Service Manual

JZ140

Service Manual - JZ140

Section 1 - General Information

Section 2 - Care & Safety

Section 3 - Maintenance

Section B - Body & Framework

Section C - Electrics

Section E - Hydraulics

Section F - Transmission

Section J - Track & Running Gear

Section K - Engine



Publication No.

9803/9910-3



Copyright © 2004 JCB SERVICE. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any other means, electronic, mechanical, photocopying or otherwise, without prior permission from JCB SERVICE.

Issued by JCB Technical Publications, JCB Aftermarket Training, Woodseat, Rocester, Staffordshire, ST14 5BW, England. Tel +44 1889 591000 Fax +44 1889 591450

World Class Customer Support

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-9910-3

Order the manual at mid-west-tech.com >

Contents Page No.

Introduction
About this Manual 1-1
Identifying Your Machine 1-3

Torque Settings
Zinc Plated Fasteners and Dacromet Fasteners 1-7
Hydraulic Connections 1-11

Service Tools
Numerical List 1-15
Tool Detail Reference 1-18

Service Consumables
Sealing and Retaining Compounds 1-39

Terms and Definitions
Colour Coding 1-41

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >

Contents **Page No.**

Routine Maintenance

Service Requirements ..... 3 - 1
Health and Safety ..... 3 - 3
Service Schedules ..... 3 - 7
Fluids, Lubricants and Capacities ..... 3 - 16
Tools ..... 3 - 23
Prepare the Machine for Maintenance ..... 3 - 24
Cleaning the Machine ..... 3 - 25
Check the Machine for Damage ..... 3 - 27
Daily Checking ..... 3 - 28
Greasing ..... 3 - 30
Electrical System ..... 3 - 34
Bolt and Nut Torque Specifications ..... 3 - 42
Engine ..... 3 - 46
Fuel System ..... 3 - 64
Hydraulic System ..... 3 - 70
Slew Gearbox ..... 3 - 82
Tracks and Running Gear ..... 3 - 83
Bucket ..... 3 - 86
Windscreen Washer ..... 3 - 87
Fire Extinguisher (If fitted) ..... 3 - 88
Troubleshooting ..... 3 - 89

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >

Contents Page No.

Technical Data
Static Dimensions B-1
Dig Depth Chart B-5
Shipping Weight B-8
Air Conditioning (option) B-9

Basic Operation
Automatic Temperature Control (ATC) System B-11

Fault Finding
Air Conditioning B-19

Service Procedures
HVAC/Air Conditioning Unit B-27
Air Conditioning Compressor B-29
Cab Structure B-30

Cab Panels
Cab Panel Removal B-39

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >

Table 28. Error Code 8 - Evaporator Temperature Sensor Error

Effect	Causes	Remedy
The unit cannot cool the cab The compressor disengages.	There is no temperature signal from the sensor to ATC control module.	Check the continuity between pin1 on the evaporator temperature sensor to pin 23 on ATC control module.
	There is a bad earth on the evaporator temperature sensor.	Check for good earth as shown on schematic.
	There is a defective sensor.	Make sure the sensor connections are correct. Replace the evaporator temperature sensor.

Table 29. Error Code 9 - Outlet Temperature Sensor Error

Effect	Causes	Remedy
The fan speed stays at maximum in AUTO mode. The manual mode blower operates as normal.	There is no temperature signal from the sensor to ATC control module.	Check the continuity between pin1 on the outlet temperature sensor to pin 22 on ATC control module.
	There is a bad earth on The outlet temperature sensor.	Check for good earth as shown on schematic.
	There is a defective sensor	Make sure the sensor connections are correct. Replace the outlet temperature sensor.

Table 30. Error Code E19 - No Communications Between User Interface / Control Panel and ATC Control Module.

Effect	Causes	Remedy
The unit cannot cool the cab / The compressor disengages.The ATC / Heater control does not operate.The fan speed stays at maximum in Auto mode / The fan speed operates as normal in Manual mode.	Wiring Error	Check power at pins on User Interface and ATC control module.
		Check Earth at pins on User Interface and ATC control module.
		Check the Continuity between the wires that connect the User Interface and the ATC control module.
	Connector Error	Check the connector plugs between User Interface and ATC control module are in good condition.
	Defective user interface / Control panel or ATC control unit	Replace the defective unit

Table 31. PWM Failure (No Fault Code Displayed)

Effect	Causes	Remedy
The unit cannot cool the cab / The compressor disengages.Fan speed unable to adjust in both auto and manual modes (fan speed defaults to max or min.) Temperature will be on maximum hot or maximum cold and unable to change.	Wiring Error	Check power and earths on PWM as shown on schematic.
		Expected readings for inputs to WM during normal operation.Pin 5 and Pin 6 Minimum 0.016 volts to maximum 11.18 volts

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >

Bucket Ram

Table 8.

Cylinder Inside Diameter	95 mm (3.74 in)
Rod Diameter	70 mm (2.76 in)
Max Contracted Length	1422 mm (55.99 in)
Stroke	924 mm (36.38 in)
Dry Weight	97 kg (214 lb)

Ram Torque Settings

JZ140

Table 9.

Ram Location	Dimensions Bore x Rod	Piston Nut A/F	Piston Nut Torque		Grub Screw Torque		Gland Torque	
	(mm)	(mm)	Nm	(lbf ft)	Nm	(lbf ft)	Nm	(lbf ft)
Boom	100 x 75	75	2430	(1798)	31.5 +/- 5.9	(23.3 +/- 4.4)	171	(127)
Dipper	115 x 80	85	5650	(4181)	56.9 +/- 10.7	(42.1 +/- 7.9)	267	(198)
Bucket	95 x 70	75	3270	(2420)	31.5 +/- 5.9	(23.3 +-/ 4.4)	171	(127)
TAB (Lift)	100 x 75	75	2430	(1792)	31.5 +/- 5.9	(23.3 +/- 4.4)	-	-
TAB (Pos'n)	140 x 75	58	5590	(4123)	57 +/- 10	(42 +/- 7.2)	367	(271)

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >

4JJ

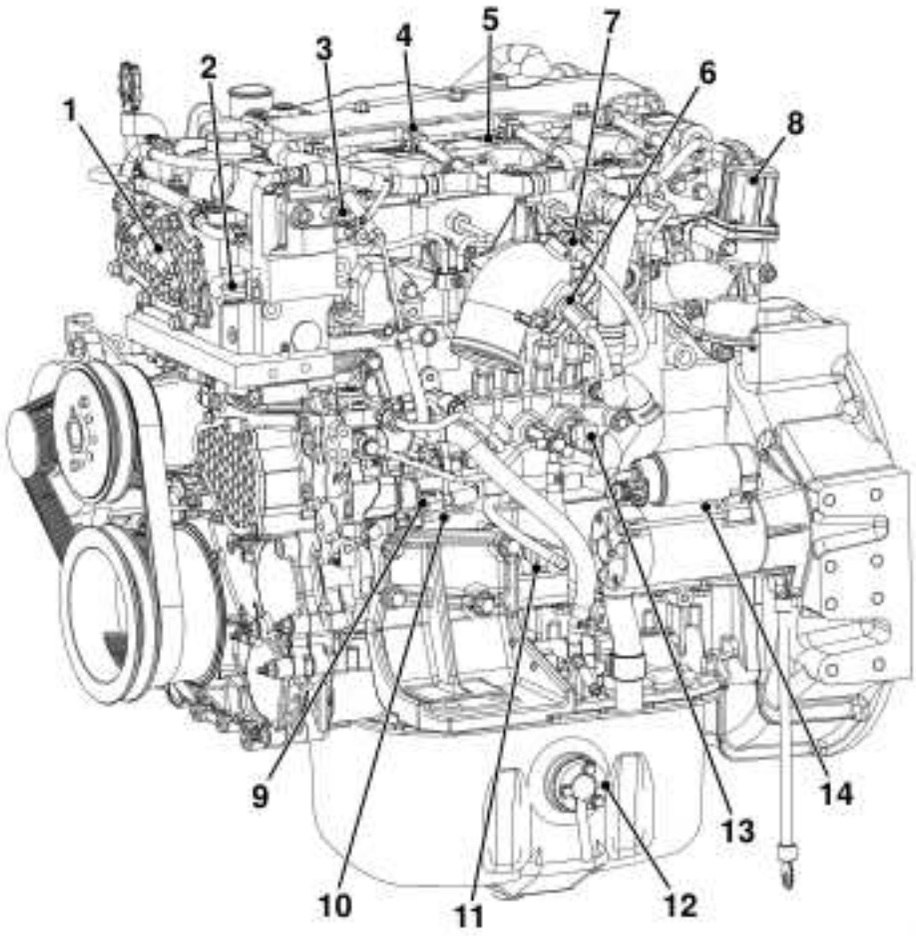


Fig 2.

Item	Description
1	Camshaft Position (CMP) Sensor. ⇨ *Camshaft Position (CMP) Sensor - 4JJ (K-26).*
2	Engine Coolant Temperature Sensor ⇨ *Engine Coolant Temp Sensor (K-13).*
3	Overheat Switch. ⇨ *Overheat Switch (K-15).*
4	Injectors. ⇨ *Injector (K-39).*
5	Glow Plugs ⇨ *Glow Plug (K-40).*
6	Boost Temperature Sensor. ⇨ *Boost Temperature Sensor (K-35)*
7	Boost Pressure Sensor. ⇨ *Boost Pressure Sensor (K-37)*
8	Suction Control Valve. ⇨ *Suction Control Valve (K-31).*
9	Exhaust Gas Re-circulation (EGR) Valve. ⇨ *Exhaust Gas Re-circulation (EGR) Valve (K-28).*
10	Fuel Temperature (FT) Sensor. ⇨ *Fuel Temperature (FT) Sensor (K-33).*

Item	Description
11	Engine Oil Pressure Sensor. ⇨ *Engine Oil Pressure Sensor (K-18)*
12	Engine Oil Level Sensor. ⇨ *Engine Oil Level Sensor (K-42).*
13	Common Rail Pressure Sensor. ⇨ *Common Rail Pressure Sensor (K-16).*
14	Crankshaft Position (CKP) Sensor. ⇨ *Crankshaft Position Sensor - 4JJ (K-22).*
15	Barometric Pressure (in battery bay - early models, in cab - late models). ⇨ *Barometric Pressure Switch (K-45).*
16	Air Intake Temperature (in air intake hose behind air filter). ⇨ *Air Intake Temperature Sensor (K-43).*

⇨ *Schematics (K-46).*

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >



Fig 31.

12 Remove the two speed spool plug and remove the O-ring from the plug.⇨ *Fig 32. (F-24)*



Fig 32.

13 Remove the two speed spool and spring.



Fig 33.

14 Remove the piston plugs and remove the O-ring from the plugs.⇨ *Fig 34. (F-24)*



Fig 34.

15 Remove the pistons.

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >



Fig 108.

11 Locate the coupling.



Fig 109.

12 Using a hoist locate first reduction planet carrier into the gearbox housing. ⇨ *Fig 110. (F-52)*



Fig 110.

13 Locate the first reduction sun gear ensuring it engages into the splines and gears.



Fig 111.

14 Locate thrust plate into position on the carrier. ⇨ *Fig 112. (F-53)*

MidWestTech | JCB JZ140 Hydraulic Excavator Service Manual | Publication 9803-99... Order the manual at mid-west-tech.com >