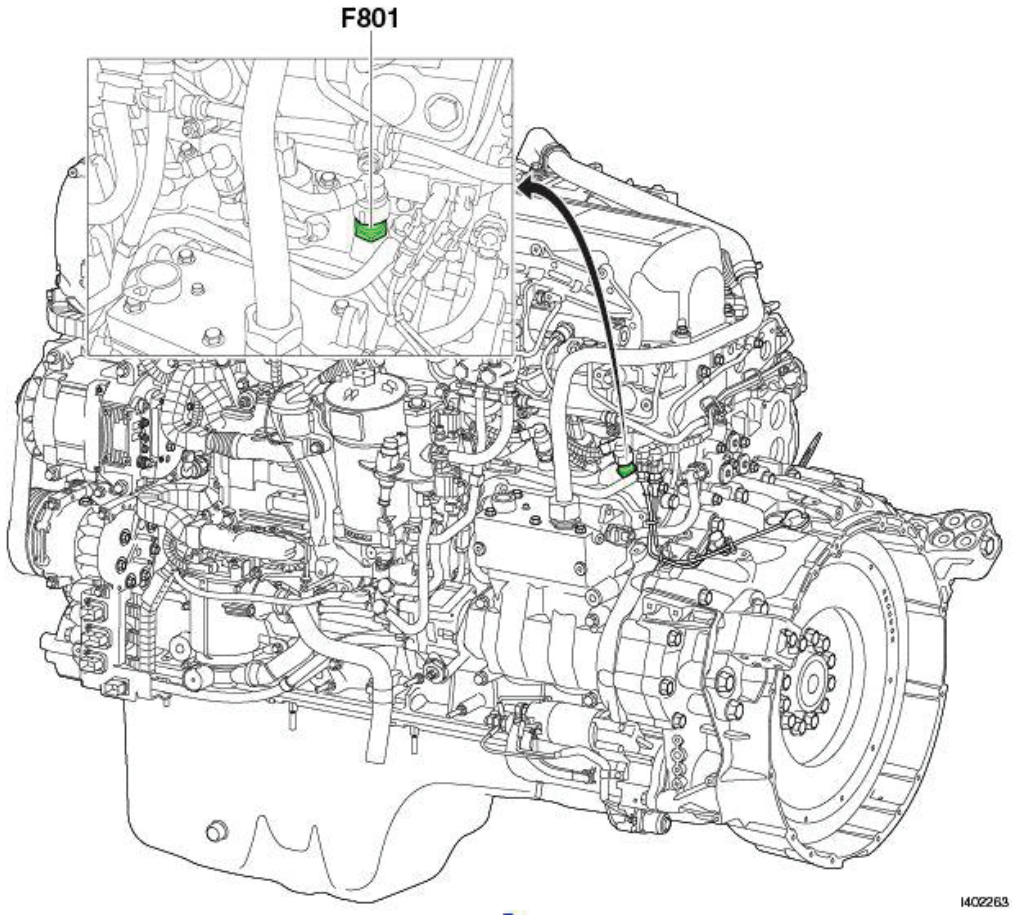
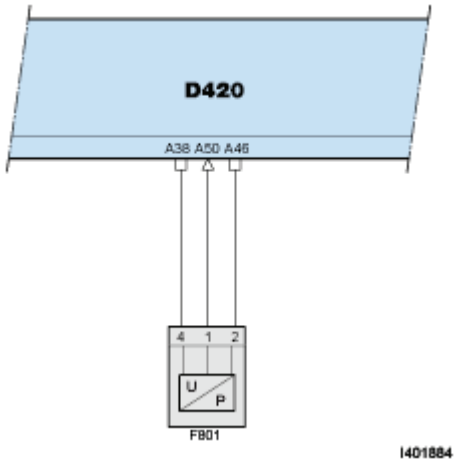
P2541

Code number	P2541
Fault code description	Fuel pressure - Voltage too low or short circuit to ground on ECU (D420) pin (A50)
Fault code information	1 trip MIL 3 drive cycle recovery Readiness group – None Freeze frame type – Fuel
Description of component(s)	The low-pressure fuel pressure is measured at the end of the low-pressure fuel supply gallery. Effect on the system: • Limitation of the engine torque when the fuel pressure is too low.
Location of component(s)	
Diagnostic condition	This diagnostic runs continuously when the engine is running
Set condition of fault code	The PCI-2 detects sensor output voltage is too low (below 0.25 V).
Reset condition of fault code	This fault code will change to inactive immediately after the diagnostic runs and passes.

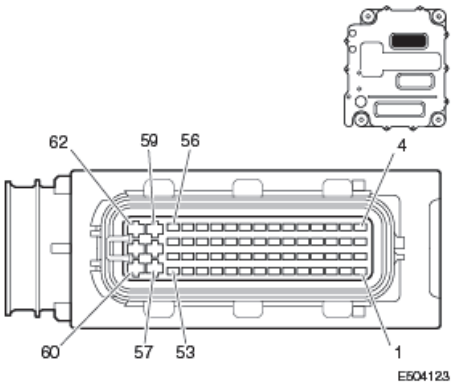
Electrical diagram(s)



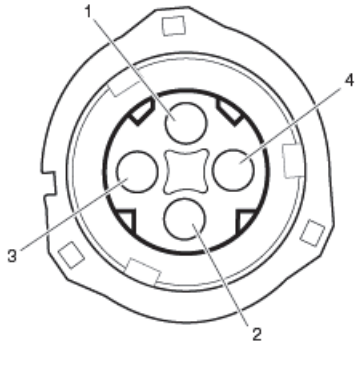
D420 PCI ECU

F801 Fuel pressure sensor

D420	F751	Function
A38	4	Ground
A46	2	Power supply
A50	1	Signal, fuel pressure



Wiring harness connector D420.A front view



Wiring harness connector F801 front view

Handle connectors and pins with care and use matching measuring probes.

Technical data

Component and wiring check , fuel pressure sensor (F801)

Component check, fuel pressure sensor (F801)

This type of component cannot be checked with a multimeter or oscilloscope. Perform

the following to assess the component:

- Monitor/test the component with DAVIE
- Perform the wiring check

Component & wiring check, ECU (D420)

Preparation

- Key off the ignition.
- Disconnect connector F801
- Attach test leads to the identified connector pins, located on the front side of wiring harness connector F801
- Key on the ignition to apply power

Pin (+ probe)	Pin (- probe)	Value	Additional information
2	4	5V	Ignition keyed on

Possible causes

- Faulty wiring
- Faulty connector
- Faulty sensor

Additional information

No additional information available

Diagnostic Step-by-Step

The ignition should always be in the OFF position when connecting or disconnecting electrical components to reduce the likelihood of damage to the components.

- This troubleshooting procedure is based on the assumption that supply power and ground to the PMCI are functioning properly.
- Disconnecting the PMCI connectors during the troubleshooting process will result in multiple errors.
- Specific electrical component information and pin out locations are provided in this procedure as a reference only. Always refer to the technical data sections in Rapido for the most up-to-date changes.
- It is necessary to use DAVIE to clear all current trouble codes from the PCI and EAS-3 ECUs, and then run the Quick Check to identify a change in fault status.
- This DTC can be set as a result of multiple failure modes. For proper fault isolation, complete all troubleshooting steps in the sequence provided.

Step 1. Fuel Pressure Sensor (F801) Checks

Step 1.A Visual inspection, fuel pressure sensor (F801)

Action

1. Visually inspect the associated component connections and wiring for any of the following:
   - Damaged or loose connectors
   - Bent, broken, corroded or loose connector pins
   - Moisture or dirt in the connections
   - Damage to the wire harness or insulation
   - ECU connections are damaged or disconnected

Was there evidence of any of the above?

Yes	No
Correct any issues found, or replace the sensor if found to be damaged. Refer to step 2.A to perform the corresponding repair verification cycles and rechecks.	
If this code is still present, go to step 1.B	**Go to step 1.B**

Step 1.B Electrical checks, supply voltage, fuel pressure sensor (F801)

Refer to the corresponding Checking Data in Engine Service – Rapido for associated supply and signal voltages, resistance values, and related connector pin test points.

Action

1. Use a multimeter to confirm the supply voltage for the fuel pressure sensor (F801) as outlined in Checking data, fuel pressure sensor (F801).

Is the measured voltage within expected range?

Yes	No
	Correct any issues found. Refer to Step 2.A to perform the corresponding repair verification cycles and rechecks.
Go to step 1.C	**If this code is still present, go to step 1.C.**

Step 1.C Electrical checks, isolation of electrical short in sensor, fuel pressure sensor (F801)

Refer to the corresponding Checking Data in Engine Service – Rapido for associated supply and signal voltages, resistance values, and related connector

pin test points.

Action

1. With ignition key set to OFF, install a jumper wire between the supply and signal terminals of the pressure sensor (F801) connector on the engine harness.
2. Set the ignition key to ON.
3. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.

If P2542 is active	If P2541 is active
Likely failed fuel pressure sensor (F801). Replace the fuel pressure sensor (F801) and reconnect the harness. Refer to Step 2.A to perform the corresponding repair verification cycles and rechecks.	
If P2541 is still present after performing the above steps, contact the PACCAR Engine Support Center for additional assistance in diagnosing this issue.	**Go to step 1.D**

Step 1.D Electrical checks, isolation of electrical short in PCI, fuel pressure sensor (F801)

Refer to the corresponding Checking Data in Engine Service – Rapido for associated supply and signal voltages, resistance values, and related connector pin test points.

Action

1. Set the ignition switch to OFF
2. Disconnect the engine harness from the PCI and install a jumper wire on the PCI between the supply and signal, terminals of the sensor circuit.
3. Set the ignition key to ON
4. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes.

If P2542 is active	If P2541 is active

Possible PCI fault. Contact the PACCAR Engine Support Center for assistance in confirming this issue and replacing the harness replacing the PCI. Refer to Step 2.A to perform the corresponding repair verification cycles and rechecks.	Likely short circuit in the harness. Contact the PACCAR Engine Support Center for assistance in confirming this issue and replacing the harness. Refer to Step 2.A to perform the corresponding repair verification cycles and rechecks.
If all steps have been completed and this trouble code is still present, contact the PACCAR Engine Support Center for further assistance.	**If all steps have been completed and this trouble code is still present, contact the PACCAR Engine Support Center for further assistance.**

Step 2. Repair Verification

Step 2.A Repair verification cycles	
Perform these repair verification cycles following any corrective actions taken, to enable related OBD monitors to reach a readiness state associated with the trouble code or system being investigated.  Before beginning these repair verification cycles, use the DAVIE Diagnostics, Quick Check function to clear all current DTCs from the PCI and EAS-3 ECUs.	
Action 1. Start-up With the brakes set, start the engine and allow it to run at idle for 2 minutes.	
Were the identified repair verification cycles able to be completed?	
Yes	**No**
	Investigate and correct any issues preventing these repair verification cycles from being completed, then re-run. For additional assistance, contact the PACCAR Engine Support Center.
Go to step 2.B	**Go to step 2.B**

Step 2.B DAVIE Diagnostics, Quick Check
Action 1. Use DAVIE Diagnostics to perform a Quick Check for current trouble codes to determine whether the actions taken have cleared this trouble code.
Has P2541 been cleared?

Yes	No
Problem resolved. No further actions.	Continue with the next step in this troubleshooting procedure. If all steps have been completed and this trouble code is still present, contact the PACCAR Engine Support Center for further assistance.

Contacting the PACCAR Engine Support Center

For further assistance in diagnosing this issue or for confirmation prior to the replacement of suspect components, contact the PACCAR Engine Support Call Center.

Back to Index