General Information

Service Manual - JCB 444 Mechanical Engine

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Section 4 - Systems Description

Section 5 - Fault Finding

Section 6 - Test Procedures

Section 7 - Fuel System

Section 8 - Cooling System

Section 9 - Lubrication System

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Section 11 - Induction and Exhaust System

Section 12 - Base Engine



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Thermostat

The thermostat is of the wax element type and is configured for by-pass blanking. The thermostat functions as follows:

State A - `Closed' - Engine Cooled

Because the engine is cold the wax pellet **42-5** has contracted in its housing. This allows spring **42-2** to act against the thermostat body and move valve plate **42-3** up against its seat, closing the outlet port **42 -8** to the radiator. Since the bottom valve plate **42-4** is connected to the top valve plate it also moves up, opening the by-pass port **42-10**. Coolant flows from the thermostat housing inlet port **42-9** into the bypass gallery.

State B - `Open' - Engine Hot

When hot, the wax pellet melts. As it does so it expands and pushes against diaphragm **42-6**. The diaphragm reacts against the actuating rod **42-7** and both the top and bottom valve plates (**42-3** and **42-4**) move down in the thermostat body, compressing spring **42-2**. Now the outlet port **42-10** to the radiator is open and by-pass port **42 -10** is closed.

A 1.0 mm (0.039 in.) diameter orifice **42-11** allows trapped air to be expelled from the system.

Table 29. Key

⇒ Fig 42. (🗋 4-59)	
1	Thermostat
2	Spring
3	Thermostat top valve plate
4	Thermostat bottom valve plate
5	Wax pellet
6	Diaphragm
7	Actuating rod
8	Outlet port - to radiator top hose
9	Inlet port - thermostat housing
10	Outlet port - by-pass gallery
11	1.0 mm (0.039 in.) diameter orifice
A	Thermostat state - `Closed' - engine cold
B	Thermostat state - `Open' - engine hot

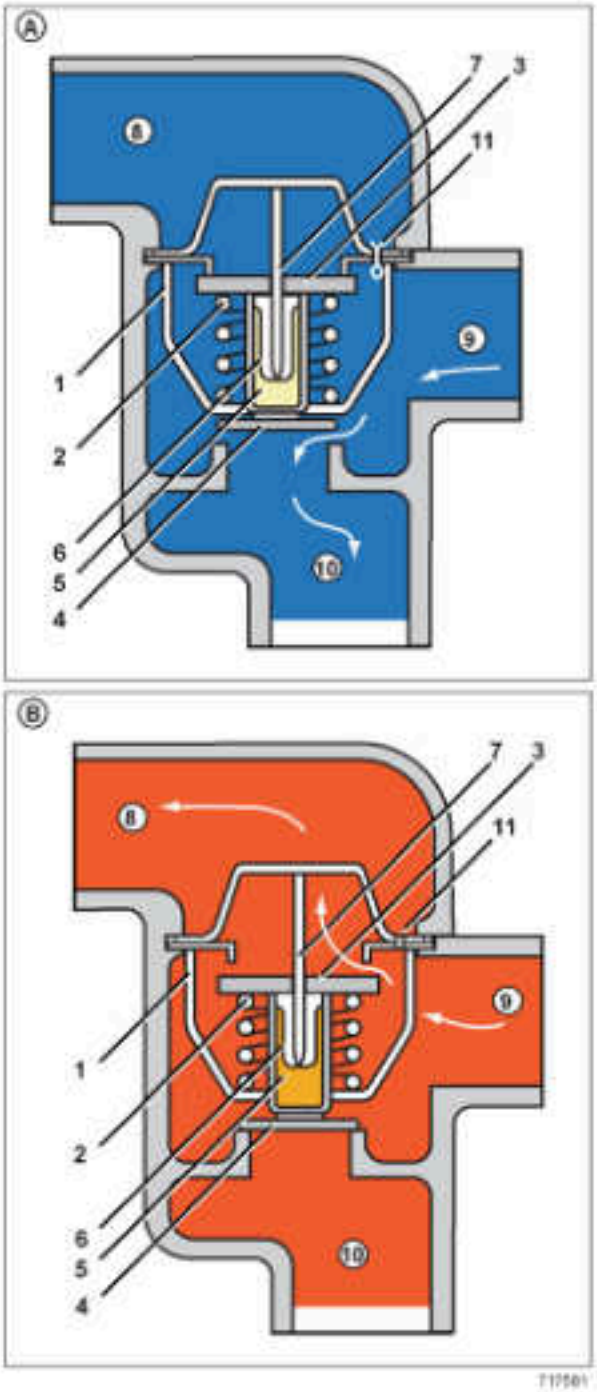


Fig 42.

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Engine Torque Figures

This section details all the torque figures to be used on the JCB 444 Engine. Some of the torques MUST be used in conjunction with the recommended procedures contained in this manual, for instance if the torques need to be applied in a specific sequence. For convenience, the list below is arranged in alphabetical order to help you quickly locate the item.

Item

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Item

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