SERVICE MANUAL

LOADER
427, 435S, 437

EN - 9813/6100 - ISSUE 4 - 03/2017

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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Cause	Remedy
Restriction in receiver-drier or liquid line resulting in a starved evaporator.	If low and high side readings are excessively low and/or the liquid line at the expansion valve is cool to the touch and showing signs of sweating or frosting, discharge and recover the refrigerant. Replace the receiver-drier, liquid lines or any other defective parts. Add 2 ounces of oil, to replace oil removed with the old receiver drier, evacuate and recharge.
Defective expansion valve restricting flow.	Symptoms are the same as receiver-drier restriction. Discharge and recover refrigerant. Remove and replace expansion valve. Check oil level in the compressor, evacuate and recharge.
Defective, worn or leaking compressor.	Low side gauge reading too high and high side gauge reading too low. Discharge and recover refrigerant. Remove and replace compressor and receiver-drier. Add 2 ounces of oil to replace oil removed with the old receiver-drier evacuate and recharge.

Table 28. Inadequate cooling during hot part of the day.

Cause	Remedy
Excessive moisture in system freezing in expansion valve and restricting refrigerant flow.	Discharge and recover refrigerant. Replace receiver drier, check oil level in compressor, evacuate and recharge.

Table 29. Gradual loss over time of cooling and air flow during HVAC operation.

Cause	Remedy
Defective evaporator frost prevention thermostat, causing continuous operation of the compressor thereby freezing condensate within the evaporator core.	Examine capillary tube of thermostat to ensure that it is inserted into the evaporator fins. If the core still freezes and the compressor clutch doesn't cycle off, replace the thermostat.

Table 30. Compressor clutch cycles too rapidly or discharge air warms excessively during compressor clutch "OFF" cycle.

Cause	Remedy
Defective evaporator frost prevention thermostat	Replace thermostat

Table 31. Compressor clutch continually cuts out.

Cause	Remedy
Condenser matrix blockage	Remove debris from around matrix/renew condenser.
Overcharging of refrigerant system	Evacuate and recharge system.
Blocked expansion valve/condenser	Clear blocked component.

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Introduction

Complex hydraulic components and circuits can be described to the engineer by using graphical symbols. The tables illustrate and give a brief description for some of the more common symbols used.

There are many symbols in use and it would be impossible to include them all here. However it should be noted that most are only variations or refinements on the basic principles explained here. If more detailed information is required you are recommended to obtain a copy of BS2917 or IS01219.

Once familiar with the symbols, the engineer can use hydraulic circuit diagrams as an aid to fault finding. It will be possible to see the complete hydraulic circuit and decipher the relationship between hydraulic components.

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Technical Data

Table 283. Locking Fluids Approved Product Information

Subsection	Commercial name	Product Number	Colour	Shelf life	Strength	Comments
High strength	Loctite 270 R.A.S. threadlock for studs (red)	4101/0100	Green fluorescent	365d	80–120bar (1,159.4–1,739.1psi) breakaway strength	For the retention of threads up to M20 diameter where disassembly is unlikely and for locking bearings etc. onto shafts and into housing. Has a maximum gap fill of 0.05mm.
High strength	Loctite 638	4101/1400	Green, UV fluorescent	365d	More than 250bar (3,623.2psi) compressive shear strength	Maximum gap fill of 0.25mm. Maximum strength at room temperature.
High strength	Permabond A115	4101/0500	Red, fluorescent	365d	100–150bar (1,449.3–2,173.9psi) prevailing strength	Fast curing (10–15min) thread locking up to M20, especially for use on oily surfaces, plated and clean parts.
High strength	Loctite 648 Permabond A118	4101/0600	Green, fluorescent	365d	More than 250bar (3,623.2psi) compressive shear strength	Designed for holding gears and sprockets onto gearbox shafts and rotors on electric motor shafts.
High strength	Loctite 2701	4101/1700	Green	365d	260–500bar (3,768.1–7,246.3psi) breakaway torque	Designed for permanent locking and sealing of threaded fasteners. Particularly suited for use on inactive substrates and/or where maximum resistance to hot oil is required.
Medium to high	Loctite 243	4101/1100	Blue	365d	140–340bar (2,029.0–4,927.5psi) breakaway torque	Suitable for all nuts, bolts, screws up to M36.
Medium strength	Permabond A119	4101/0900	Blue	365d	80–120bar (1,159.4–1,739.1psi) static shear strength	Maximum gap fill of 0.25mm. Handling strength in 10–15min.
Medium strength	Loctite 640	4101/1200	Green, fluorescent	365d	150–330bar (2,173.9–4,782.6psi) static shear strength	Product has a slow cure rate, used on parts unlikely to be disassembled.
Medium strength	Loctite 242 Permabond A1042 Permabond A113	4101/0200	Blue, fluorescent	365d	80–120bar (1,159.4–1,739.1psi) static shear strength	Suitable for all nuts, bolts and screws up to M36 and hydraulic fittings up to 25mm in diameter. Permabond A113 and A1042 are the preferred choices. The difference between A113 and A1042 is timing for handling and working strength. A113 handling time 10–25min, working strength 1h. A1042 handling time 5–10min, working strength 30min.

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9.3. Disconnect the DOC unit from the exhaust pipework.

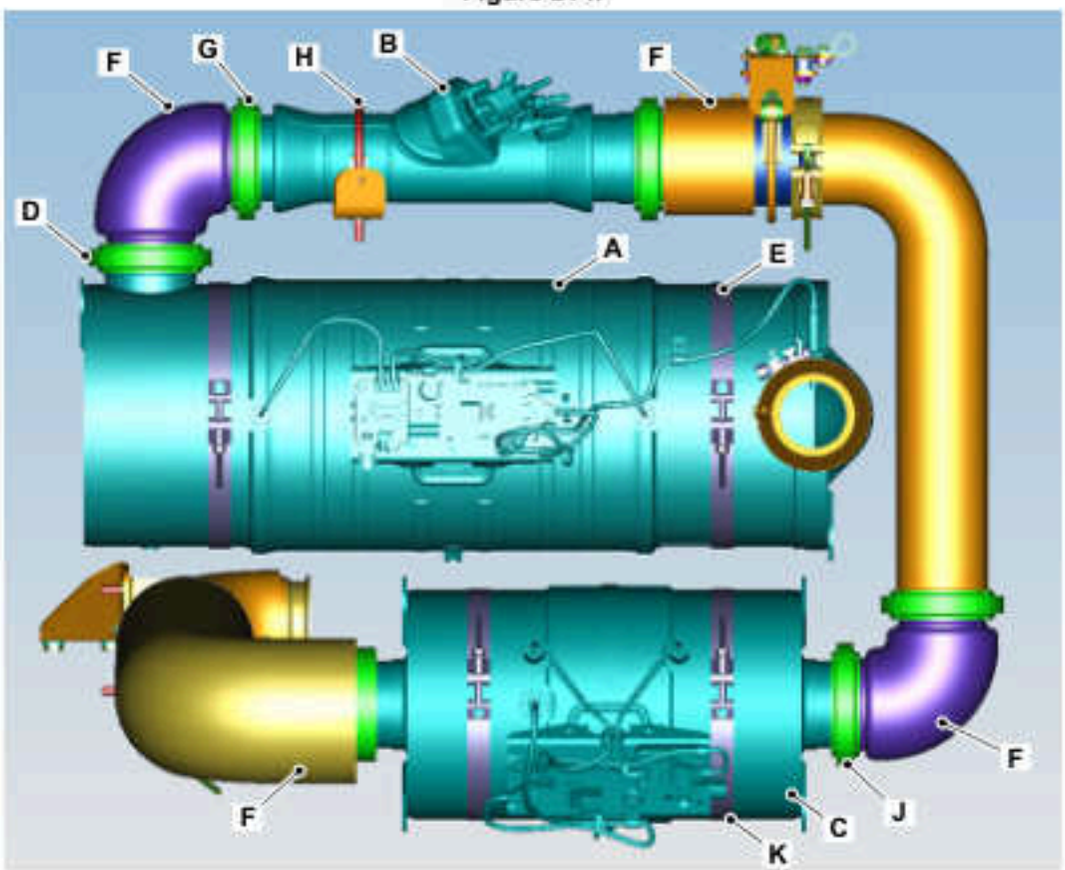
9.4. Discard the gaskets.

9.5. Loosen the nut from the bolt clamp 2.

9.6. Remove the bolt clamp 2.

9.7. Remove the DOC unit from the engine.

Figure 214.



A SCR unit
B DRT unit
C DOC unit
D Clamp 1
E Bolt clamp 1
F Exhaust pipework
G Clamp 2
H U-clamp
J Clamp 3
K Bolt clamp 2

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Remove and Install

Remove

⚠ **CAUTION** When working on the HVAC System gloves, eye protection and protective clothing must be worn. Refrigerant may be released which can be harmful to your skin or eyes.

1. Make the machine safe with the lift arm lowered. Refer to PIL (01-03).
2. Install the articulation strut. Refer to PIL (06-27).
3. Refer to the HVAC (Heating Ventilation Air Conditioning) unit health and safety information. Refer to PIL (12-00).
4. Open the HVAC access panel on the right hand side of the machine.

Figure 134.



B Access panel

5. Remove the HVAC unit from the machine. Refer to PIL (12-03).
6. Remove the screws that attach the rear cover to the HVAC housing assembly.
7. Remove the HVAC rear cover.
8. Remove the fixings that attach the blower motor assembly to the blower bulkhead assembly.
9. Remove the blower motor assembly slowly from the HVAC unit until the wiring connections of the motor are accessible.
10. Mark the wiring connections and disconnect.
11. Remove the thermostat from the heater blower support tray.

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