SERVICE MANUAL

LOADALL (ROUGH TERRAIN VARIABLE REACH TRUCK)
506-36, 507-42, 509-42, 510-42, 510-56, 512-56, 514-56, 516-42

EN - 9813/5050 - ISSUE 2 - 08/2017

This manual contains original instructions, verified by the manufacturer (or their authorized representative).

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Foreword

The Operator's Manual

⚠

You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator's Manual. You must understand and follow the instructions in the Operator's Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

Do not operate the machine without an Operator's Manual, or if there is anything on the machine you do not understand.

Treat the Operator's Manual as part of the machine. Keep it clean and in good condition. Replace the Operator's Manual immediately if it is lost, damaged or becomes unreadable.

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Technical Data

(For: 506-36 [T4F], 507-42 [T4F], 509-42 [T4F], 510-42 [T4F], 510-56 [T4F], 514-56 [T4F], 516-42 [T4F])

Fixed Speed Fan Motor (55 KW Engines)

Table 198.

Type:	Gear motor
Direction of rotation:	Clockwise
Motor Displacement:	19 cc/rev
Fan speed (at maximum engine RPM (Revolutions Per Minute)):	TBA
Maximum pressure setting:	55bar (797.1psi)
Colour code (see sticker):	Red

Fixed Speed fan Motor (81 KW Engines)

Table 199.

Type:	Gear motor
Direction of rotation:	Clockwise
Motor Displacement:	15 cc/rev
Fan speed (at maximum engine RPM):	TBA
Maximum pressure setting:	80bar (1,159.4psi)
Colour code (see sticker):	Black

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Introduction

A schematic wiring diagram is a simplified pictorial representation of the machines electrical circuit. It shows the components of the circuit as simplified electrical symbols, and the power and signal connections between the devices. The wiring diagram is used to troubleshoot problems and to make sure that all the connections have been made and that everything is present.

Use the schematics together with the correct electrical harness drawings to reference the connector pin details.

This section may contain more than one set of electrical schematics for different machine variants.

Understanding Electrical Schematics

Use the applicable schematic set to trace wires and connections between electrical devices. In most cases it will be necessary to trace wires across more than one schematic sheet.

The example identifies the information contained on the diagrams. It also shows how to follow wires from one diagram sheet to another.

The harness inter-connector codes and device harness connector codes are the same as used on the applicable harness drawings.

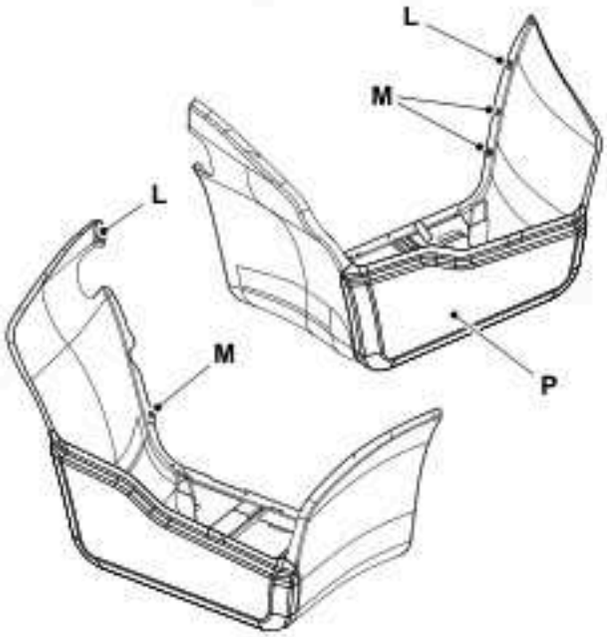
Splices are not normally accessible. Splices are inside the harness sheath and not visible on the outside. Wires are welded together at a splice, there are no individual connector components.

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Fault Code	Fault Description	Fault Severity
B152E-11	Reverse lamp STG	Operator
B152E-11	Reverse lamp STG	Operator
B152F-12	Reverse lamp STB	Operator
B152F-12	Reverse lamp STB	Operator
B1530-18	Foot brake pressure OORL	Operator
B1530-18	Foot brake pressure OORL	Operator
B1531-17	Foot brake pressure OORH	Operator
B1531-17	Foot brake pressure OORH	Operator
B1532-18	5 supply STG	Operator
B1532-18	5 supply STG	Trivial
B1533-17	5 supply STB	Operator
B1533-17	5 supply STB	Trivial
B153F-13	Fuel level sensor open circuit	Trivial
B1541-68	Engine oil low when engine started	Trivial
B1542-68	Air filter blocked	Operator
B1543-4B	Coolant temperature high (critical level)	Critical
B1544-14	Coolant temperature sensor short	Trivial
B1545-13	Coolant temperature sensor open	Trivial
B1546-68	Coolant temperature high (operator level)	Trivial
B1547-68	Coolant level low, engine running	Trivial
B1548-21	Coolant level low, engine not started	Trivial
B1549-21	Ambient temperature sensor-OORL	Service
B154B-12	Left indicator- short to battery	Trivial
B154C-11	Left indicator- short to ground	Trivial
B154D-13	Left indicator- bulb out / open	Trivial
B154E-12	Right indicator- short to battery	Trivial
B154F-11	Right indicator- short to ground	Trivial
B1550-13	Right indicator- bulb out / open	Trivial
B1551-13	Right trailer indicator- bulb out / open	Trivial
B1552-13	Left trailer indicator- bulb out / open	Trivial
B1555-68	Error logs full	Trivial
B1556-68	Errors logs erased	Trivial
B1558-12	Reversing fan output- short to battery	Trivial
B1559-11	Reversing fan output- short to ground	Trivial
B155A-13	Reversing fan output- open	Trivial
B155B-12	Trailer indicator LED output- short to battery	Trivial
B155C-11	Trailer indicator LED output- short to ground	Trivial
B155D-13	Trailer indicator LED output- open	Trivial
B155E-12	Proportional fan output- short to battery	Trivial

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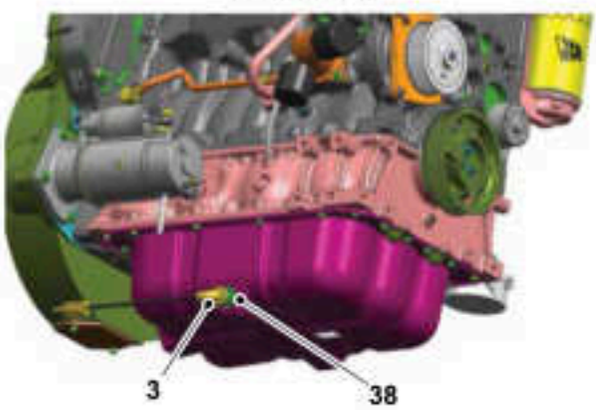
Figure 375.



L Fixings 1
M Fixings 2
P Engine side pod

4. Drain the engine oil. Refer to (PIL 15-00).
5. Install the dowty seal onto the engine sump heater and install it to the sump.

Figure 376.



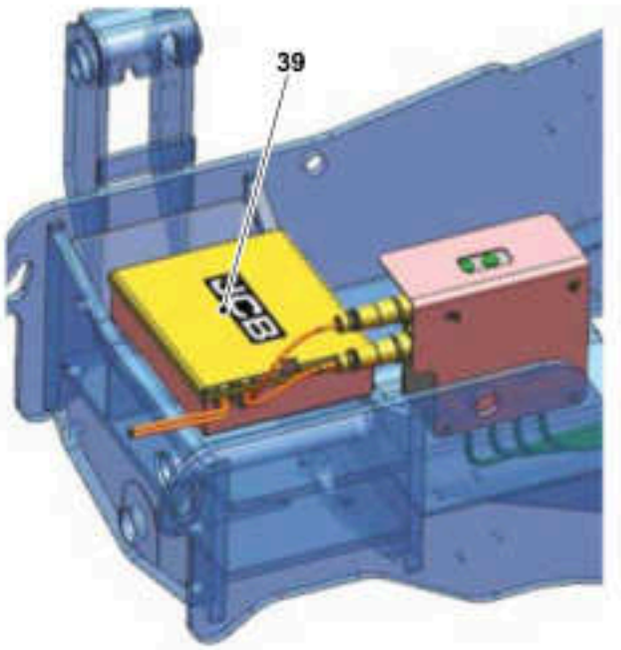
3 Engine sump heater
38 Dowty seal

6. Install the engine side pod.
7. Fill the engine via the filler with the correct grade of oil for the ambient temperature conditions. Refer to (PIL 750-00).

Stowage Cabinet Installation

1. Using the stowage cabinet as a template, mark off the position of the fixing holes into the front chassis.

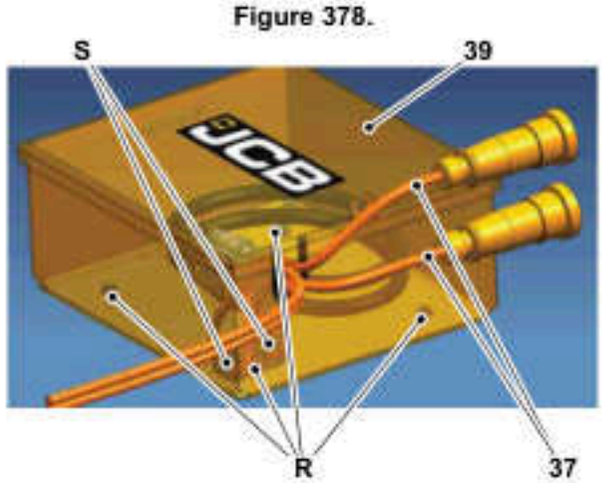
Figure 377.



39 Stowage cabinet

2. Drill and tap 4 off holes to M8.
3. Position the stowage cabinet on the chassis and install it on the chassis using three M8 bolts and washers provided with the stowage cabinet.

Figure 378.

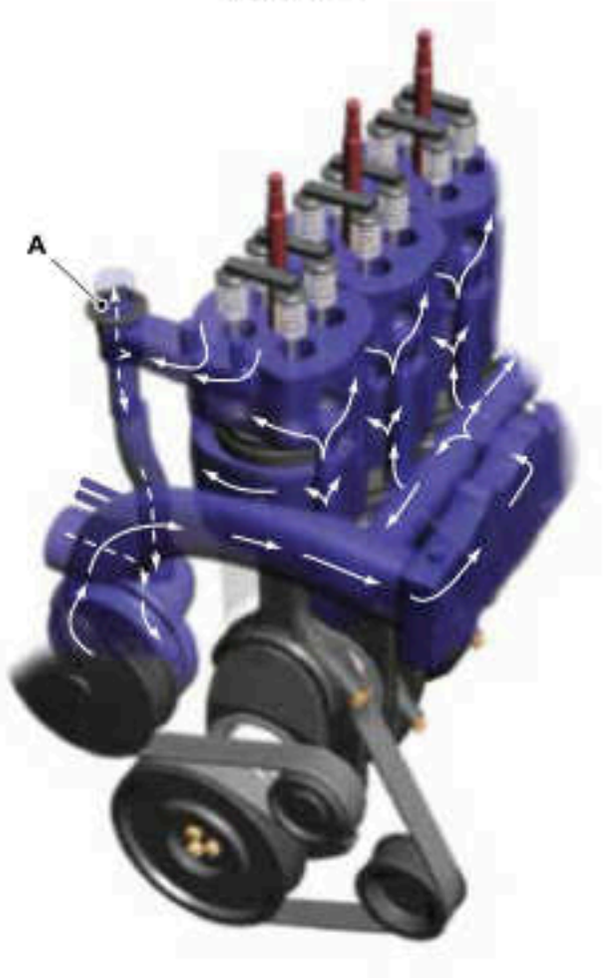


37 Extension leads
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R Washers
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Component Identification

Figure 523.



A Thermostat

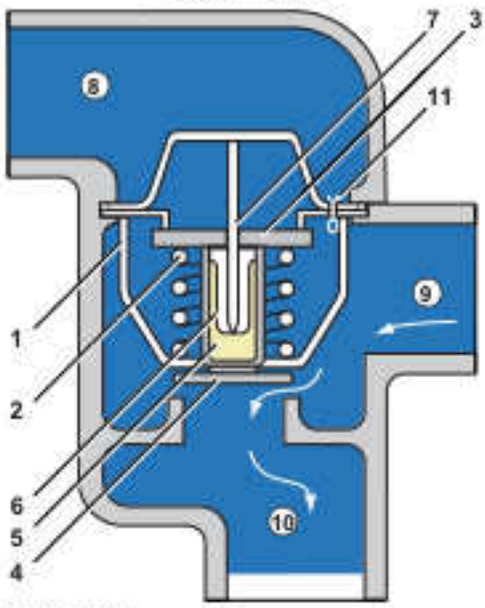
Operation

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

State A - Closed (Engine Cold)

When the engine is cold the wax pellet has contracted into its housing. This allows the spring to act against the thermostat body and move the valve plate up against its seat, closing the outlet port to the radiator. Since the bottom valve plate is connected to the top valve plate it also moves up, opening the bypass port. The coolant flows from the thermostat housing inlet port into the bypass gallery.

Figure 524.



1 Thermostat
2 Spring
3 Top valve plate
4 Bottom valve plate
5 Wax pellet
6 Diaphragm
7 Actuating rod
8 Outlet port to the radiator top hose
9 Inlet port thermostat housing
10 Outlet port bypass gallery
11 1mm diameter orifice

State B - Open (Engine Hot)

When the engine is hot, the wax pellet melts, as it does so it expands and pushes against the diaphragm. The diaphragm reacts against the actuating rod and both the top and bottom valve plates move down into the thermostat body, compressing spring. The outlet port to the radiator is now open and the bypass port is closed. A 1mm

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