

8040ZTS, 8045ZTS, 8050RTS, 8050ZTS

Service Manual - 8040ZTS, 8045ZTS, 8050RTS, 8050ZTS

[Section 1 - General Information](#)

[Section 2 - Care and Safety](#)

[Section 3 - Maintenance](#)

[Section A - Attachments](#)

[Section B - Body and Framework](#)

[Section C - Electrics](#)

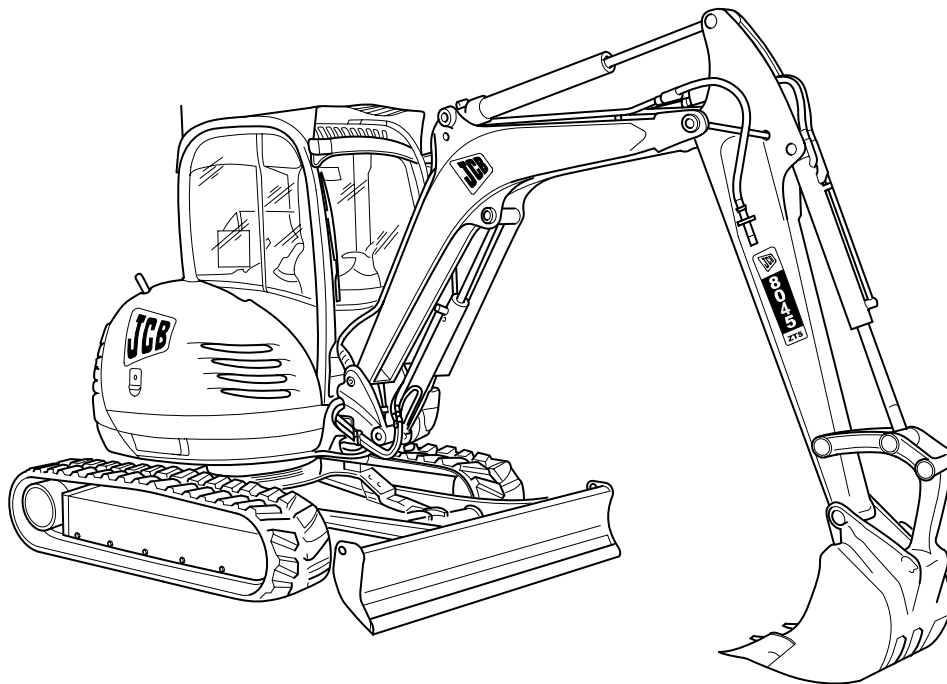
[Section D - Controls](#)

[Section E - Hydraulics](#)

[Section F - Gearboxes](#)

[Section J - Track and Running Gear](#)

[Section K - Engine](#)



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Notes:

Contents	Page No.
Introduction	
About this Manual	1-1
Machine Model and Serial Number	1-1
Using the Service Manual	1-1
Section Numbering	1-1
Left Side, Right Side	1-2
Cross References	1-2
Identifying Your Machine	
Identification Plates	1-3
Machine Identification Plate	1-3
Typical Vehicle Identification Number (VIN)	1-3
Typical Product Identification Number (PIN)	1-3
Typical Engine Identification Number	1-4
ROPS, TOPS and FOGS	1-5
Standard Torque Settings	
Zinc Plated Fasteners and Dacromet Fasteners	1-7
Introduction	1-7
Bolts and Screws	1-7
Hydraulic Connections	1-11
'O' Ring Face Seal System	1-11
'Torque Stop' Hose System	1-14
Service Tools	
Numerical List	1-15
Tool Detail Reference	1-18
Section B - Frame and Bodywork	1-18
Section C - Electrics	1-22
Section E - Hydraulics	1-23
Section K - Engine	1-28
Service Consumables	
Sealing and Retaining Compounds	1-29
Terms and Definitions	
Colour Coding	1-31
Hydraulic Schematic Colour Codes	1-31



Contents

Page No.

Introduction

About this Manual

Machine Model and Serial Number

This manual provides information for the following model(s) in the JCB machine range:

JCB 8040ZTS from serial number 1056000.

JCB 8045ZTS from serial number 1057000.

JCB 8050ZTS from serial number 1741500.

JCB 8050CTS from serial number 1741500.

Using the Service Manual

T11-004
This publication is designed for the benefit of JCB Distributor Service Engineers who are receiving, or have received, training by JCB Technical Training Department.

These personnel should have a sound knowledge of workshop practice, safety procedures, and general techniques associated with the maintenance and repair of hydraulic earthmoving equipment.

The illustrations in this publication are for guidance only. Where the machines differ, the text and/or the illustration will specify.

General warnings in Section 2 are repeated throughout the manual, as well as specific warnings. Read all safety statements regularly, so you do not forget them.

Renewal of oil seals, gaskets, etc., and any component showing obvious signs of wear or damage is expected as a matter of course. It is expected that components will be cleaned and lubricated where appropriate, and that any opened hose or pipe connections will be blanked to prevent excessive loss of hydraulic fluid and ingress of dirt.

Where a torque setting is given as a single figure it may be varied by plus or minus 3%. Torque figures indicated are for dry threads, hence for lubricated threads may be reduced by one third.

The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will

be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this publication.

Finally, please remember above all else safety must come first!

Section Numbering

T11-005
The manual is compiled in sections, the first three are numbered and contain information as follows:

- 1 General Information - includes torque settings and service tools.
- 2 Care and Safety - includes warnings and cautions pertinent to aspects of workshop procedures etc.
- 3 Maintenance - includes service schedules and recommended lubricants for all the machine.

The remaining sections are alphabetically coded and deal with Dismantling, Overhaul etc. of specific components, for example:

- A Attachments
- B Body and Framework, etc.

Section contents, technical data, circuit descriptions, operation descriptions etc. are inserted at the beginning of each alphabetically coded section.

Left Side, Right Side

In this manual, 'left' **A** and 'right' **B** mean your left and right when you are seated correctly in the machine.

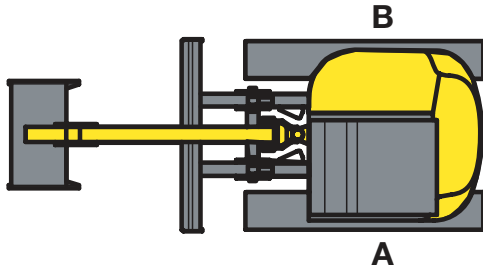


Fig 1.

Cross References

T1-004_2

In this publication, page cross references are made by presenting the subject title printed in bold, italic and underlined. It is preceded by the 'go to' symbol. The number of the page upon which the subject begins, is indicated within the brackets. For example: [⇒ ***Cross References*** \(***1-2***\).](#)

Identifying Your Machine

Identification Plates

Machine Identification Plate

Your machine has an identification plate mounted as shown. The Product Identification Number (PIN), weight, engine power, year of manufacture and serial number of the machine are shown on the plate.

Note: The machine model and build specification is indicated by the PIN. Refer to **Typical Product Identification Number (PIN)**.

If the engine is replaced by a new one, the serial number on the identification plate will be wrong. Either get a replacement identification plate from your JCB Dealer or simply remove the old number. This will prevent the wrong unit number being quoted when replacement parts are ordered.

The machine and engine serial numbers can help identify exactly the type of equipment you have.

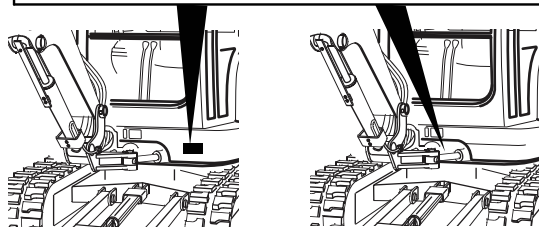
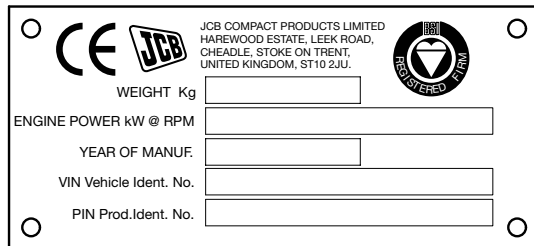


Fig 1.

Typical Vehicle Identification Number (VIN)

1	2	3	4	5
JCB	08045	L	7	1226501

- 1 World Manufacturer Identification (JCB)
- 2 Machine Type and Model (08045 = 8045)
- 3 Random Check Letter
- 4 Year of Manufacture (6 = 2006, 7 = 2007, 8 = 2008, 9 = 2009)
- 5 Product Identification Number (1226501)

Typical Product Identification Number (PIN)

1	2	3	4
JCB	08040	L	01056000

- 1 World Manufacturer Identification (3 Digits).

JCB = UK Build.

- 2 Machine Type and Model (5 Digits).

08040 = 8040.

- 3 Random Check Letter (1 Digit).

The Check Letter is used to verify the authenticity of a machine's PIN.

- 4 Machine Serial Number (8 Digits).

Each machine has a unique serial number.

Typical Engine Identification Number

The engine data label is located on the cylinder block as shown. The data label includes the engine identification number.

A typical engine identification number is:

GJ	U	65692	500405	P
1	2	3	4	5

1 Engine Type (2 Digits)

GJ = Naturally aspirated, 13.8kW (18.5Hp)

2 Country of Manufacture (1 Digit)

U = United Kingdom

3 Build Number (5 Digits)

4 Engine Serial Number (6 Digits)

5 Year of Manufacture (1 Digit)

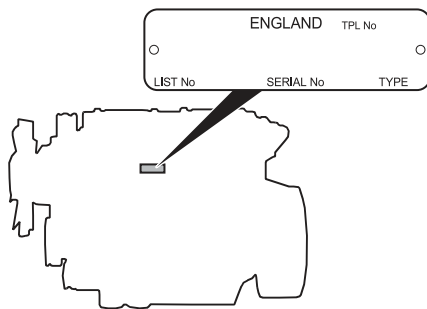


Fig 2.

T017650-2

ROPS, TOPS and FOGS

WARNING

Modified and wrongly repaired ROPS, TOPS & FOGS Structures are dangerous. Do not modify the TOPS Structure. Do not attempt to repair the ROPS, TOPS & FOGS Structure. If the ROPS, TOPS & FOGS Structure has been in an accident, do not use the machine until the structure has been inspected and repaired. This must be done by a qualified person. For assistance, contact your JCB dealer. Failure to take precautions could result in death or injury to the operator.

5-3-1-7_2

Machines built to ROPS and TOPS standards have an identification label fitted to the cab. → [Fig 3.](#) (□ 1-5).

A bolt on falling object guard is available which also carries a certified label. This label certifies the cab to FOGS standard. → [Fig 4.](#) (□ 1-5)

When a machine is used in an application with the risk of falling objects, the machine must be equipped with the optional FOGS guard. This guard is compliant to ISO10262 level 1 and is intended for protection from small objects, e.g. small rocks, small debris and other small objects encountered in operations such as highway maintenance, landscaping and other construction site services.

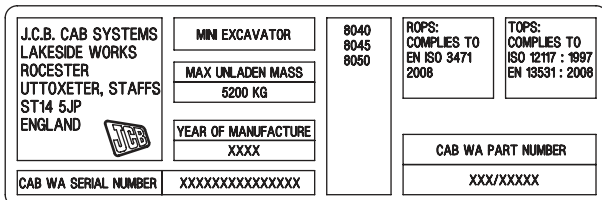


Fig 3.

332/L7066

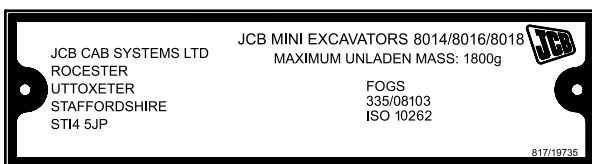


Fig 4.



Section 1 - General Information Identifying Your Machine

Identification Plates

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Standard Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

T11-002

Introduction

Some external fasteners on JCB machines are manufactured using an improved type of corrosion resistant finish. This type of finish is called Dacromet and replaces the original Zinc and Yellow Plating used on earlier machines.

The two types of fasteners can be readily identified by colour and part number suffix. ⇒ [Table 1. Fastener Types](#) (1-7).

Table 1. Fastener Types

Fastener Type	Colour	Part No. Suffix
Zinc and Yellow	Golden finish	'Z' (e.g. 1315/3712Z)
Dacromet	Mottled silver finish	'D' (e.g. 1315/3712D)

Note: As the Dacromet fasteners have a lower torque setting than the Zinc and Yellow fasteners, the torque figures used must be relevant to the type of fastener.

Note: A Dacromet bolt should not be used in conjunction with a Zinc or Yellow plated nut, as this could change the torque characteristics of the torque setting further. For the same reason, a Dacromet nut should not be used with a Zinc or Yellow plated bolt.

Note: All bolts used on JCB machines are high tensile and must not be replaced by bolts of a lesser tensile specification.

Note: Dacromet bolts, due to their high corrosion resistance are used in areas where rust could occur. Dacromet bolts are only used for external applications. They are not used in applications such as gearbox or engine joint seams or internal applications.

Bolts and Screws

Use the following torque setting tables only where no torque setting is specified in the text.

Note: Dacromet fasteners are lubricated as part of the plating process, do not lubricate.

Torque settings are given for the following conditions:

Condition 1

- Un-lubricated fasteners
- Zinc fasteners
- Yellow plated fasteners

Condition 2

- Zinc flake (Dacromet) fasteners
- Lubricated zinc and yellow plated fasteners
- Where there is a natural lubrication. For example, cast iron components

Verbus Ripp Bolts

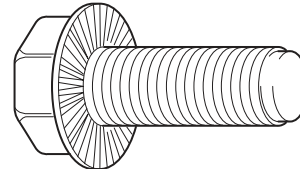


Fig 1.

Torque settings for these bolts are determined by the application. Refer to the relevant procedure for the required settings.



Section 1 - General Information Standard Torque Settings

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	98.0	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



Section 1 - General Information Standard Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 4. Metric Grade 10.9 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	8.1	0.8	6.0	7.3	0.7	5.4
M6	6	10	13.9	1.4	10.2	12.5	1.3	9.2
M8	8	13	34.0	3.5	25.0	30.0	3.0	22.1
M10	10	17	67.0	6.8	49.4	60.0	6.1	44.2
M12	12	19	116.0	11.8	85.5	104.0	10.6	76.7
M16	16	24	288.0	29.4	212.4	259.0	26.4	191.0
M20	20	30	562.0	57.3	414.5	506.0	51.6	373.2
M24	24	36	971.0	99.0	716.9	874.0	89.1	644.6
M30	30	46	1930.0	196.8	1423.5	1737.0	177.1	1281.1
M36	36	55	3374.0	344.0	2488.5	3036.0	309.6	2239.2

Table 5. Metric Grade 12.9 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	9.8	1.0	7.2	8.8	0.9	6.5
M6	6	10	16.6	1.7	12.2	15.0	1.5	11.1
M8	8	13	40.0	4.1	29.5	36.0	3.7	26.5
M10	10	17	80.0	8.1	59.0	72.0	7.3	53.1
M12	12	19	139.0	14.2	102.5	125.0	12.7	92.2
M16	16	24	345.0	35.2	254.4	311.0	31.7	229.4
M20	20	30	674.0	68.7	497.1	607.0	61.9	447.7
M24	24	36	1165.0	118.8	859.2	1048.0	106.9	773.0
M30	30	46	2316.0	236.2	1708.2	2084.0	212.5	1537.1
M36	36	55	4049.0	412.9	2986.4	3644.0	371.6	2687.7



Section 1 - General Information Standard Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 6. Torque Settings - Rivet Nut Bolts/Screws

Bolt Size		Nm	kgf m	lbf ft
ISO Metric Thread	mm			
M3	3	1.2	0.1	0.9
M4	4	3.0	0.3	2.0
M5	5	6.0	0.6	4.5
M6	6	10.0	1.0	7.5
M8	8	24.0	2.5	18.0
M10	10	48.0	4.9	35.5
M12	12	82.0	8.4	60.5

Table 7. Torque Settings - Internal Hexagon Headed Cap Screws (Zinc)

Bolt Size	Nm	kgf m	lbf ft
ISO Metric Thread			
M3	2.0	0.2	1.5
M4	6.0	0.6	4.5
M5	11.0	1.1	8.0
M6	19.0	1.9	14.0
M8	46.0	4.7	34.0
M10	91.0	9.3	67.0
M12	159.0	16.2	117.0
M16	395.0	40.0	292.0
M18	550.0	56.0	406.0
M20	770.0	79.0	568.0
M24	1332.0	136.0	983.0

Hydraulic Connections

T11-003

'O' Ring Face Seal System

Adaptors Screwed into Valve Blocks

Adaptor screwed into valve blocks, seal onto an 'O' ring which is compressed into a 45° seat machined into the face of the tapped port.

Table 8. Torque Settings - BSP Adaptors

BSP Adaptor Size	Hexagon (A/F)	Nm	kgf m	lbf ft
	in.			
1/4	19.0	18.0	1.8	13.0
3/8	22.0	31.0	3.2	23.0
1/2	27.0	49.0	5.0	36.0
5/8	30.0	60.0	6.1	44.0
3/4	32.0	81.0	8.2	60.0
1	38.0	129.0	13.1	95.0
1 1/4	50.0	206.0	21.0	152.0

Table 9. Torque Settings - SAE Connections

SAE Tube Size	SAE Port Thread Size	Hexagon (A/F)	Nm	kgf m	lbf ft
		mm			
4	7/16 - 20	15.9	20.0 - 28.0	2.0 - 2.8	16.5 - 18.5
6	9/16 - 18	19.1	46.0 - 54.0	4.7 - 5.5	34.0 - 40.0
8	3/4 - 16	22.2	95.0 - 105.0	9.7 - 10.7	69.0 - 77.0
10	7/8 - 14	27.0	130.0 - 140.0	13.2 - 14.3	96.0 - 104.0
12	1 1/16 - 12	31.8	190.0 - 210.0	19.4 - 21.4	141.0 - 155.0
16	1 5/16 - 12	38.1	290.0 - 310.0	29.6 - 31.6	216.0 - 230.0
20	1 5/8	47.6	280.0 - 380.0	28.5 - 38.7	210.0 - 280.0

Hoses Screwed into Adaptors

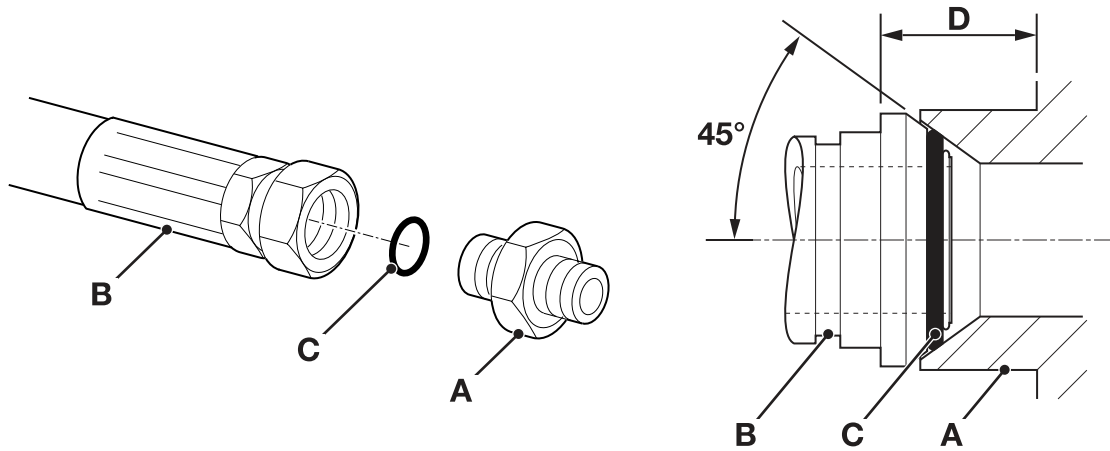


Fig 2.

Hoses **2-B** screwed into adaptors **2-A** seal onto an 'O' ring **2-C** which is compressed into a 45° seat machined into the face of the adaptor port.

Note: Dimension **2-D** will vary depending upon the torque applied.

Table 10. BSP Hose - Torque Settings

BSP Hose Size	Hexagon (A/F)	Nm	kgf m	lbf ft
	in.			
1/8		14.0 - 16.00	1.4 - 1.6	10.3 - 11.8
1/4		24.0 - 27.0	2.4 - 2.7	17.7 - 19.9
3/8		33.0 - 40.0	3.4 - 4.1	24.3 - 29.5
1/2		44.0 - 50.0	4.5 - 5.1	32.4 - 36.9
5/8		58.0 - 65.0	5.9 - 6.6	42.8 - 47.9
3/4		84.0 - 92.0	8.6 - 9.4	61.9 - 67.8
1		115.0 - 126.0	11.7 - 12.8	84.8 - 92.9
1 1/4		189.0 - 200.0	19.3 - 20.4	139.4 - 147.5
1 1/2		244.0 - 260.0	24.9 - 26.5	180.0 - 191.8



Section 1 - General Information Standard Torque Settings

Hydraulic Connections

Adaptors into Component Connections with Bonded Washers

Table 11. BSP Adaptors with Bonded Washers - Torque Settings

BSP Size			
in.	Nm	kgf m	lbf ft
1/8	20.0	2.1	15.0
1/4	34.0	3.4	25.0
3/8	75.0	7.6	55.0
1/2	102.0	10.3	75.0
5/8	122.0	12.4	90.0
3/4	183.0	18.7	135.0
1	203.0	20.7	150.0
1 1/4	305.0	31.0	225.0
1 1/2	305.0	31.0	225.0

'Torque Stop' Hose System

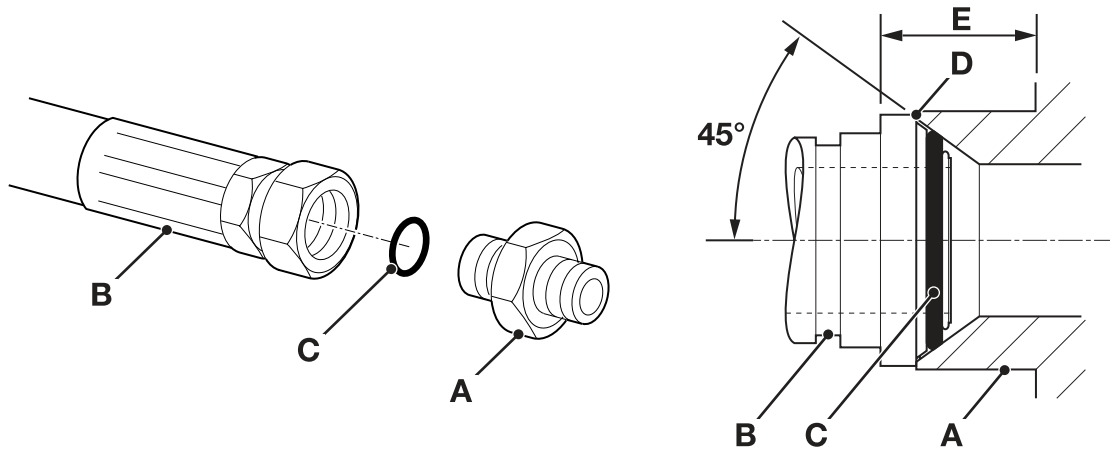


Fig 3.

'Torque Stop' Hoses **3-B** screwed into adaptors **3-A** seal onto an 'O' ring **3-C** which is compressed into a 45° seat machined in the face of the adaptor port. To prevent the 'O' ring being damaged as a result of over tightening, 'Torque

Stop' Hoses have an additional shoulder **3-D**, which acts as a physical stop.

Note: Minimum dimension **3-E** fixed by shoulder **3-D**.

Table 12. BSP 'Torque Stop' Hose - Torque Settings

BSP Hose Size	Hexagon (A/F)	Nm	kgf m	lbf ft
	in.			
1/8	14.0	14.0	1.4	10.0
1/4	19.0	27.0	2.7	20.0
3/8	22.0	40.0	4.1	30.0
1/2	27.0	55.0	5.6	40.0
5/8	30.0	65.0	6.6	48.0
3/4	32.0	95.0	9.7	70.0
1	38.0	120.0	12.2	89.0
1 1/4	50.0	189.0	19.3	140.0
1 1/2	55.0	244.0	24.9	180.0

Service Tools

Numerical List

The tools listed in the table are special tools required for carrying out the procedures described in this manual. These tools are available from JCB Service.

Note: *Tools other than those listed will be required. It is expected that such general tools will be available in any well equipped workshop or be available locally from any good tool supplier.*

Some tools are available as kits or sets, the part numbers for parts within such kits or sets are not listed here. For full details of all tools, including the content of kits and sets, refer to **Tool Detail Reference, Section 1**.

Part Number	Description	See Section
-	Bonded Washers - see Tool Detail Reference (Section 1) for content	E
-	Female Cone Blanking Plugs - see Tool Detail Reference (Section 1) for content	E
-	Female Connectors - see Tool Detail Reference (Section 1) for content	E
-	Hydraulic Flow Test Equipment - see Tool Detail Reference (Section 1) for content	E
-	Hydraulic Hand Pump Equipment - see Tool Detail Reference (Section 1) for content	E
-	Male Adapters - BSP x BSP - see Tool Detail Reference (Section 1) for content	E
-	Male Adapters - BSP x NPT (USA only) - see Tool Detail Reference (Section 1) for content	E
-	Male Cone Blanking Caps - see Tool Detail Reference (Section 1) for content	E
-	Pressure Test Points - Adaptors - see Tool Detail Reference (Section 1) for content	E
-	Pressure Test Points - 'T' Adaptors - see Tool Detail Reference (Section 1) for content	E
-	Rivet Nut Tool - see Tool Detail Reference (Section 1) for content	B
331/22966	Pump Drive Alignment Tool	E
331/31069	Test Block for A.R.V.	E
4104/1310	Hand Cleaner	B
892/00039	Spool Clamp	E
892/00041	De-glazing Tool	K
892/00137	Micro-Bore Hose	E
892/00223	Hand Pump	E
892/00253	Hydraulic Circuit Pressure Test Kit - see Tool Detail Reference (Section 1) for content	E
892/00254	Hose	E
892/00271	Adapter	E
892/00272	Adapter	E
892/00273	Adapter	E
892/00274	Adapter	E
892/00275	Adapter	E
892/00276	Adapter	E



Section 1 - General Information Service Tools

Numerical List

Part Number	Description	See Section
892/00277	Adapter	E
892/00279	Gauge	E
892/00280	Gauge	E
892/00281	AVO Meter	C
892/00284	Digital Tachometer	C
892/00285	Hyd. Oil Temperature Probe	C
892/00298	Fluke Meter	C
892/00334	Ram Seal Fitting Tool	E
892/00346	Gauge	E
892/00347	Connector	E
892/00706	Test Probe	E
892/00842	Glass Lifter	B
892/00843	Folding Stand for Holding Glass	B
892/00845	Cartridge Gun	B
892/00846	Glass Extractor (Handles)	B
892/00847	Nylon Spatula	B
892/00848	Wire Starter	B
892/00849	Braided Cutting Wire	B
892/01016	Ram Protection Sleeve for 25 mm Rod Diameter	E
892/01017	Ram Protection Sleeve for 30 mm Rod Diameter	E
892/01018	Ram Protection Sleeve for 40 mm Rod Diameter	E
892/01019	Ram Protection Sleeve for 50 mm Rod Diameter	E
892/01020	Ram Protection Sleeve for 50 mm Rod Diameter (slew ram)	E
892/01021	Ram Protection Sleeve for 60 mm Rod Diameter	E
892/01022	Ram Protection Sleeve for 60 mm Rod Diameter (slew ram)	E
892/01023	Ram Protection Sleeve for 65 mm Rod Diameter	E
892/01024	Ram Protection Sleeve for 70 mm Rod Diameter	E
892/01025	Ram Protection Sleeve for 75 mm Rod Diameter	E
892/01026	Ram Protection Sleeve for 80 mm Rod Diameter	E
892/01027	Piston Seal Assembly Tool	E
926/15500	Rubber Spacer Blocks	B
992/02800	ARV Extractor	E
992/04000	Torque Multiplier	F
992/09300	Hexagon Spanner 55mm A/F	E
992/09400	Hexagon Spanner 65mm A/F	E
992/09500	Hexagon Spanner 75mm A/F	E
992/09600	Hexagon Spanner 85mm A/F	E



Section 1 - General Information Service Tools

Numerical List

Part Number	Description	See Section
992/09700	Hexagon Spanner 95mm A/F	E
992/09900	Hexagon Spanner 115mm A/F	E
992/10000	Hexagon Spanner 125mm A/F	E
992/10100	Spool Clamp	E
992/12300	12V Mobile Oven	B
992/12400	24V Static Oven (2 Cartridge)	B
992/12800	Cut-Out Knife	B
992/12801	'L' Blades	B
993/68100	Slide Hammer Kit - see <i>Tool Detail Reference (Section 1)</i> for content	B

Tool Detail Reference

Section B - Frame and Bodywork

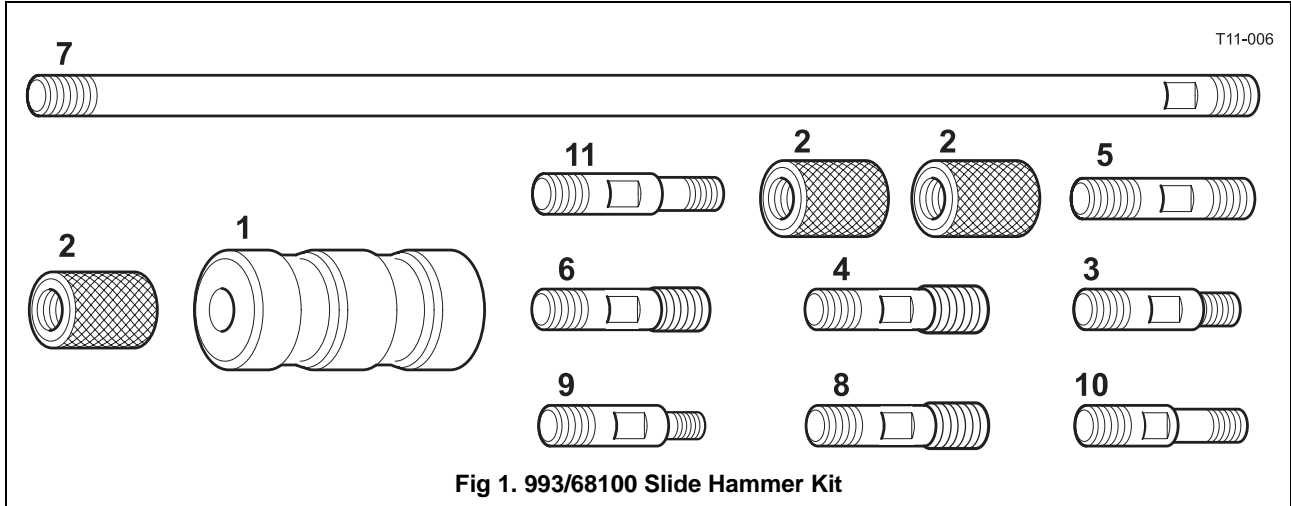


Fig 1. 993/68100 Slide Hammer Kit

1	993/68101	Slide Hammer	7	993/68107	Bar - M20 x M20 X 800 mm
2	993/68102	End Stops	8	993/68108	Adaptor - M20 x 7/8" UNF
3	993/68103	Adaptor - M20 x 5/8" UNF	9	993/68109	Adaptor - M20 x M12
4	993/68104	Adaptor - M20 x 1" UNF	10	993/68110	Adaptor - M20 x 5/8" UNF (Shoulder)
5	993/68105	Adaptor - M20 x M20	11	993/68111	Adaptor - M20 x 1/2" UNF
6	993/68106	Adaptor - M20 x M24			

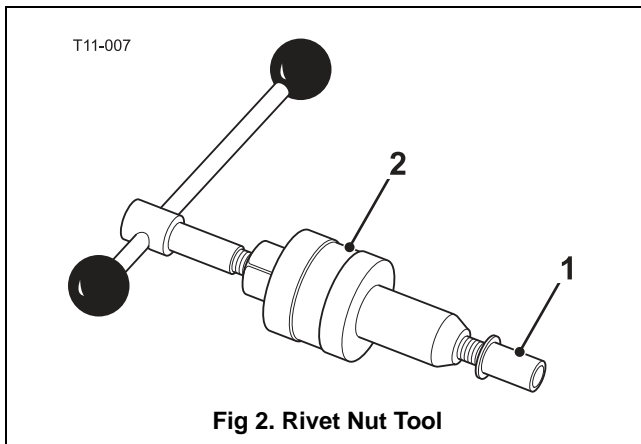
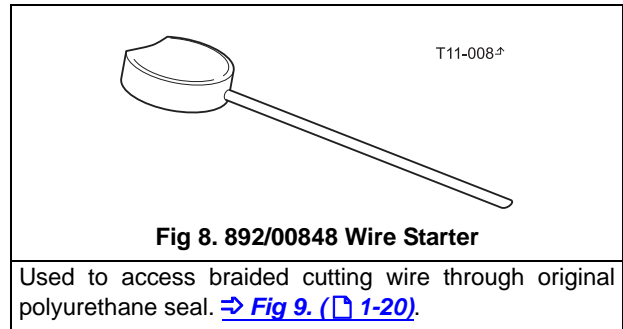
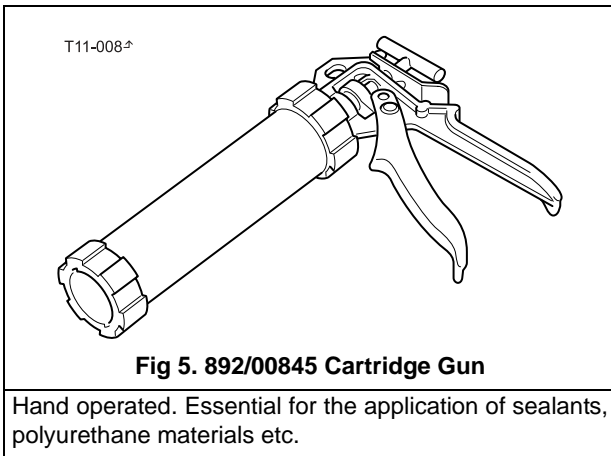
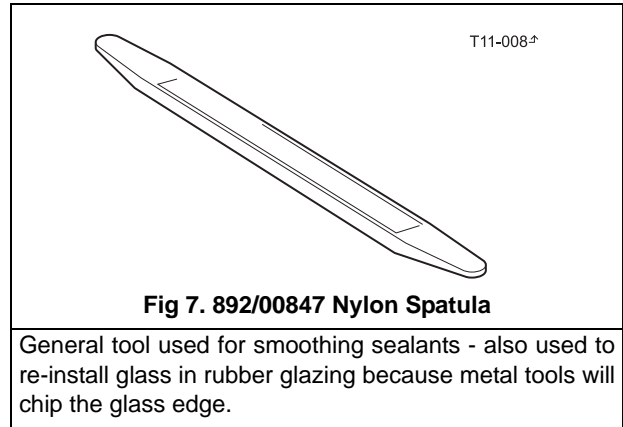
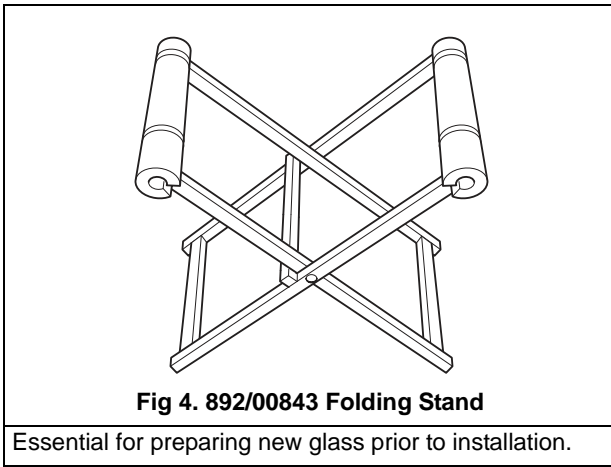
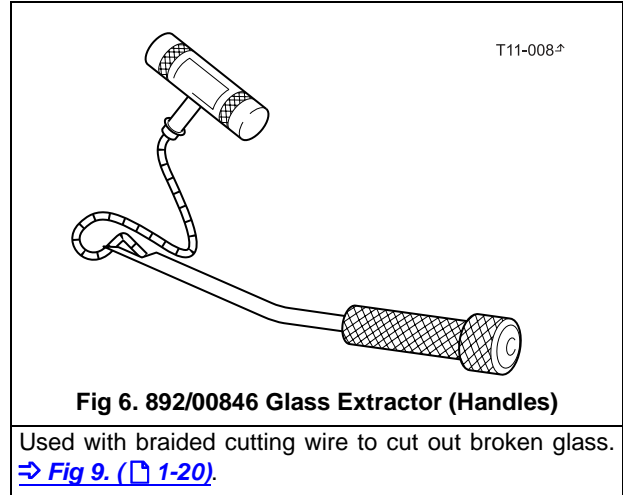
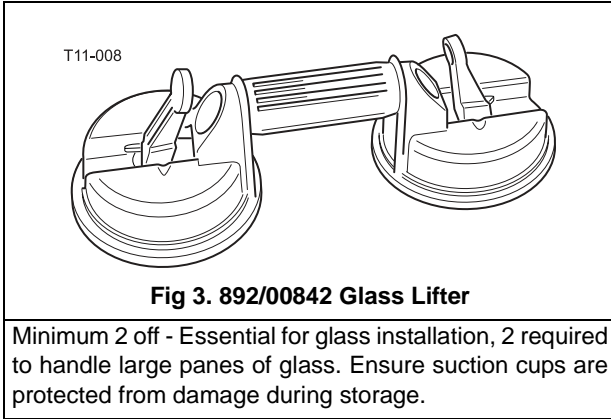


Fig 2. Rivet Nut Tool

1	826/01099	M6 x 16 mm Rivet Nut
	826/01101	M6 x 19 mm Rivet Nut
	826/01102	M8 x 18 mm Rivet Nut
	826/01103	M8 x 21 mm Rivet Nut
	826/01104	M10 x 23 mm Rivet Nut
	826/01105A	M10 x 26 mm Rivet Nut
2	-	Installation Tool available from: Bollhoff Fastenings Ltd (www.bollhoff.com)



T11-008[±]

Fig 9. 892/00849 Braided Cutting Wire

Consumable heavy duty cut-out wire used with the glass extraction tool. ⇒ [Fig 6.](#) (□ 1-19). Approx 25 m length.

T11-008[±]

Fig 10. 926/15500 Rubber Spacer Blocks

Used to provide the correct set clearance between glass edge and cab frame. Unit quantity = 500 off.

T11-008[±]

Fig 11. 992/12300 Mobile Oven 12V

1 cartridge capacity. Required to pre-heat adhesive prior to use. It is fitted with a male plug (703/23201) which fits into a female socket (715/04300).

T11-008[±]

Fig 12. 992/12400 Static Oven 240V

Required to pre-heat adhesive prior to use. No plug supplied.

Note: 110V models available upon request - contact JCB Technical Service.

T11-008[±]

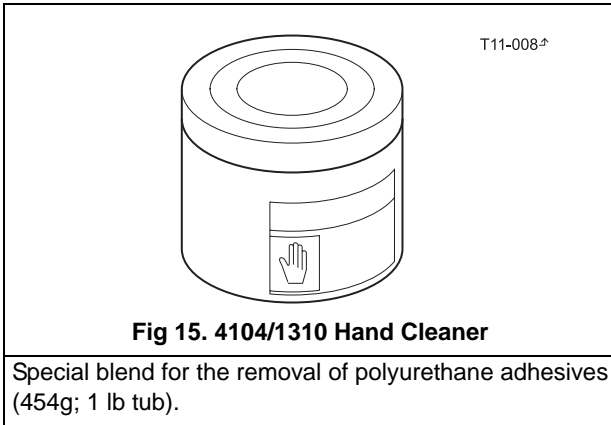
Fig 13. 992/12800 Cut-Out Knife

Used to remove broken glass.

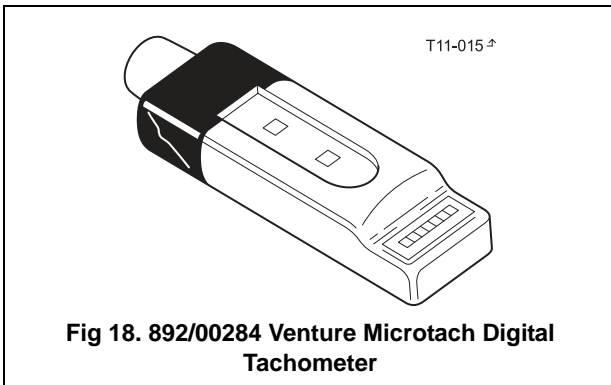
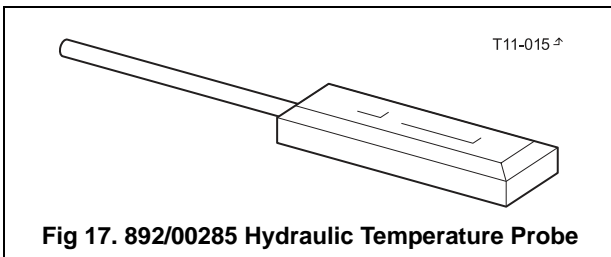
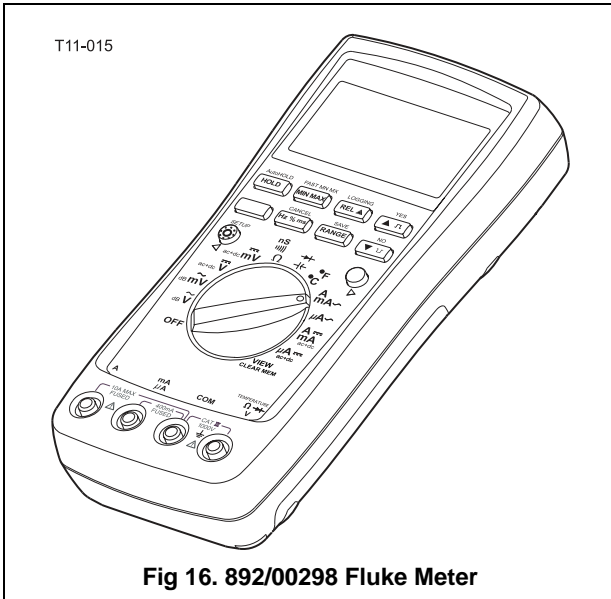
T11-008[±]

Fig 14. 992/12801 'L' Blades

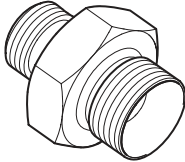
25 mm (1 in.) cut. Replacement blades for cut-out knife. ⇒ [Fig 13.](#) (□ 1-20). Unit quantity = 5 off.

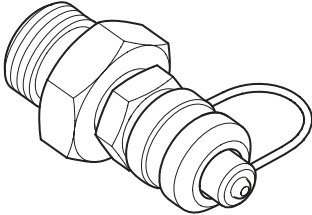


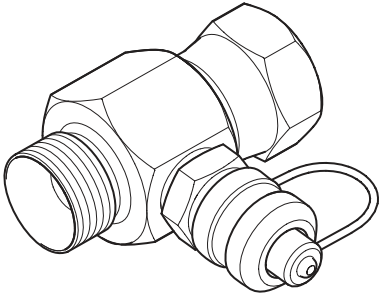
Section C - Electrics



Section E - Hydraulics

<p>T11-010</p>  <p>Fig 19. Male Adaptors</p>			Male Adaptors - BSP x BSP
	1606/2052		3/8 in. x 1/4 in.
	1604/0003A		3/8 in. x 3/8 in.
	892/00071		3/8 in. x 3/8 in. taper
	1606/0004		1/2 in. x 1/4 in.
	1606/0007A		1/2 in. x 3/8 in.
	1604/0004A		1/2 in. x 1/2 in.
	1606/0017		5/8 in. x 1/2 in.
	1606/0008		3/4 in. x 3/8 in.
	Male Adaptors - BSP x NPT (USA only)	1606/0009	3/4 in. x 1/2 in.
816/00439	3/8 in. x 1/4 in.	1604/2055	3/4 in. x 3/4 in.
816/00440	1/2 in. x 1/4 in.	1606/0012	3/4 in. x 1 in.
816/15007A	3/8 in. x 3/8 in.	1606/0014	3/4 in. x 1.1/4 in.
816/15008	1/2 in. x 3/8 in.	1606/0015	1 in. x 1.1/4 in.

<p>T11-010[±]</p>  <p>Fig 20. Pressure Test Adaptors</p>		892/00255	1/4 in. BSP x Test Point
		892/00256	3/8 in. BSP x Test Point
		892/00257	1/2 in. BSP x Test Point
		892/00258	5/8 in. BSP x Test Point
		816/15118	3/4 in. BSP x Test Point
		892/00259	1 in. BSP x Test Point
		892/00260	1.1/4 in. BSP x Test Point
		892/00261	5/8 in. UNF x Test Point

<p>T11-010[±]</p>  <p>Fig 21. Pressure Test 'T' Adaptors</p>		816/55045	1/4 in. M BSP x 1/4 in. F BSP x Test Point
		816/55038	3/8 in. M BSP x 3/8 in. F BSP x Test Point
		816/55040	1/2 in. M BSP x 1/2 in. F BSP x Test Point
		892/00263	5/8 in. M BSP x 5/8 in. F BSP x Test Point
		892/00264	3/4 in. M BSP x 3/4 in. F BSP x Test Point
		892/00265	1 in. M BSP x 1 in. F BSP x Test Point
		892/00266	1.1/4 in. M BSP x 1.1/4 in. F BSP x Test Point
		892/00267	1.1/4 in. M BSP x 1.1/2 in. F BSP x Test Point

<p>T11-010[±]</p> <p>Fig 22. 'T' Adapters</p>	892/00047	3/8 in. BSP (A) x 1/4 in. BSP (B)
	892/00048	1/2 in. BSP (A) x 1/4 in. BSP (B)
	892/00049	5/8 in. BSP (A) x 1/4 in. BSP (B)
	816/50043	3/4 in. BSP (A) x 1/4 in. BSP (B)
	892/00051	1 in. BSP (A) x 1/4 in. BSP (B)
	816/50005	1/2 in. BSP (A) x 1/2 in. BSP (B)
	816/60096	3/4 in. BSP (A) x 3/4 in. BSP (B)
	816/00017	1 in. BSP (A) x 1 in. BSP (B)

<p>T11-010[±]</p> <p>Fig 23. Female Blanking Caps</p>	892/00055A	1/4 in. BSP
	892/00056A	3/8 in. BSP
	892/00057	1/2 in. BSP
	892/00058A	5/8 in. BSP
	892/00059A	3/4 in. BSP
	892/00060	1 in. BSP

<p>T11-010[±]</p> <p>Fig 24. Male Cone Blanking Caps</p>	816/90045	1/4 in. BSP
	816/00189A	3/8 in. BSP
	816/00190A	1/2 in. BSP
	816/90022	5/8 in. BSP
	816/90274	3/4 in. BSP
	816/90205	1 in. BSP

<p>T11-010[±]</p> <p>Fig 25. Female Connectors</p>	892/00074	3/8 in. BSP x 3/8 in. BSP
	892/00075	1/2 in. BSP x 1/2 in. BSP
	892/00076	5/8 in. BSP x 5/8 in. BSP
	892/00077	3/4 in. BSP x 3/4 in. BSP

<p>T11-010[±]</p> <p>Fig 26. Bonded Washers</p>	1406/0011	1/4 in. BSP
	1406/0018	1/2 in. BSP
	1406/0014	5/8 in. BSP
	1406/0021	3/4 in. BSP
	1406/0029	1.1/4 in. BSP

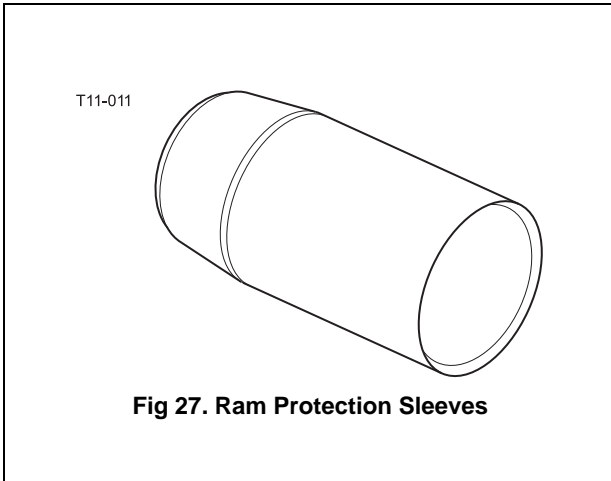


Fig 27. Ram Protection Sleeves

892/01016	For 25 mm Rod Diameter
892/01017	For 30 mm Rod Diameter
892/01018	For 40 mm Rod Diameter
892/01019	For 50 mm Rod Diameter
892/01020	For 50 mm Rod Diameter (slew ram)
892/01021	For 60 mm Rod Diameter
892/01022	For 60 mm Rod Diameter (slew ram)
892/01023	For 65 mm Rod Diameter
892/01024	For 70 mm Rod Diameter
892/01025	For 75 mm Rod Diameter
892/01026	For 80 mm Rod Diameter
892/00167	For 90 mm Rod Diameter

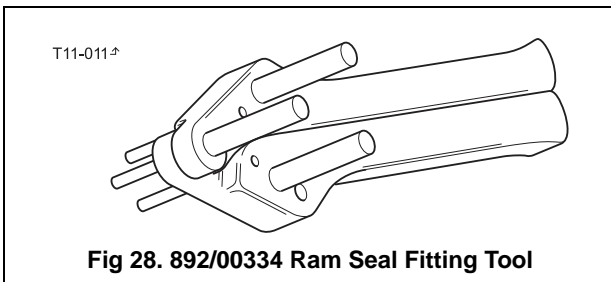


Fig 28. 892/00334 Ram Seal Fitting Tool

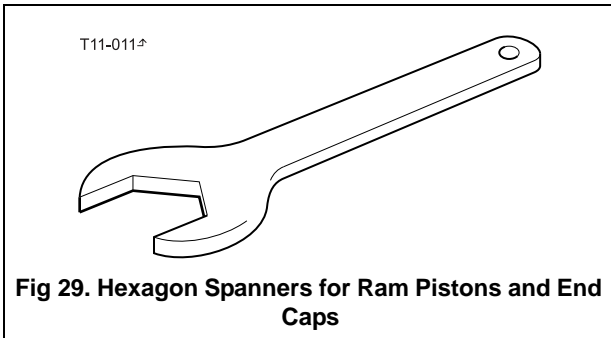


Fig 29. Hexagon Spanners for Ram Pistons and End Caps

992/09300	55mm A/F
992/09400	65mm A/F
992/09500	75mm A/F
992/09600	85mm A/F
992/09700	95mm A/F
992/09900	115mm A/F
992/10000	125mm A/F

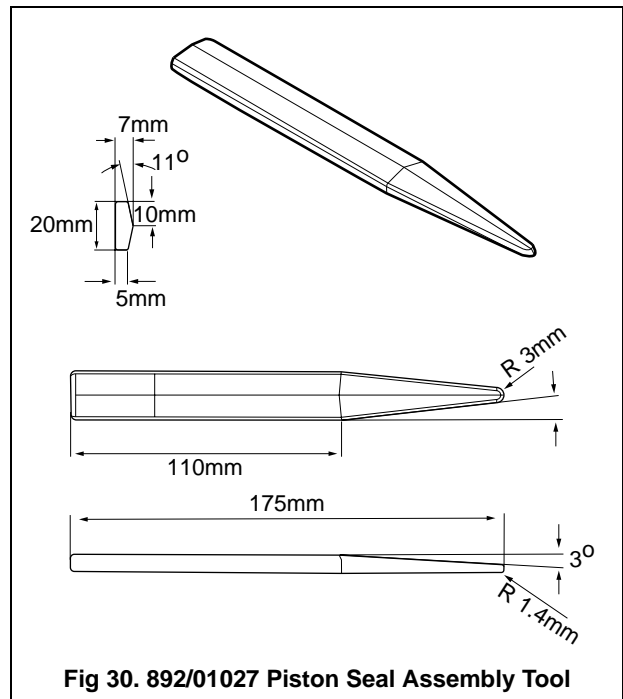
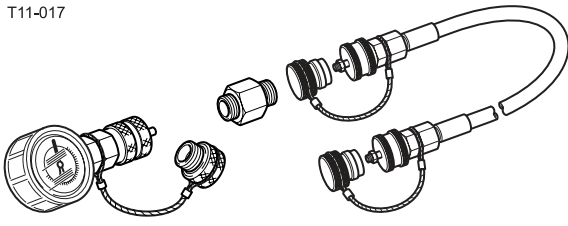
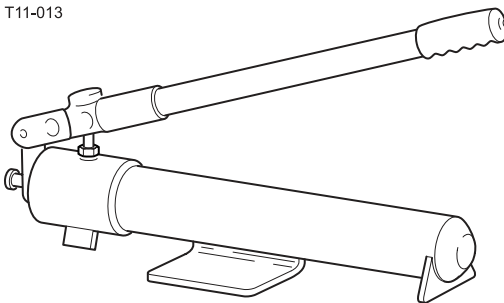


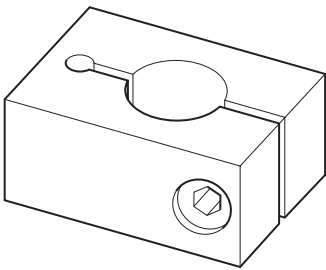
Fig 30. 892/01027 Piston Seal Assembly Tool

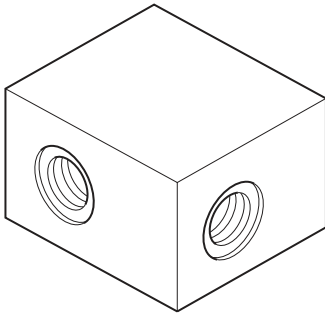
<p style="text-align: right;">T11-012</p> <p style="text-align: center;">Fig 31. Flow Test Equipment</p>	892/00268	Flow Monitoring Unit
	892/00269	Sensor Head 0 - 100 l/min (0 - 22 UK gal/min)
	892/00273	Sensor Head 0 - 380 l/min (0 - 85.5 UK gal/min)
	892/00293	Connector Pipe
	892/00270	Load Valve
	1406/0021	Bonded Washer
	1604/0006A	Adapter 3/4 in M x 3/4 in M BSP
	1612/2054	Adapter 3/4 in F x 3/4 in M BSP
	892/00271	Adapter 3/4 in F x 5/8 in M BSP
	892/00272	Adapter 5/8 in F x 3/4 in M BSP
	816/20008	Adapter 3/4 in F x 1/2 in M BSP
	892/00275	Adapter 1/2 in F x 3/4 in M BSP
	892/00276	Adapter 3/4 in F x 3/8 in M BSP
	892/00277	Adapter 3/8 in F x 3/4 in M BSP
	1606/0015	Adapter 1.1/4 in M BSP x 1 in M BSP
	892/00078	Connector 1 in F x 1 in F BSP
	1604/0008	Adapter 1 in M x 1 in M BSP
	1604/0008	Adapter 1 in M x 3/4 in M BSP
	816/20013	Adapter 3/4 in F x 1 in M BSP

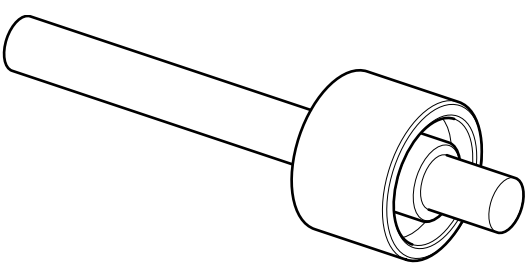
<p style="text-align: right;">T11-012²</p> <p style="text-align: center;">Fig 32. 892/ 00253 Hydraulic Circuit Pressure Test Kit</p>	892/00201	Replacement Gauge 0-20 bar (0-300 lbf/in ²)
	892/00202	Replacement Gauge 0-40 bar (0-600 lbf/in ²)
	892/00203	Replacement Gauge 0-400 bar (0-6000 lbf/in ²)
	892/00254	Replacement Hose
	993/69800	Seal Kit for 892/00254 (can also be used with probe 892/00706)
	892/00706	Test Probe
	892/00347	Connector - Hose to gauge

<p>T11-017</p>  <p>Fig 33. Hydraulic Circuit Test Gauges and Connections</p>	892/00279	Pressure Gauge 0-400 bar (0-6000 lbf/in ²)
	892/00346	Pressure Gauge 0-70 bar (0-1000 lbf/in ²)
	892/00347	Connector
	892/00254	Hose
	892/00280	Pressure Gauge 0-600 bar (0-9000 lbf/in ²)

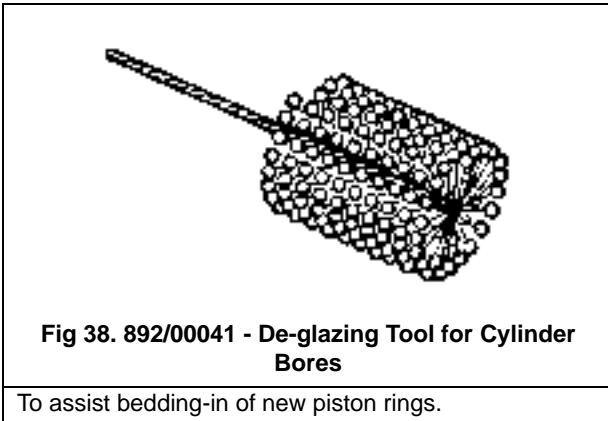
<p>T11-013</p>  <p>Fig 34. Hand Pump Equipment</p>	892/00223	Hand Pump
	892/00137	Micro-bore Hose 1/4 in BSP x 3 metres
	892/00274	Adapter 1/4 in M BSP x 3/8 in M BSP Taper
	892/00262	1/4 in M BSP x 1/4 in F BSP x Test Point
	892/00706	Test Probe
	892/00278	Gauge 0 - 40 bar (0 - 600 lbf/in ²)
	892/00279	Gauge 0 - 400 bar (0 - 6000 lbf/in ²)

 <p>Fig 35. Spool Clamps</p>	
892/00039	Spool Clamp
992/10100	Spool Clamp - Diameter 19mm (3/4 in)
992/02800	ARV Extractor

 <p>Fig 36. 331/31069 - Test Block for A.R.V.</p>	
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 <p style="text-align: right;">382310-V1</p> <p>Fig 37. 331/22966 Pump Drive Alignment Tool</p>	
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Section K - Engine



For details of other engine service tools refer to:

- Publication No. 9806/2100 English
- Publication No. 9806/2101 French
- Publication No. 9806/2102 German
- Publication No. 9806/2103 Spanish
- Publication No. 9806/2104 Italian



Service Consumables

Sealing and Retaining Compounds

T11-001_4

Table 1.

Type	Description	Part No.	Quantity
JCB Multi-Gasket	A medium strength sealant suitable for all sizes of gasket flanges, and for hydraulic fittings of 25-65 mm diameter.	4102/1212	50 ml
JCB High Strength Threadlocker	A high strength locking fluid for use with threaded components. Gasketing for all sizes of flange where the strength of the joint is important.	4102/0551	50 ml
JCB Retainer (High Strength)	For all retaining parts which are unlikely to be dismantled.	4101/0601	10 ml
		4101/0651	50 ml
JCB Threadlocker and Sealer	A medium strength locking fluid for sealing and retaining nuts, bolts, and screws up to 50 mm diameter, and for hydraulic fittings up to 25 mm diameter.	4101/0250	10 ml
		4101/0251	50 ml
JCB Threadlocker and Sealer (High Strength)	A high strength locking fluid for sealing and retaining nuts, bolts, and screws up to 50 mm diameter, and for hydraulic fittings up to 25 mm diameter.	4101/0550	10 ml
		4101/0552	200 ml
JCB Threadseal	A medium strength thread sealing compound.	4102/1951	50 ml
JCB Activator	A cleaning primer which speeds the curing rate of anaerobic products.	4104/0251	200 ml (Aerosol)
		4104/0253	1 ltr (Bottle)
JCB Cleaner/Degreaser	For degreasing components prior to use of anaerobic adhesives and sealants.	4104/1557	400 ml (Aerosol)
Direct Glazing Kit	For one pane of glass; comprises of: <ul style="list-style-type: none"> - 1 x Ultra Fast Adhesive (310 ml) - 1 x Active Wipe 205 (30 ml) - 1 x Black Primer 206J (30 ml) - plus applicator nozzle etc. 	993/55700	
Ultra Fast Adhesive	For direct glazing.	4103/2109	310 ml
Active Wipe 205	For direct glazing.	4104/1203	250 ml
Black Primer 206J	For direct glazing.	4201/4906	30 ml
Clear Silicone Sealant	To seal butt jointed glass.	4102/0901	
Plastic to Metal Bonder	To seal plastic to metal joints.	4103/0956	50 g
Black Polyurethane Sealant	To finish exposed edges of laminated glass.	4102/2309	310 ml



Section 1 - General Information

Service Consumables

Sealing and Retaining Compounds

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Terms and Definitions

Colour Coding

Hydraulic Schematic Colour Codes

T11-006

The following colour coding, used on illustrations to denote various conditions of oil pressure and flow, is standardised throughout JCB Service Publications.

	Red	Full Pressure: Pressure generated from operation of a service. Depending on application this may be anything between neutral circuit pressure and MRV operating pressure.
	Pink	Pressure: Pressure that is above neutral circuit pressure but lower than that denoted by Red.
	Orange	Servo: Oil pressure used in controlling a device (servo).
	Blue	Neural: Neutral circuit pressure.
	Green	Exhaust
	Light Green	Cavitation: Oil subjected to a partial vacuum due to a drop in pressure (cavitation).
	Yellow	Lock Up: Oil trapped within a chamber or line, preventing movement of components (lock up).



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Notes:



Section 2 - Care and Safety

Contents	Page No.
Safety Notices	
Important Information	2-1
The Operator Manual	2-1
Safety Warnings	2-1
Safety Check List	2-2
Safety - Yours and Others	2-2
General Safety	2-2
Operating Safety	2-4
Maintenance Safety	2-8
Safety Labels	2-12
Introduction	2-12
Safety Label Identification	2-13



Section 2 - Care and Safety

Contents

Page No.

Safety Notices

Important Information

T1-042

The Operator Manual

WARNING

You and others can be killed or seriously injured if you operate or maintain the machine without first studying the Operator Manual. You must understand and follow the instructions in the Operator Manual. If you do not understand anything, ask your employer or JCB dealer to explain it.

INT-1-4-2

Do not operate the machine without an Operator Manual, or if there is anything on the machine you do not understand.

Treat the Operator Manual as part of the machine. Keep it clean and in good condition. Replace the Operator Manual immediately if it is lost, damaged or becomes unreadable.

Safety Warnings



This safety alert system identifies important safety messages in this manual. When you see this symbol, be alert, your safety is involved, carefully read the message that follows, and inform other operators.

In this publication and on the machine, there are safety notices. Each notice starts with a signal word. The signal word meanings are given below.

DANGER

Denotes an extreme hazard exists. If proper precautions are not taken, it is highly probable that the operator (or others) could be killed or seriously injured.

INT-1-2-1

WARNING

Denotes a hazard exists. If proper precautions are not taken, the operator (or others) could be killed or seriously injured.

INT-1-2-2

CAUTION

Denotes a reminder of safety practices. Failure to follow these safety practices could result in injury to the operator (or others) and possible damage to the machine.

INT-1-2-3

Safety Check List

P11-1010_3

Safety - Yours and Others

INT-1-3-1_3

All machinery can be hazardous. When a machine is correctly operated and properly maintained, it is a safe machine to work with. But when it is carelessly operated or poorly maintained it can become a danger to you (the operator) and others.

In this manual and on the machine you will find warning messages. Read and understand them. They tell you of potential hazards and how to avoid them. If you do not fully understand the warning messages, ask your employer or JCB distributor to explain them.

But safety is not just a matter of responding to the warnings. All the time you are working on or with the machine you must be thinking what hazards there might be and how to avoid them.

Do not work with the machine until you are sure that you can control it.

Do not start any job until you are sure that you and those around you will be safe.

If you are unsure of anything, about the machine or the job, ask someone who knows. Do not assume anything.

Remember

BE CAREFUL

BE ALERT

BE SAFE

General Safety

T1-043

WARNING

To operate the machine safely you must know the machine and have the skill to use it. You must abide by all relevant laws, health and safety regulations that apply to the country you are operating in. The Operator Manual instructs you on the machine, its controls and its safe operation; it is not a training manual. If you are a new operator, get yourself trained in the skills of using a machine before trying to work with it. If you don't, you will not do your job well, and you will be a danger to yourself and others.

INT-1-4-1

WARNING

Care and Alertness

All the time you are working with or on the machine, take care and stay alert. Always be careful. Always be alert for hazards.

INT-1-3-5

WARNING

Clothing

You can be injured if you do not wear the proper clothing. Loose clothing can get caught in the machinery. Wear protective clothing to suit the job. Examples of protective clothing are: a hard hat, safety shoes, safety glasses, a well fitting overall, ear-protectors and industrial gloves. Keep cuffs fastened. Do not wear a necktie or scarf. Keep long hair restrained. Remove rings, watches and personal jewellery.

INT-1-3-6_2

WARNING

Alcohol and Drugs

It is extremely dangerous to operate machinery when under the influence of alcohol or drugs. Do not consume alcoholic drinks or take drugs before or while operating the machine or attachments. Be aware of medicines which can cause drowsiness.

INT-1-3-9_2

WARNING

Feeling Unwell

Do not attempt to operate the machine if you are feeling unwell. By doing so you could be a danger to yourself and those you work with.

8-1-2-4

WARNING

Mobile Phones

Switch off your mobile phone before entering an area with a potentially explosive atmosphere. Sparks in such an area could cause an explosion or fire resulting in death or serious injury.

Switch off and do not use your mobile phone when refuelling the machine.

INT-3-3-9

WARNING

Lifting Equipment

You can be injured if you use incorrect or faulty lifting equipment. You must identify the weight of the item to be lifted then choose lifting equipment that is strong enough and suitable for the job. Make sure that lifting equipment is in good condition and complies with all local regulations.

INT-1-3-7_2

WARNING

Raised Equipment

Never walk or work under raised equipment unless it is supported by a mechanical device. Equipment which is supported only by a hydraulic device can drop and injure you if the hydraulic system fails or if the control is operated (even with the engine stopped).

Make sure that no-one goes near the machine while you install or remove the mechanical device.

13-2-3-7_3

WARNING

Raised Machine

NEVER position yourself or any part of your body under a raised machine which is not properly supported. If the machine moves unexpectedly you could become trapped and suffer serious injury or be killed.

INT-3-3-7_1

DANGER

Lightning

Lightning can kill you. Do not use the machine if there is lightning in your area.

5-1-1-2

WARNING

Machine Modifications

This machine is manufactured in compliance with legislative and other requirements. It should not be altered in any way which could affect or invalidate any of these requirements. For advice consult your JCB Distributor.

INT-1-3-10_2

Operating Safety

WARNING

Machine Condition

A defective machine can injure you or others. Do not operate a machine which is defective or has missing parts. Make sure the maintenance procedures in this manual are completed before using the machine.

INT-2-1-2_2

WARNING

Machine Limits

Operating the machine beyond its design limits can damage the machine, it can also be dangerous. Do not operate the machine outside its limits. Do not try to upgrade the machine performance with unapproved modifications.

INT-2-1-4

WARNING

Engine/Steering Failure

If the engine or steering fails, stop the machine as quickly as possible. Do not operate the machine until the fault has been corrected.

INT-2-1-5

WARNING

Exhaust Gases

Breathing the machine exhaust gases can harm and possibly kill you. Do not operate the machine in closed spaces without making sure there is good ventilation. If possible, fit an exhaust extension. If you begin to feel drowsy, stop the machine at once and get into fresh air.

INT-2-1-10_2

WARNING

Work Sites

Work sites can be hazardous. Inspect the site before working on it. You could be killed or injured if the ground gives way under your machine or if piled material collapses onto it. Check for potholes and hidden debris, logs, ironwork etc. Any of these could cause you to lose control of your machine. Check for utilities such as electric cables (overhead and underground), gas and water pipes etc. Mark the positions of the underground cables and pipes. Make sure that you have enough clearance beneath overhead cables and structures.

INT-2-2-1_2

WARNING

Communications

Bad communications can cause accidents. Keep people around you informed of what you will be doing. If you will be working with other people, make sure any hand signals that may be used are understood by everybody. Work sites can be noisy, do not rely on spoken commands.

INT-2-2-3

WARNING

Parking

An incorrectly parked machine can move without an operator. Follow the instructions in the Operator Manual to park the machine correctly.

INT-2-2-4_2

WARNING

Banks and Trenches

Banked material and trenches can collapse. Do not work or drive too close to banks and trenches where there is danger of collapse.

INT-2-2-5

WARNING

Safety Barriers

Unguarded machines in public places can be dangerous. In public places, or where your visibility is reduced, place barriers around the work area to keep people away.

INT-2-2-8

DANGER

Sparks

Explosions and fire can be caused by sparks from the exhaust or the electrical system. Do not use the machine in closed areas where there is flammable material, vapour or dust.

INT-2-2-10

WARNING

Hazardous Atmospheres

This machine is designed for use in normal out door atmospheric conditions. It should not be used in an enclosed area without adequate ventilation. Do not use the machine in a potentially explosive atmosphere, i.e. combustible vapours, gas or dust, without first consulting your JCB Distributor.

INT-2-1-14

CAUTION

Regulations

Obey all laws, work site and local regulations which affect you and your machine.

INT-1-3-3

WARNING

Practice

You or others can be killed or seriously injured if you do unfamiliar operations without first practising them. Practise away from the work site on a clear area. Keep other people away. Do not perform new operations until you are sure you can do them safely.

INT-2-1-1

WARNING

Airborne particles of light combustible material such as straw, grass, wood shavings, etc. must not be allowed to accumulate within the engine compartment or in the propshaft guards (when fitted). Inspect these areas frequently and clean at the beginning of each work shift or more often if required. Before opening the engine cover, ensure that the top is clear of debris.

5-3-1-12_3

WARNING

Keep the machine controls clean and dry. Your hands and feet could slide off slippery controls. If that happens you could lose control of the machine.

2-2-3-6

WARNING

Electrical Power Cables

You could be electrocuted or badly burned if you get the machine or its attachments too close to electrical power cables.

You are strongly advised to make sure that the safety arrangements on site comply with the local laws and regulations concerning work near electric power lines.

Before you start using the machine, check with your electricity supplier if there are any buried power cables on the site.

There is a minimum clearance required for working beneath overhead power cables. You must obtain details from your local electricity supplier.

2-2-5-4

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

WARNING

Use only the JCB approved attachments that are specified for your machine. Operating with non-specified attachments can overload the machine, causing possible damage and machine instability which could result in injury to yourself or others.

The use of non-approved attachments could invalidate your warranty.

2-4-5-2_1

DANGER

Working Platform

Using the machine as a working platform is hazardous; you can fall off and be killed or injured. Never use the machine as a working platform.

5-1-5-9

WARNING

Machine Safety

Stop work at once if a fault develops. Abnormal sounds and smells can be signs of trouble. Inspect and repair before resuming work.

8-1-2-3

WARNING

Touching hot surfaces can burn skin. The engine and machine components will be hot after the unit has been running. Allow the engine and components to cool before servicing the unit.

10-1-1-40

WARNING

Travelling at High Speeds

Travelling at high speeds can cause accidents. Do not reverse in a high gear with full throttle. Always travel at a safe speed to suit working conditions.

INT-5-3-3

WARNING

The engine has exposed rotating parts. Switch OFF the engine before working in the engine compartment. Do not use the machine with the engine cover open.

5-2-6-5

WARNING

You could be killed or seriously injured if you operate a machine with a damaged or missing ROPS/FOPS. If the Roll Over Protection Structure (ROPS)/Falling Objects Protection Structure (FOPS) has been in an accident, do not use the machine until the structure has been renewed. Modifications and repairs that are not approved by the manufacturer may be dangerous and will invalidate the ROPS/FOPS certification.

INT-2-1-9_6

WARNING

Machines with a TOPS structure are equipped with a seat belt. The TOPS structure is designed to give you protection in an accident. If you do not wear the seat belt you could be thrown off the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

2-2-1-9

WARNING

Hillsides

Operating the machine on hillsides can be dangerous if proper precautions are not taken. Ground conditions can be changed by rain, snow, ice etc. Check the site carefully. When applicable, keep all attachments low to the ground.

8-1-1-1

WARNING

Visibility

Accidents can be caused by working in poor visibility. Use your lights to improve visibility. Keep the road lights, windows and mirrors clean.

Do not operate the machine if you cannot see clearly.

5-1-4-7

WARNING

Keep Your Hands and Feet Inside the Vehicle

When using the machine, keep your hands and feet clear of moving parts. Keep your hands and feet within the operator compartment while the vehicle is in motion.

13-1-1-17

WARNING

Controls

You or others can be killed or seriously injured if you operate the control levers from outside the machine. Operate the control levers only when you are correctly seated.

0179_2



CAUTION

Passengers

Passengers in or on the machine can cause accidents. Do not carry passengers.

INT-2-2-2_1

WARNING

Fires

If your machine is equipped with a fire extinguisher, make sure it is checked regularly. Keep it in the correct machine location until you need to use it.

Do not use water to put out a machine fire, you could spread an oil fire or get a shock from an electrical fire. Use carbon dioxide, dry chemical or foam extinguishers. Contact your nearest fire department as quickly as possible. Firefighters should use self-contained breathing apparatus.

INT-3-2-7_2

WARNING

Should the machine start to roll over, you can be crushed if you try to leave the cab. If the machine starts to roll over, do not try and jump from the cab. Stay in the cab, with your seat belt fastened.

INT-2-1-12

WARNING

Seat Belt

Operating the machine without a seat belt can be dangerous. Before starting the engine, make sure your seat belt is fastened. Check the tightness and condition of the seat belt securing bolts regularly (see maintenance schedules).

INT-2-1-8_1

WARNING

Safe Working Loads

Overloading the machine can damage it and make it unstable. Study the specifications in the Operator Manual before using the machine.

7-1-1-8_2

WARNING

Machine Safety

Stop work at once if a fault develops. Abnormal sounds and smells can be signs of trouble. Inspect and repair before resuming work.

8-1-2-3

WARNING

Machines with a TOPS structure are equipped with a seat belt. The TOPS structure is designed to give you protection in an accident. If you do not wear the seat belt you could be thrown off the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

2-2-1-9

Maintenance Safety

WARNING

Communications

Bad communications can cause accidents. If two or more people are working on the machine, make sure each is aware of what the others are doing. Before starting the engine make sure the others are clear of the danger areas; examples of danger areas are: the rotating blades and belt on the engine, the attachments and linkages, and anywhere beneath or behind the machine. People can be killed or injured if these precautions are not taken.

INT-3-1-5

WARNING

Repairs

If your machine does not function correctly in any way, get it repaired straight away. Neglect of necessary repairs could result in an accident or affect your health. Do not try to do repairs or any other type of maintenance work you do not understand. To avoid injury and/or damage get the work done by a specialist engineer.

GEN-1-5_2

WARNING

Metal Splinters

You can be injured by flying metal splinters when driving metal pins in or out. Use a soft faced hammer or copper pin to remove and fit metal pins. Always wear safety glasses.

INT-3-1-3_2

WARNING

Electrical Circuits

Understand the electrical circuit before connecting or disconnecting an electrical component. A wrong connection can cause injury and/or damage.

INT-3-1-4

WARNING

Fluid Under Pressure

Fine jets of fluid at high pressure can penetrate the skin. Keep face and hands well clear of fluid under pressure and wear protective glasses and gloves. Hold a piece of cardboard close to suspected leaks and then inspect the cardboard for signs of fluid. If fluid penetrates your skin, get medical help immediately.

INT-3-1-10_3

WARNING

Hydraulic Pressure

Hydraulic fluid at system pressure can injure you. Before connecting or removing any hydraulic hose, residual hydraulic pressure trapped in the service hose line must be vented. Make sure the hose service line has been vented before connecting or removing hoses. Make sure the engine cannot be started while the hoses are open.

INT-3-1-11_2

WARNING

Fuel

Fuel is flammable; keep naked flames away from the fuel system. Stop the engine immediately if a fuel leak is suspected. Do not smoke while refuelling or working on the fuel system. Do not refuel with the engine running. Completely wipe off any spilt fuel which could cause a fire. There could be a fire and injury if you do not follow these precautions.

INT-3-2-2_3

WARNING

Oil

Oil is toxic. If you swallow any oil, do not induce vomiting, seek medical advice. Used engine oil contains harmful contaminants which can cause skin cancer. Do not handle used engine oil more than necessary. Always use barrier cream or wear gloves to prevent skin contact. Wash skin contaminated with oil thoroughly in warm soapy water. Do not use petrol, diesel fuel or paraffin to clean your skin.

INT-3-2-3

CAUTION

It is illegal to pollute drains, sewers or the ground. Clean up all spilt fluids and/or lubricants.

Used fluids and/or lubricants, filters and contaminated materials must be disposed of in accordance with local regulations. Use authorised waste disposal sites.

INT-3-2-14

WARNING

Soft Ground

A machine can sink into soft ground. Never work under a machine on soft ground.

INT-3-2-4

WARNING

Always wear safety glasses when dismantling assemblies containing components under pressure from springs. This will protect against eye injury from components accidentally flying out.

GEN-6-2

CAUTION

Rams

The efficiency of the rams will be affected if they are not kept free of solidified dirt. Clean dirt from around the rams regularly. When leaving or parking the machine, close all rams if possible to reduce the risk of weather corrosion.

INT-3-2-10

CAUTION

Cleaning

Cleaning metal parts with incorrect solvents can cause corrosion. Use only recommended cleaning agents and solvents.

INT-3-2-11

WARNING

When using cleaning agents, solvents or other chemicals, you must adhere to the manufacturer's instructions and safety precautions.

GEN-1-9

CAUTION

'O' rings, Seals and Gaskets

Badly fitted, damaged or rotted 'O' rings, seals and gaskets can cause leakages and possible accidents. Renew whenever disturbed unless otherwise instructed. Do not use Trichloroethane or paint thinners near 'O' rings and seals.

INT-3-2-12

WARNING

Hydraulic Hoses

Damaged hoses can cause fatal accidents. Inspect the hoses regularly. Do not use the machine if a hose or hose fitting is damaged.

INT-3-3-2_4

CAUTION

Waxoyl contains turpentine substitute which is flammable. Keep flames away when applying Waxoyl. Waxoyl can take a few weeks to dry completely. Keep flames away during the drying period.

Do not weld near the affected area during the drying period. Take the same precautions as for oil to keep Waxoyl off your skin. Do not breathe the fumes. Apply in a well-ventilated area.

5-3-1-9

WARNING

Working Under the Machine

Make the machine safe before getting beneath it. Ensure that any fitments on the machine are secure; engage the park brake, remove the starter key, disconnect the battery.

INT-3-3-8_2

WARNING

Certain seals and gaskets (e.g. crankshaft oil seal) on JCB machines contain fluoroelastomeric materials such as Viton®, Fluorel™ and Technoflon®. Fluoroelastomeric materials subjected to high temperatures can produce highly corrosive hydrofluoric acid. **THIS ACID CAN SEVERELY BURN.**

New fluoroelastomeric components at ambient temperature require no special safety precautions.

Used fluoroelastomeric components whose temperatures have not exceeded 300°C (572°F) require no special safety precautions. If evidence of decomposition (e.g. charring) is found, refer to the next paragraph for safety instructions **DO NOT TOUCH COMPONENT OR SURROUNDING AREA.**

Used fluoroelastomeric components subjected to temperatures greater than 300°C (572°F) (e.g. engine fire) must be treated using the following safety procedure. Make sure that heavy duty gloves and special safety glasses are worn:

- 1 Thoroughly wash contaminated area with 10% calcium hydroxide or other suitable alkali solution, if necessary use wire wool to remove burnt remains.
- 2 Thoroughly wash contaminated area with detergent and water.
- 3 Contain all removed material, gloves etc. used in this operation in sealed plastic bags and dispose of in accordance with Local Authority Regulations.

DO NOT BURN FLUOROELASTOMERIC MATERIALS.

INT-3-3-5_4

WARNING

Protect your eyes when grinding metal. Wear safety glasses or goggles. Remove or protect any combustible materials from the area which could be ignited by sparks.

GEN-1-12

WARNING

To avoid burning, wear protective gloves when handling hot components. To protect your eyes, wear goggles when using a brush to clean components.

HYD-1-3_2

WARNING

Arc Welding

To prevent the possibility of damage to electronic components, disconnect the battery and the alternator before arc-welding on the machine or attached implements.

If the machine is equipped with sensitive electrical equipment, i.e. amplifier drivers, electronic control units (E.C.U.s), monitor displays, etc., then disconnect them before welding. Failure to disconnect the sensitive electrical equipment could result in irreparable damage to these components.

Parts of the machine are made from cast iron; welds on cast iron can weaken the structure and break. Do not weld cast iron. Do not connect the welder cable or apply any weld to any part of the engine.

Always connect the welder earth (ground) cable to the same component that is being welded, i.e. boom or dipper, to avoid damage to pivot pins, bearings and bushes. Attach the welder earth (ground) cable no more than 0.6 metres (2 feet) from the part being welded.

INT-3-1-15_2

WARNING

Counterweights

Your machine may be fitted with counterweights. They are extremely heavy. Do not attempt to remove them.

INT-3-2-5

WARNING

Compressed air is dangerous. Wear suitable eye protection and gloves. Never point a compressed air jet at yourself or others.

0147_1

WARNING

Accumulators

The accumulators contain hydraulic fluid and gas at high pressure. Prior to any work being carried out on systems incorporating accumulators, the system pressure must be exhausted by a JCB distributor, as the sudden release of the hydraulic fluid or gas may cause injury.

INT-3-1-17

WARNING

Petrol

Do not use petrol in this machine. Do not mix petrol with the diesel fuel; in storage tanks the petrol will rise to the top and form flammable vapours.

INT-3-1-6

CAUTION

Do not disconnect the battery while the engine is running, otherwise the electrical circuits may be damaged.

INT-3-1-14

WARNING

If you try to charge a frozen battery, or jump start and run the engine, the battery could explode. Do not use a battery if its electrolyte is frozen. To prevent the battery electrolyte from freezing, keep the battery at full charge.

0125

WARNING

Battery Gases

Batteries give off explosive gases. Keep flames and sparks away from the battery. Do not smoke close to the battery. Make sure there is good ventilation in closed areas where batteries are being used or charged. Do not check the battery charge by shorting the terminals with metal; use an approved battery tester.

INT-3-1-8_2

DANGER

Electrolyte

Battery electrolyte is toxic and corrosive. Do not breathe the gases given off by the battery. Keep the electrolyte away from your clothes, skin, mouth and eyes. Wear safety glasses.

INT-3-2-1_3

WARNING

Battery Terminals

The machine is negatively earthed. Always connect the negative pole of the battery to earth.

When connecting the battery, connect the earth (-) lead last.

When disconnecting the battery, disconnect the earth (-) lead first.

INT-3-1-9

CAUTION

Never use water or steam to clean inside the cab. The use of water or steam could damage the on-board computer and render the machine inoperable. Remove dirt using a brush or damp cloth.

8-3-4-8

WARNING

Asbestos

Asbestos dust can damage your lungs. Some engine gaskets contain asbestos. Do not dismantle the engine or exhaust system; get these jobs done by a qualified person who has a copy of the engine service manual.

5-1-6-1

DANGER

Before removing the boom from the machine, ensure that the counterweight is adequately supported as in certain ground conditions the machine could tip backwards. Never travel or transport the machine with the boom removed.

BF-6-3

Safety Labels

Introduction

T1-014_2

WARNING

Safety Labels

Safety labels on the machine warn you of particular hazards. You can be injured if you do not obey the safety instructions shown.

INT-1-3-11

Safety labels are strategically placed around the machine to remind you of possible hazards.

If you need eye-glasses for reading, make sure you wear them when reading the safety labels. Do not over-stretch or place yourself in dangerous positions to read the safety labels. If you do not understand the hazard shown on the safety label, then refer to **Safety Label Identification**.

Note: *The illustration(s) show a typical machine model. Your machine may look different from the model shown.*

Keep all safety labels clean and readable. Replace lost or damaged safety labels. Make sure replacement parts include safety labels where necessary. Each safety label has a part number printed on it, use this number to order a new safety label from your JCB distributor.

ISO-07B

Part Number: 817/70018

Description: Crush hazard. Do not operate the controls from outside of the machine.



817-70018-2

ISO-010A

Part Number: 817/70029

Description: Crush hazard. Wear the seatbelt when you operate the machine.



817-70029-3

ISO-07D

Part Number: 817/70112

Description: Crush hazard. Keep a safe distance from the moving parts.



817-70112-2

ISO-12A

Part Number: 817/70106

Description: Strike to whole body (machine swing). Keep a safe distance from the machine.



817-70106-2

ISO-09A

Part Number: 332/P4581

Description: Severing of hands or fingers. Keep clear of/do not reach into the moving parts. Stop the engine and remove the starter key before you start maintenance work. Refer to ***Making the Machine Safe (Routine Maintenance Section)***.



332-P4581-1

ISO-11D

Part Number: 817/70100

Description: Fall. Enter and dismount safely. Refer to ***Entering and Leaving the Cab (Operation Section)***.

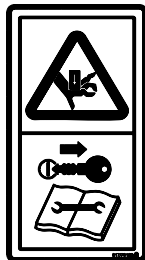


817-70100-2

ISO-09C

Part Number: 817/70102

Description: Crushing of fingers or hands. Remove the starter key and refer to the Service Manual before you start maintenance work.



817-70102-3

ISO-11E

Part Number: 817/70006

Description: Fall. Unexpected machine movement because of accidental contact with the machine controls if the hydraulic functions are not isolated..



817-70006-2

ISO-15E

Part Number: 332/V3761

Description: Flying debris warning.
Refer to **Optional Attachments**.



332-V3761-1

ISO-09A

Part Number: 332/P4581

Description: Severing of hands or fingers. Keep clear of/do not reach into the moving parts. Stop the engine and remove the starter key before you start maintenance work. Refer to **Making the Machine Safe (Routine Maintenance Section)**.



332-P4581-1

ISO-11A

Part Number: 332/T9356

Description: Falling hazard. Lift the lever lock.



332-T9356-2



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Notes:



Section 3 - Maintenance

Contents	Page No.
Routine Maintenance	
Service Requirements	3-1
Introduction	3-1
Owner/Operator Support	3-1
Service/Maintenance Agreements	3-1
Fit for Purpose Tests for Lifting Equipment	3-1
Obtaining Replacement Parts	3-2
Health and Safety	3-3
Lubricants	3-3
Battery	3-5
Service Schedules	3-7
Introduction	3-7
How to Use the Service Schedules	3-7
Calendar Equivalents	3-8
Pre-Start Cold Checks, Service Points and Fluid Levels	3-9
Functional Test and Final Inspection	3-11
Fluids, Lubricants and Capacities	3-12
Coolant Mixtures	3-13
Fuels	3-14
Tools	3-17
Toolbox (if fitted)	3-17
Carrying Tools onto the Machine	3-17
Prepare the Machine for Maintenance	3-18
Introduction	3-18
How to Make the Machine Safe (Excavator Lowered)	3-18
Cleaning the Machine	3-19
Introduction	3-19
Preparing the Machine for Cleaning	3-19
Cleaning the Machine	3-20
Cleaning the Tracks	3-20
Checking for Damage	3-22
Check the Machine Body and Structure	3-22
Check the Seat and Seat Belt	3-22
Check the Hydraulic Hoses and Fittings	3-22
Check the Electrical Circuits	3-22
Checking the ROPS/FOPS Structure	3-23
Checking the Ram Piston Rods	3-23
Greasing	3-24
Introduction	3-24
Pivot Pins	3-24
Slew Ring Bearings	3-27
Slew Ring Gear Teeth	3-27
Access Panels	3-29
Introduction	3-29
Engine Cover	3-29
Hydraulic Bay Cover	3-30
Electrical System	3-31
Battery	3-31
Fuses	3-35
Engine	3-37
Oil and Filter	3-37
Cooling System	3-39
Fan Belt	3-41
Air Filter	3-42



Contents	Page No.
Fuel System	3-43
Introduction	3-43
Water Separator and Engine Fuel Filter	3-44
Bleeding the System	3-47
Hydraulic System	3-48
Introduction	3-48
Releasing the Hydraulic Pressure	3-49
Oil and Filter	3-50
Tracks and Running Gear	3-51
Checking the Track Gearbox Oil Level	3-51
Changing the Track Gearbox Oil	3-51
Checking the Track Tension	3-52
Windscreen Washer	3-53
Checking the Level	3-53
Fire Extinguisher (if fitted)	3-54
Checking the Fire Extinguisher	3-54

Routine Maintenance

Service Requirements

Introduction

T3-095
Your machine has been designed and built to give maximum performance, economy and ease of use under a wide variety of operating conditions. Prior to delivery, your machine was inspected both at the Factory and by your Distributor to ensure that it reaches you in optimum condition. To maintain this condition and ensure trouble free operation it is important that the routine services, as specified in this Manual, are carried out by an approved JCB Distributor at the recommended intervals.

This section of the Manual gives full details of the service requirements necessary to maintain your JCB machine at peak efficiency.

A Service Manual for your machine is available from your JCB Distributor. The Service Manual contains information on how to repair, dismantle and assemble your machine correctly.

It can be seen from the Service Schedules on the following pages that many essential service checks should only be carried out by a JCB trained specialist. Only JCB Distributor Service Engineers have been trained by JCB to carry out such specialist tasks, and only JCB Distributor Service Engineers are equipped with the necessary special tools and test equipment to perform such tasks, thoroughly, safely, accurately and efficiently.

JCB regularly updates its Distributors advising them of any product developments, changes in specifications and procedures. Therefore only a JCB Distributor is fully able to maintain and service your machine.

A Service Record Sheet or Book is provided which will enable you to plan your service requirements and keep a service history record. It should be dated, signed and stamped by your Distributor each time your machine is serviced.

Remember, if your machine has been correctly maintained, not only will it give you improved reliability but its resale value will be greatly enhanced.

Owner/Operator Support

JCB together with your Distributor wants you to be completely satisfied with your new JCB machine. If you do encounter a problem however, you should contact your Distributor's Service Department who are there to help you!

You will have been given the names of the relevant service contacts at your Distributor when the machine was installed.

To get the most from your Distributor please help them to satisfy you by:

- 1 Giving your name, address and telephone number.
- 2 Quoting your machine model and serial number.
- 3 Date of purchase and hours of work.
- 4 Nature of the problem.

Remember, only your JCB Distributor has access to the vast resources available at JCB to help support you. In addition, your Distributor is able to offer a variety of programmes covering Warranty, Fixed Price Servicing, Safety Inspections, including weight tests, covering both legal and insurance requirements.

Service/Maintenance Agreements

To help plan and spread the costs of maintaining your machine, we strongly recommend you take advantage of the many Service and Maintenance Agreements your Distributor can offer. These can be tailor made to meet your operating conditions, work schedule etc.

Please consult your JCB Distributor for details.

Fit for Purpose Tests for Lifting Equipment

T3-097
All lifting equipment (for example forks, lifting hooks and shackles) need regular inspection and testing by a competent person to ensure they are fit for purpose.

**Thank you very much
for your reading.**

Please Click Here

**Then Get More
Information.**