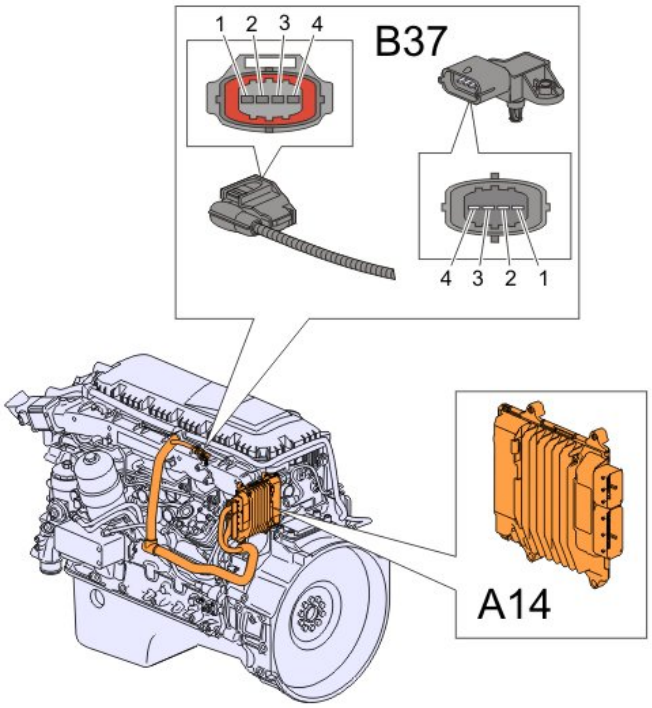
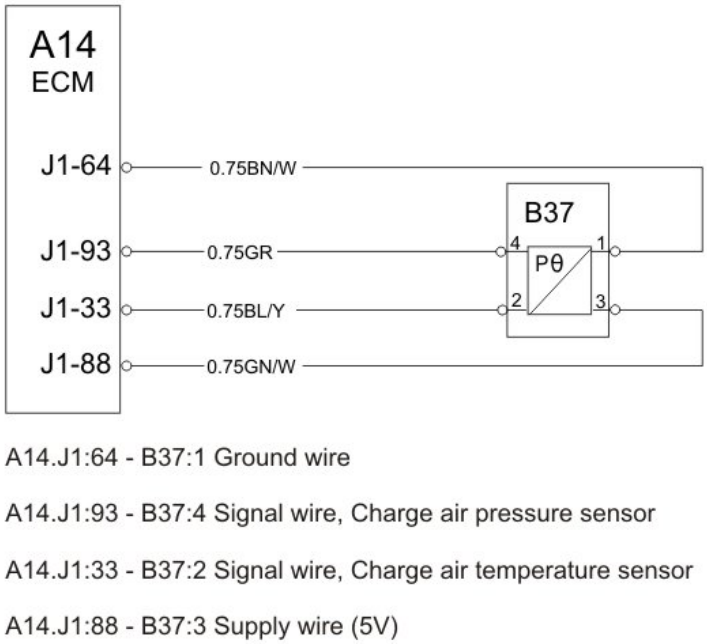
P0234 - Turbocharger/Supercharger Overboost Condition

B37: Charge Pressure and temperature Sensor	Schematics:
	

Fault type	Condition for Fault	Observable Symptoms	Possible cause
P0234 FTB 00	• Charge pressure High.	None.	• Wastegate. • Turbocharger. • Charge air pressure sensor.

Inlet System Check

Visual Check

Purpose	Action	Evaluation
Check Air Filter.	• Remove the air filter from the air cleaner. • Check that the air filter is properly installed. • Check that the seal on the air filter is undamaged.	None.
Check Inlet Pipe.	• Check that the inlet pipe between the air intake and the air cleaner is undamaged. • Check that the inlet pipe between air filter and turbocharger is undamaged	• Pinched or damaged inlet pipes leads to increasing negative pressure in the inlet pipe • With damage, leakage or faults the charge pressure drops and the engine looses power • Dirt entering the inlet system leads to high wear of the engine and turbo • A clogged inlet pipe can lead to low charge pressure, turbo problems and smoke development
Check Turbocharger	• Check that the Turbo charger part number matches the part number for this vehicle in Impact.	None.
Check Gasket	• The incorrect gasket has tabs as shown in the illustration. • If the wrong gasket is installed, the tabs of the incorrect gasket will be protruding from between the turbo and exhaust manifold housing. • If the tabs are visible, the gasket must be replaced with the correct one.	None.
Check the turbo for damage to the compressor wheel	• Remove the inlet pipe from the turbocharger. • Check the turbo for damage to the compressor wheel.	None.

	• A damaged component leads to decreased charge air pressure and can cause engine failure.	

Charger Air System, leakage Check

Visual Check

Danger
Do not exceed 150 kPa (21 psi) since this can cause the component to explode, which can cause serious injury or death

Purpose	Action	Evaluation
Check if there is leakage in the charge air cooler system Leakage check (entire system)	• Remove the air inlet pipe between the turbocharger and the air filter housing • Fit adapter 88800186 on the turbocharger inlet side *Note: Ensure that the sealing surface is flat against the turbo flange for best air tightness* • Tighten the attaching arm lock nuts • The engine can not be started with the tool in place since the airflow to the engine is blocked • If the engine is rotated while the tool is in place it may stop with several valves open and that can prevent a leakage check from being performed • Check that the pressure gauge reduction valve is completely open • Connect the pressure gauge to adapter 88800186 • Connect manometer 9996662 to the pneumatic system in the workshop *Note: Some vehicles may have a hole drilled in the lower connection pipe to the charge air cooler and to perform the leakage test it must be plugged* • Increase the pressure to 50 kPa, (7.25 psi) • Check that there is no leakage at the adapter • If leakage occurs tighten the attaching screws further *Note: If there is a large leak in the charge pressure system it can be difficult to build up and retain pressure in the system so that a leakage check can be performed Listen for loud blowing sounds to localize the leakage* • Increase the pressure to 50 kPa, (7.25 psi) *Note: The pressure can not be held constant even if the system is free from leakage since at least one valve will be open (when the engine stops, the valves can be in one of three open/closed positions)*	• Listen for and feel out if there is leakage • Spray soapy water on suspect areas to identify leaks

If pressure is decreasing but leakage cannot be located, please check the below instructions

Caution
Unscrew the pressure gauge reduction valve and the screw at the back edge of the adapter safety valve is that the system has no pressure. before beginning any work on any part of the air system, be certain that the air pressure has been released. Failure to do so may cause a component to violently separate, which can result in serious personnel injury.

• Check leakage in charge air cooler.	• Remove the left hose from the charge air cooler and the preheat element. • Put the 88800270 plug on the charge air cooler left connection. • Pressurize the system. • Increase the pressure to 50 kPa, (7.25 psi). • Listen for leaks.	None.
	• Check the inlet pipe on the cylinder head, the preheater element and pipe and hose to the upper charge air cooler connection. • check the clampings, connections and seals	System should be free from leakage and other faults.

EGR Differential Pressure Sensor

Connect Tech Tool and check the Engine Exhaust gas recirculation 1 Differential pressure [kPa]

With the engine not running the pressure should be approximately 0 kPa (0 psi) +/- 35 kPa (0.3 psi)

EGR Venturi Inspection:

Visual Check:

Warning
Do not blow compressed air into the sensor, it should be turned over and carefully tapped so that the soot falls out

Purpose	Action	Evaluation
Check that the sensor ports, venturi pipe and venturi pipe ducts are not clogged	• Remove the sensor from the bracket • Remove the Venturi tube and inspect internally for port restrictions • Inspect the channels with a torch • Check that the O-rings are undamaged	• A blocked sensor channel can cause incorrect pressure measurement and result in a fault code for EGR flow • Small amounts of soot do not normally cause a fault • The fine-grained soot can form a hard mass if it is mixed with coolant that has leaked from the EGR cooler

Charger Pressure and Temperature sensor Check

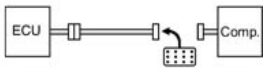
Visual Check

Purpose	Action	Evaluation
Check wiring Harness	• Visually check that wiring harness is not damaged	None
Check connector	• Check that the connectors are properly connected and locked into position • Disconnect and check the component connector • Inspect pins and terminals for oxidations or corrosion • Ensure that the pins and terminals are locked into the connectors and that they are not pushed back out of the sockets • Check the pins and terminal are not damaged (which can cause poor connection) • Carefully insert the correct test pin from special tool 9990008 and verify that pin connections are in good condition	None
Check Charge air pressure sensor	• Remove component • Check if clogged • Check that pressure sensor is reading correctly • Connect measurement tools 9990123 and 9998538 and check the pressure gauge to 0 kPa, 50– kPa, 100kPa and 200kPa	None

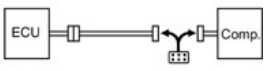
Voltage measurement



Measuring	Key position	Measurement points		Reference value	Measured value	Other (Special tool No.)
		Breakout box	Wiring diagram			
Sensor signal – 0 kPa (0 psi)	On	1– 4	B37:1– B37:4	U = 0.5 V – 4.5 V		9990216, 88890074
Sensor signal – 50 kPa (7.25 psi)	On	1– 4	B37:1– B37:4	U = 0.5 V – 4.5 V		9990216, 88890074
Sensor signal – 100 kPa (14.5 psi)	On	1– 4	B37:1– B37:4	U = 0.5 V – 4.5 V		9990216, 88890074
Sensor signal – 200 kPa (29 psi)	On	1– 4	B37:1– B37:4	U = 0.5 V – 4.5 V		9990216, 88890074
Voltage supply check	On	1– 3	B37:1– B37:3	U = 4.75 V – 5.25 V		9990216, 88890074
Open circuit check	On	1– 4	B37:1– B37:4	U = 0.5 V – 4.5 V		9990216, 88890074



Measuring	Key position	Measurement points		Reference value	Measured value	Other (Special tool No.)
		Breakout box	Wiring diagram			
Voltage supply check	ON	3 — Engine ground point	B37:3– Engine ground point	U = 4.75 V – 5.25 V		9990216, 88890074



Measuring	Key position	Measurement points		Reference value	Measured value	Other (Special tool No.)
		Breakout box	Wiring diagram			
Controller voltage check	On	B:26— Engine ground point	A14.J1:88 – Engine ground point	U = 4.75 V – 5.25 V		9998699, 88890227,9990061/62, 88890074

Verification:

Purpose:	Conditions:	Evaluation:
Verification.	1. • Ignition key in OFF position. • Wait 5 seconds. • Ignition key in ON position. 2. • Start the vehicle. • Run the test drive for at least 30 minutes.	• If the fault code is not set during the verification the fault may be corrected. • The status of the diagnostic process in the control unit can not be tested without communication with the vehicle. • The fault code may appear later when the vehicle has been returned to service.