

Technical data on the vehicle

Make Iveco LV Model Stralis 440 E 44 Cursor 13 Year 2002-2009 Engine F3B E0681C Variant	Date: 06-07-2011 Owner _____
	Registration No. _____ VIN _____ 1. Reg. Date _____

Technical item	Data
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Engine

Engine ID code	F3B E0681C	
Number of cylinders	R6	
Number of valves	24, OHV	
Capacity/ (bore/ stroke)	12880 cm ³ (135,0/ 150,0)	
Compression ratio	16,5: 1	
Max. output kW (din hp)/ rpm	324 (440)/ 1450 - 1900	
Max. torque NM/ rpm	2100/ 1000 - 1470	
Engine code location	Engine block left side	
Vehicle Identification Number location	Right side rail by front wheel	
Vehicle identification plate location	Behind front grille	
Valve clearance, inlet (cold/ hot)	0.40 ± 0.05 cold	i
Valve clearance, exhaust (cold/ hot)	0.60 ± 0.05 cold	i
Valve angle/ seat angle	Intake 60° 30'/ 60° Exhaust 45° 30'/ 45°	
Valve height in cylinder head, mm		i
Oil pressure/ rpm, bar	Min. 1.5/ idle speed (5.0/ max. rpm)	
Radiator cap, bar/ thermostat °C	/ 84° ± 2° C	
Thermostat gap at test temperature	Max. open/ 94° ± 2° C	
Clutch freeplay, mm	(Hydraulic)	
Timing gear:		i
Drive belt		i

Engine management

Engine management system	Bosch MS6.2 PDE	
Pump/ pump type	Bosch/ PDE 31	
Injector/ injector type	Bosch/	
Crank position °/ engine piston, mm	Electronic	
Pump position, mm		i
Adjustment method		i
Injector opening pressure, new, bar	1500	
Injection order	1 - 4 - 2 - 6 - 3 - 5	

Electrical system

Terminal definitions DIN 72 552	
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Wheel alignment

Load	Unloaded	
Toe-in, mm	1,00 ± 0,75	
Camber°	1°	
Caster°	1° 24'	
KPI/SAI°	7°	
Rear camber°	1°	i
Rear toe-in °	Left wheel 0 ± 0.75/ Right wheel ÷ 2.00 ± 0.75	i

Tightening torques

Tightening, NM	Torque standards	
Cylinder head bolts, stage 1, Nm	60 Nm oiled	i
Cylinder head bolts, stage 2, Nm	120 Nm	
Cylinder head bolts, stage 3, Nm	+ 90°	
Cylinder head bolts, stage 4, Nm	Bolts 4, 5, 12, 20, 21 = 45°	
Cylinder head bolts, stage 5, Nm	Others = 65°	
Main bearings, Nm		i

Technical item	Data
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Tightening torques

Connection rod bearings, Nm	60 Nm + 60° oiled
Flywheel, Nm	120 Nm + 60° + 30° oiled
Crankshaft pulley/ vibration damp. Nm	/ 70 Nm + 50°
Camshaft pulley/ bearings, Nm	60 Nm + 60° (Rocker arm assembly 100 Nm + 60°)
Pump pulley/ idle wheel, Nm	/ 30 Nm + 90°
Nozzle retainer/ Nozzle in cylinder head	26/
Wheel nuts/ bolts, Nm	Front 665/ Rear 600
Wheel hub, front/ rear, Nm	515/ 932 i

Brakes

Front, min. thickness (new)	37,0/ 414,0 mm (45,0/ 410,0 mm)
Rear, min. thickness (new)	37,0/ 414,0 mm (45,0/ 410,0 mm)
Min. brake lining thickness, front, mm	Pads 2.0 mm (Shoes 4.7 mm)
Min. brake lining thickness, rear, mm	Pads 2.0 mm (Shoes 4.7 mm)

Capacities

Engine oil/ - incl. filter, litre	28,0/ 31,0 (Urania Turbo LD)
Manual transmission, litre	i
Final drive, litre	U177 = 18,5, RT160 centre/ rear = 18.5/ 16,5
Power steering, litre	2,7 (Tutela GI/A) i
Cooling system, litre	44.0 (64.0 with retarder)

Environmental parametres

Idle speed, rpm	525 ± 25
Max rpm (exhaust test)	2250 ± 25

Remarks

n

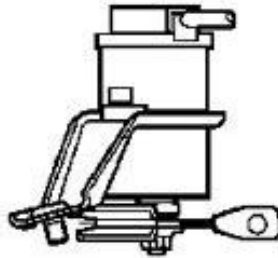
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Order No.: _____

Mechanic _____

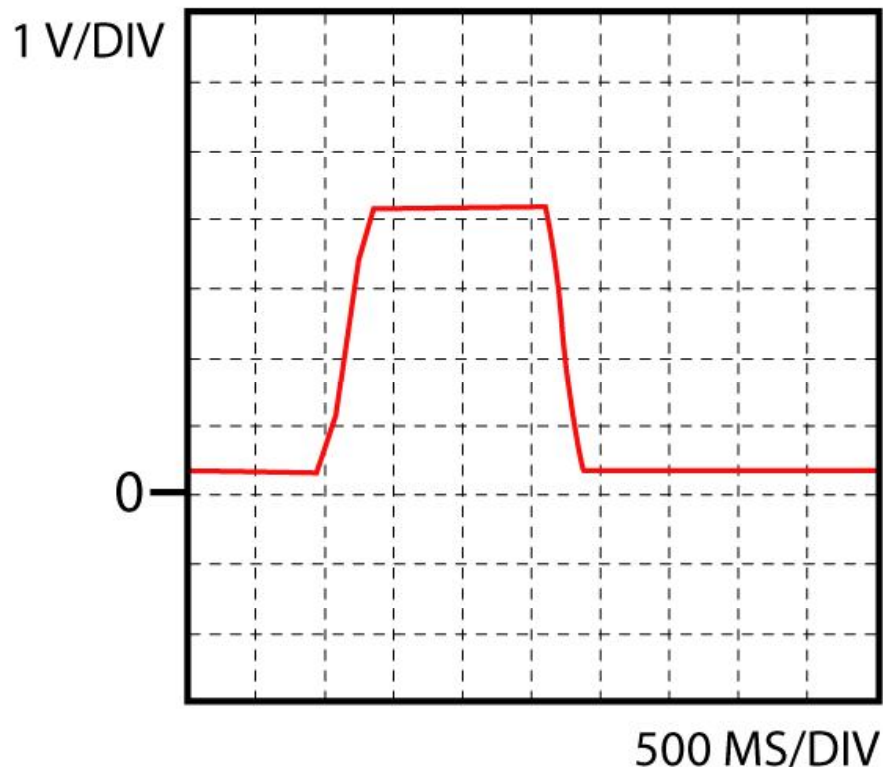
Accelerator pedal sensor



Function

The spindle which is connected to the accelerator pedal operates the position sensor. The sensor comprises a carbon strip and a stylus, the spindle operates the stylus. The stylus moves over the carbon strip, the voltage on the stylus depends on the position at which the stylus touches the carbon strip. Based on the output voltage the control unit determines fuel delivery.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check supply voltage accelerator pedal position sensor: Turn off ignition. Remove connector from pedal position sensor. Turn ignition on. Measure voltage between supply terminal and the negative terminal of the battery. It should equal specified voltage. If not check wiring then check ECU. Check connection to ECU: Turn off ignition. Remove connector from pedal position sensor and ECU. Measure the resistance between connectors terminal and the corresponding terminal in the ECU connector. Should be < 1 ohm. If not check wiring. Check position sensor signal: Connect oscilloscope to the signal wire pin of the ECU and ground. Turn ignition on and compare to the data

Air temperature sensor



Function

The air temperature sensor incorporates a NTC thermistor, the resistance decreases as the temperature of the air increases. As the temperature changes, the thermistor resistance changes, enabling the control unit to calculate the air temperature from the level of voltage that is registered on the sensors' signal wire.

Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. **Check resistance:** Turn off ignition. Remove connector from sensor. Measure resistance between pins of the sensor. Compare with specified resistance. **Check supply voltage:** Turn off ignition. Remove connector from sensor. Turn ignition on and measure successively voltage between connector terminal and the negative terminal of the battery. One should be 5 V. If not check wiring then check ECU. **Check connection to ECU:** Turn off ignition. Remove connectors from sensor and ECU. Measure the resistance between supply voltage connector terminal and the corresponding terminal in the ECU connector. It should be < 1 ohm. If not check wiring. **Check ground:** Check in schematic if ground connection is connected to a direct ground or to the ECU. When it is connected directly to ground: Turn off ignition. Remove connector from sensor and measure resistance between ground connector terminal and the negative terminal of the battery. It should be < 1 ohm. If not check wiring. **When it is connected to the ECU:** Turn off ignition. Remove connector from sensor and ECU. Measure resistance between ground connector terminal and the corresponding terminal in the ECU connector. It should be < 1 ohm. If not check wiring then check ECU.

Boost pressure valve



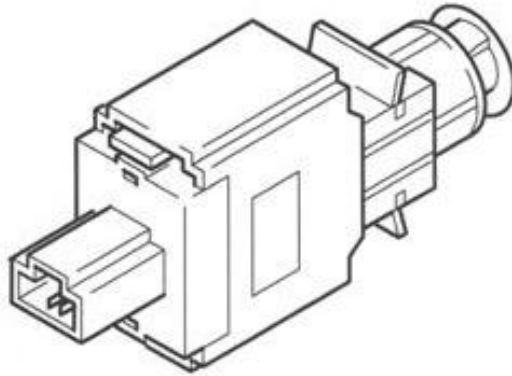
Function

The solenoid controls a valve which opens or closes the air line between the waste gate valve and vacuum. When the valve opens vacuum is applied to the waste gate valve, which in turn regulates the amount of exhaust gasses passing through the exhaust gas turbine. In this way the turbo pressure is regulated.

Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. **Check resistance:** Turn off ignition. Remove connector from solenoid. Locate the two pins of the solenoid. Measure resistance between the two pins of the solenoid. Compare with specified resistance. Alternatively you can check functioning of the solenoid by applying battery voltage to the two pins of the solenoid, the solenoid should "click". **Check supply voltage:** Turn off ignition. Remove connector from solenoid. Locate the two connector terminals of the solenoid. Start the engine and measure voltage between one connector terminal of the solenoid and the negative terminal of the battery. Check the second terminal of the solenoid, one of the two should equal the battery voltage. If not check wiring and if present fuse and relay. **Check connection to ECU:** Turn off ignition. Remove connectors from solenoid and ECU. Locate the two connector terminals of the solenoid. Measure the resistance between one of the two connector terminals of the solenoid and the corresponding terminal in the ECU connector. Check the other terminal of the solenoid, one of the two should be < 1 ohm. If not check wiring.

Brake pedal switch



Function

Engaging the brakes is detected by the brake pedal switch. There are single and double switches. Single switches send a voltage signal to the control unit, thus signaling that the brakes are engaged. In a double switch the additional switch actuates the brake lights.

Fault finding:

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good.

Check supply voltage:

Turn off ignition. Remove connector from brake pedal switch.

Turn ignition on. Measure voltage between connector terminal + and the negative terminal of the battery. Both should equal battery voltage. If not check wiring, relay and fuse(s).

Check connection to ECU:

Turn off ignition. Remove connector from brake pedal switch.

Measure the resistance between connector terminal + and - and the corresponding terminals in the ECU connector. Both should be < 1 ohm. If not check wiring.

Check switch signal:

Connect oscilloscope or voltage meter to the pin of the ECU which corresponds to the brake pedal switch and ground. Turn ignition on, output voltage should equal battery voltage. Press brake, output voltage should be 0 V. Connect oscilloscope or voltage meter to the pin of the ECU which corresponds to the brake light switch and ground. Turn ignition on, output voltage should be 0 V. Press brake, output voltage should equal battery voltage.

CAN BUS SAE J1708

Function

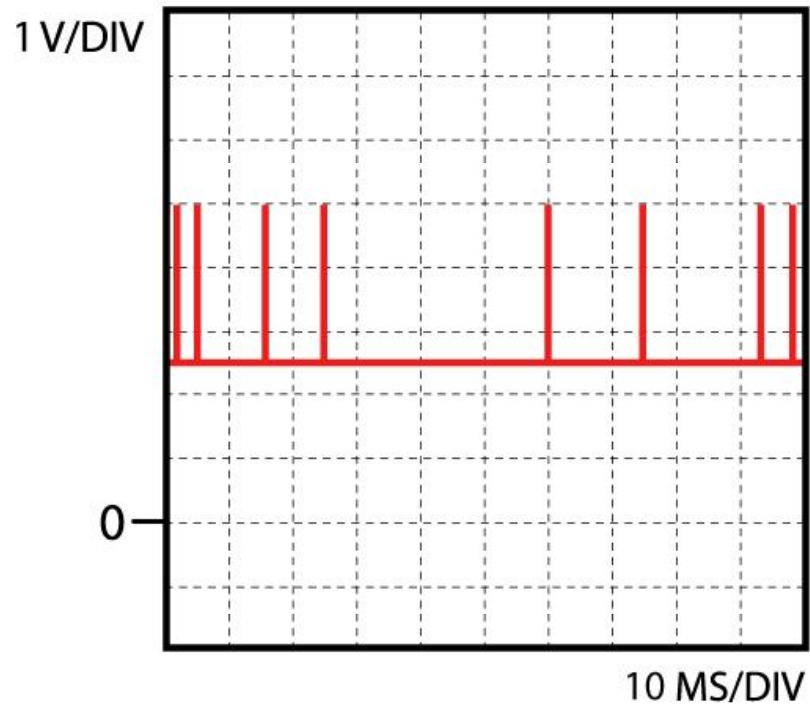
CAN bus connection SAE J1708 is a data chain used to send trouble code information etc. The voltage on the data chain varies and depends on the number of ECUs and the traffic on the line.

CAN BUS SAE J1939

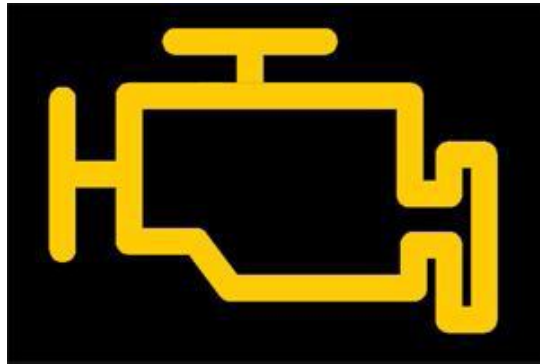
Function

CAN bus connection SAE J1939 is an electric control chain used to send data that the system uses for control functions. The voltage on the control chain varies and depends on the number of ECUs and the traffic on the line.

Info



ECU lamp



Function

The control unit actuates the check engine light when it senses inadequate functioning of the motormanagement system.

Coolant temperature sensor



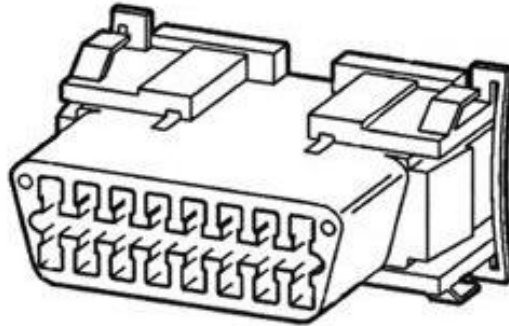
Function

The coolant temperature sensor incorporates a NTC thermistor, the resistance decreases as the temperature of the coolant increases. As the temperature changes, the thermistor resistance changes, enabling the control unit to calculate the coolant temperature from the level of voltage that is registered on the sensors' signal wire.

Quickcheck

Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector from sensor. Measure resistance between pins of the sensor. Compare with specified resistance. Check supply voltage: Turn off ignition. Remove connector from sensor. Turn ignition on and measure successively voltage between connector terminal and the negative terminal of the battery. One should be 5 V. If not check wiring then check ECU. Check connection to ECU: Turn off ignition. Remove connectors from sensor and ECU. Measure the resistance between supply voltage connector terminal and the corresponding terminal in the ECU connector. It should be < 1 ohm. If not check wiring. Check ground: Check in schematic if ground connection is connected to a direct ground or to the ECU. When it is connected directly to ground: Turn off ignition. Remove connector from sensor and measure resistance between ground connector terminal and the negative terminal of the battery. It should be < 1 ohm. If not check wiring. When it is connected to the ECU: Turn off ignition. Remove connector from sensor and ECU. Measure resistance between ground connector terminal and the corresponding terminal in the ECU connector. It should be < 1 ohm. If not check wiring then check ECU.

Diagnostic connector



Function

The diagnostic connector is connected to the control unit. It facilitates communication with the control unit to get information on stored error codes and/or operating states of sensors and actuators.

Fault finding:

"Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check in schematic which diagnostic connector terminal is (are) connected to the connector terminal(s) of the ECU connector or ground. Measure the resistance between the ECU connector terminal(s) and each pin of the diagnostic connector. The resistance between the ECU connector terminal(s) and the corresponding terminal in the diagnostic connector should be < 1 ohm.

Measure the resistance between the negative terminal of the battery and each pin of the diagnostic connector. The resistance between the negative battery terminal and the corresponding terminal in the diagnostic connector should be < 1 ohm.

ECU



Function

The control unit is the electronic processing unit for the motormanagement system. The control unit has to ensure that the engine receives the right amount of fuel, the right injection timing and a proper idle control in every operating state. The control unit uses sensors to determine engine operating conditions. Depending on the engine conditions, the control unit activates actuators.

Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. When you suspect the control unit is faulty make sure all sensors, actuators and the communication with other control units function properly. Furthermore check the supply voltage and ground connections of the control unit: Turn ignition off. Remove ECU connector. Locate the supply voltage connections. Turn ignition on, measure voltage between corresponding connector terminal(s) and the negative terminal of the battery, these should equal battery voltage. If not check wiring and fuse. Turn ignition off. Locate the ground connections. Measure resistance between corresponding connector terminal(s) and the negative terminal of the battery, these should be < 1 ohm.

Exhaust pressure sensor



Function

The pressure in the exhaust is measured using the exhaust pressure sensor. The sensor is a transducer, the sensor senses the absolute pressure in the exhaust and transduces this to a DC voltage signal.

Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check supply voltage: Turn off ignition. Remove connector from sensor. Turn ignition on and measure voltage between the supply terminal and negative terminal of the battery. It should be 5 V. Check connection to ECU: Turn off ignition. Remove connector from sensor and ECU. Measure the resistance between the terminals and the corresponding terminals in the ECU connector. They all should be < 1 ohm. If not check wiring.

Fuel temperature sensor

Function

The fuel temperature sensor incorporates a NTC thermistor, the resistance decreases as the temperature of the fuel increases. As the temperature changes, the thermistor resistance changes, enabling the control unit to calculate the fuel temperature from the level of voltage that is registered on the sensors' signal wire.

Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector from diesel pump. Measure resistance between pin 1 and 2 of the connector. Compare with specified resistance. Check supply voltage: Turn off ignition. Remove connector from diesel pump. Turn ignition on and measure voltage between terminal 4 and the negative terminal of the battery. It should equal 5 V. If not check wiring then check ECU. Check connection to ECU: Turn off ignition. Remove connector from diesel pump and ECU. Measure the resistance between terminal 1, 2 and the corresponding terminals in the ECU connector, each one should be < 1 ohm. If not check wiring.

Inductive position sensor 1



Function

Function:

The sensor contains three parts: a coil, a magnet and a soft iron core. The teeth of a gearwheel move past the magnetic pickup which changes the magnetic field of the magnet, increasing when a tooth approaches and decreasing when a tooth moves away. These changes result in an AC voltage produced in the coil. Engine rpm and/or TDC are determined in this way.

Trouble shooting:

"Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good.

Check resistance:

Turn off ignition. Remove connector from pickup sensor.

Measure resistance between the two pins of the coil of the pickup sensor. Compare with specified resistance.

Check connection to ECU:

Turn off ignition. Remove connector from pickup sensor and ECU.

Measure the resistance between each coil connector terminal and the corresponding terminals in the ECU connector. Both should be < 1 ohm.

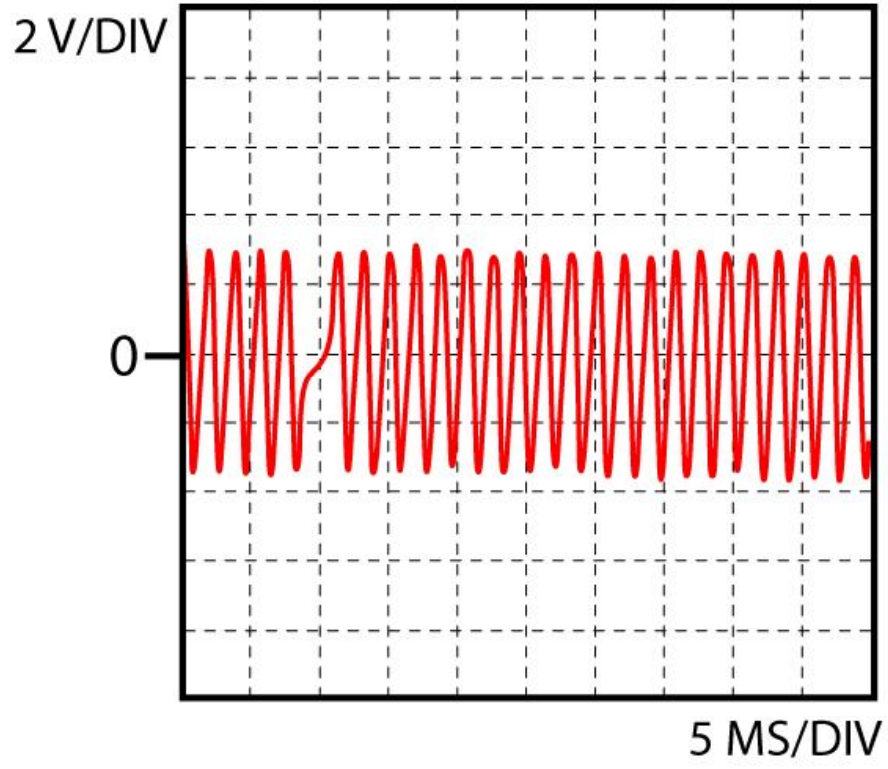
If present check shield connection:

Check in schematic if the shield terminal is connected to a direct ground or to the ECU. When it is connected to a direct ground: Turn off ignition. Remove connector from pickup sensor. Measure resistance between the shield connector terminal and the negative terminal of the battery. It should be < 1 ohm. When it is connected to the ECU: Turn off ignition. Remove connector from pickup sensor and ECU. Measure the resistance between the shield connector terminal and the corresponding terminal in the ECU connector. It should be < 1 ohm. If not check wiring.

Check sensor signal:

Connect oscilloscope to signal wire pin of the ECU and ground. Start or crank the engine and compare to the scope image shown."

Info



Inductive position sensor 2



Function

Function:

The sensor contains three parts: a coil, a magnet and a soft iron core. The teeth of a gearwheel move past the magnetic pickup which changes the magnetic field of the magnet, increasing when a tooth approaches and decreasing when a tooth moves away. These changes result in an AC voltage produced in the coil. Engine rpm and/or TDC are determined in this way.

Trouble shooting:

"Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good.

Check resistance:

Turn off ignition. Remove connector from pickup sensor.

Measure resistance between the two pins of the coil of the pickup sensor. Compare with specified resistance.

Check connection to ECU:

Turn off ignition. Remove connector from pickup sensor and ECU.

Measure the resistance between each coil connector terminal and the corresponding terminals in the ECU connector. Both should be < 1 ohm.

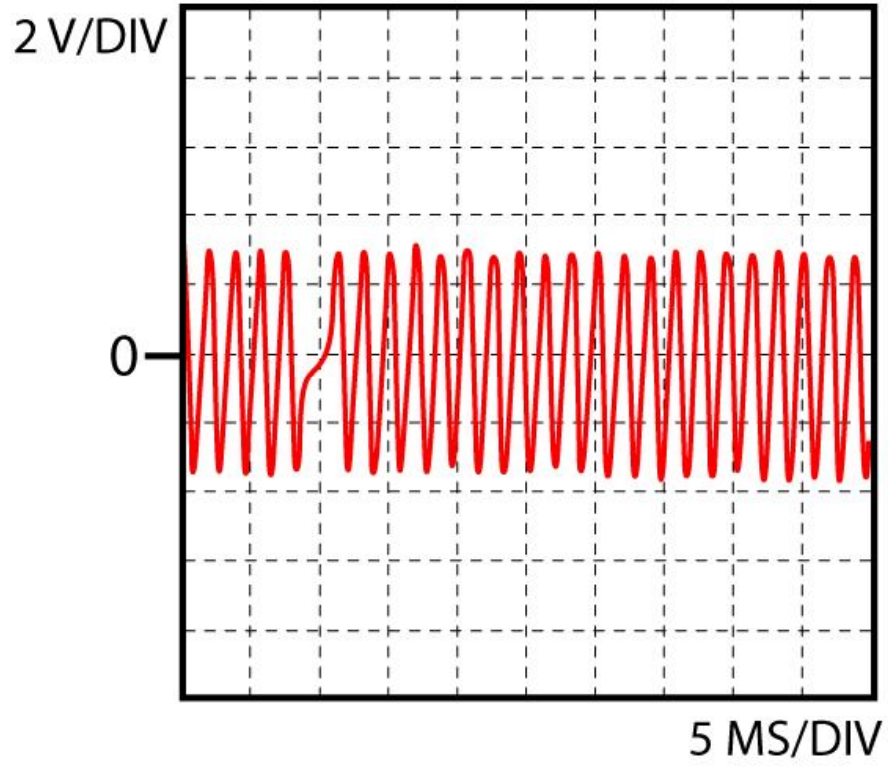
If present check shield connection:

Check in schematic if the shield terminal is connected to a direct ground or to the ECU. When it is connected to a direct ground: Turn off ignition. Remove connector from pickup sensor. Measure resistance between the shield connector terminal and the negative terminal of the battery. It should be < 1 ohm. When it is connected to the ECU: Turn off ignition. Remove connector from pickup sensor and ECU. Measure the resistance between the shield connector terminal and the corresponding terminal in the ECU connector. It should be < 1 ohm. If not check wiring.

Check sensor signal:

Connect oscilloscope to signal wire pin of the ECU and ground. Start or crank the engine and compare to the scope image shown."

Info



Inductive position sensor



Function

Function:

The sensor contains three parts: a coil, a magnet and a soft iron core. The teeth of a gearwheel move past the magnetic pickup which changes the magnetic field of the magnet, increasing when a tooth approaches and decreasing when a tooth moves away. These changes result in an AC voltage produced in the coil. Engine rpm and/or TDC are determined in this way.

Trouble shooting:

"Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good.

Check resistance:

Turn off ignition. Remove connector from pickup sensor.

Measure resistance between the two pins of the coil of the pickup sensor. Compare with specified resistance.

Check connection to ECU:

Turn off ignition. Remove connector from pickup sensor and ECU.

Measure the resistance between each coil connector terminal and the corresponding terminals in the ECU connector. Both should be < 1 ohm.

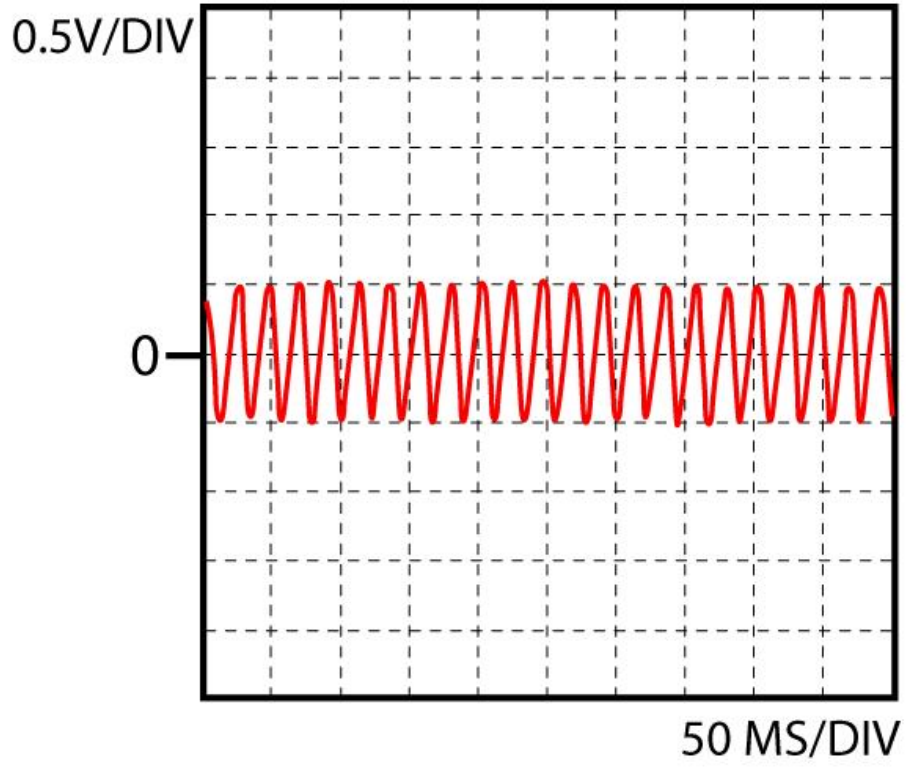
If present check shield connection:

Check in schematic if the shield terminal is connected to a direct ground or to the ECU. When it is connected to a direct ground: Turn off ignition. Remove connector from pickup sensor. Measure resistance between the shield connector terminal and the negative terminal of the battery. It should be < 1 ohm. When it is connected to the ECU: Turn off ignition. Remove connector from pickup sensor and ECU. Measure the resistance between the shield connector terminal and the corresponding terminal in the ECU connector. It should be < 1 ohm. If not check wiring.

Check sensor signal:

Connect oscilloscope to signal wire pin of the ECU and ground. Start or crank the engine and compare to the scope image shown."

Info



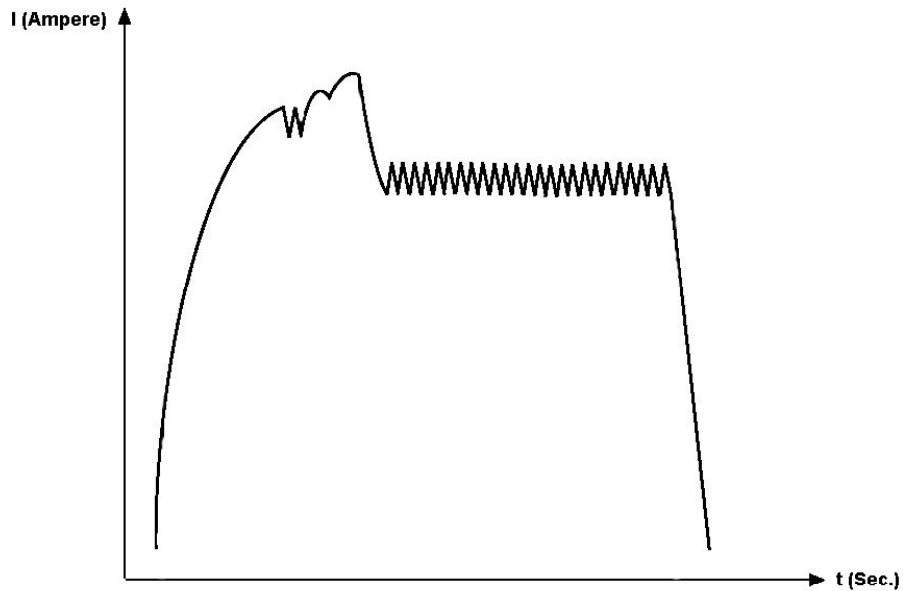
Unit Injector 1



Function

The unit injector is a one-cylinder injection pump and injection valve built into one unit. The unit injector is activated mechanically by the camshaft that is used to produce the high injection pressure of up to approx. 2000 bar. The actual injection takes place via the solenoid valve inside the injector that pulls up a fitting connected with the injector needle. Thus, fuel is injected directly into the combustion chamber of the cylinder. The injector valve is activated by the control unit where it receives a signal about injection amount and injection point. One unit injector is used for every cylinder.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector(s) from injector(s). Measure resistance between the two pins of the injector. Compare with specified resistance. Check connection to ECU: Turn off ignition. Remove connector(s) from injector (s) and ECU. Measure the resistance between one of the two connector terminals and the corresponding terminal in the ECU connector. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check connection to ground: Turn off ignition. Remove connector(s) from injector(s). Measure the resistance between one of the two connector terminals and the negative battery pole. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check injector activation: Connect oscilloscope to one of the signal wire pins of the ECU and ground. Start or crank the engine and compare to the scope image shown.

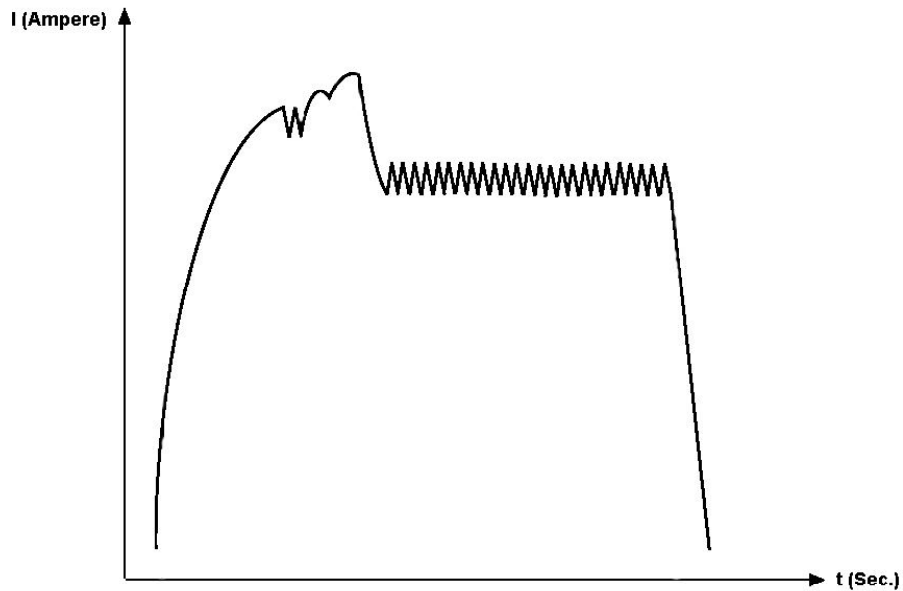
Unit Injector 1



Function

The unit injector is a one-cylinder injection pump and injection valve built into one unit. The unit injector is activated mechanically by the camshaft that is used to produce the high injection pressure of up to approx. 2000 bar. The actual injection takes place via the solenoid valve inside the injector that pulls up a fitting connected with the injector needle. Thus, fuel is injected directly into the combustion chamber of the cylinder. The injector valve is activated by the control unit where it receives a signal about injection amount and injection point. One unit injector is used for every cylinder.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. **Check resistance:** Turn off ignition. Remove connector(s) from injector(s). Measure resistance between the two pins of the injector. Compare with specified resistance. **Check connection to ECU:** Turn off ignition. Remove connector(s) from injector(s) and ECU. Measure the resistance between one of the two connector terminals and the corresponding terminal in the ECU connector. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. **Check connection to ground:** Turn off ignition. Remove connector(s) from injector(s). Measure the resistance between one of the two connector terminals and the negative battery pole. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. **Check injector activation:** Connect oscilloscope to one of the signal wire pins of the ECU and ground. Start or crank the engine and compare to the scope image shown.

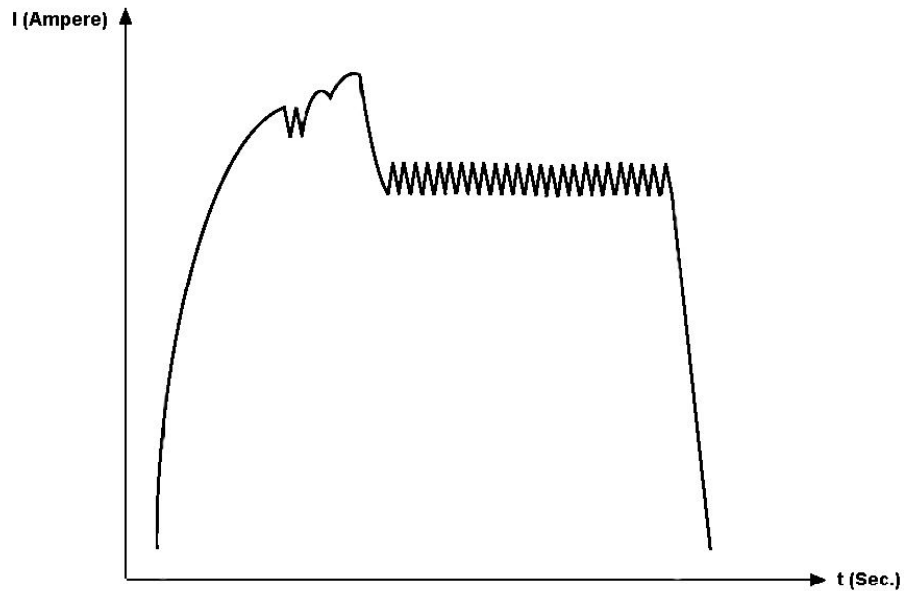
Unit Injector 2



Function

The unit injector is a one-cylinder injection pump and injection valve built into one unit. The unit injector is activated mechanically by the camshaft that is used to produce the high injection pressure of up to approx. 2000 bar. The actual injection takes place via the solenoid valve inside the injector that pulls up a fitting connected with the injector needle. Thus, fuel is injected directly into the combustion chamber of the cylinder. The injector valve is activated by the control unit where it receives a signal about injection amount and injection point. One unit injector is used for every cylinder.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector(s) from injector(s). Measure resistance between the two pins of the injector. Compare with specified resistance. Check connection to ECU: Turn off ignition. Remove connector(s) from injector (s) and ECU. Measure the resistance between one of the two connector terminals and the corresponding terminal in the ECU connector. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check connection to ground: Turn off ignition. Remove connector(s) from injector(s). Measure the resistance between one of the two connector terminals and the negative battery pole. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check injector activation: Connect oscilloscope to one of the signal wire pins of the ECU and ground. Start or crank the engine and compare to the scope image shown.

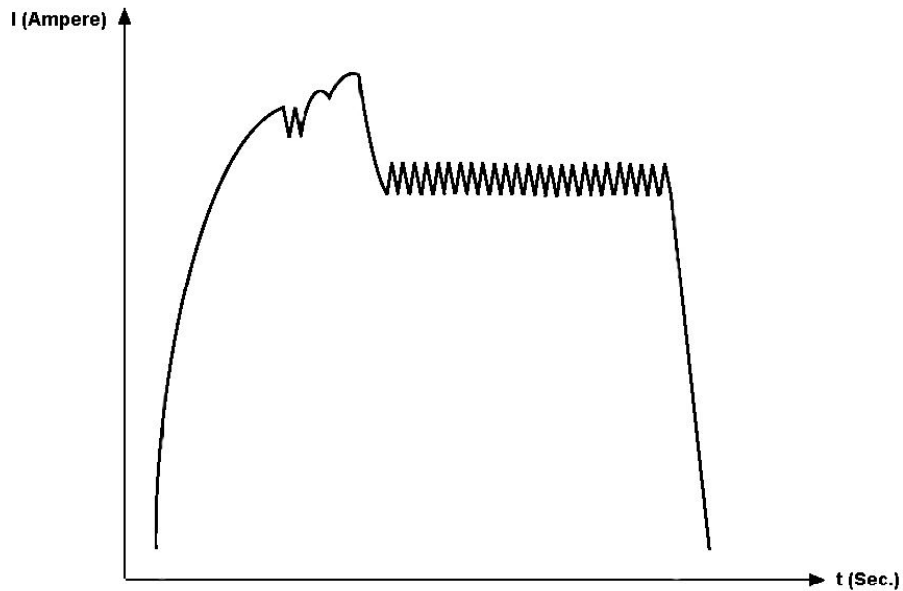
Unit Injector 3



Function

The unit injector is a one-cylinder injection pump and injection valve built into one unit. The unit injector is activated mechanically by the camshaft that is used to produce the high injection pressure of up to approx. 2000 bar. The actual injection takes place via the solenoid valve inside the injector that pulls up a fitting connected with the injector needle. Thus, fuel is injected directly into the combustion chamber of the cylinder. The injector valve is activated by the control unit where it receives a signal about injection amount and injection point. One unit injector is used for every cylinder.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector(s) from injector(s). Measure resistance between the two pins of the injector. Compare with specified resistance. Check connection to ECU: Turn off ignition. Remove connector(s) from injector (s) and ECU. Measure the resistance between one of the two connector terminals and the corresponding terminal in the ECU connector. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check connection to ground: Turn off ignition. Remove connector(s) from injector(s). Measure the resistance between one of the two connector terminals and the negative battery pole. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check injector activation: Connect oscilloscope to one of the signal wire pins of the ECU and ground. Start or crank the engine and compare to the scope image shown.

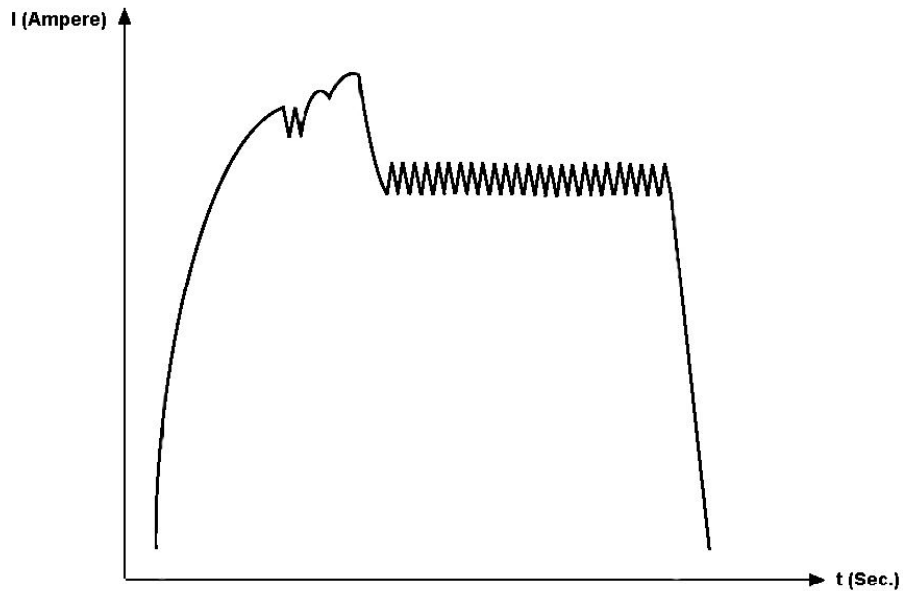
Unit Injector 4



Function

The unit injector is a one-cylinder injection pump and injection valve built into one unit. The unit injector is activated mechanically by the camshaft that is used to produce the high injection pressure of up to approx. 2000 bar. The actual injection takes place via the solenoid valve inside the injector that pulls up a fitting connected with the injector needle. Thus, fuel is injected directly into the combustion chamber of the cylinder. The injector valve is activated by the control unit where it receives a signal about injection amount and injection point. One unit injector is used for every cylinder.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector(s) from injector(s). Measure resistance between the two pins of the injector. Compare with specified resistance. Check connection to ECU: Turn off ignition. Remove connector(s) from injector (s) and ECU. Measure the resistance between one of the two connector terminals and the corresponding terminal in the ECU connector. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check connection to ground: Turn off ignition. Remove connector(s) from injector(s). Measure the resistance between one of the two connector terminals and the negative battery pole. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check injector activation: Connect oscilloscope to one of the signal wire pins of the ECU and ground. Start or crank the engine and compare to the scope image shown.

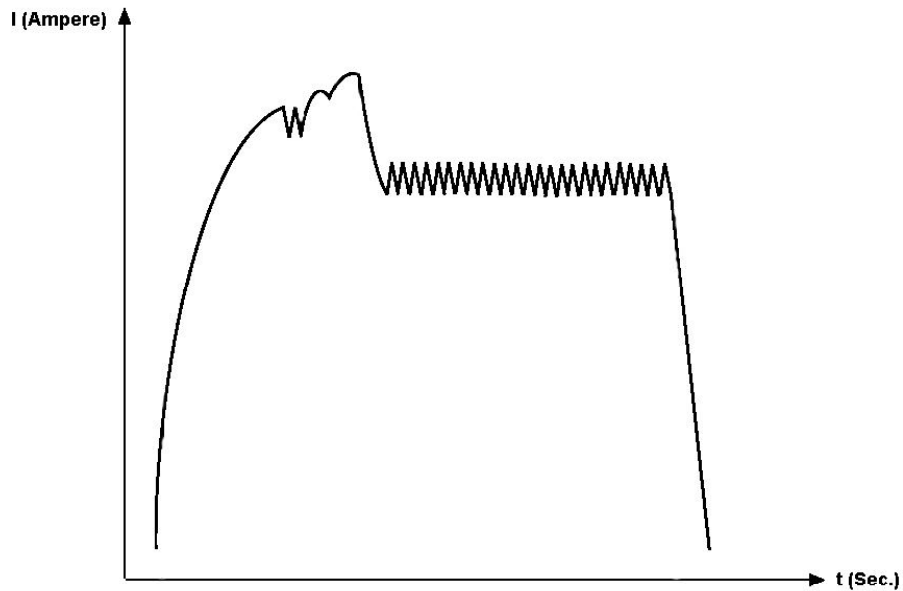
Unit Injector 5



Function

The unit injector is a one-cylinder injection pump and injection valve built into one unit. The unit injector is activated mechanically by the camshaft that is used to produce the high injection pressure of up to approx. 2000 bar. The actual injection takes place via the solenoid valve inside the injector that pulls up a fitting connected with the injector needle. Thus, fuel is injected directly into the combustion chamber of the cylinder. The injector valve is activated by the control unit where it receives a signal about injection amount and injection point. One unit injector is used for every cylinder.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector(s) from injector(s). Measure resistance between the two pins of the injector. Compare with specified resistance. Check connection to ECU: Turn off ignition. Remove connector(s) from injector (s) and ECU. Measure the resistance between one of the two connector terminals and the corresponding terminal in the ECU connector. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check connection to ground: Turn off ignition. Remove connector(s) from injector(s). Measure the resistance between one of the two connector terminals and the negative battery pole. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check injector activation: Connect oscilloscope to one of the signal wire pins of the ECU and ground. Start or crank the engine and compare to the scope image shown.

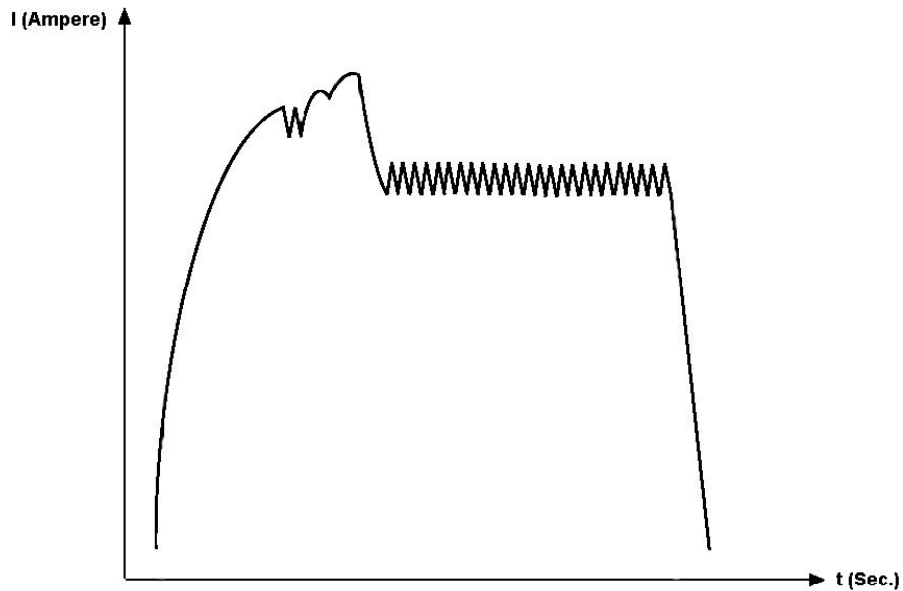
Unit Injector 6



Function

The unit injector is a one-cylinder injection pump and injection valve built into one unit. The unit injector is activated mechanically by the camshaft that is used to produce the high injection pressure of up to approx. 2000 bar. The actual injection takes place via the solenoid valve inside the injector that pulls up a fitting connected with the injector needle. Thus, fuel is injected directly into the combustion chamber of the cylinder. The injector valve is activated by the control unit where it receives a signal about injection amount and injection point. One unit injector is used for every cylinder.

Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check resistance: Turn off ignition. Remove connector(s) from injector(s). Measure resistance between the two pins of the injector. Compare with specified resistance. Check connection to ECU: Turn off ignition. Remove connector(s) from injector (s) and ECU. Measure the resistance between one of the two connector terminals and the corresponding terminal in the ECU connector. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check connection to ground: Turn off ignition. Remove connector(s) from injector(s). Measure the resistance between one of the two connector terminals and the negative battery pole. Check the other terminal, one of the two should be < 1 ohm. If not check wiring. Check injector activation: Connect oscilloscope to one of the signal wire pins of the ECU and ground. Start or crank the engine and compare to the scope image shown.

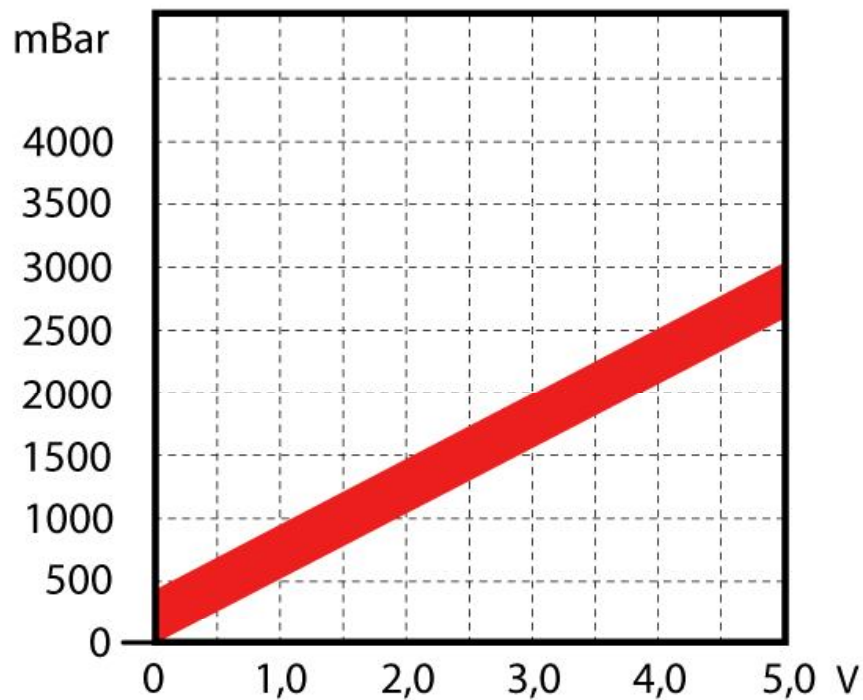
MAP-sensor



Function

The air pressure in the intake manifold is measured using the Manifold Absolute Pressure (MAP) sensor. The MAP sensor is a transducer, the MAP sensor senses the absolute pressure in the intake manifold and transduces this to a DC voltage signal.

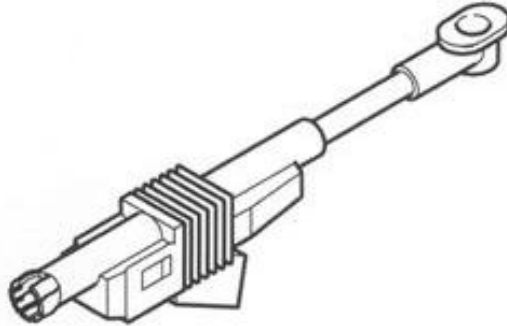
Info



Quickcheck

Check connector(s): Inspect the connector(s) and if necessary clean or fix them to make sure the connection is good. Check supply voltage: Turn off ignition. Remove connector from sensor. Turn ignition on and measure voltage between the supply terminal and negative terminal of the battery. It should be 5 V. Check connection to ECU: Turn off ignition. Remove connector from MAP sensor and ECU. Measure the resistance between MAP sensor terminals and the corresponding terminals in the ECU connector. They all should be < 1 ohm. If not check wiring. Check MAP sensor signal: Connect oscilloscope or voltmeter to the corresponding pin of the ECU (signal wire) and ground. Remove vacuum tube and connect vacuum pump. Turn ignition on and apply several different pressures. Compare to the characteristic shown.

Clutch switch



Function

Engaging the clutch pedal is detected by this switch. The control unit senses the voltage signal of this switch detecting that the clutch is engaged.

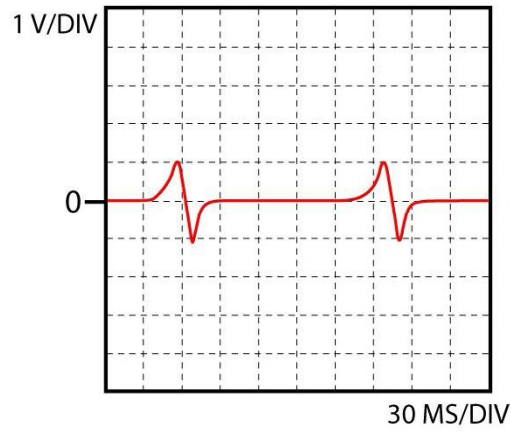
Speedometer



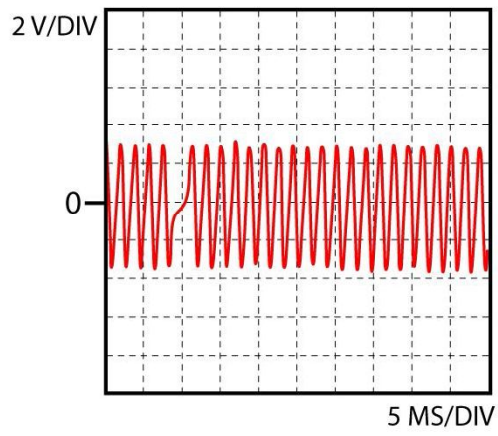
Function

Gives information about the speed of the car.

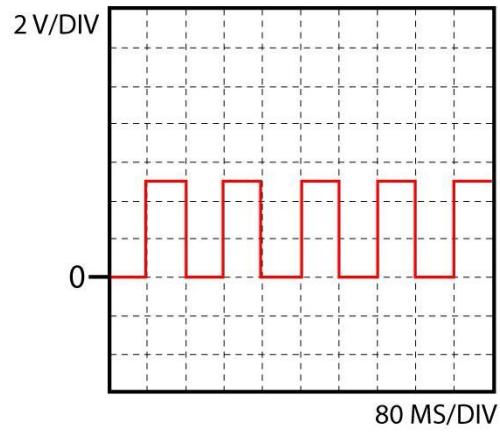
1007



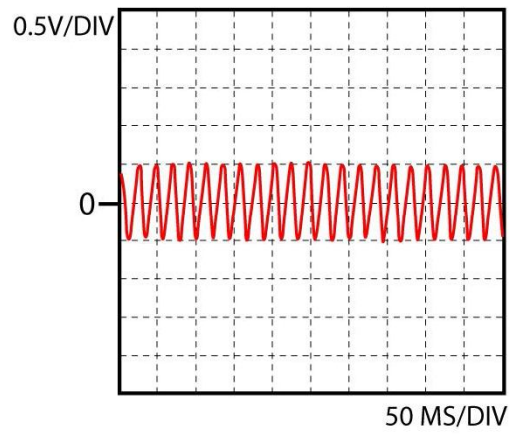
1012



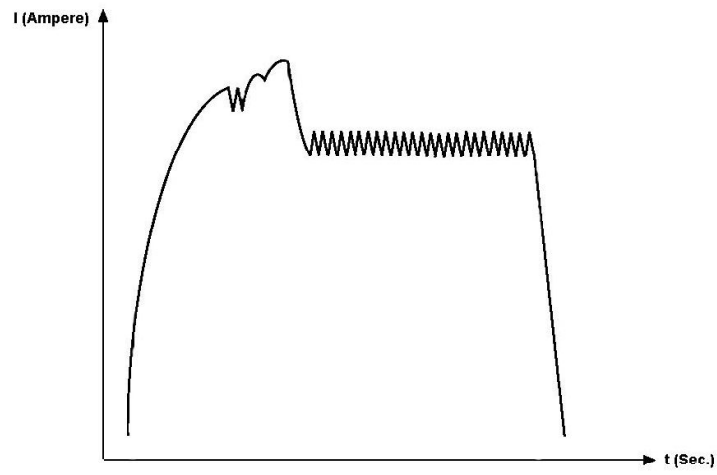
1047



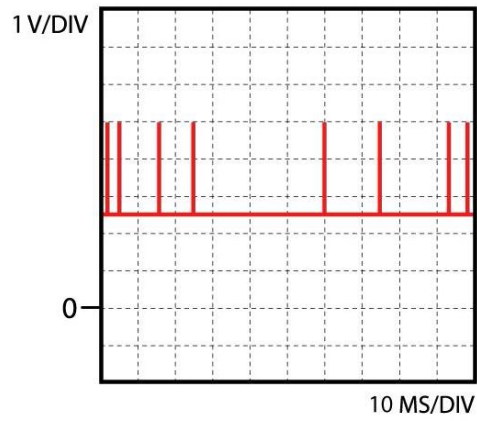
1050

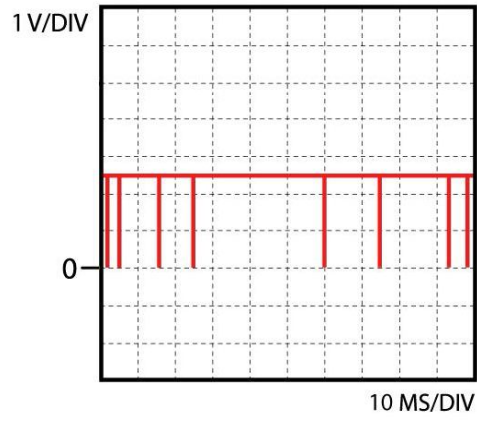


1079



1087





Iveco LV Stralis 440 E 44 Cursor 13**Main bearings, Nm**

Tightening of lower block. Step 1 outer position bolts 30 Nm. Step 2 inner position bolts 120 Nm. Step 3 inner position bolts + 60°. Step 4 inner position bolts + 55°. Step 5 outer position bolts + 60°.

DIN 72 552

Klemmebetegnelser:

Terminal Definition:

IGNITION

- 1 Ignition coil, ignition distributor, low voltage
(Ignition distributor with two separate electrical circuits)
- 1a to ignition contact breaker I
- 1b to ignition contact breaker II
- 2 short-circuit terminal (magneto ignition)
- 4 Ignition coil, ignition distributor, high voltage
(ignition distributor with two separate electrical circuits)
- 4a from ignition coil I, terminal 4
- 4b from ignition coil II, terminal 4
- 15 Switched + downstream of battery
(output of ignition/driving switch)
- 15a Output at dropping resistor to ignition coil and starter

GLOW PLUG AND STARTER SWITCH

- 17 Start
- 19 Preheat

BATTERY

- 30 input from + battery terminal, direct
- 30a input from + terminal of battery II
(12/24 V series-parallel battery switch)
- 31 Return line to battery
- battery terminal or ground, direct
- 31b Return line to negative battery terminal or ground, via
switch or relay (switched negative)
(12/24 V series-parallel battery)
- 31a Return line to - terminal of battery II
- 31c Return line to - terminal of battery I

ELECTRIC MOTORS

- 32 Return line
(Polarity reversal possible at terminals 32-33)
- 33 Main terminal connection
(Polarity reversal possible at terminals 32-33)
- 33a Self-parking switch-off
- 33b Shunt field
- 33f For second lower-speed range
- 33g For third lower-speed range
- 33h For fourth lower-speed range

- 33L Counterclockwise rotation
- 33R Clockwise rotation

STARTER

- 45 Separate starter relay, output; starter input (main current)
- 45a Output, starter I
Input, starters I and II (Two-starter parallel operation)
- 45b Output, starter II (Two-starter parallel operation)
- 48 Terminal on starter and on start-repeating relay for monitoring starting procedure

TURN SIGNAL FLASHER

- 49 Input
- 49a Output
- 49b Output, second turn-signal circuit
- 49c Output, third turn-signal circuit

STARTER

- 50 Starter control (direct)
- 50a Output for starter control
(Series-parallel battery switch)
- 50b Starter control with parallel operation of two starters with sequential control
- 50c Input at starting relay for starter I
(Starting relay for sequential control of the engagement current during parallel operation of two starters)
- 50d Input at starting relay for starter I
(Starting relay for sequential control of the engagement current during parallel operation of two starters)
- 50e Input, Start-locking relay
- 50f Output, Start-locking relay
- 50g Input, Start-repeating relay
- 50h Output, Start-repeating relay

ALTERNATOR

- 51 DC voltage at rectifier
- 51e DC voltage at rectifier with choke coil for daytime driving

TRAILER SIGNALS

- 52 Signals from trailer to towing vehicle, general

WIPER MOTOR

- 53 Wiper motor, input (+)
- 53a Wiper (+), self-parking switch-off
- 53b Wiper (shunt winding)
- 53c Electric windshield-washer pump
- 53e Wiper (brake winding)
- 53i Wiper motor with permanent magnet and third brush (for higher speed)

TRAILER SIGNAL

54 For lamp combinations and trailer plug connections

TRAILER STOP LAMP

54g Pneumatic valve for additional retarding brake,
electromagnetically actuated

LIGHTING

55 Fog lamps

56 Headlamp

56a High beam, high-beam indicator lamp

56b Low beam

56d Headlamp-flasher contact

57 Side-marker lamp: motorcycles, mopeds.

Abroad also cars, trucks, etc.

57a Parking lamp

57L Parking lamp, left

57R Parking lamp, right

58 Side-marker lamps, tail lamps, license-plate lamps and
instrument-panel lamps

58b Tail-lamp changeover for single-axle tractors

58c Trailer plug-and-receptacle assembly for single-
conductor

tail-lamp cable with fuse in trailer

58d Variable-intensity instrument-panel lamp, tail-lamp and
side-marker lamp

58L Side-marker lamp, left

58R Side-marker lamp, right; license-plate lamp

ALTERNATOR (magneto, generator)

59 AC voltage, output

Rectifier, input

59a Charging armature, output

59b Tail-lamp armature, output

59c Stop-lamp armature, output

61 Alternator charge-indicator lamp

TONE-SEQUENCE CONTROL DEVICE

71 Input

71a Output to horns 1 & 2, low

71b Output to horns 1 & 2, high

72 Alarm switch (rotating beacon)

INTERIOR

75 Radio, cigarette lighter

76 Speaker

77 Door-valve control

SWITCHES

(Break-contact and changeover switches)

81 Input

81a 1st output, break side

81b 2nd output, break side

(Make-contact switches)

82 Input

82a 1st output

82b 2nd output

82z 1st input

- 82y 2nd input
(Multiple-position switches)-
- 83 Input
- 83a Output, position 1
- 83b Output, position 2
- 83L Output, left-hand position
- 83R Output, right-hand position

CURRENT RELAY

- 84 Input, actuator and relay contact
- 84a Output, actuator
- 84b Output, relay contact

SWITCHING RELAY

- 85 Output, actuator (end of winding to ground or negative)
- 86 Start of winding
- 86a Start of winding or 1st winding
- 86b Winding tap or 2nd winding
(relay contact for break and changeover contacts)
- 87 Input
- 87a 1st output (break side)
- 87b 2nd output
- 87c 3rd output
- 87x 1st input
- 87y 2nd input
- 87z 3rd input
(Relay contact for make contact)-
- 88 Input
(Relay contact for make and changeover contacts (make side))-
- 88a 1st output
- 88b 2nd output
- 88c 3rd output
(Relay contact for make contact)-
- 88z 1st input
- 88y 2nd input
- 88x 3rd input

ALTERNATOR and VOLTAGE REGULATOR
GENERATOR and GENERATOR REGULATOR

- B+ Battery positive
- B- Battery negative
- D+ Dynamo positive
- D- Dynamo negative
- DF Dynamo field
- DF1 Dynamo field 1
- DF2 Dynamo field 2
(Alternator with separate rectifier)
- J Excitation winding positive
- K Excitation winding negative
- Mp Center point terminal
- U,V,W Alternator terminals

DIRECTION INDICATOR (turn-signal flasher)

- C First indicator lamp
- C0 Main terminal connection for separate indicator circuits

actuated by the turn-signal switch

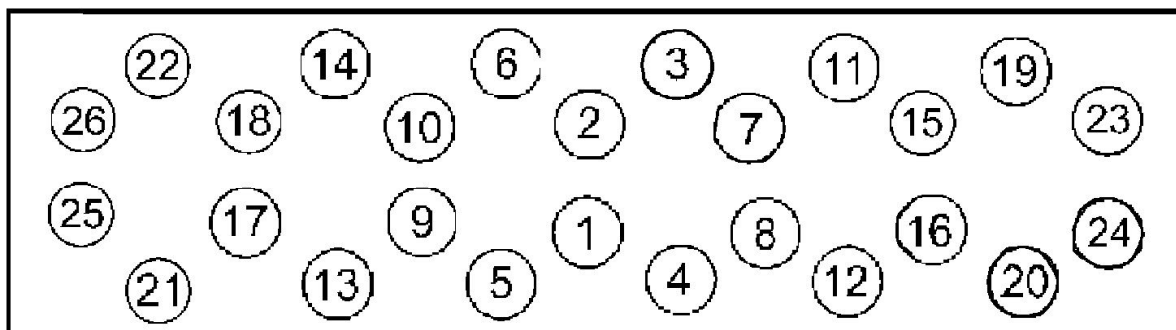
- C2 Second indicator lamp
- C3 Third indicator lamp (e.g., when towing two trailers)
- L Turn-signal lamps, left
- R Turn-signal lamps, right

Cross-reference for old and new terminal designations in accordance with DIN 72 552.
Only terminal designations whose significance has altered are given.

OLD	NEW
1	1, 53(wiper), 53e
2	2, 53e
3	53, 53b(wiper)
4	4, 53a, 53b(wiper)
15	15, 49(turn-signal flasher)
15+	49
15/54	15, 49, 54
16	15a, 15
30	30, 33(motor)
30/51	30, 87, 88(relay)
30f	45
30h	45, 45a
30h I	45a
30h II	45b
30L	33L (motors)
30R	33R (motors)
31	31, 31c, 32(motors)
31a	31a, 31c
31B-	B-
50	50, 50b, 50f, 50h
50a	50, 50a, 50e, 50g
50b	50d
50k	50d
50 II	50c
51	51, 59, B+
51 -	59
51a	59
51B+	B+
54	54, 53a, 54g
54/15	15
54d	53(wiper)
54e	33b, 53b(wiper)
54L	49a
58	58, 58L, 58R
58b	58b, 58d
59	59a
85d	31b(alarm switch)
B+30	B+
B+51	B+
D+/61	D+
D-/61	D-
H	71
HL	L (L54b)
HR	R (R54b)
K	C
K0	C0

K1	C, C2
K2	C2
K3	C2, C3
K4	C2, C3
L54	L (L54)
N	55
P	C, 57a
PL	57L
PR	57R
R	R, 75
R54	R, (R54)
R54b	Rb
S	49a, 53(wiper)
S4	49a
SBL	(L54)
SBR	(R54)
VL	L
VR	R
+	15, 49(turn-signal flasher) 53, 53a(wiper)
+2	53a
+15	49
-	1 (ignition coil), 31

Tightening sequence



Pic. 1

Iveco LV Stralis 440 E 44 Cursor 13

Timing gear:

Timing gear marking

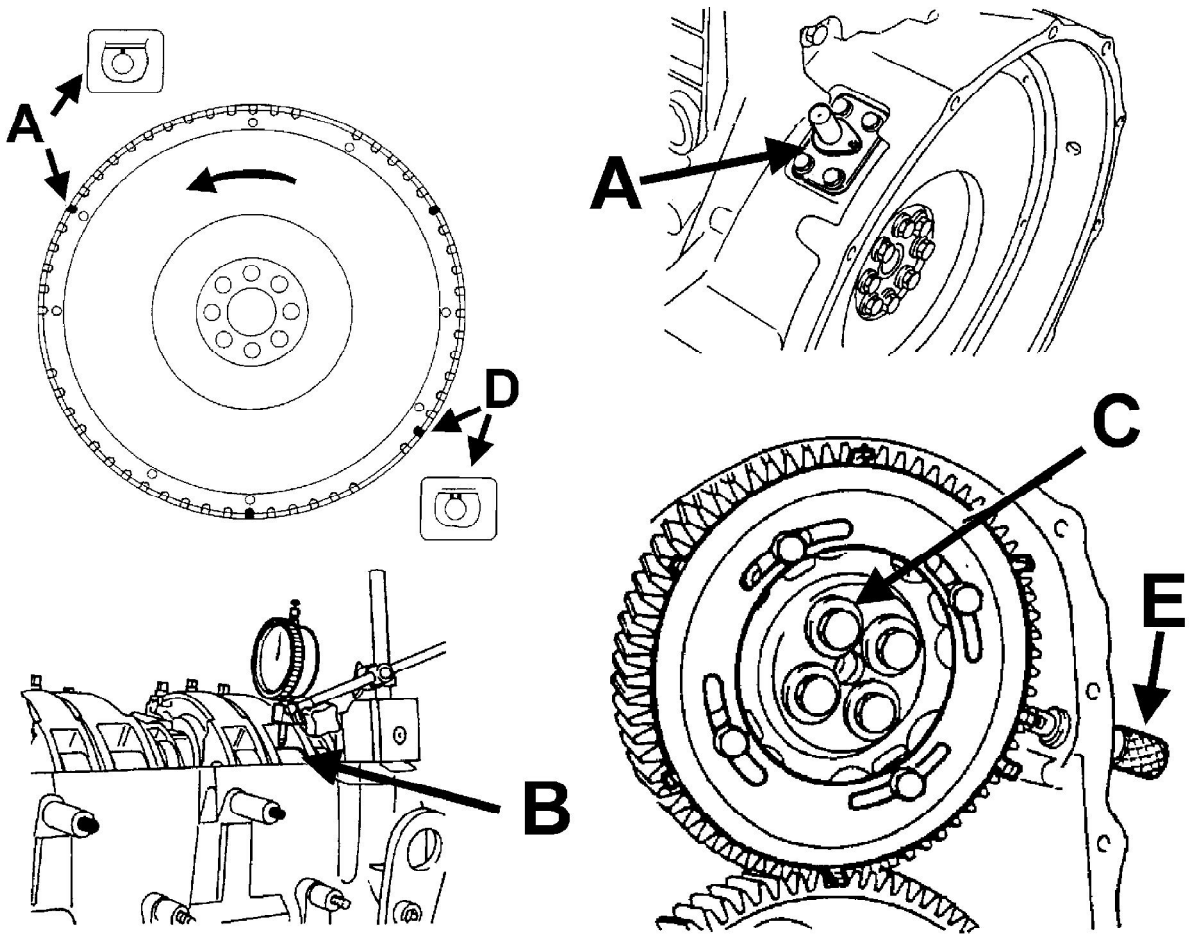
Cylinder 1 in compression top. (Hole "11" in the flywheel, outside of the crank position sensor hole in the clutch casing (see arrow A)). Fit the measuring gauge to the roller bearing on the rocker arm of the flue injection nozzle on cylinder 1 (see arrow B), and prestress the measuring gauge (see below). Turn the engine in the direction of revolution until the measuring gauge shows the minimum deflection. Reset the measuring gauge and turn the engine in the direction of rotation until the measuring gauge shows:

Engine type:

Height measured on the roller bearing Prestressing of measuring gauge

F2B (Euro 2)	2.43 ± 0.05 mm	Prestressing 4 mm
F2B (Euro 3)	4.90 ± 0.05 mm	Prestressing 6 mm
F3A	4.44 ± 0.05 mm	Prestressing 6 mm
F3B	5.31 ± 0.05 mm	Prestressing 6 mm

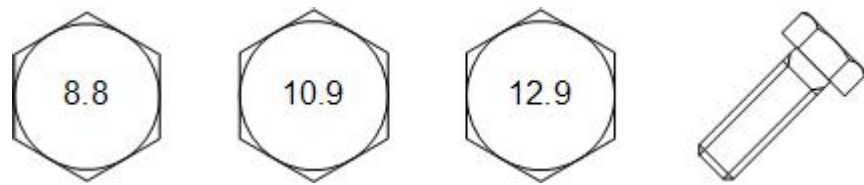
Check that the special tool (99360612) can be placed into the flywheel "11." hole without resistance (see arrow A). If not, the securing bolt of the cam gear is not loose (see arrow C) and the engine is turned approx. half a crank revolution back. Turn the engine forwards to the top and fit the special tool (99360612) into the flywheel "11." hole (see arrow A). Tighten the cam gear again and check using the measuring gauge again as previously described. Turn the crank to 54° to before the top of cylinder 1 and place the special tool (99360612) into the flywheel hole (Note: there should be two notches outside of the hole (see arrow D)). Check that the special tool (99360613) can go over the marked tooth on the cam gear (see arrow E).



Pic. 1

Tightening torques

M4	8.8	2.4 Nm
M4	10.9	3.6 Nm
M5	8.8	5.0 Nm
M5	10.9	7.3 Nm
M5	12.9	8.0 Nm
M6	8.8	8.6 Nm
M6	10.9	12.6 Nm
M6	12.9	14.0 Nm
M7	8.8	14.0 Nm
M7	10.9	20.5 Nm
M7	12.9	22.5 Nm
M8	8.8	20.5 Nm
M8	10.9	30.5 Nm
M8	12.9	33.5 Nm
M8x1	8.8	22 Nm
M8x1	10.9	32 Nm
M8x1	12.9	35.5 Nm
M10	8.8	41 Nm
M10	10.9	60 Nm
M10	12.9	66 Nm
M10x1	8.8	44 Nm
M10x1	10.9	65 Nm
M10x1	12.9	72 Nm
M12	8.8	71 Nm
M12	10.9	104 Nm
M12	12.9	116 Nm
M12x1.5	8.8	73 Nm
M12x1.5	10.9	108 Nm
M12x1.5	12.9	120 Nm
M14	8.8	112 Nm
M14	10.9	165 Nm
M14	12.9	185 Nm
M14x1.5	8.8	120 Nm
M14x1.5	10.9	175 Nm
M14x1.5	12.9	195 Nm
M16	8.8	175 Nm
M16	10.9	255 Nm
M16	12.9	280 Nm
M16x1.5	8.8	180 Nm
M16x1.5	10.9	265 Nm
M16x1.5	12.9	295 Nm
M18	8.8	240 Nm
M18	10.9	355 Nm
M18	12.9	395 Nm
M18x1.5	8.8	265 Nm
M18x1.5	10.9	385 Nm
M18x1.5	12.9	430 Nm



Pic. 1

Iveco LV Stralis 440 E 44 Cursor 13

Valve clearance, exhaust (cold/ hot)

Valve adjustment

Valve adjustment:

Measure by rocker arm / valve arm.

When valves overlap on:

adjust on:

Cylinder 6

Cylinder 1 and injector 5

Cylinder 3

Cylinder 4 and injector 1

Cylinder 5

Cylinder 2 and injector 4

Cylinder 1

Cylinder 6 and injector 2

Cylinder 4

Cylinder 3 and injector 6

Cylinder 2

Cylinder 5 and injector 3

Iveco LV Stralis 440 E 44 Cursor 13

Valve clearance, inlet (cold/ hot)

Valve adjustment

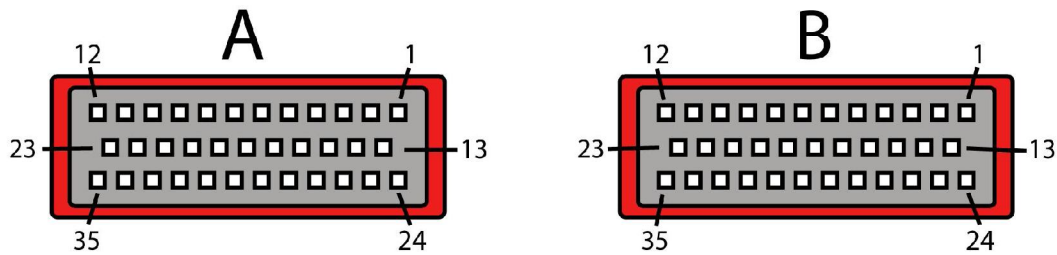
Valve adjustment:

Measure by rocker arm / valve arm.

When valves overlap on:	adjust on:
Cylinder 6	Cylinder 1 and injector 5
Cylinder 3	Cylinder 4 and injector 1
Cylinder 5	Cylinder 2 and injector 4
Cylinder 1	Cylinder 6 and injector 2
Cylinder 4	Cylinder 3 and injector 6
Cylinder 2	Cylinder 5 and injector 3

Iveco LV Stralis 440 E 44 Cursor 13**Manual transmission, litre**

Gearbox no.: ZF 16S 181 / 221 = 13.0. ZF 16S 181 / 221 with retarder = 21.5. Eurotronic 12 AS 2301 / with retarder = 12.0 / 21.0. Eurotronic 12 AS 2601 / with retarder = 12.0 / 23.0.



Troubleshooting-data

Model: Stralis 440 E 44 Cursor 13

Motor: F3B E0681C / Bosch MS6.2 Unit Inje

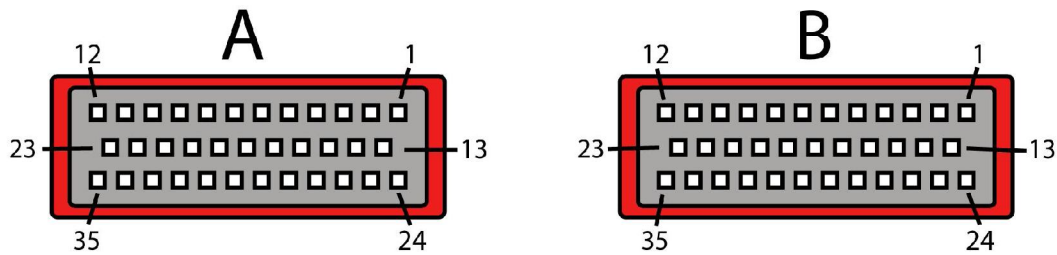
Component:	From:	To:	Condition:	Value	Measured	etc.
.	.	.	Connector seen from wire side	.		
.	.	.	Measurements taken with connector installed	.		
Battery (earth)	B1	Batt. -	Ignition on	0 V		
Battery (earth)	B2	Batt. -	Ignition on	0 V		
CAN BUS SAE J1939	B11	B12	Ignition off	55 - 65 ohm		
CAN BUS SAE J1939	B12	B1	Idle			1087
CAN BUS SAE J1939	B11	B1	Idle			1088
Accelerator pedal sensor	B35	B1	Ignition on	0 V		
Accelerator pedal sensor	B16	B35	Ignition on	4,5 - 5,5 V		
Accelerator pedal sensor	B23	B35	Ignition on, accelerator released	0,2 - 0,6 V		
Accelerator pedal sensor	B23	B35	Ignition on, accelerator fully depressed	3,5 - 4 V		
Boost pressure valve	A31	A18	Ignition on	22 - 28 V		
Brake pedal switch	B26	B1	Ignition on, brake pedal released	22 - 28 V		
Brake pedal switch	B31	B1	Ignition on, brake pedal released	0 V		
Brake pedal switch	B31	B1	Ignition on, brake pedal depressed	22 - 28 V		
Brake pedal switch	B26	B1	Ignition on, brake pedal depressed	0 V		
Clutch switch	B20	B1	Ignition on	22 - 28 V		
Clutch switch	B20	B1	Ignition on, pedal activated	0 V		
Ignition	B15	B1	Ignition on	22 - 28 V		
Ignition	B15	B1	Ignition off	0 V		
Inductive position sensor	A7	A16	Idle			1050
Inductive position sensor 1	A2	A14	Starter rpm			1007
Inductive position sensor 2	A1	A14	Starter rpm			1012
MAP-sensor	A17	A23	Ignition on	4,5 - 5,5 V		
MAP-sensor	A12	A23	Ignition on	0,9 - 1,1 V		
MAP-sensor	A23	B1	Ignition on	0 V		
MAP-sensor	A12	A23	2000 rpm	1,3 - 1,7 V		
MAP-sensor	A12	A23	Ignition on, at 2500 - 3000 mbar	3,4 - 4,7 V		
Relay	B27	B1	Ignition on	0 - 1 V		
Relay	B3	B1	Ignition on	22 - 28 V		
Relay	B4	B1	Ignition on	22 - 28 V		
Relay	B4	B1	Ignition off	0 V		
Relay	B27	B1	Ignition off	22 - 28 V		

Troubleshooting-data

Model: Stralis 440 E 44 Cursor 13

Motor: F3B E0681C / Bosch MS6.2 Unit Inje

Component:	From:	To:	Condition:	Value	Measured	pic.
Relay	B3	B1	Ignition off	0 V		
Speedometer	B29	B1	Vehicle in motion			1047
Unit Injector 1	A35	A24	Idle			1079
Unit Injector 2	A34	A24	Idle			1079
Unit Injector 3	A33	A24	Idle			1079
Unit Injector 4	A26	A25	Idle			1079
Unit Injector 5	A28	A25	Idle			1079
Unit Injector 6	A27	A25	Idle			1079



Troubleshooting-data

Model: Stralis 440 E 44 Cursor 13

Motor: F3B E0681C / Bosch MS6.2 Unit Inje

Component:	From:	To:	Condition:	Value	Measured	etc.
.	.	.	Connector seen from wire side	.		
.	.	.	Measurements taken with connector installed	.		
Battery (earth)	B1	Batt. -	Ignition on	0 V		
Battery (earth)	B2	Batt. -	Ignition on	0 V		
CAN BUS SAE J1939	B11	B12	Ignition off	55 - 65 ohm		
CAN BUS SAE J1939	B12	B1	Idle			1087
CAN BUS SAE J1939	B11	B1	Idle			1088
Accelerator pedal sensor	B35	B1	Ignition on	0 V		
Accelerator pedal sensor	B16	B35	Ignition on	4,5 - 5,5 V		
Accelerator pedal sensor	B23	B35	Ignition on, accelerator released	0,2 - 0,6 V		
Accelerator pedal sensor	B23	B35	Ignition on, accelerator fully depressed	3,5 - 4 V		
Boost pressure valve	A31	A18	Ignition on	22 - 28 V		
Brake pedal switch	B26	B1	Ignition on, brake pedal released	22 - 28 V		
Brake pedal switch	B31	B1	Ignition on, brake pedal released	0 V		
Brake pedal switch	B31	B1	Ignition on, brake pedal depressed	22 - 28 V		
Brake pedal switch	B26	B1	Ignition on, brake pedal depressed	0 V		
Clutch switch	B20	B1	Ignition on	22 - 28 V		
Clutch switch	B20	B1	Ignition on, pedal activated	0 V		
Ignition	B15	B1	Ignition on	22 - 28 V		
Ignition	B15	B1	Ignition off	0 V		
Inductive position sensor	A7	A16	Idle			1050
Inductive position sensor 1	A2	A14	Starter rpm			1007
Inductive position sensor 2	A1	A14	Starter rpm			1012
MAP-sensor	A17	A23	Ignition on	4,5 - 5,5 V		
MAP-sensor	A12	A23	Ignition on	0,9 - 1,1 V		
MAP-sensor	A23	B1	Ignition on	0 V		
MAP-sensor	A12	A23	2000 rpm	1,3 - 1,7 V		
MAP-sensor	A12	A23	Ignition on, at 2500 - 3000 mbar	3,4 - 4,7 V		
Relay	B27	B1	Ignition on	0 - 1 V		
Relay	B3	B1	Ignition on	22 - 28 V		
Relay	B4	B1	Ignition on	22 - 28 V		
Relay	B4	B1	Ignition off	0 V		
Relay	B27	B1	Ignition off	22 - 28 V		

Troubleshooting-data

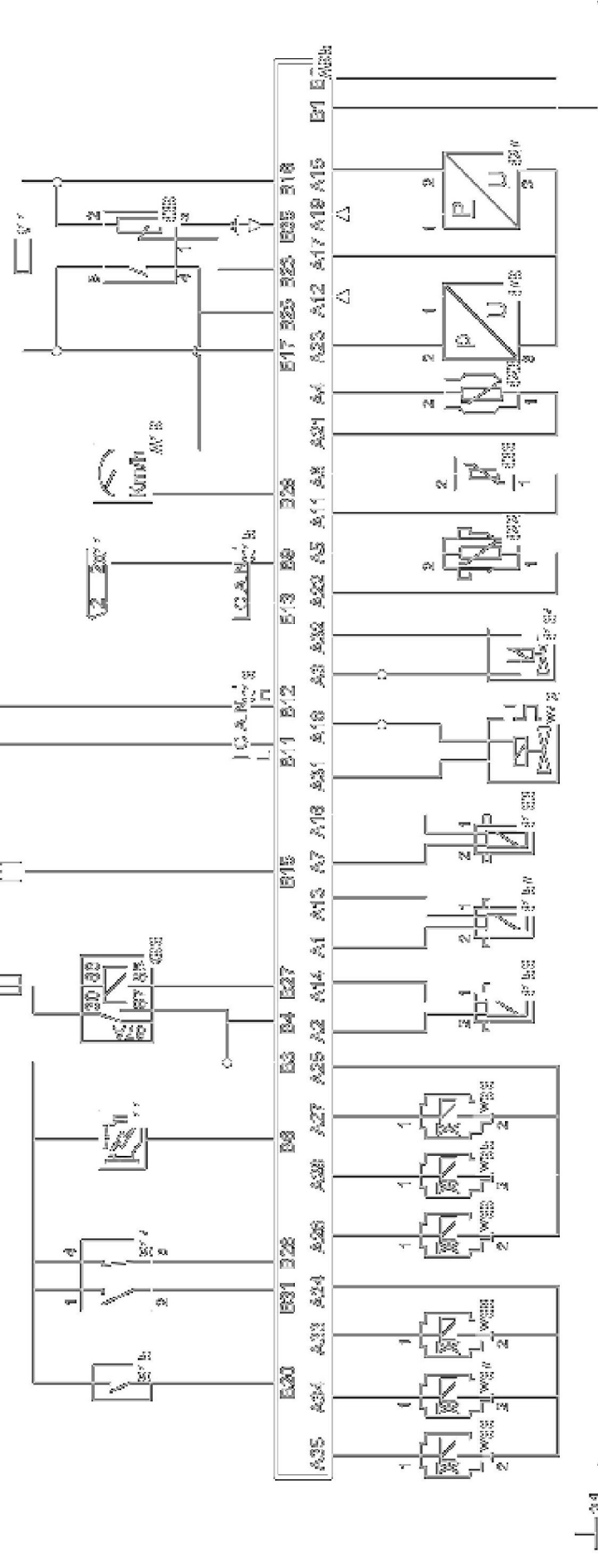
Model: Stralis 440 E 44 Cursor 13

Motor: F3B E0681C / Bosch MS6.2 Unit Inje

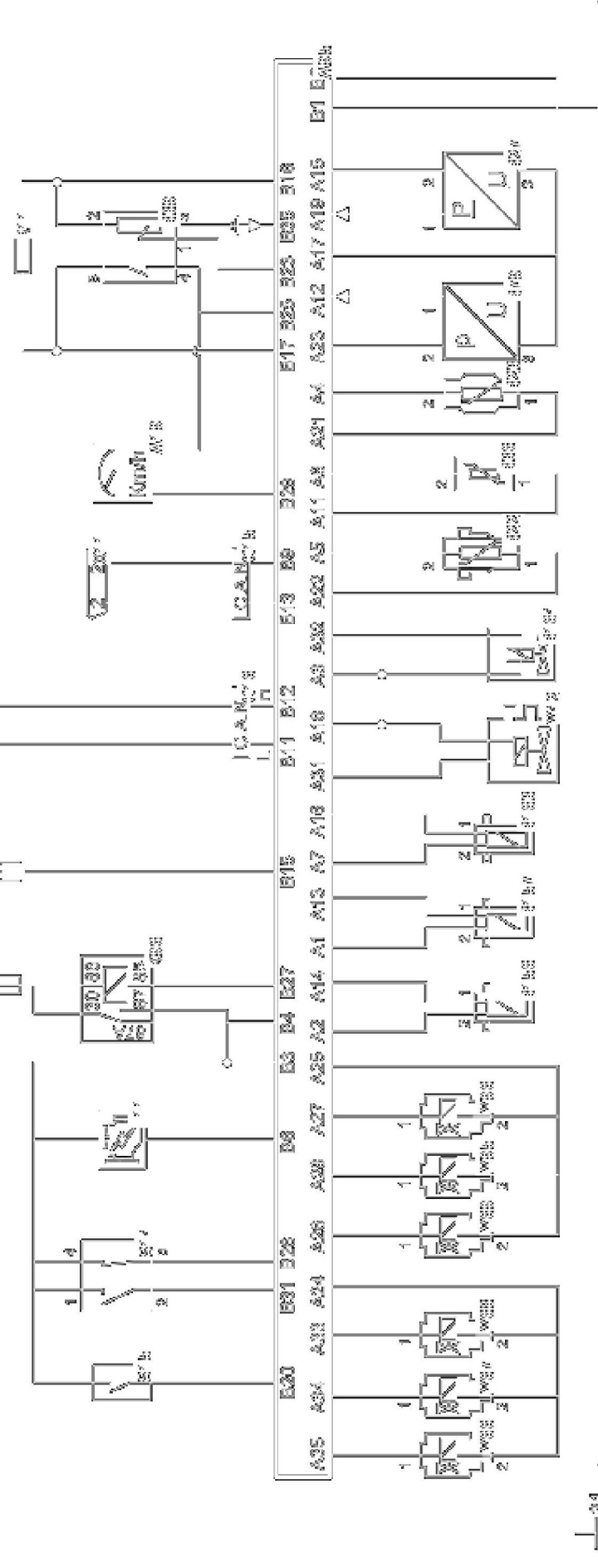
Component:	From:	To:	Condition:	Value	Measured	pic.
Relay	B3	B1	Ignition off	0 V		
Speedometer	B29	B1	Vehicle in motion			1047
Unit Injector 1	A35	A24	Idle			1079
Unit Injector 2	A34	A24	Idle			1079
Unit Injector 3	A33	A24	Idle			1079
Unit Injector 4	A26	A25	Idle			1079
Unit Injector 5	A28	A25	Idle			1079
Unit Injector 6	A27	A25	Idle			1079

A19	Speedometer
A95	ECU
B156	Inductive position sensor 1
B157	Inductive position sensor 2
B163	Inductive position sensor
B164	Solenoid valve exh. Brake 1
B22	Coolant temperature sensor
B23	Air temperature sensor
B27	Exhaust pressure sensor
B36	Fuel temperature sensor
B39	Accelerator pedal sensor
B79	MAP-sensor
F-	Fuse
G15	CAN BUS SAE J1708
G16	CAN BUS SAE J1939
H11	ECU lamp
K96	Relay
R11	Resistor
S14	Brake pedal switch
S15	Clutch switch
X11	Diagnostic connector
Y42	Boost pressure valve
Y66	Unit Injector 1
Y67	Unit Injector 2
Y68	Unit Injector 3
Y69	Unit Injector 4
Y95	Unit Injector 5
Y96	Unit Injector 6

Cam III
 Cam Low
 30
 15



Cam III
 Cam Low
 30
 15



Fault-codes

Model: Stralis 440 E 44 Cursor 13

Motor: F3B E0681C / ABS-ASR Basis 4 Char

Faultcode	Possible cause(s)
01 - 01, Wheel speed sensor 1L	CAN communication, Air gap, Wrong,
01 - 02, Wheel speed sensor 1L	CAN communication, Tyre size, Wrong,
01 - 03, Wheel speed sensor 1L	Short circuit to plus,
01 - 04, Wheel speed sensor 1L	Short circuit to ground,
01 - 05, Wheel speed sensor 1L	Circuit open,
01 - 06, Wheel speed sensor 1L	Short circuit,
01 - 07, Wheel speed sensor 1L	CAN communication, Toothed ring, Wrong,
01 - 08, Wheel speed sensor 1L	Wheel slip detected,
01 - 09, Wheel speed sensor 1L	Fault in circuit,
01 - 0A, Wheel speed sensor 1L	Speed low,
01 - 0B, Wheel speed sensor 1L	Signal error/ signal variation,
01 - 0C, Wheel speed sensor 1L	Signal, Input too high,
02 - 01, Wheel speed sensor 1R	CAN communication, Air gap, Wrong,
02 - 02, Wheel speed sensor 1R	CAN communication, Tyre size, Wrong,
02 - 03, Wheel speed sensor 1R	Short circuit to plus,
02 - 04, Wheel speed sensor 1R	Short circuit to ground,
02 - 05, Wheel speed sensor 1R	Circuit open,
02 - 06, Wheel speed sensor 1R	Short circuit,
02 - 07, Wheel speed sensor 1R	CAN communication, Toothed ring, Wrong,
02 - 08, Wheel speed sensor 1R	Wheel slip detected,
02 - 09, Wheel speed sensor 1R	Fault in circuit,
02 - 0A, Wheel speed sensor 1R	Speed low,
02 - 0B, Wheel speed sensor 1R	Signal error/ signal variation,
02 - 0C, Wheel speed sensor 1R	Signal, Input too high,
03 - 01, Wheel speed sensor 2L	CAN communication, Air gap, Wrong,
03 - 02, Wheel speed sensor 2L	CAN communication, Tyre size, Wrong,
03 - 03, Wheel speed sensor 2L	Short circuit to plus,
03 - 04, Wheel speed sensor 2L	Short circuit to ground,
03 - 05, Wheel speed sensor 2L	Circuit open,
03 - 06, Wheel speed sensor 2L	Short circuit,
03 - 07, Wheel speed sensor 2L	CAN communication, Toothed ring, Wrong,
03 - 08, Wheel speed sensor 2L	Wheel slip detected,
03 - 09, Wheel speed sensor 2L	Fault in circuit,
03 - 0A, Wheel speed sensor 2L	Speed low,
03 - 0B, Wheel speed sensor 2L	Signal error/ signal variation,
03 - 0C, Wheel speed sensor 2L	Signal, Input too high,
04 - 01, Wheel speed sensor 2R	CAN communication, Air gap, Wrong,
04 - 02, Wheel speed sensor 2R	CAN communication, Tyre size, Wrong,
04 - 03, Wheel speed sensor 2R	Short circuit to plus,
04 - 04, Wheel speed sensor 2R	Short circuit to ground,
04 - 05, Wheel speed sensor 2R	Circuit open,
04 - 06, Wheel speed sensor 2R	Short circuit,
04 - 07, Wheel speed sensor 2R	CAN communication, Toothed ring, Wrong,
04 - 08, Wheel speed sensor 2R	Wheel slip detected,
04 - 09, Wheel speed sensor 2R	Fault in circuit,
04 - 0A, Wheel speed sensor 2R	Speed low,
04 - 0B, Wheel speed sensor 2R	Signal error/ signal variation,
04 - 0C, Wheel speed sensor 2R	Signal, Input too high,
07 - 03, Control valve 1L	Short circuit to plus,
07 - 05, Control valve 1L	Circuit disconnected/ short circuited,
07 - 06, Control valve 1L	Short circuit to ground,

Fault-codes

Model: Stralis 440 E 44 Cursor 13

Motor: F3B E0681C / ABS-ASR Basis 4 Char

Faultcode	Possible cause(s)
08 - 03, Control valve 1R	Short circuit to plus,
08 - 05, Control valve 1R	Circuit disconnected/ short circuited,
08 - 06, Control valve 1R	Short circuit to ground,
09 - 03, Control valve 2L	Short circuit to plus,
09 - 05, Control valve 2L	Circuit disconnected/ short circuited,
09 - 06, Control valve 2L	Short circuit to ground,
0A - 03, Control valve 2R	Short circuit to plus,
0A - 05, Control valve 2R	Circuit disconnected/ short circuited,
0A - 06, Control valve 2R	Short circuit to ground,
0D - 03, Retarder	Relay control circuit electrical, Short circuit to +,
0D - 05, Retarder	Relay control circuit electrical, Circuit open,
0D - 06, Retarder	Relay control circuit electrical, Short-circuited to ground,
0E - 04, ABS ECU	Circuit low,
0E - 05, ABS ECU	Connection to ground,
0E - 06, ABS ECU	Internal fault,
10 - 03, Pressure sensor	Short circuit to plus,
10 - 05, Pressure sensor	Circuit disconnected/ short circuited,
12 - 03, ASR valve	Short circuit to plus,
12 - 05, ASR valve	Circuit open,
12 - 06, ASR valve	Short circuit to ground,
17 - 05, ABS fault indicator	Circuit disconnected/ short circuited,
E7 - 05, CAN communication	Circuit disconnected/ short circuited,
E7 - 06, CAN communication	Malfunction,
E7 - 07, CAN communication	No signal, ECU, Retarder,
E7 - 08, CAN communication	No signal, ECU, Engine,
E7 - 09, CAN communication	No signal, ECU, Engine,
E7 - 0C, CAN communication	Internal fault, ECU,
FB - 03, ABS ECU	Voltage too high,
FD - 01, ABS ECU	Incorrect coding,
FD - 02, ABS ECU	Incorrect, Tyre size,

Diagnostic connector

Flash code:

