

**FUEL SYSTEM****FUEL (Specific for petrol engines)**

Unleaded fuel	minimum R.O.N. = 95
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**FUEL TANK**




Total capacity	51/61 litres (*)
Reserve	5 ÷ 8 litres

(\*) : For Versions/Markets.

**SAFETY VALVE SETTING CHECK (on fuel tank)  
(Specific for petrol engines)**

Opening vacuum for tank ventilation	≤ 0.020 bar
Opening pressure for releasing fuel vapours	0.065 ÷ 0.085

**CHECKING FUEL SUPPLY PRESSURE  
(Specific for petrol engines)**

			 16V	T. SPARK 16V
Opening vacuum for tank ventilation	2.3 ÷ 2.7 bar	2.8 ÷ 3.2 bar		2.8 ÷ 3.2 bar (*)
Opening pressure for relasing fuel vapours	4 bar (*)			

(\*) For versions with M1.5.5 injection - ignition system: 3.5 ± 0.2 bar.

**MULTI-PURPOSE VALVE SETTING CHECK (on fuel tank)**

	Petrol engines	Turbodiesel engines
Opening pressure for releasing fuel vapours	0.038 ÷ 0.053 bar	0.055 ÷ 0.075 bar
Opening vacuum for tank ventilation	- 0.020 bar	- 0.020 bar

**CHECKING THE FUEL WARMING DEVICE THERMAL SWITCH SETTING  
(Specific for 1929 Turbodiesel engine)**

Contact closing temperature	6°C
Contact opening temperature	15°C

**INJECTOR SETTING CHECK (Specific for 1929 Turbodiesel engine)**

Injector seal control pressure	130 ÷ 138 bar
Injector setting pressure	150 ÷ 158 bar

**CHECKING INJECTION PUMP TIMING**  
(Specific for 1929 Turbodiesel engine)



Injection pump distribution stroke	0.8 mm
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**CHECKING AUTOMATIC FAST IDLE DEVICE**  
**THERMOSTATIC SENSOR SETTING (Specific for 1929 Turbodiesel engine) (\*)**

Start of stroke	60° ± 2 °C
Stroke at 75 °C	7 mm
MAX stroke at 100 °C	11 mm

(\*): On the version with catalyst, though the injection pump has a fast idle device, use of it is not made (there is no connection with the thermostatic sensor).

**CHECKING AUTOMATIC FAST IDLE AND IDLE SPEED**  
(Specific for Turbodiesel engines)

	 TD	 JTD
Idle speed	880 + 920 rpm with control lever in contact with adjustment screw	770 + 830 rpm
Automatic fast idle speed (*)	1180 + 1220 rpm with gap between control lever & adjustment screw of 5 mm	-

(\*): - On the version with catalyst, though the injection pump has a fast idle device, use of it is not made (there is no connection with the thermostatic sensor).

- 1910 JTD versions are not equipped with an automatic fast idling device.

**CHECKING KSB DEVICE THERMAL SWITCH SETTING**  
(Specific for 1929 Turbodiesel engine)

Contact closing temperature	60° ± 2 °C
Contact opening temperature	50° ± 2 °C

**AIR SUPPLY****FLUXING TEST**  
Specific for Boxer 1596 - MP3.1 engine

Throttle on contact (closed)	80 MAX Scale D - SOLEX flow meter
Throttle adjusted	295 ± 10 Scale N - SOLEX flow meter

**Specific for Boxer 1712 16V engine**

Air leakage with by-pass screws completely tightened	120 + 130 Scale K - SOLEX flow meter
Air leakage with throttles adjusted and by-passes open	185 Scale N - SOLEX flow meter

## EXHAUST EMISSIONS CONTROL

Specific for Boxer engines (1)

CO while exhausting	% vol.	≤ 0.2
HC while exhausting	p.p.m.	≤ 50



(1): Measured at the end of the exhaust pipe with nominal slow running, warmed up engine, neutral gear and accessories not operating.

## Specific for T. Spark 16V engines

CO while exhausting	≤ 2.2 g x km
HC + NOx while exhausting	0.5 g x km

## CALIBRATION CHECKING OF THE OVERPRESSURE VALVE "WASTE-GATE"

(Specific for Turbodiesel engines)

Check pressure	Corresponding actuator's stroke
	 TD
0.96 ÷ 1.04 bar	2 mm
1.10 ÷ 1.19 bar	4 mm
	 JTD
0.86 ÷ 0.91 bar	1 mm

## SMOKE GRADE CHECKING DURING EXHAUSTION

(Specific for Turbodiesel engines)

Limit value of smoke grade while exhausting	< 70%
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## SENSORS

### ENTREFER SENSOR OF REVOLUTIONS AND TDC (Specific for Boxer engines)

0.7 ± 0.1 mm
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### ENTREFER PHASE SENSOR (Specific for Boxer 1712 16V engines)

1.5 mm
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### ENTREFER SENSOR OF REVOLUTIONS (Specific for 1929 Turbodiesel engines)

0.25 ÷ 1.3 mm
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### ENTREFER SENSOR OF REVOLUTIONS AND PHASE

(Specific for T. Spark 16V and 1910 JTD engines)

0.8 ÷ 1.5 mm
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## COOLING SYSTEM

Check pressure of hydraulic system	1.08 bar (1.1 kg/cm <sup>2</sup> )
Calibration pressure of the pressurized cap	0.98 ± 0.1 bar (1 ± 0.1 kg/cm <sup>2</sup> )


## WATER PUMP

	Boxer engines	Turbodiesel engines
Play between impeller and pump body	0.5 ÷ 0.8 mm	0.53 ÷ 1.37 mm

## THERMOSTAT

	Boxer engines	Turbodiesel engines		T. Spark 16V engines
		 TD	 JTD	
Temperature of start opening	86° ± 2°C	83° ± 2°C	80° ± 2°C	83° ± 2°C
Valve stroke	(a 100°C) > 7 mm	(a 90°C) ≥ 7.5 mm	-	(a 103° ± 2°C) 9.5 mm







## THERMAL CONTACT OF THE ELECTRIC COOLING FAN

		Petrol engines (**)	 TD
1 <sup>^</sup> speed	ON (contacts closing)	92° ± 2°C	88° ± 2°C
	OFF (contacts opening)	87° ± 2°C	83° ± 2°C
2 <sup>^</sup> speed (*)	ON (contacts closing)	97° ± 2°C	92° ± 2°C
	OFF (contacts opening)	92° ± 2°C	87° ± 2°C

(\*): For cars with Boxer engines, the second  
 (\*\*): Not for T. SPARK 16V with injection- ig

is present only on air conditioned versions.  
 system M2.10.4 e M1.5.5.

## TRANSMITTER GAUGE FOR TEMPERATURE OF COOLING/CONTACT FLUID PILOT LIGHT OF MAXIMUM TEMPERATURE

Contact temperature pilot light of max. temperature	Boxer engines	Turbodiesel engines			   T. SPARK 16V		
		 TD	 JTD	 T. SPARK 16V			
Intervention temperature	117° ± 3°C	115° ± 3°C	(*)	122° ± 2°C	120° ± 2°C		
Release temperature	100° ± 3°C	85°C	(*)	112° ± 3°C	108° ± 3°C		

N.B. To check the calibration data of the transmitter, please refer to "ELECTRIC-ELECTRONIC DIAGNOSTICS".  
 (\*): Data which are not available while printing