

## THERMOSWITCH

### TECHNICAL INFORMATION

#### Operation

They are commutators that activate several products in the cooling system, according to the engine's temperature.

#### Application

- **Electric-blower (fan):** activates the Electric-blower (fan), forcing the passage of air through the radiator and causing the reduction of cooling fluid's temperature.
- **Warning lamp - Alarm:** activates a warning lamp or alarm, informing a possible overheating in the cooling system.

#### Operation Principle

The main component of Thermostiches used on the automotive systems is the bimetallic disc. Formed by two metals with different thermal expansion coefficients, the bimetallic disc is calibrated to snap at a specific temperature. This deformation causes the pin displacement that closes the silver contacts. **(ON-OFF). (Fig. 1).**

**Important:** Some vehicle models use a Thermostich in conjunction with a Temperature Sensor, called DUPLEX. This switch not only informs the temperature excess to the instrument panel bay (warning lamp or alarm), but also activates the gauge that informs the cooling fluid temperature increase. (For more information please refer to the Temperature Sensor chapter).

#### Location

When used to activate the fan, the **Thermostich** will be located in the vehicle's radiator. When used to activate a warning lamp or alarm, it might be located near the thermostatic valve or several other places in the engine.

#### Use

##### Used to:

- Activate the fan when the fluid's temperature in the radiator exceeds the specified limit. This usually occurs with the vehicle operating in heavy traffic.
- Activate a warning, which can be either a warning lamp in the vehicle's instrument panel or an alarm.

#### When it does not work.

- The fluid's temperature in the radiator increases so much that it boils and causes the engine to overheat, burning and deforming the cylinder's head gasket, damaging to hoses, leaking of fluid and etc.

#### Diagnostic

1. The switch does not activate - Inoperative.
2. The switch activates out of the specified temperature.  
In both cases the diagnostic can be performed in the factory, with the use of specific test equipment.

#### Activation Temperatures

There is an indication of the activation temperature in all products' codes.

- **Switch of 01 (one) temperature with 01 terminal:**

MTE Number: **3046.115: ON** at 115°C.

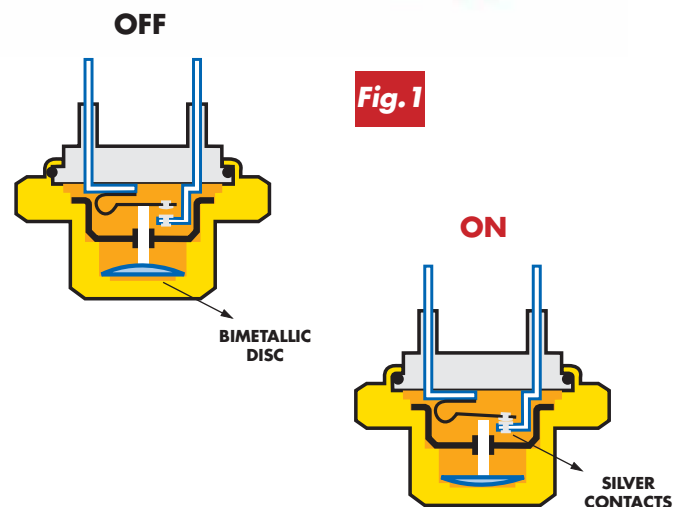
- **Switch of 01 (one) temperature with 02 terminals:**

MTE Number: **705.92/87: ON** at 92°C and **OFF** at 87°C.

- **Switch of 02 (two) temperatures:**

MTE Number: **717.95-102: ON** at 95°C the fan first speed and **ON** at 102°C the fan second speed.

Used on vehicles equipped with air conditioner.



#### Maintenance

##### Important actions when to changing the switch:

- Avoid excessive tightening.
- Bleed the air (remove air bubbles) from the cooling system.

#### Cares

- Always check the correct Thermostich for each vehicle model.
- Never perform a maintenance repair while the cooling system is hot. There is a great risk of burning traumas.
- At any symptom of excessive temperature, park the vehicle in a safe place and turn off the engine immediately.
- Check the cooling fluid level weekly, with the engine cold.
- Always use the specified cooling fluid and the correct rate.
- Do not complete the cooling system with pure water, because this will dilute the ethylene glycol concentration.
- Any reduction in the cooling fluid level indicates a leaking in the cooling system.
- Perform the preventive maintenance of the thermostiches every 30.000 Km.

#### Warranty

- The MTE-THOMSON products are warranted by 01 year against manufacture or material defects, starting from the purchase date, by the final user.
- The warranty is not valid for parts damaged due to installation errors, wrong application or accident.
- The replacement will occur in the purchase place, by means of the presentation of the purchase bill, according to the description on the Warranty Procedures.
- This warranty is valid only for MTE-THOMSON products.