16. Mechanical Temperature Gauge (dia. 52 mm)

(only for VDO cockpit international)

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Installations instructions

999-165-021: VDO cockpit international

See file ‘Installation Instructions (MA)’.

16. Mechanical Temperature Gauge (dia. 52 mm)

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16.1 General Informations

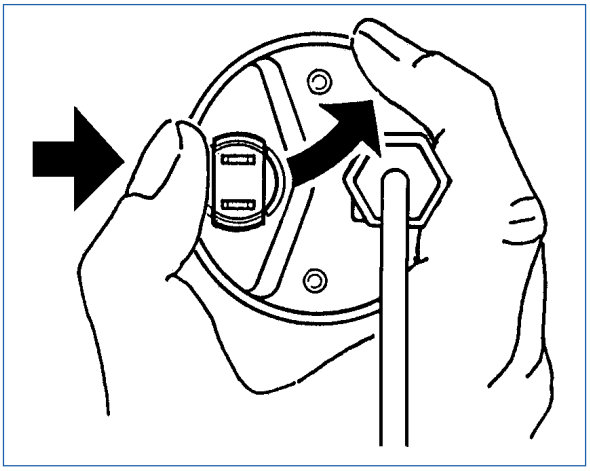
The mechanical temperarure gauge has been designed for land-bound vehicles or stationary systems only (exception: motorcycles).

The instrument has an analog display for oil or coolant or air temperature.

A dry probe is throug a capillary tube fixed connected with the indicating instrument.

Installation on the measuring point with dry probe or additional adaptor (not included).

The lamp socket (not included) is clipped in
To replace the lamp bulb, carefully, with the thump, push the lamp holder out to the side.



16. Mechanical Temperature Gauge (dia. 52 mm)

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16.1 Genral Informations

Designation of function
Movement: vapour pressure system

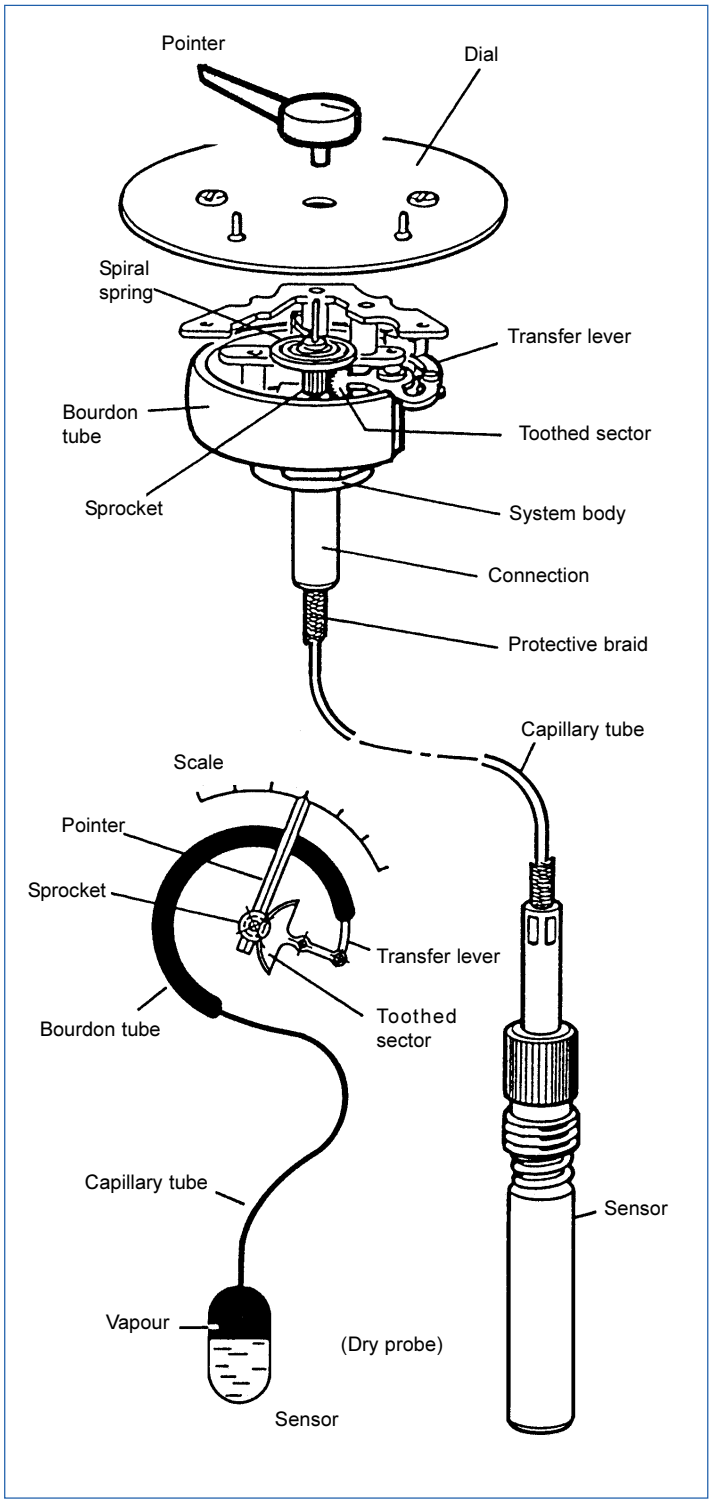
The temperature measurement applies the principle of phase change of a liquid evaporating in the corresponding temperature range.

The liquid is contained in the measuring system. The sensor is connected to the temperature indicating system by a capillary tube, thereby constituting a closed system with constant volume. This means that the vapour pressure in the system is a direct function of the temperature at the sensor. The vapour pressure is applied to the bourdon tube of the temperature measuring system. The tube deflection is indicated by a pointer on a dial graduated in temperature values.

The circular bourdon tube with nearly oval section is soldered to the system body at one side. A port connects the tube inside to the system body on the connection. The capillary tube connecting sensor and measuring instrument is soldered into this connection. The free end of the bourden tube carries a lever, which transfers the bourdon tube end deflection (proportional to the pressure) to a toothed sector.

This toothed sector is engaged in a sprocket, which converts the deflection of the bourdon tube to a rotation and a pointer deflection. Backlash of gears and bearings in the transmission system is compensated by a spiral spring.

The capillary tube between indicating instrument and sensor is covered by a protective braid to prevent bending and friction damages as well as breaks caused by vibration.



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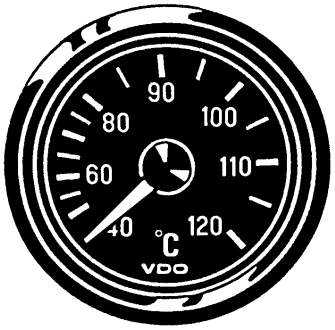
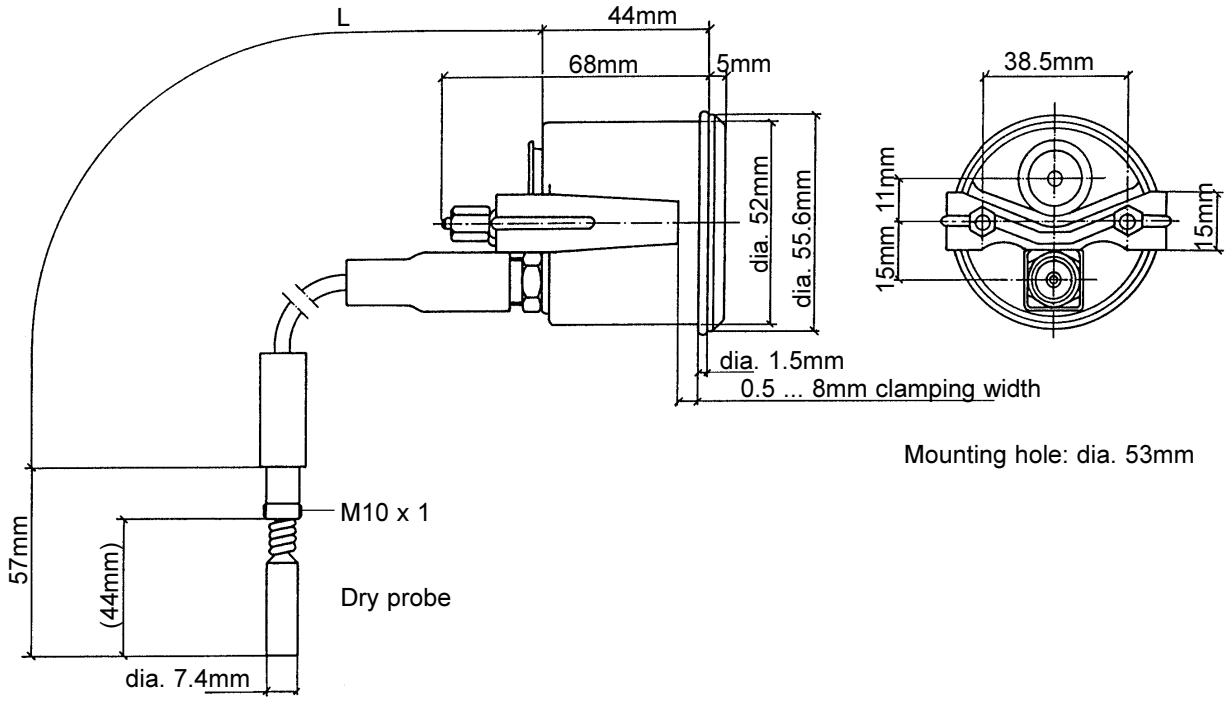
16.2 Technical Data

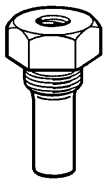
Movement:	Vapour pressure system
Operating temperature:	– 30°C ... + 85°C
Storage temperature:	– 40°C ... + 90°C
Illumination (option):	1 light bulb 12 V, 2 W or 24 V, 2 W
Protection:	IP64 DIN 40050 from the front
Vibration resistance:	max. 1g eff., 25 ... 500 Hz, duration 8 h, f: 1 octave/min.
Nominal position:	NL 0 to NL 90, DIN 16257
Indication accuracy:	± 4 % of the full range for the last 2/3 of the scale

VDO cockpit international

dia.52 mm Floodlight

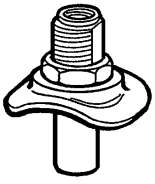






Adaptor for dry probe (not included)

or



Hose adaptor for dry probe (not included)

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16.3 Adaptors For Dry Probe

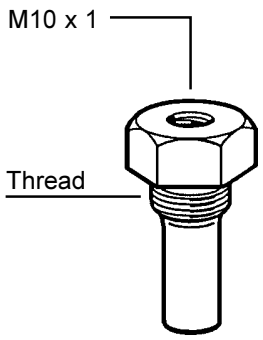
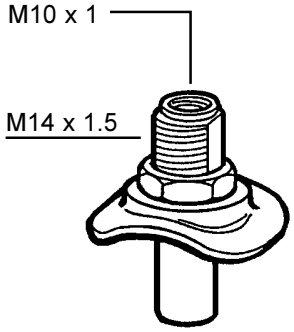
The mounting of the dry probe on the measuring point followed with a adaptor (not included), which is be screwed into a threaded hole.

If the connection thread is cylindrical, a sealing washer or a sealing ring made of copper must be fitted.

The maximum torque (Nm max.) specified for the thread into which the adaptor is to be screwed must be observed in any case!

Ask for the maximum torque (Nm max.) from the engine manufacturer, equipment manufacturer or car manufacturer.

Non-observance of the maximum tightening torque specified for the threaded hole in each instance can result in demage to the vehicle, engine or equipment system.

Thread	Nm max. (the load-bearing capacity of connection fitting)	Part No.	
R 1/2	30	800-005-029	
M14 x 1.5	20	800-005-030	
M16 x 1.5	30	800-005-031	
M18 x 1.5	30	800-005-032	
R 3/8	30	800-005-033	
5/8 - 18 NF-3	20	800-005-034	
1/8 - 27 NPTF	10	800-005-036	
Hose adaptor for dry probe		800-005-035	

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16.4 Instruments Survey

VDO cockpit international (Floodlight) dia. 52 mm **Part No. 180-035-. . .**

Dial		Special feature	Part No.
Range	Imprint		
40 ... 120 °C	°C	L 1600 + 106 mm	**002G**
40 ... 120 °C	°C	L 2600 + 160 mm	**004G**
40 ... 120 °C	°C	L 4000 + 160 mm	**005G**
40 ... 120 °C	°C	L 6000 + 188 mm	**006G**
40 ... 150 °C	°C	L 1600 + 106 mm	**007G**
40 ... 150 °C	°C	L 2600 + 160 mm	**008G**
40 ... 150 °C	°C	L 4000 + 160 mm	**009G**
40 ... 150 °C	°C	L 6000 + 188 mm	**010G**