Service Manual

JS115 - JS180

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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



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Lubricants and Capacities

JS115 - JS145 and Variants

Item	Lubricant	International Specification	Capacity
ENGINE	⇨ *Engine Lubrication Chart (🗋 3-16)*		13.2 litres (2.9 UK gal) (3.5 US gal)
TRACK GEARBOX	JCB HD90 Gear Oil	API-GL-5, MIL-L-2105	2 x 5.1 litres (2 x 1.1 UK gal) (2 x 1.4 US gal)
SLEW GEARBOX	JCB HD90 Gear Oil	API-GL-5, MIL-L-2105	2.2 litres (0.5 UK gal) (0.6 US gal))
TRACK ROLLERS AND IDLER WHEEL	JCB HD90 Gear Oil	API-GL-5, MIL-L-2105	
RECOIL SPRING CYLINDER	JCB Special HP Grease	Lithium complex (NLGI) inc.extreme pressure additives	
HYDRAULIC SYSTEM	JCB Hydraulic Fluid 46	ISO VG46	124 litres (27.3 UK gal) (32.8 US gal)
SLEW RING - BEARING - GEAR TEETH	 JCB Special HP Grease JCB Special HP Grease	 Lithium complex (NLGI) inc. extreme pressure additives Lithium complex (NLGI) inc. extreme pressure additives	 -- 11 kg (24.25 lb)
ALL OTHER GREASE POINTS	JCB Special HP Grease	Lithium complex (NLGI) inc. extreme pressure additives	--
COOLING SYSTEM	JCB HP Coolant ⇨ *Coolant Mixtures (🗋 3-43)*	ASTM D - 6210	16.4 litres (3.8 UK gal) (4.3 US gal)
FUEL TANK	⇨ *Types of Fuel (🗋 3-45)*		253 litres (55.6 UK gal) (66.7 US gal)

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Troubleshooting

To extend the service life and improve the operation of the machine, daily inspection and lubrication are necessary as well as immediately isolating any problem found and dealing with it. If the machine is operated with the problem uncorrected, it may lead to larger trouble and possibly to a big accident.

If trouble occurs, search for the cause in the items below and make adjustments, repairs, etc. as necessary. If the cause cannot be isolated, contact your JCB distributor.

Engine and Related Area

Table 13. Engine does not start

Cause	Remedy
Defective starter switch	Connect, repair connection
Defective rotation of starter (Starter rotates slowly)	Discharged battery, starter problems, contaminated or loose wiring connection
Improper viscosity of engine oil	Inspect and replace as necessary
Excessive cooling of engine (Cold weather)	Preheat with air heater. Warm up the coolant (add hot water)
Possible seizure in engine	Repair[1]
Incomplete air bleeding of fuel system	Completely bleed air
No fuel in fuel tank	Refill
Fuel quality unsuitable	Inspect and replace as necessary
Fuel filter clogged	Clean or replace
Low compression	Repair[1]
Defective fuel injection pump	Repair[1]

Table 14. Engine stops during operation

Cause	Remedy
No fuel in fuel tank	Refill
Fuel filter clogged	Clean and replace
Air is mixed in the fuel system	Retighten fuel pipe connections and bleed system

Table 15. Low oil pressure

Cause	Remedy
Low oil	Refill
Defective oil pressure switch	Replace[1]
Oil filter clogged	Replace element
Low oil viscosity	Replace with oil of viscosity matching temperature
Improper operation of oil pump	Replace parts[1]
Oil leakage at connections	Tighten connections

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Note: ** denotes option.*

The item numbers in the following table are identified on the Hydraulic Schematic diagram. ⇨ *Fig 10. (E-19).*

Table 8. Component Identification

Item	Part number	Description	Location
1	20/925360	Slew motor	Centre section of machine
2	45/920020	Rotary Coupling 6 Port	Centre section of machine
3	331/17715	Cylinder Arm	On the boom
4	25/221987	HBCV Arm	Dipper ram
5	20/925737	Motor Travel and Gearbox	Lower frame sprocket drive
6*	563/60082	Cylinder Dozer LH	On the dozer
7*	563/60081	Cylinder Dozer Rh	On the dozer
8	45/920062	Rotary Coupling 8 Port	Centre section of machine
9	45/910500	Coupling Male 1/2	Dipper
10	45/910400	Coupling Female 1/2	Dipper
12*	25/221977	HBCV/TAB	TAB ram
13	331/17714	Cylinder Bucket	On dipper
14	25/221829	Valve Main Standard	Centre section of machine
15*	25/222222	Valve Main Dozer	Centre section of machine
16	331/17713	Cylinder Mono Boom LH	On boom
17*	JRJ0343	Valve L/F Closed Centre	Above Main Control Valve
19*	JNV1304	Manifold HBCV	Centre of machine between Boom rams
20*	JRJ0344	Valve L/F Open Centre	Right hand compartment
21*	JNV1305	Manifold HBCV	Centre of machine between Boom rams
22*	701/80197	Overload Pressure Switch	On rear of item 21
23*	701/80195	Pressure Switch	On rear of item 19
25*		Coupling Female 1"	End of Hammer Pipe work
26*		Coupling Female 3/4"	End of Hammer Pipe work
27*	25/222216	Valve Logic	Centre of machine
28	25/222140	Valve Check 3 Bar	Control valve
29	JNJ0611	Filter Return	Inside hydraulic tank
30	KHJ0897	Plexus filter stop valves	Below plexus filter
31	30/926082	Oil Cooler	Radiator bay
32	25/222139	Valve Check 1 Bar	Cooler return pipe
34	KNJ0287	Filter Drain	Right hand compartment
35	KRJ3460	Hydraulic tank air breather	On top of hydraulic tank
36	JLJ0495	Plexus filter	Right hand compartment
37	331/31535	Hydraulic tank	Right hand side of machine

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Fault Finding

JCB Service Master

Service Master is a gateway application allowing a large number of Vehicle Support Applications to be linked using one familiar interface. The interface acts as a graphical tool for selecting the target vehicle from a database of Vehicle Families and triggering the particular Service Tool Application desired. This removes the need for a user to 'remember' every individual service tool available and select which one is intended for a particular machine.

The Service Master also provides several key features that will accompany all JCB projects, a Multi Language editing tool that provides a means of individual text string translation for all JCB applications and the means to select a localised language translation for each JCB application.

The contents of this document aim to explain to you, the User, how to operate this application and to make most of its functionality.

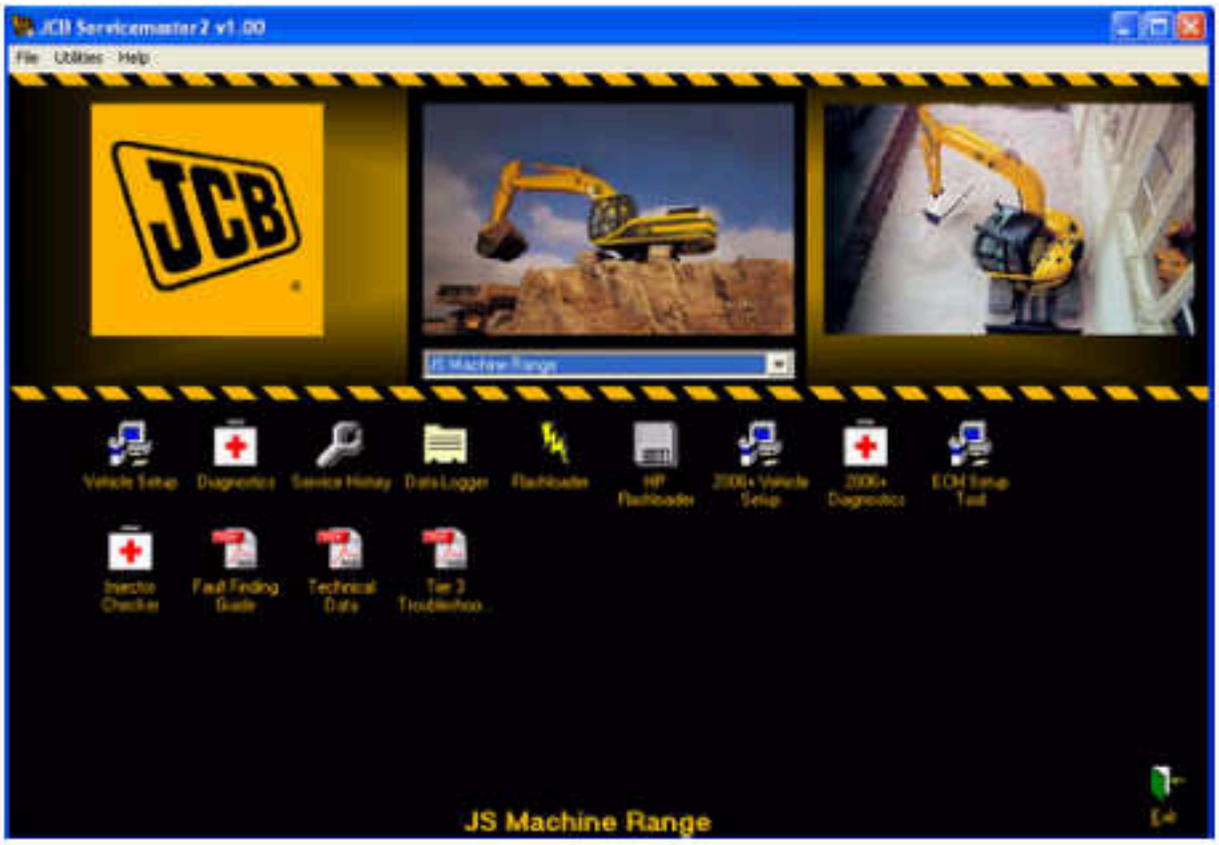


Fig 130.

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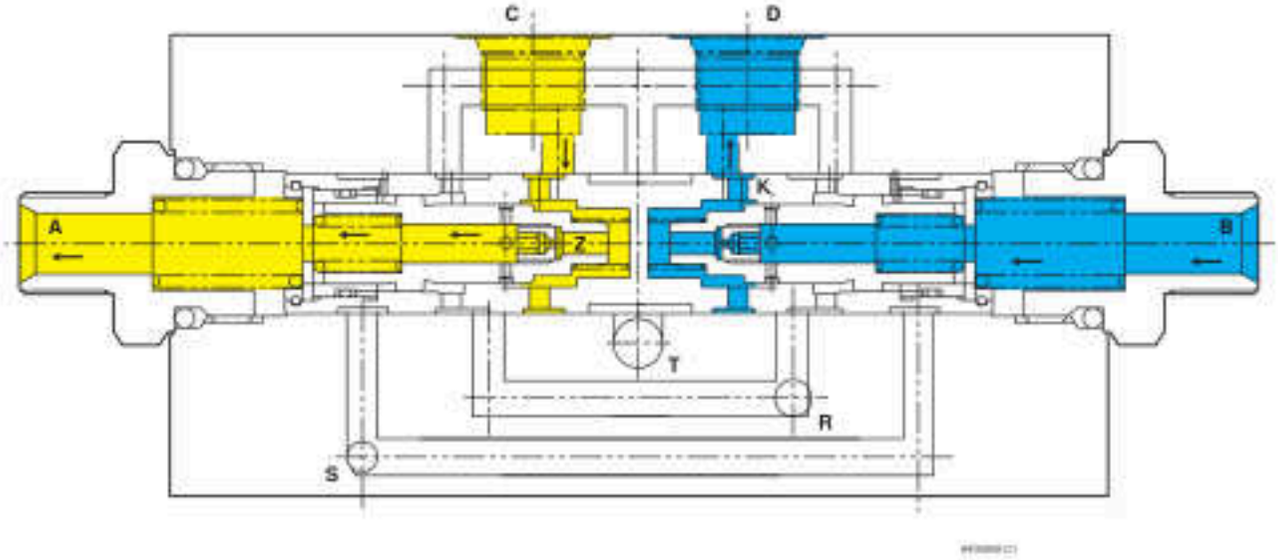


Fig 129. Cushion valve - Pressure applied to S port (Piloted Open)

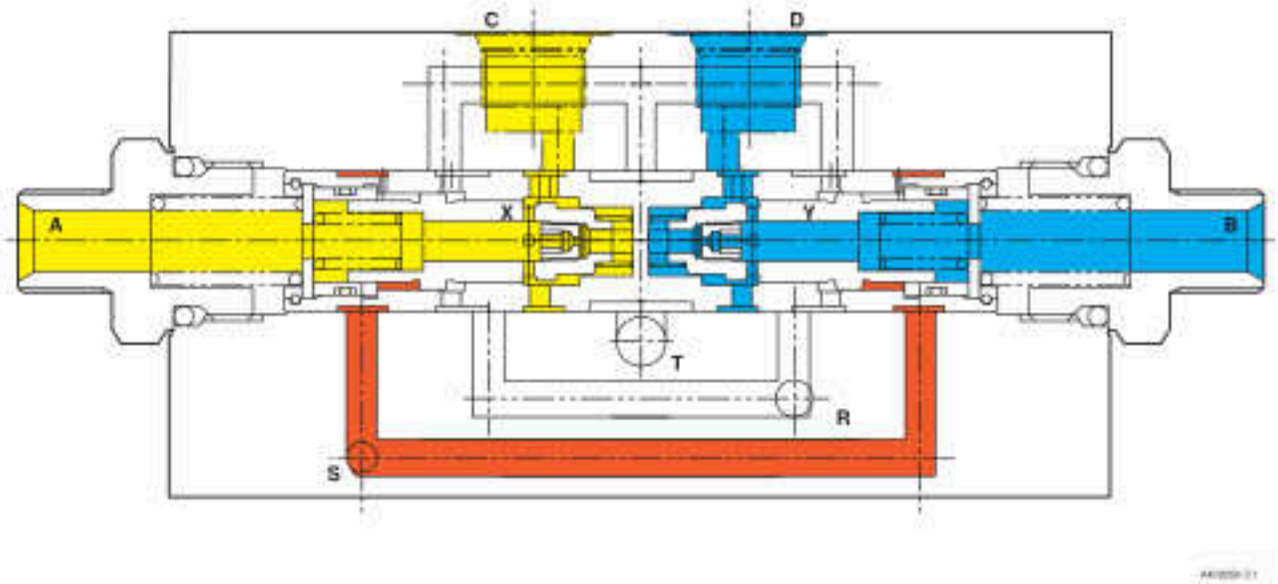


Fig 130. Cushion valve - No Pressure applied

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