Service Manual

JS360 Tier III Auto

Service Manual - JS360 Tier III Auto

Section 1 - General Information

Section 2 - Care and Safety

Section 3 - Routine Maintenance

Section B - Body & Framework

Section C - Electrics

Section E - Hydraulics

Section F - Transmission

Section J - Track and Running Gear

Section K - Engine



Publication No.
9803/9880-4



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Issued by JCB Technical Publications, JCB Aftermarket Training, Woodseat, Rocester, Staffordshire, ST14 5BW, England. Tel +44 1889 591300 Fax +44 1889 591400

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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

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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 3-28
Prepare the Machine for Maintenance 3-29
Cleaning the Machine 3-30
Checking for Damage 3-32
Daily Checking 3-34
Greasing 3-36
Electrical System 3-39
Bolt and Nut Torque Specifications 3-47
Engine 3-56
Fuel System 3-74
Hydraulic System 3-80
Slew Gearbox 3-92
Tracks and Running Gear 3-93
Bucket 3-96
Windscreen Washer 3-97
Fire Extinguisher (If fitted) 3-98
Troubleshooting 3-99

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Contents Page No.

Technical Data
General B-1
Static Dimensions B-2
Shipping Weight B-3
Dig Depth Chart B-4
Air Conditioning (option) B-5

Basic Operation
Automatic Temperature Control (ATC) System B-7

Fault Finding
Air Conditioning B-15

Service Procedures
HVAC/Air Conditioning Unit B-23
Air Conditioning Compressor B-25
Cab Structure B-26

Cab Panels
Cab Panel Removal B-35

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JS200 - JS235 and Variants

Table 7.

Item	Capacity	Fluid/Lubricant	JCB Part No.	Container Size(1)
ENGINE	23.5 litres (5.2 UK gal) (6.2 US gal)	JCB Engine Oil HP 15W40 -15°C to +40°C (5°F to 104°F)	4001/1505	20 Litres
		JCB Engine Oil HP 10W30 -30°C to +30°C (-22°F to 86°F)	4001/1705	20 Litres
COOLING SYSTEM	28 litres (6.2 UK gal) (7.4 US gal)	JCB HP Coolant ⇨ *Coolant Mixtures (📄 3-25)*	4006/1120	20 Litres
TRACK GEARBOX	2 x 4.7 litres (2 x 1 UK gal) (2 x 1.2 US gal)	JCB HP90 Gear Oil	4000/0301	5 Litres
SLEW GEARBOX	5 litres (1.1 UK gal) (1.3 US gal)		4000/0305	20 Litres
TRACK ROLLERS AND IDLER WHEEL				
RECOIL SPRING CYLINDER		JCB Special HP Grease	4003/2017	400g
HYDRAULIC SYSTEM	200 litres (44 UK gal) (52.8 US gal)	JCB Hydraulic Fluid HP32 -20°C to +15°C (-4°F to 59°F)	4002/1024	200 Litres
		JCB Hydraulic Fluid HP46 -10°C to +30°C (14°F to 86°F)	4002/0803	
		JCB Hydraulic Fluid HP68 0°C to +40°C (32°F to 104°F)	4002/0701	
SLEW RING			4003/2017	400g
- BEARING	100 g (0.22 lb)	JCB Special HP Grease		
- GEAR TEETH	17 kg (37.5 lb)		4003/2006	12.5kg
ALL OTHER GREASE POINTS	–			
FUEL TANK	343 litres (75.5 UK gal) (90.6 US gal)	⇨ *Fuel System (📄 3-74)*		

(1) For information about the different container sizes that are available (and their part numbers), contact your JCB Dealer.

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Introduction to Hydraulic Schematic Symbols

TE-001

General (Basic and Functional Symbols)

Complex hydraulic components and circuits can be described to the engineer by using graphical symbols. The following pages 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.

Table 2. General

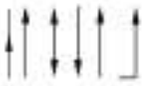
	Spring
	Flow restriction affected by viscosity
	Direction of flow
	Indication of rotation
	Indication of direction and paths of flow
	Variable control

Table 3. Rams

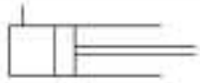
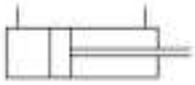
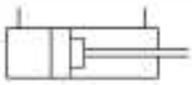
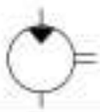
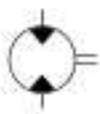
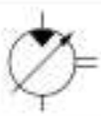
	Single acting
	Double acting
	Double ended
	Double acting with damping at rod area end

Table 4. Pumps and Motors

	Variable capacity pump two directions of flow
	Fixed capacity motor one direction of flow
	Fixed capacity motor two directions of flow
	Variable capacity motor one direction of flow
	Variable capacity motor two directions of flow

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Counterbalance Valve

Symptom	Possible Cause	Remedy
a Motor does not run or rotation speed is slow.	**1** Plunger not switching.	
	i External pilot pressure not present.	Inspect the piping for damage.
	ii Foreign matter between plunger and body.	Completely remove foreign matter, repair any damage and reassemble after cleaning. Renew if damage or leakage is excessive.
	iii Orifice clogged.	Completely remove foreign matter, repair any damage and reassemble after cleaning. Renew if damage or leakage is excessive.
	iv Foreign matter caught between dumper piston and cap.	Renew spring. Completely remove foreign matter, repair any damage and reassemble after cleaning. Renew if damage or leakage is excessive.
b Motor does not stop or stops slowly.	**1** Plunger does not return.	
	i Foreign matter between plunger and body.	Completely remove foreign matter, repair the damaged part and reassemble after cleaning. Renew if damage or leakage is excessive.
	ii Spring broken.	Renew spring. Completely remove foreign matter, repair any damage and reassemble after cleaning. Renew if damage or leakage is excessive.
	iii Spring not fitted.	Fit spring in specified position.
	iv Orifice clogged.	Reassemble after cleaning.
c Rotation varies.	**1** Plunger does not move smoothly.	
	i Foreign matter between plunger and body.	Completely remove foreign matter, repair any damage and reassemble after cleaning. Renew if damage or leakage is excessive.
	ii Orifice clogged.	Reassemble after cleaning.
d Abnormal noise is heard.	**1** Plunger does not return.	
	i Foreign matter between plunger and body.	Completely remove foreign matter, repair any damage and reassemble after cleaning. Renew if damage or leakage is excessive.
	ii Spring broken.	Renew spring. Completely remove foreign matter, repair any damage and reassemble after cleaning. Renew if damage or leakage is excessive.
	iii Orifice clogged.	Reassemble after cleaning.
e Travel not linear.	**1** Dumper piston or cap is excessively worn.	Renew dumper piston and cap. Completely remove foreign matter, repair any damage and reassemble after cleaning.

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4JJ

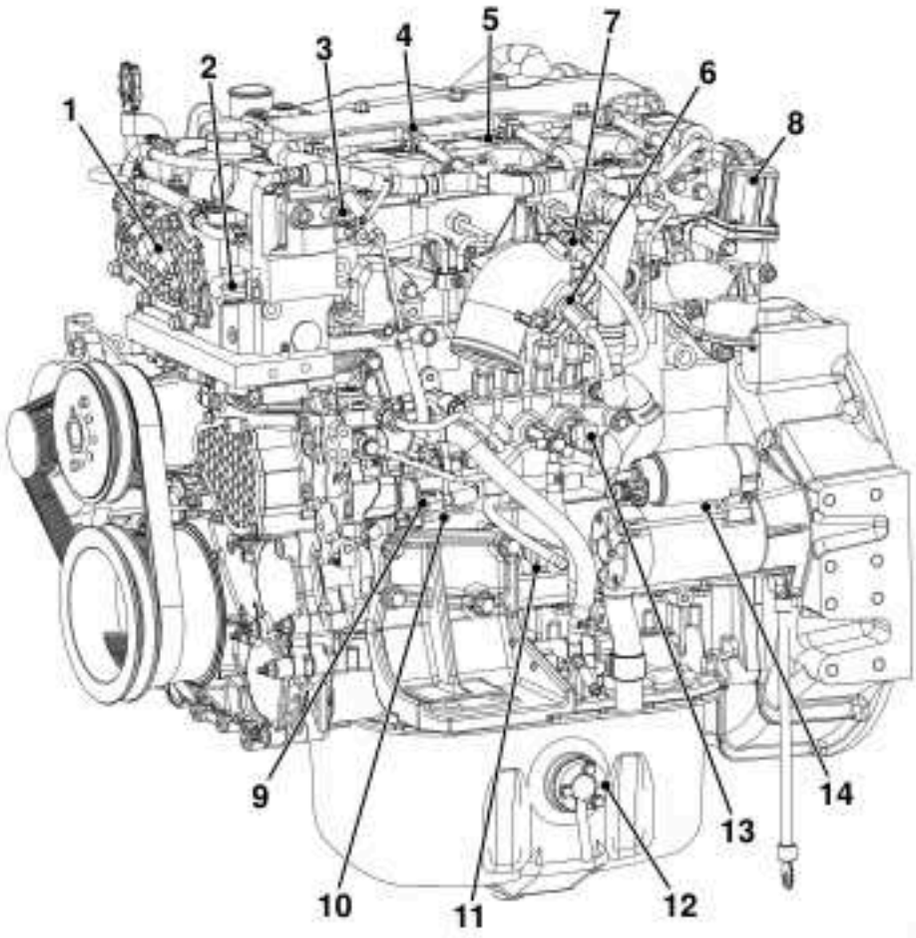


Fig 2.

Item	Description
1	Camshaft Position (CMP) Sensor. ⇨ *Camshaft Position (CMP) Sensor - 4JJ (K-24)*.
2	Engine Coolant Temperature Sensor ⇨ *Engine Coolant Temp Sensor (K-11)*.
3	Overheat Switch. ⇨ *Overheat Switch (K-13)*.
4	Injectors. ⇨ *Injector (K-37)*.
5	Glow Plugs ⇨ *Glow Plug (K-38)*.
6	Boost Temperature Sensor. ⇨ *Boost Temperature Sensor (K-33)*
7	Boost Pressure Sensor. ⇨ *Boost Pressure Sensor (K-35)*
8	Suction Control Valve. ⇨ *Suction Control Valve (K-29)*.
9	Exhaust Gas Re-circulation (EGR) Valve. ⇨ *Exhaust Gas Re-circulation (EGR) Valve (K-26)*.
10	Fuel Temperature (FT) Sensor. ⇨ *Fuel Temperature (FT) Sensor (K-31)*.

Item	Description
11	Engine Oil Pressure Sensor. ⇨ *Engine Oil Pressure Sensor (K-16)*
12	Engine Oil Level Sensor. ⇨ *Engine Oil Level Sensor (K-40)*.
13	Common Rail Pressure Sensor. ⇨ *Common Rail Pressure Sensor (K-14)*.
14	Crankshaft Position (CKP) Sensor. ⇨ *Crankshaft Position Sensor - 4JJ (K-20)*.
15	Barometric Pressure (in battery bay - early models, in cab - late models). ⇨ *Barometric Pressure Switch (K-43)*.
16	Air Intake Temperature (in air intake hose behind air filter). ⇨ *Air Intake Temperature Sensor (K-41)*.

⇨ *Schematics (K-44)*.

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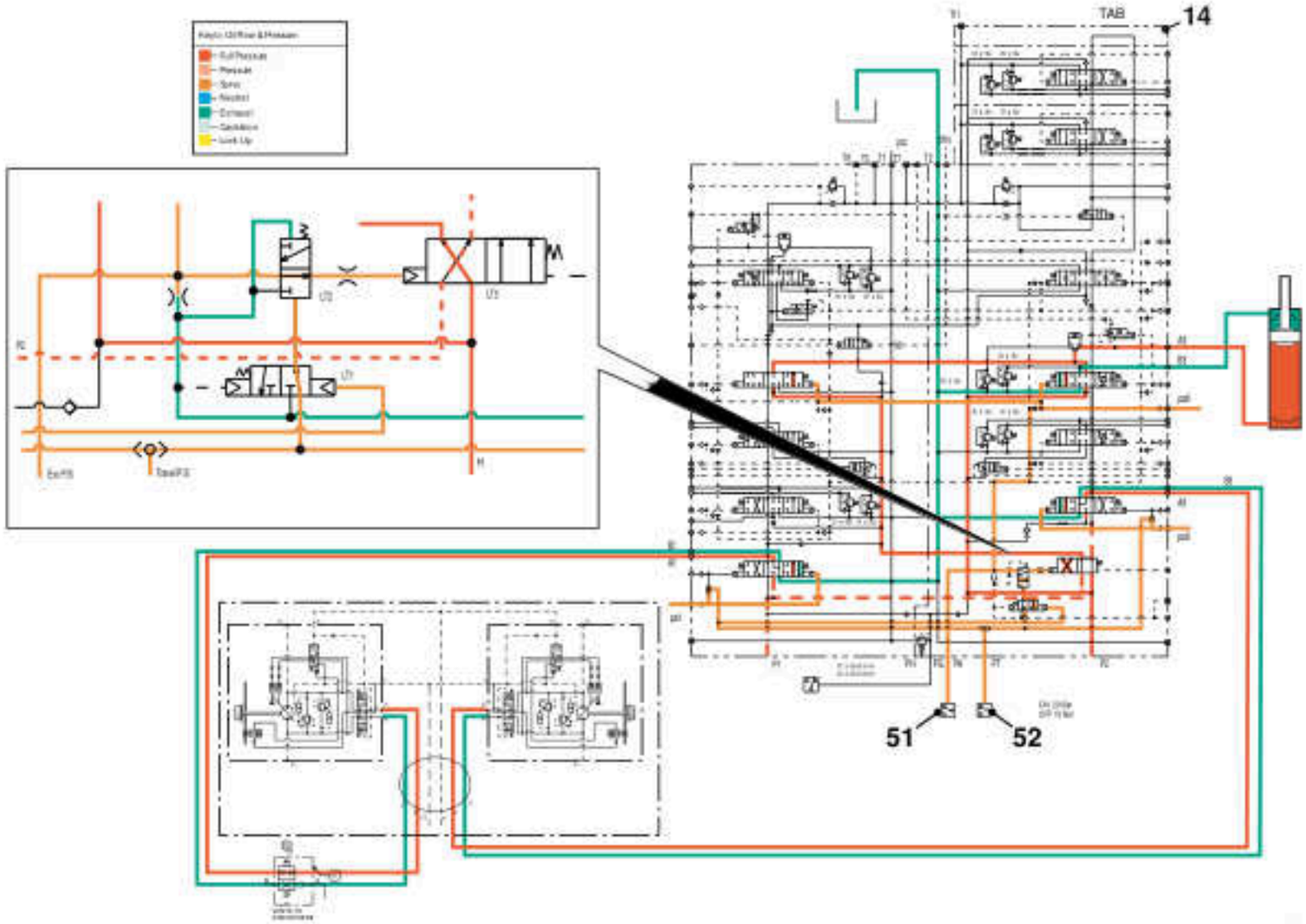


Fig 9. Straight Line Travel Schematic

⇨ *Straight Line Travel (E-32)*

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