An Oshkosh Corporation Company

Service and Maintenance Manual

Models

X14JH

X14J - X390AJ

X17J

X19J - X550AJ

X23J - X700AJ

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MidWestTech | JLG X14J, X17J, X19J, X23J, X390AJ, X550AJ, X700AJ Compact Crawler Boom Service Manual | Publication 3121448

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Specifications

Table 3-10.

402D-05 Engine	
Maximum Operating Speed (rpm)	3600 rpm
Cylinders and Arrangement	In-Line two cylinder
Bore	67 mm (2.64 inch)
Stroke	72 mm (2.83 inch)
Displacement	0.507 L (30.939 in3)
Aspiration	NA[1]
Compression Ratio	23.5:1
Firing Order	1-2
Rotation that is viewed from the flywheel	Counterclockwise
Valve Lash Setting (Inlet)	0.20 mm (0.008 inch)
Valve Lash Setting (Exhaust)	0.20 mm (0.008 inch)
Injection	Indirect

[1] Naturally Aspirated

ENGINE IDENTIFICATION

Perkins engines are identified by a serial number. This number is shown on a serial number plate that is mounted above the fuel injection pump on the right hand side of the engine block.

An example of an engine number is

GP*****U000001M.

GP _____ Type of engine

U _____ Built in the United Kingdom

***** _____ The list number of the engine

000001 _____ Engine Serial Number

M _____ Year of Manufacture

Perkins dealers or Perkins distributors need all of these numbers in order to determine the components that were included with the engine. This permits accurate identification of replacement part numbers.

SERIAL NUMBER PLATE



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Table 6-7. BATTERY CHARGER FAULT CODES

CODE	DESCRIPTION	STATUS	ACTION
8	Logic internal fault	The battery charger stops working	Call the assistance or change the product.
13	Communication problem with external memory	The battery charger stops working.	Call the assistance or change the product.
19	Logic internal fault	The battery charger stops working.	Call the assistance or change the product.
242	Error during the reading of the micro controller internal memory	The battery charger stops working.	Call the assistance or change the product.
252	Short circuit in the battery charger output.	The battery charger stops working	Turn the battery charger off and eliminate the output short circuit. If the problem persists call the service or change the product.
246	Phase 1 finished for timeout and not for natural reaching of the control voltage.	The battery charger stops working	Control that the battery capacity is compatible or control that the battery conforms to the battery charger purchased. If the battery is correct and the problem persists cal the service
241	Problem in CANBUS communication with other systems in the network	The managing may change according to the different product firmware.	Control the correct functioning of the CANBUS system
248	Too high temperature in the battery charger	if the internal temperature exceeds 80°C the battery charger reduces the power to the 80% while it stops working if the internal temperature exceeds 90°C. It restarts at full power if the internal temperature drops below 70°C	
249	Battery temperature too high.	The battery charger stops working if the temperature exceeds 55°C or drops below -20°C. When the battery temperature drops under 45°C or rises over -10°C the battery charger restarts working	
251	A network hole has been found	The battery charger stops the supply. It restarts once the alarm conditions disappear.	If the problem persists control supply of the battery charger network.
18	Stalling or very long network hole.	The battery charger stops the supply. It restarts once the alarm conditions disappear or after restarting.	If it is a network hole control the network supply of the battery charger.
245	Irregular current absorption	The battery charger stops the supply. It restarts once the alarm conditions disappear.	If the problem persists call the service or change the product.

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7.22 A - HOW TO READ THE WIRING DIAGRAMS

The wiring diagram is shown divided by individual application, in order to an easier and faster reading.

Some considerations are valid for all machines, unless otherwise specified. Specifically, the following should be remembered:

- Each component is identified by a code; the meaning of this code is shown in the key.
- Each component describes only the identification of the connector used and the pins corresponding to the application in question. The wiring references are shown on the outside of the connector.
- Each cable describes the color or the identifier number. When no color is indicated, the cable is black. Where the number is used, are shown two digits: the first identifies the wire and is also marked on the wire itself, the second identifies the number of wires in the cable (e.g.: 14/16=wire number 14 in an 18-wire cable).
- The Y/G or Y-G(= yellow and green) wires are always earth wires. The general earth connectors are located in the control panel, in the control board box and in the main power supply box.
- The simplest electronic schedules are always shown with a dashed perimeter. To make the system easier to understand, the wiring diagram is also shown inside these electronic schedule.
- The underlined letters show in what pages it is possible to find the same pin or connector
- The location of the connectors and the pins in the electronic schedules is shown in section "S".
- The location of the electrical components is shown in section "T".

COLOUR CODES

B = BLACK

BL = BLUE

BR = BROWN

G = GREEN

GR = GREY

OR = ORANGE

R = RED

W = WHITE

Y = YELLOW

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19. Insert the nos. 2 springs (44) on the counterbalance valve spool (47).



20. Fit the O-ring seals (45) into their seats in the plug (46).



21. Tighten the counterbalance valve plugs (46) by a torque wrench at 240 ± 5 Nm torque.



Anticavitation valve reassembly

22. Assemble the spool (65) into the anticavitation valve housing (66).



23. Insert the nos. 2 spring seats (64) on the spool (65).



24. Insert the nos. 2 springs (63) on the spool (65).



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Reassembling method

COUNTERBALANCE VALVE REASSEMBLY

1. Slide the spool (53) into the valve housing (56).

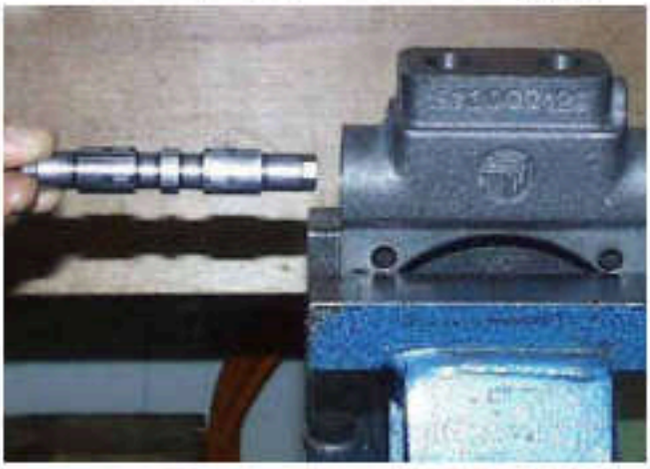


Figure 3-84.

2. Insert the spring seats (47) into the valve housing (56).



Figure 3-85.

3. Insert the springs (46) into the valve housing (56).



Figure 3-86.

4. Assemble the O-ring seals (45) on the valve plugs (48).



Figure 3-87.

5. Insert the valve plugs (48) and tighten them by a torque wrench at 100 Nm torque.



Figure 3-88.

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