Service Manual

Skid Steer Large Platform

Service Manual - Skid Steer Large Platform

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Section 2 - Care and Safety

Section 3 - Maintenance

Section A - Attachments

Section B - Body and Framework

Section C - Electrics

Section E - Hydraulics

Section F - Transmission

Section J - Tracks

Section K - Engine



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Zinc Plated Fasteners and Dacromet Fasteners

Table 2. Torque Settings - UNF Grade 'S' Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
in.	mm	in.	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
1/4	6.3	7/16	11.2	1.1	8.3	10.0	1.0	7.4
5/16	7.9	1/2	22.3	2.3	16.4	20.0	2.0	14.7
3/8	9.5	9/16	40.0	4.1	29.5	36.0	3.7	26.5
7/16	11.1	5/8	64.0	6.5	47.2	57.0	5.8	42.0
1/2	12.7	3/4	98.00	10.0	72.3	88.0	9.0	64.9
9/16	14.3	13/16	140.0	14.3	103.2	126.0	12.8	92.9
5/8	15.9	15/16	196.0	20.0	144.6	177.0	18.0	130.5
3/4	19.0	1 1/8	343.0	35.0	253.0	309.0	31.5	227.9
7/8	22.2	1 15/16	547.0	55.8	403.4	492.0	50.2	362.9
1	25.4	1 1/2	814.0	83.0	600.4	732.0	74.6	539.9
1 1/8	31.7	1 7/8	1181.0	120.4	871.1	1063.0	108.4	784.0
1 1/4	38.1	2 1/4	1646.0	167.8	1214.0	1481.0	151.0	1092.3

Table 3. Torque Settings - Metric Grade 8.8 Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
ISO Metric Thread	mm	mm	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M5	5	8	5.8	0.6	4.3	5.2	0.5	3.8
M6	6	10	9.9	1.0	7.3	9.0	0.9	6.6
M8	8	13	24.0	2.4	17.7	22.0	2.2	16.2
M10	10	17	47.0	4.8	34.7	43.0	4.4	31.7
M12	12	19	83.0	8.5	61.2	74.0	7.5	54.6
M16	16	24	205.0	20.9	151.2	184.0	18.8	135.7
M20	20	30	400.0	40.8	295.0	360.0	36.7	265.5
M24	24	36	690.0	70.4	508.9	621.0	63.3	458.0
M30	30	46	1372.0	139.9	1011.9	1235.0	125.9	910.9
M36	36	55	2399.0	244.6	1769.4	2159.0	220.0	1592.4

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Fitting Procedure

1 Drill a hole in the machine body/framework where the rivet nut is to be fitted. De-burr hole edges.

2 Screw the rivet nut onto the mandrel of the installation tool. The bottom of the mandrel should be in line with the bottom of the rivet nut **2-A**.

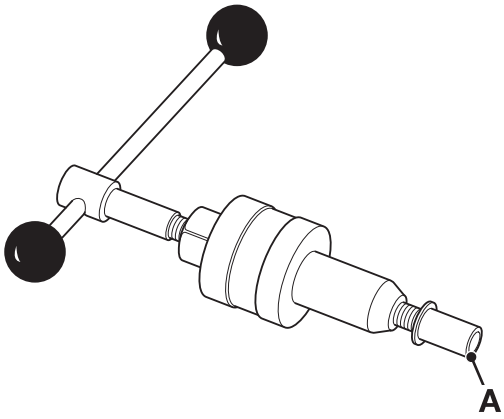


Fig 2.

3 Wind the body of the installation tool down the threaded mandrel until it touches the head of the rivet nut **3-B**.

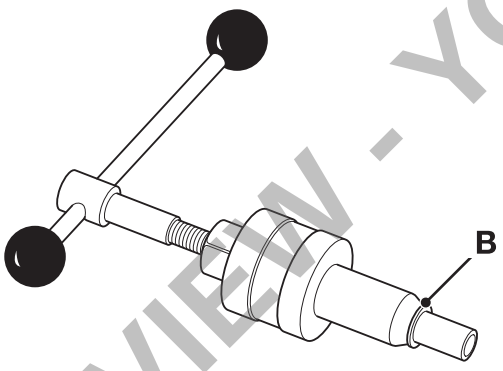


Fig 3.

4 Insert the rivet nut (assembled to the tool) into the hole drilled in step 1.

5 Hold handle **4-C** and at the same time draw the mandrel into the installation tool by turning nut **4-D**. The rivet nut will contract in length and form an 'upset' (smooth bulge) seating itself against the body/framework **4-E**.

Note: *The thread of the rivet nut must not be stripped, take care when 'upsetting' the rivet nut.*

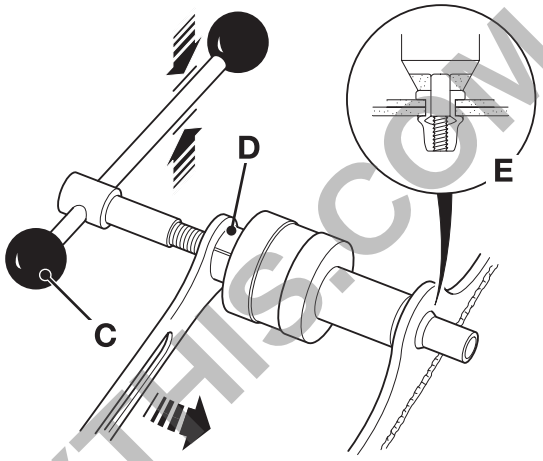


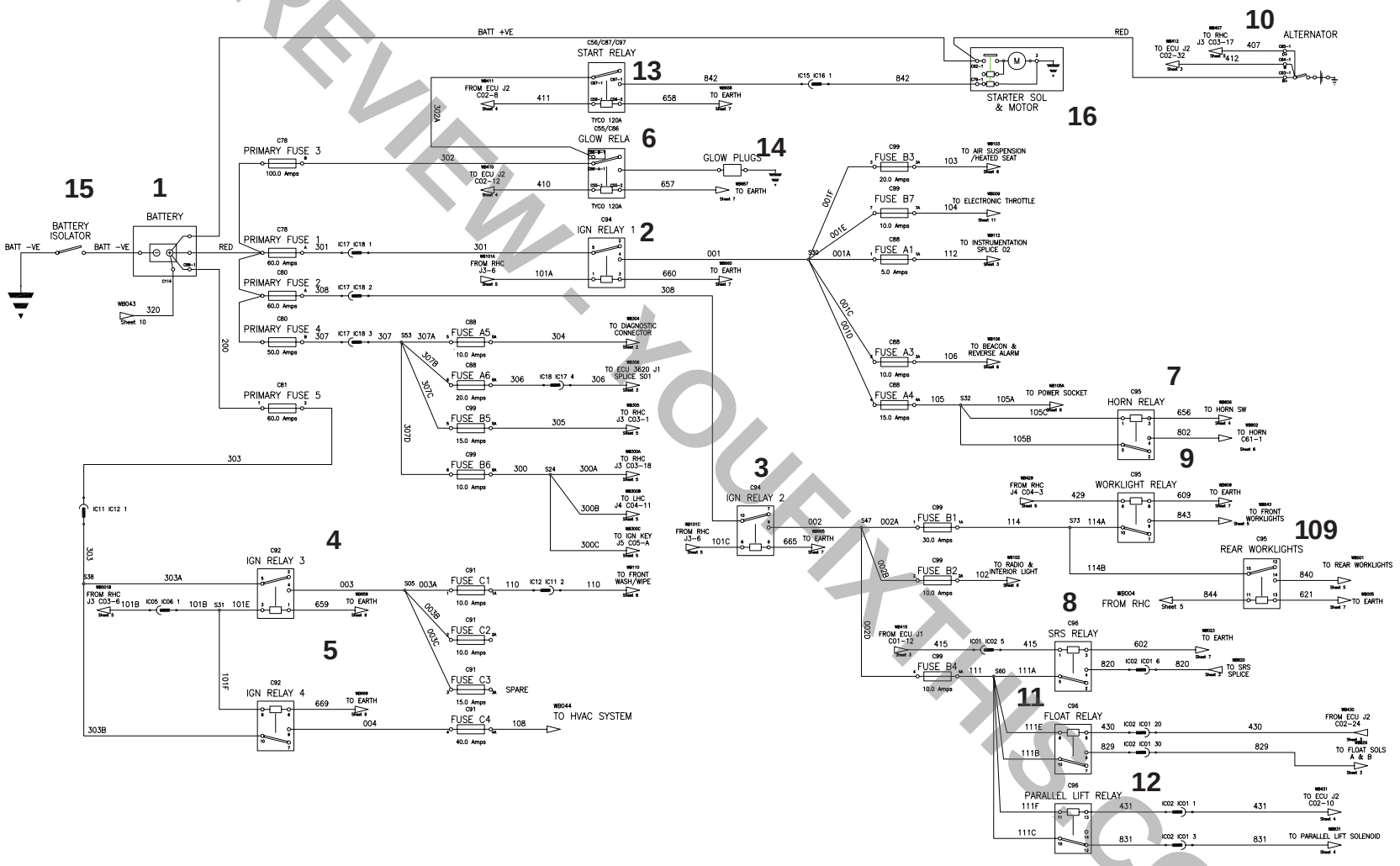
Fig 4.

6 Remove the installation tool.

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Diagrams



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Fig 1. Start Circuit and Secondary Fuses - 333/C10102-2

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Error Codes

Machine Error Codes

Table 1.

Code	Description
Code	Description
C108	SC to + at Boom Proximity Sensor
C109	SC to + at Float Relay
C110	SC to + at ESOS
C111	SC to + at Fuel Sender
C114	SC to + at Hydraulic Oil Temp Sender
C116	SC to + at Fan Solenoid
C117	SC to + at High Flow Solenoid
C118	SC to + at Charge Pump Transducer
C119	SC to + at Parallel Lift Relay
C125	SC to + at Loader Valve
C126	SC to + at Aux. A Solenoid
C127	SC to + at Aux. B Solenoid
C130	SC to + at Quick Hitch A
C131	SC to + at Quick Hitch B
C132	SC to + at Flushing Solenoid
C133	SC to + at Water Temp Sender/Switch
C134	SC to + at SRS Relay
C135	SC to + at Two-Speed Solenoid
C136	SC to + at LH Turn Signal
C137	SC to + at RH Turn Signal
C139	SC to + at Air Filter Switch
C142	SC to + at Creep Solenoid
C143	SC to + at Float Transducer
C146	SC to + at Parkbrake Transducer
C148	Oil pressure switch (if the engine is NOT running and the switch is CLOSED)
C155	SC to + at Grid Heater Relay
C156	SC to + at Starter Relay
C171	SC to + at Aux. Roller
C184	SC to + at W Terminal
C185	SC to + at D+ Terminal

Code	Description
C196	SC to + at SRS Relay
C208	SC to - at Boom Proximity Sensor
C209	SC to - at Float Relay
C210	SC to - at ESOS
C211	SC to - at Fuel Sender
C214	SC to - at Hydraulic Oil Temp Sender
C216	SC to - at Fan Solenoid
C217	SC to - at High Flow Solenoid
C218	SC to - at Charge Pump Transducer
C219	SC to - at Parallel Relay
C225	SC to - at Loader Valve
C226	SC to - at Aux. A Solenoid
C227	SC to - at Aux. B Solenoid
C230	SC to - at Quick Hitch A
C231	SC to - at Quick Hitch B
C232	SC to - at Flushing Solenoid
C233	SC to - at Water Temp Sender/Switch
C234	SC to - at SRS Relay
C235	SC to - at Two-Speed Solenoid
C236	SC to - at LH Turn Signal
C237	SC to - at RH Turn Signal
C242	SC to - at Creep Solenoid
C243	SC to - at Float Transducer
C246	SC to - at Parkbrake Transducer
C255	SC to - at Grid Heater Relay
C256	SC to - at Starter Relay
C271	SC to - at Aux. Roller
C284	SC to - at W Terminal
C285	SC to - at D+ Terminal
C296	SC to - at SRS Relay
C308	OC at Boom Proximity Sensor
C309	OC at Float Relay
C310	OC at ESOS

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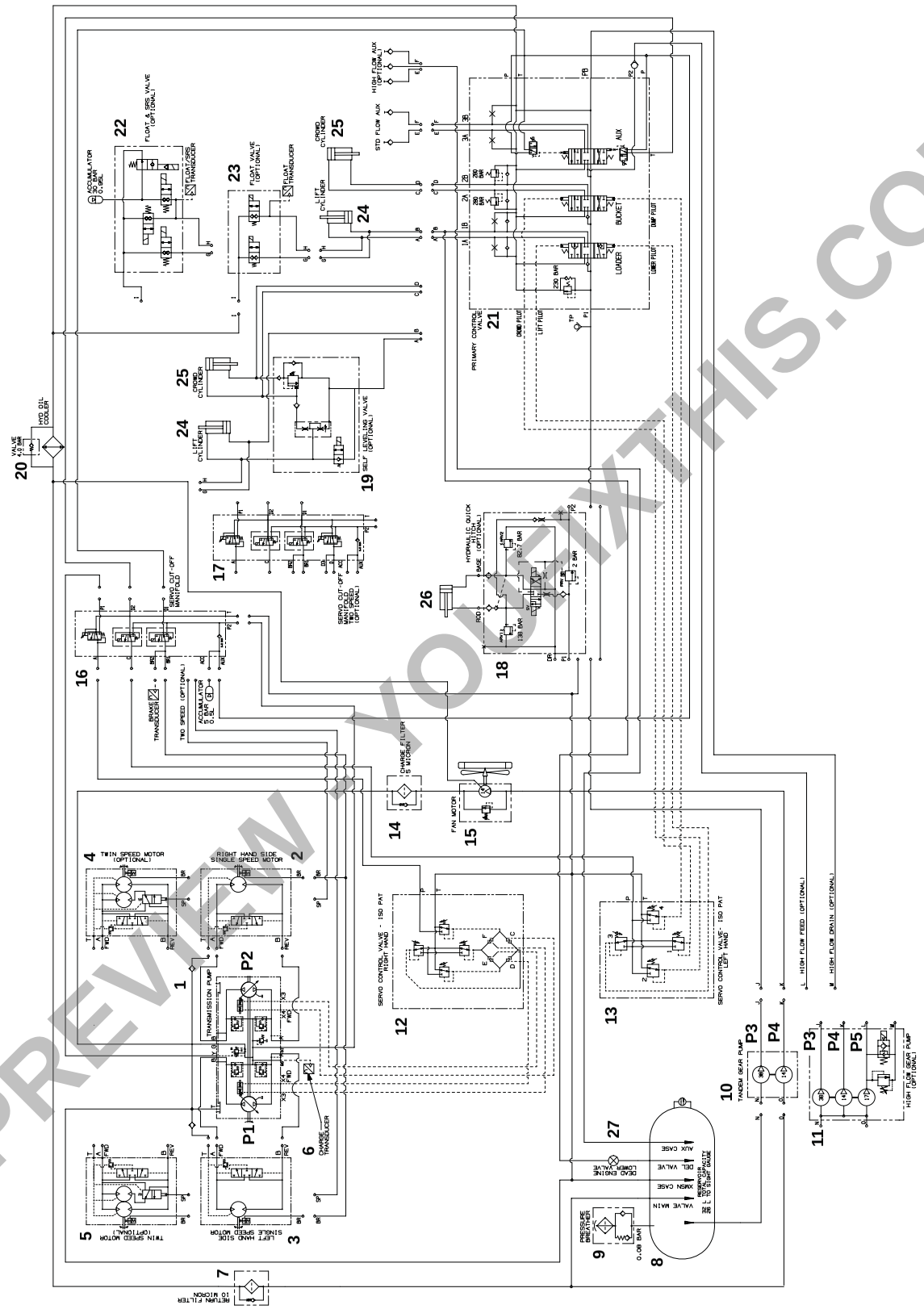


Fig 8. Hydraulic Schematic - 332/X2024-1

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Fault Finding

Hydrostatic Transmission

Table 37.

Key to Cause		Remedy	Page Ref.
1	No oil in hydrostatic system	Check supply of oil to pump.	Section 3
2	Isolator bar or arm rest not in correct position	Ensure isolator bar and arm rest are in operating position, check electrical wiring and switch as required.	Section C
3	Tyres worn or pressure incorrect	Check tyre pressures and condition.	Section 3
4	Charge pressure incorrect	Charge pressure is controlled by the Charge Pressure Relief Valve. Carry out flow check.	⇨ *Transmission Charge Pressure (E-64)*
5	No or low pump output	Check pump - carry out wheel speed check. If one pump suspect, swop motor feed hoses and notice if problem changes sides - if 'yes', pump related fault; if 'no', motor related fault.	
6	A high pressure 'loop' relief valve/tow valve open/set incorrectly	Replace relief valve and re-check.	
7	Pump neutral position set incorrectly	Adjust servo neutral position.	
8	Pump servos incorrectly set	Adjust servos	⇨ *Machine veers to one side when travelling (E-73)*
9	Feed hose failure	Check motor feed hoses.	
10	No hydraulic feed to joystick	Check for feed to joystick.	
11	No hydraulic feed from joystick to pump	Check for feed from joystick to pump.	
12	Brake hose failure	Inspect brake hoses.	
13	Brake release pressure incorrect	Check charge/brake pressure.	
14	Electrical failure (brake valve circuit)	Check brake valve electrical circuit.	Sect. C
15	Brake valve inoperative	Check valve (sticking spool, etc.)	
16	Brakes not released	Inspect motor brakes for seal damage. Repair as required.	

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Service Schedules

Introduction

T3-036-2

A badly maintained machine is a danger to the operator and the people working around him. Make sure that the regular maintenance and lubrication jobs listed in the service schedules are done to keep the machine in a safe and efficient working condition.

⚠ WARNING

Maintenance must be done only by suitably qualified and competent persons.

Before doing any maintenance make sure the machine is safe, it should be correctly parked on level ground.

To prevent anyone starting the engine, remove the starter key. Disconnect the battery when you are not using electrical power. If you do not take these precautions you could be killed or injured.

8-3-1-1

Apart from the daily jobs, the schedules are based on machine running hours. Keep a regular check on the hourmeter readings to correctly gauge service intervals. Do not use a machine which is due for a service. Make sure any defects found during the regular maintenance checks are rectified immediately.

How to Use the Service Schedules

T3-012_3

In the example shown, **A** shows all service requirements to be carried out every 10 hours and **B** shows the requirements to be carried out every 500 hours.

Important: *Services should be carried out at either the hourly interval or calendar interval, whichever occurs first. Refer to* ***Calendar Equivalents****.*

Pre-start Cold Checks, Service Points and Fluid Levels

Operation		A: 10	50	100(1)	B: 500	1000	2000	8000
ENGINE								
Coolant Quality and Level	- Check	□	□	□	□	□		
Cooling System	- Drain and Refill						□	□
Oil level	- Check	□	□					
Oil and Filter(2)(3)(4)	- Change				□	□	□	□
Air Cleaner Dust Valve(5)	- Change				□	□	□	□
Air Cleaner Outer Element(5)	- Change					□	□	□
Air Cleaner Inner Element	- Change						□	□
Pre-Cleaner (if fitted)	- Check			□				
Water Seperator	- Check for contamination and Drain		□	□	□	□	□	□
Engine Fuel Filter	- Change					□	□	□
Front End Accessory Drive (FEAD) Belt Condition	- Check				□	□	□	□
Front End Accessory Drive (FEAD) Belt	- Change							□
Engine Mounting Bolts for Tightness	- Check			□	□	□	□	□
All Hoses - Condition	- Check			□	□	□	□	□
Radiator(5)	- Clean				□	□	□	□
Crankcase Ventilation Filter	- Change					□	□	□

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Calendar Equivalents

Calendar equivalents:

Every 10 Hours = Daily

Every 50 Hours = Weekly

Every 500 Hours = Six Months

Every 1000 Hours = Yearly

Every 2000 Hours = 2 Years

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Technical Data

General Data

Note: *System Cleanliness is to be to ISO 16/13.*

Main Valve Block

Table 1.

Nominal Flow	130 l/min.
Nominal Working Pressure	230 bar
MRV Setting	230 bar at 60 l/min.
Crowd/dump ARV	280 bar
Relief Pressure	95% of relief setting at 100cc/min.
Nominal Flow	130 l/min.

Smooth Ride System Valve Block

Table 2.

Input Flow	60 l/min.
Maximum Operating Pressure	280 bar
Nominal Flow	85 l/min.
Nominal Pressure	230 bar

Servo Cut Off Manifold

Table 3.

Input Flow	60 l/min.
Maximum Operating Pressure	280 bar
Nominal Flow	85 l/min.
Nominal Pressure	230 bar

Servo Cut Off Manifold 2 Speed

Table 4.

Input Flow	60 l/min.
Maximum Operating Pressure	280 bar
Nominal Flow	85 l/min.
Nominal Pressure	230 bar

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Fluids, Lubricants and Capacities

Table 1. Machines with JCB Dieselmax Engines

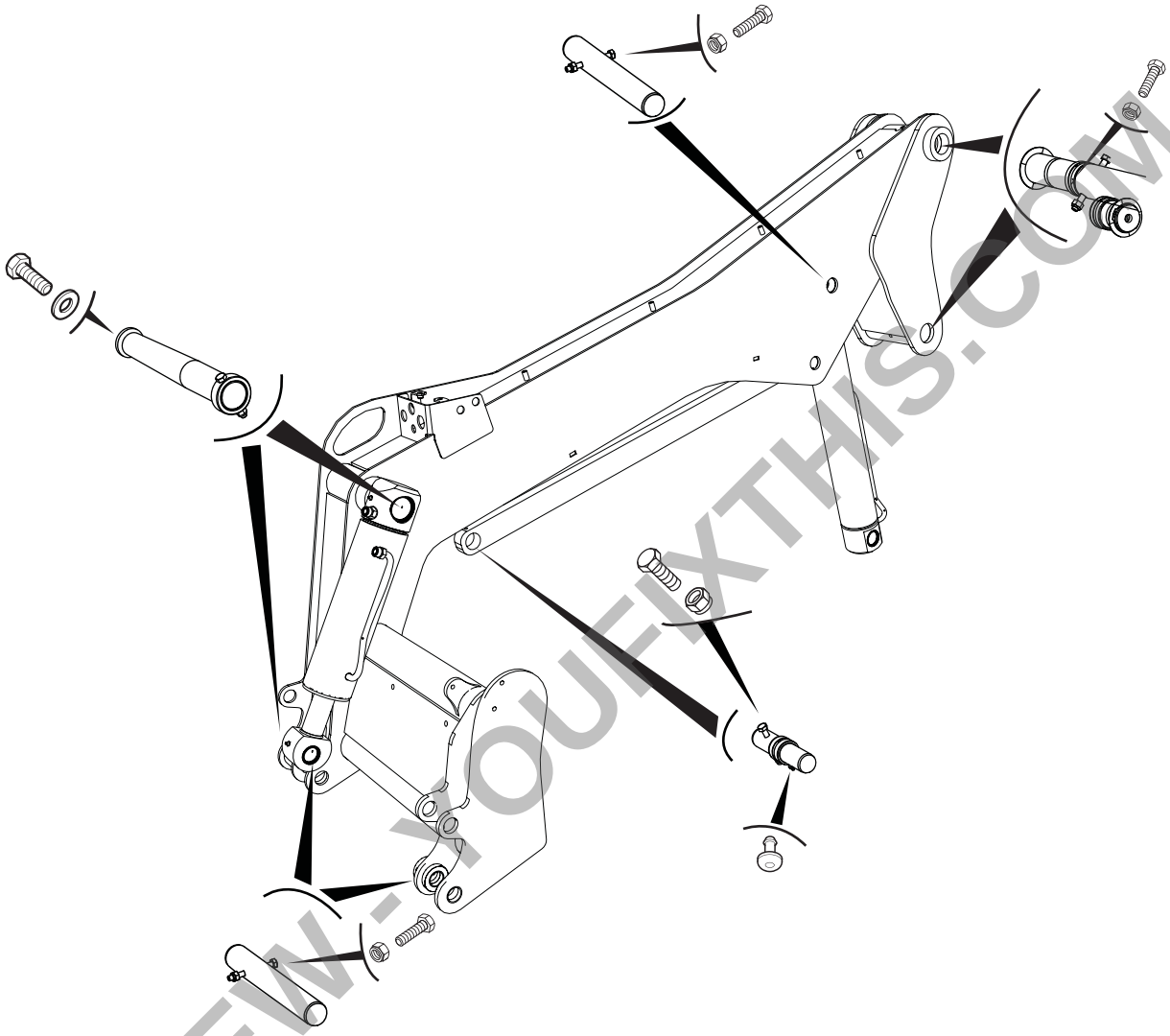
ITEM	CAPACITY Litres (UK Gal)	FLUID/LUBRICANT	JCB Part Number	Container Size(1)
Fuel Tank	103.3 (22.7)	Diesel Oil. ⇒ *Fuels (3-17)*.		
Engine (Oil)	Min 12 (2.6)	JCB Engine Oil EP 15W40	4001/1805	20 Litres
	Max 15 (3.3)	JCB Engine Oil EP 5W40 (climates below -12°C)	4001/2705	20 Litres
Engine (Coolant)	22 (4.8)	JCB Antifreeze HP. ⇒ *Coolant Mixtures (3-16)*.	4006/1120	20 Litres
Hydraulic System	30 (6.6)System 26 (5.7)Tank	JCB Optimum Performance Hydraulic Fluid 46	4002/2003	200 Litres
		JCB Bio Hydraulic Fluid 46 (if required)	4002/2603	200 Litres
Chain Cases	23.3 (5.1)	JCB Engine Oil EP 15W40	4001/1805	20 Litres
Grease Points		JCB HP Grease or JCB Special MPL-EP Grease	4003/2017	24 x 400 gram cartridges

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

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15 Check all bushes and pivot pins for wear and renew as required.



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Fig 6. Pivot Pins - Vertical Lift

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Attachments For Your Machine

Before selecting an attachment for use, assess the application and select the appropriate attachment. The density of any materials being handled will affect the selection of the appropriate attachment.

⚠ CAUTION

If you have an attachment which is not covered in the Operator Manual do not install it, use it or remove it until you have obtained, read and understood the pertinent information. Install attachments only on the machines for which they were designed.

5-5-1-1_2

Remember, do not operate attachments until you have read and fully understand the attachment operating instructions.

These attachments will help increase the productivity of your machine, for more information contact your JCB Distributor.

Do not operate or work with attachments until the machine hydraulic oil has reached its normal working temperature.

Table 1. Dirt/GP Buckets

Part #	Item	JCB Model Name	260	280	300	330	260T	300T	320T
332/X3184	66" Dirt/GP Bucket / 14.1 cu. ft. Capacity	DB66	*	*	*				
332/L1798	72" Dirt/GP Bucket / 15.4 cu. ft. Capacity	DB72	*	*	*				
332/X3180	78" Dirt/GP Bucket / 16.7 cu. ft. Capacity	DB78	*	*	*	*	*	*	*
332/L1825	84" Dirt/GP Bucket / 18.1 cu. ft. Capacity	DB84	*	*	*	*	*	*	*
332/L1831	84" Extra High Capacity / Very Light Material Bucket / 43.9 cu. ft. Capacity	HCB84	*	*	*	*	*	*	*
332/L1834	96" Extra High Capacity / Very Light Material Bucket / 54 cu. ft. Capacity	HCB96	*	*	*	*	*	*	*

Table 2. Landscape Buckets

Part #	Item	JCB Model Name	260	280	300	330	260T	300T	320T
332/L1826	66" Landscape Bucket / 17.5 cu. ft. Capacity	LSB66	*	*	*				
332/L1827	72" Landscape Bucket / 19.2 cu. ft. Capacity	LSB72	*	*	*				
332/L1828	78" Landscape Bucket / 20.9 cu. ft. Capacity	LSB78	*	*	*	*	*	*	*
332/X3214	84" Landscape Bucket / 22.7 cu. ft. Capacity	LSB84	*	*	*	*	*	*	*

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Battery Isolator (Option)

To disconnect the battery from the machine electrics a battery isolator switch is installed in the battery bay.

⚠ CAUTION

Before carrying out arc welding on the machine, disconnect the battery and alternator to protect the circuits and components. The battery must still be disconnected even if a battery isolator is fitted.

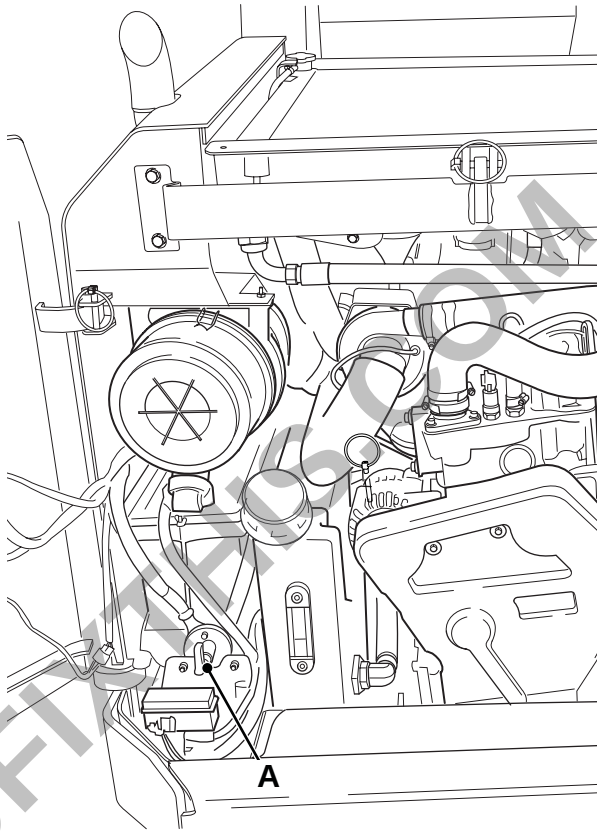
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To disconnect the machine electrics:

1 Turn the battery isolation switch **A** to the OFF position and remove the key.

To connect the machine electrics:

1 Turn the battery isolation switch **A** to the ON position.

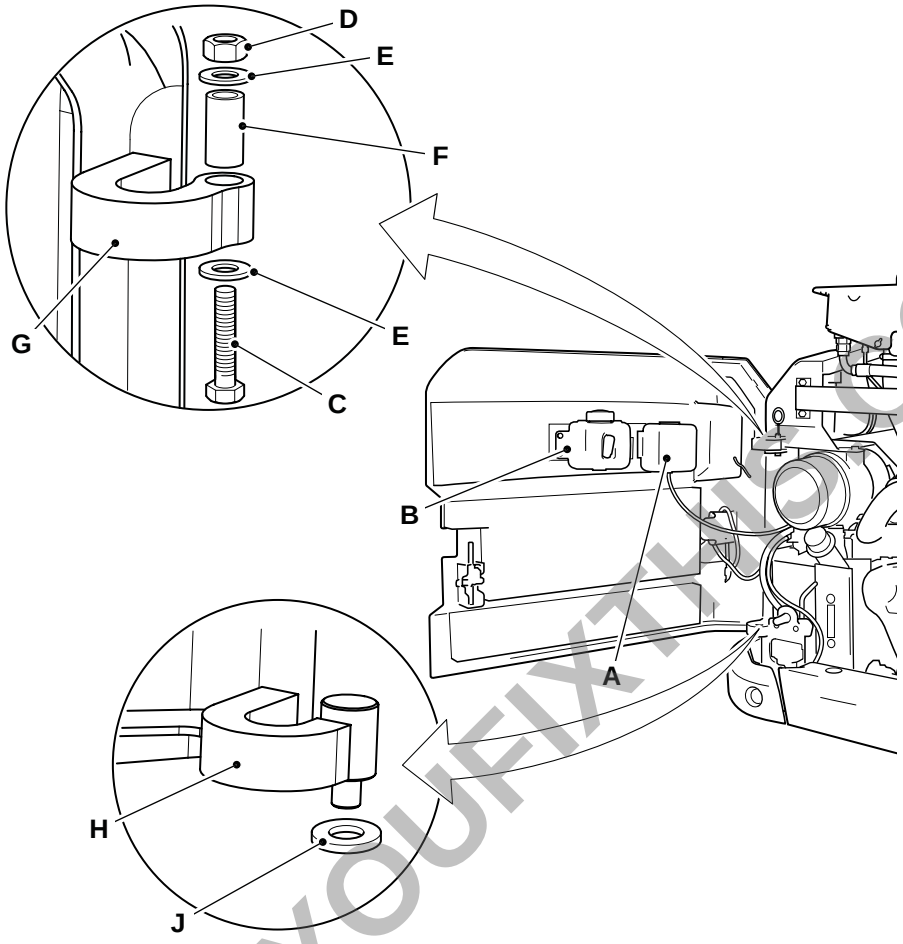


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Fig 39.

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Fig 1.

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White Noise/Reverse Alarm

Removal, Inspection and Replacement

The reverse/white Noise alarm will sound when the machine is moving in the reverse direction.

Table 1.

1	Alarm reverse white noise 87 dB(A)
1	Alarm reverse 102 dB(A)
2	Switch pressure, 7 bar
3	Adapter
4	Adapter - 04M/-06F
5	Grommet
6	Washer M5
7	Bolt M5
8	Lock nut M5

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