Service Manual

Wheeled Loading Shovel - 418S

Publication No.

9813/3550-01

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

World Class
Customer Support

Section 1

General Information

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Notes:

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Introduction

About this Manual

Machine Model and Serial Number

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

– 418 from SN 23356 to 2336423

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:

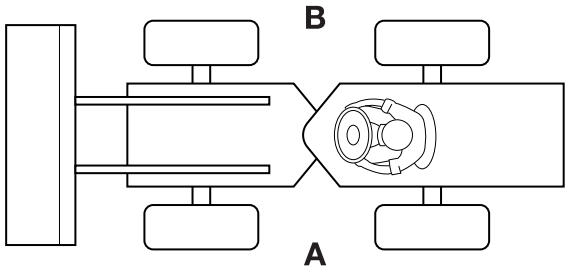
A Attachments

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.



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 preceeded 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

Machine Identification Plate

Your machine has an identification plate mounted as shown. The serial numbers of the machine and its major units are stamped on the plate.

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

The serial number of each major unit is also stamped on the unit itself. If a major unit is replaced by a new one, the serial number on the identification plate will be wrong. Either stamp the new number of the unit on the identification plate, or simply stamp out 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.

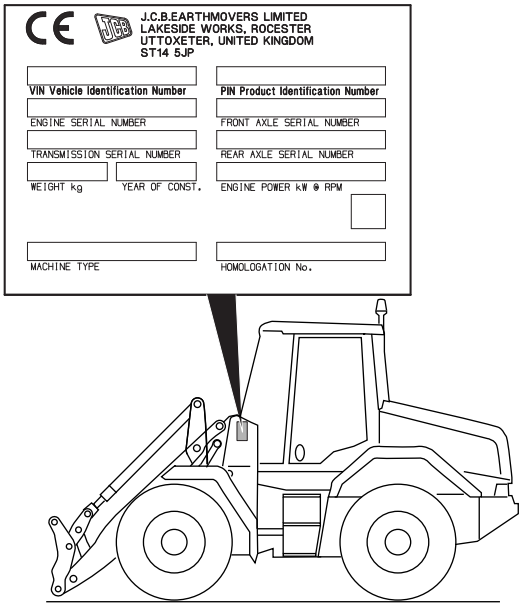


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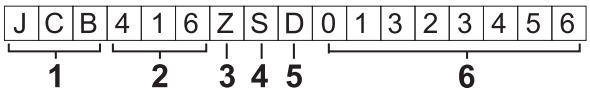
Fig 1.

Typical Product Identification Number



T033160-2

Fig 2.

1 World Manufacturer Identification (3 Digits)

2 Model Number (3 Digits)

3 Loader End Type (1 Digit)

O = HT Loader End
Z = ZX Loader End

4 Designation (1 Digit)

S = Farmmaster
O = None Farmmaster
I = India

5 Check Letter (1 Digit)

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

6 Machine Serial Number (8 Digits)

Each machine has a unique serial number.

Component Identification Plates

FOPS Data Plate

⚠ WARNING

Do not use the machine if the falling objects protection level provided by the structure is not sufficient for the application. Falling objects can cause serious injury.

8-2-8-17

If the machine is used in any application where there is a risk of falling objects then a falling-objects protective structure (FOPS) must be installed. For further information contact your JCB Dealer

The falling objects protection structure (FOPS) is fitted with a dataplate. The dataplate indicates what level protection the structure provides.

There are two levels of FOPS:

- **Level I Impact Protection** - impact strength for protection from small falling objects (e.g. bricks, small concrete blocks, hand tools) encountered in operations such as highway maintenance, landscaping and other construction site services.
- **Level II Impact Protection** - impact strength for protection from heavy falling objects (e.g. trees, rocks) for machines involved in site clearing, overhead demolition or forestry.

ROPS Data Plates

⚠ 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

Seat Belts

The ROPS/FOPS is designed to give you protection in an accident. If you do not wear your seat belt, you could be thrown out of the machine and crushed. You must wear a seat belt when using the machine. Fasten the seat belt before starting the engine.

0153

Machines built to ROPS/FOPS standards have a data plate attached to the inside of the cab.

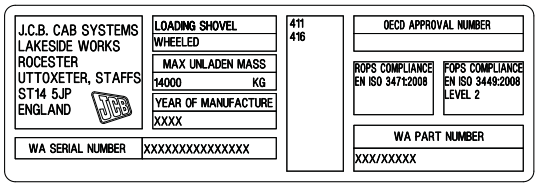


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Fig 3.

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 (1-5)*.

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

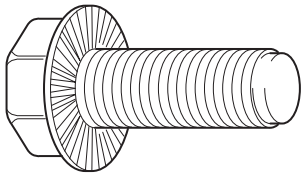


Fig 1.

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

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

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

Table 6. Torque Settings - Rivet Nut Bolts/Screws

Bolt Size				
ISO Metric Thread	mm	Nm	kgf m	lbf ft
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			
ISO Metric Thread	Nm	kgf m	lbf ft
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)			
in.	mm	Nm	kgf m	lbf ft
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)			
		mm	Nm	kgf m	lbf ft
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

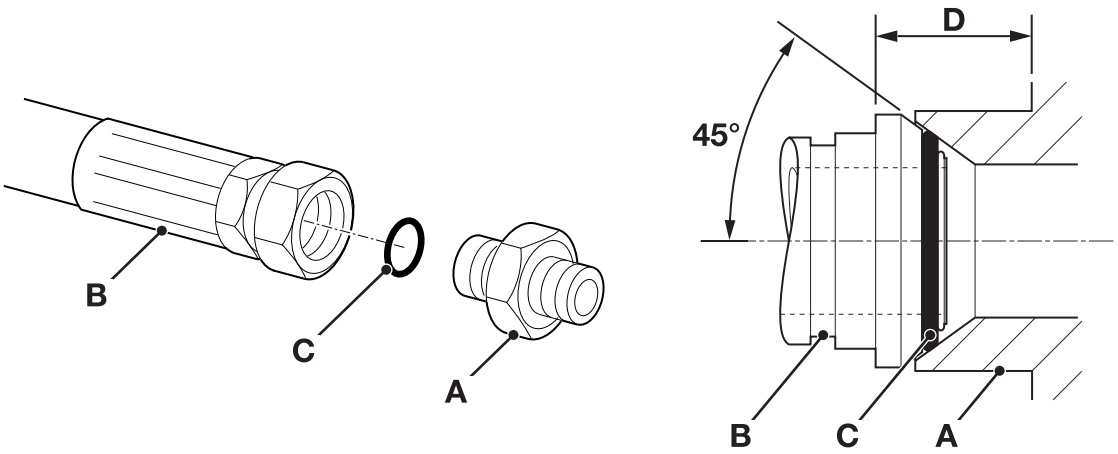


Fig 2.

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)			
in.	mm	Nm	kgf m	lbf ft
1/8	14.0	14.0 - 16.00	1.4 - 1.6	10.3 - 11.8
1/4	19.0	24.0 - 27.0	2.4 - 2.7	17.7 - 19.9
3/8	22.0	33.0 - 40.0	3.4 - 4.1	24.3 - 29.5
1/2	27.0	44.0 - 50.0	4.5 - 5.1	32.4 - 36.9
5/8	30.0	58.0 - 65.0	5.9 - 6.6	42.8 - 47.9
3/4	32.0	84.0 - 92.0	8.6 - 9.4	61.9 - 67.8
1	38.0	115.0 - 126.0	11.7 - 12.8	84.8 - 92.9
1 1/4	50.0	189.0 - 200.0	19.3 - 20.4	139.4 - 147.5
1 1/2	55.0	244.0 - 260.0	24.9 - 26.5	180.0 - 191.8

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

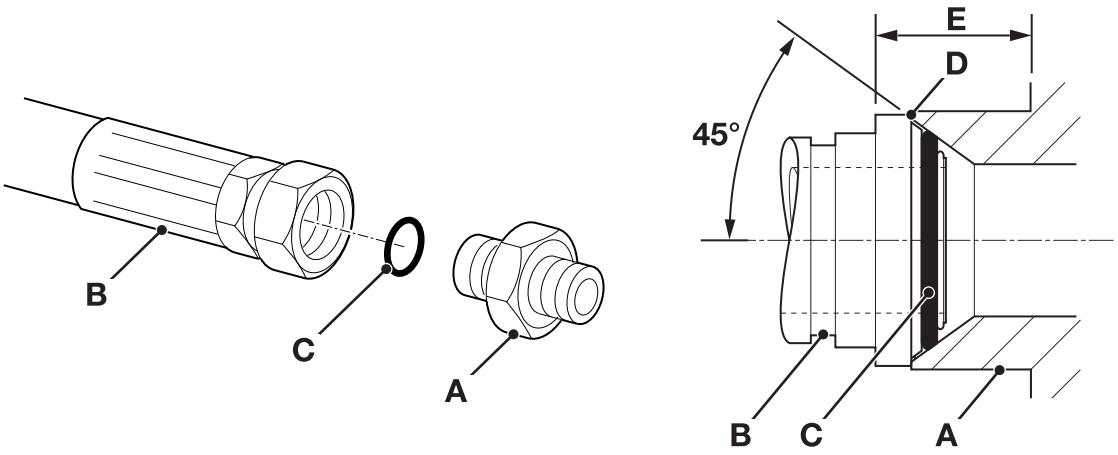


Fig 3.

`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 damages 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)			
in.	mm	Nm	kgf m	lbf ft
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

JCB Standard Torque Settings

B.S.P. Port Connection (Colour Coded)

Note: *All adapters, elbows and hoses should be tightened to JCB standard torque settings unless stated otherwise.*

Fig 4.

Hose Ends and Flanged Fittings (Colour Coded)

Note: *All adapters, elbows and hoses should be tightened to JCB standard torque settings unless stated otherwise.*

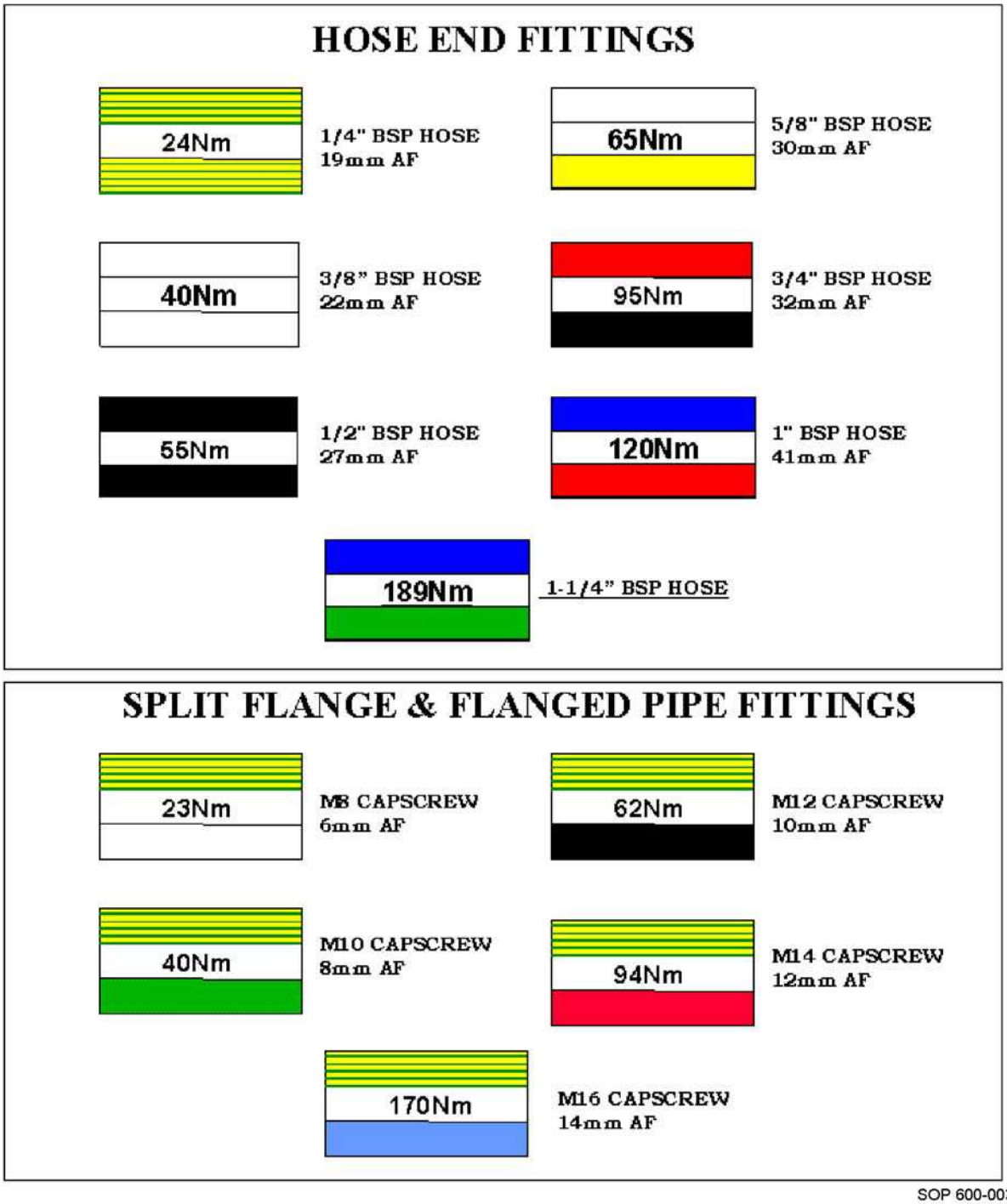


Fig 5.

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.

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***.

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.*

Tool Detail Reference Section B - Body and Framework

Part Number	Description	Tool Detail Reference
825/99849	Dummy Boss	⇨ *Fig 12. (1-19)*
825/99850	Bearing Locator	⇨ *Fig 12. (1-19)*
826/01179	M6 x 16mm Rivet Nut	⇨ *Fig 1. (1-16)*
826/01106	M6 x 19mm Rivet Nut	⇨ *Fig 1. (1-16)*
826/01177	M8 x 18mm Rivet Nut	⇨ *Fig 1. (1-16)*
826/01176	M10 x 23mm Rivet Nut	⇨ *Fig 1. (1-16)*
826/01333	M10 x 26mm Rivet Nut	⇨ *Fig 1. (1-16)*
892/00842	Glass Lifter	⇨ *Fig 3. (1-17)*
892/00843	Glass Stand	⇨ *Fig 2. (1-17)*
892/00844	Long Knife	⇨ *Fig 11. (1-19)*
892/00846	Glass Extractor (Handles)	⇨ *Fig 8. (1-18)*
892/00847	Nylon Spatula	⇨ *Fig 4. (1-17)*
892/00848	Wire Starter	⇨ *Fig 6. (1-18)*
892/00849	Braided Cutting Wire	⇨ *Fig 10. (1-19)*
926/15500	Rubber Spacer Blocks	⇨ *Fig 5. (1-17)*
992/12800	Cut-Out Knife	⇨ *Fig 7. (1-18)*
992/12801	'L' Blades	⇨ *Fig 9. (1-19)*

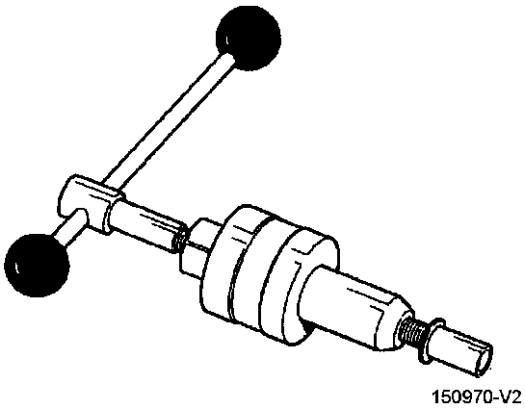


Fig 1.

Note: *826/01179 M6 x 16mm Rivet Nut, 826/01106 M6 x 19mm Rivet Nut, 826/01177 M8 x 18mm Rivet Nut, 826/01176 M10 x 23mm Rivet Nut, 826/01333 M10 x 26mm Rivet Nut*

Installation Tool Available from:

Bollhoff Fastenings Ltd.
Midacre
The Willenhall Estate
Rose Hill
Willenhall
West Midlands, WV13 2JW

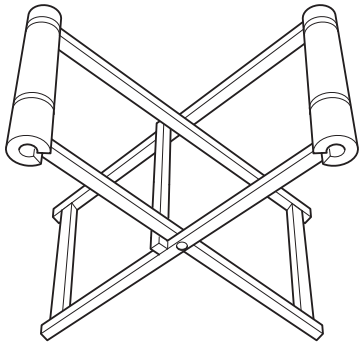


Fig 2. 892/00843

Note: *essential for preparing new glass prior to installation.*

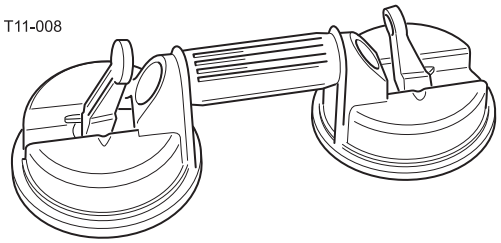


Fig 3. 892/00842

Note: *- minimum 2 off - essential for glass installation, 2 required to handle large panes of glass. Ensure suction cups are protected from damage during storage.*

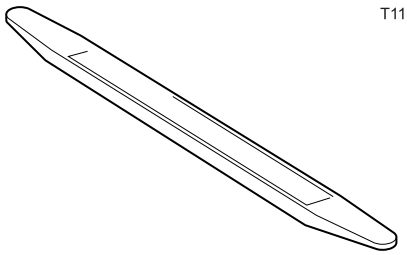


Fig 4. 892/00847

Note: *- general tool used for smoothing sealants - also used to re-install glass in rubber glazing because metal tools will chip the glass edge.*

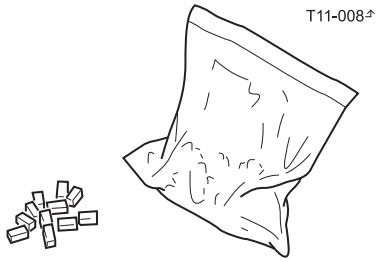


Fig 5. 926/15500

Note: *- used to provide the correct set clearance between glass edge and cab frame. (unit quantity = 500 off)*

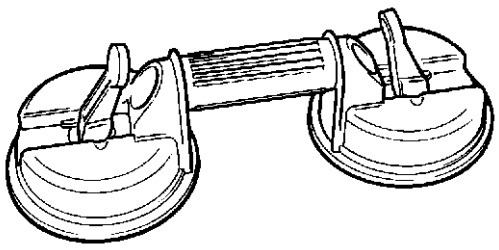


Fig 6. 892/00848

Note: *- used to access braided cutting wire (below) through original polyurethane seal.*

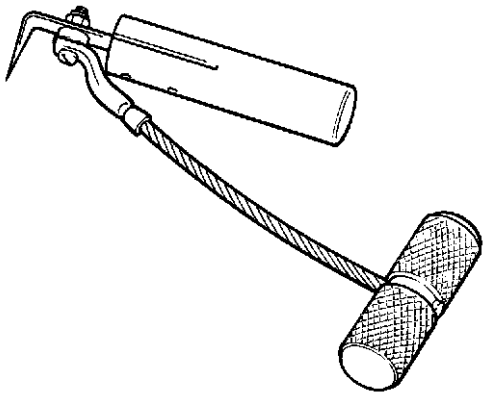


Fig 7. 992/12800

Note: *- used to remove broken glass.*

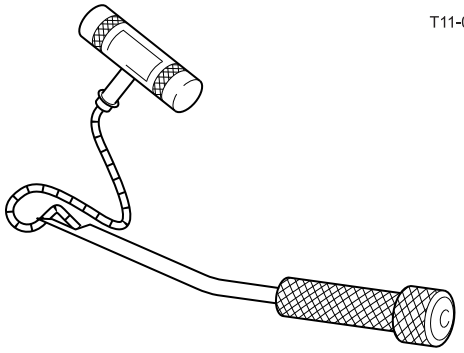


Fig 8. 892/00846

Note: *- used with braided cutting wire (below) to cut out broken glass.*

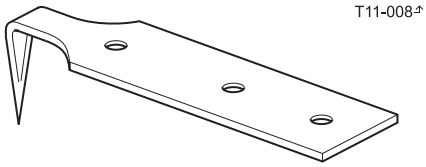


Fig 9. 992/12801

Note: *- 25 mm (1 in) cut - replacement blades for cut-out knife (above), (unit quantity = 5 off)*

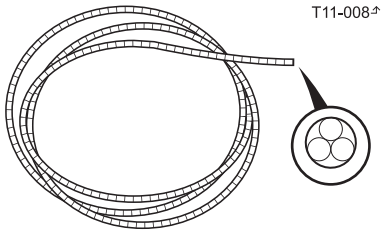


Fig 10. 892/00849

Note: *- consumable heavy duty cut-out wire used with the glass extraction tool (above), (approx 25 m length)*

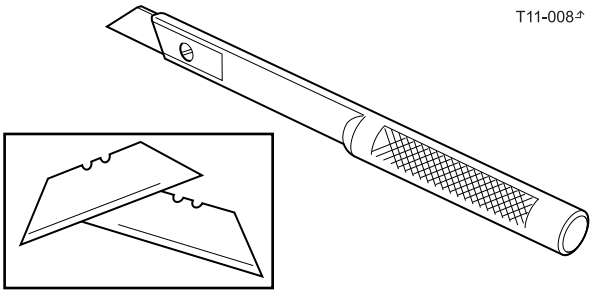


Fig 11. 892/00844

Note: *- used to give extended reach for normally inaccessible areas.*

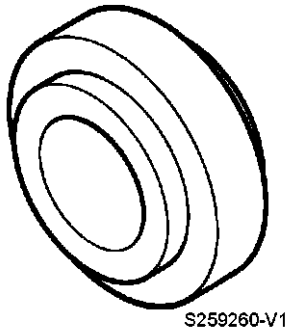


Fig 12. 825/99849

Note: *- used with bearing locator to set up Upper Centre Pivot.*

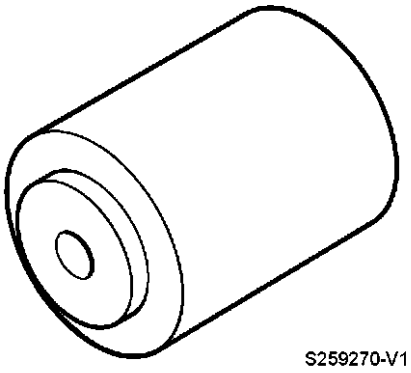


Fig 13. 825/99850

Note: *- used with dummy bush to set up Upper Centre Pivot.*

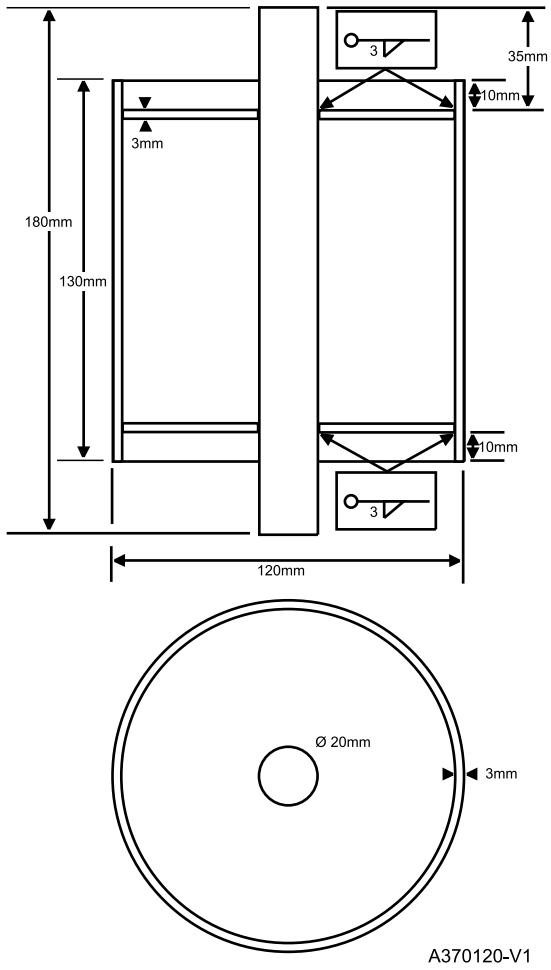


Fig 14. Cab Prop

Note: *- used to support cab in the raised position. A minimum of 2 are required to support the side where work is being carried out. It is recommended that 4 are used to support the cab level.Manufacture from mild steel.Tube wall and plate minimum thickness must be 3 mm.*

Numerical List Section C - Electrics

The tools listed in the table are special tools required for testing electrics. 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.*

Part Number	Description	Tool Detail Reference
892/00282	Shunt	⇨ *Fig 15. (1-22)*
892/00283	Tool Kit Case	⇨ *Fig 15. (1-22)*
892/00284	Digital Tachometer	⇨ *Fig 15. (1-22)*
892/00285	Hyd. Oil Temperature Probe	⇨ *Fig 15. (1-22)*
892/00286	Surface Temperature Probe	⇨ *Fig 15. (1-22)*
892/00298	Fluke Meter	⇨ *Fig 15. (1-22)*
993/85700	Battery Tester	⇨ *Fig 16. (1-22)*

Tool Detail Reference Section C - Electrics

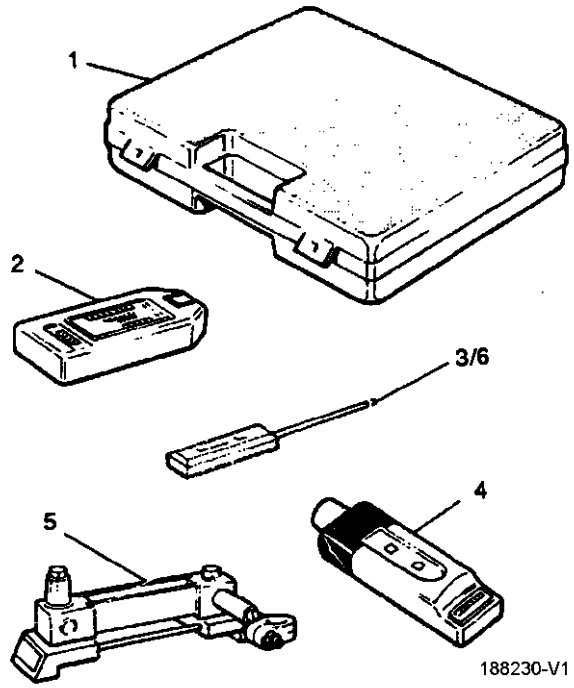


Fig 15.

1	892/00283 Tool Kit Case
2	892/00298 Fluke Meter
3	892/00286 Surface Temperature Probe
4	892/00284 Venture Microtach Digital Tachometer
5	892/00282 100 amp Shunt - open type
6	892/00285 Hydraulic Temperature Probe

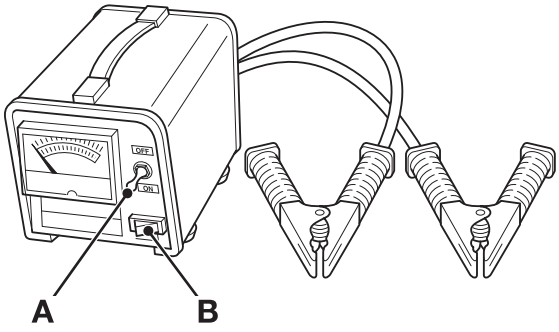


Fig 16. 993/85700

Numerical List Section E - Hydraulics

The tools listed in the table are special tools required for testing, removing and replacing hydraulics. 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.*

Part Number	Description	Tool Detail Reference
1406/0011	Bonded Washer	⇨ *Fig 19. (1-26)*
1406/0014	Bonded Washer	⇨ *Fig 19. (1-26)*
1406/0018	Bonded Washer	⇨ *Fig 19. (1-26)*
1406/0021	Bonded Washer	⇨ *Fig 19. (1-26)*
1406/0029	Bonded Washer	⇨ *Fig 19. (1-26)*
1604/0006	Adapter	⇨ *Fig 20. (1-26)*
1612/0006	Adapter	⇨ *Fig 20. (1-26)*
816/00189	Blanking Cap	⇨ *Fig 22. (1-27)*
816/00190	Blanking Cap	⇨ *Fig 22. (1-27)*
816/00193	Blanking Cap	⇨ *Fig 22. (1-27)*
816/00196	Blanking Cap	⇨ *Fig 22. (1-27)*
816/00197	Blanking Cap	⇨ *Fig 22. (1-27)*
816/00294	Blanking Cap	⇨ *Fig 22. (1-27)*
816/15118	Pressure Test Adapter	⇨ *Fig 23. (1-27)*
816/20008	Adapter	⇨ *Fig 20. (1-26)*
816/55038	Pressure Test Adapter	⇨ *Fig 18. (1-26)*
816/55040	Pressure Test Adapter	⇨ *Fig 18. (1-26)*
892/00039	Spool Clamp	⇨ *Fig 26. (1-28)*
892/00055	Blanking Plug	⇨ *Fig 21. (1-27)*
892/00056	Blanking Plug	⇨ *Fig 21. (1-27)*
892/00057	Blanking Plug	⇨ *Fig 21. (1-27)*
892/00058	Blanking Plug	⇨ *Fig 21. (1-27)*
892/00059	Blanking Plug	⇨ *Fig 21. (1-27)*
892/00060	Blanking Plug	⇨ *Fig 21. (1-27)*
892/00074	Female Connector	⇨ *Fig 24. (1-27)*
892/00075	Female Connector	⇨ *Fig 24. (1-27)*
892/00076	Female Connector	⇨ *Fig 24. (1-27)*
892/00077	Female Connector	⇨ *Fig 24. (1-27)*
892/00137	Micro-Bore Hose	⇨ *Fig 27. (1-28)*
892/00223	Hand Pump	⇨ *Fig 27. (1-28)*
892/00239	Charging Tool	⇨ *Fig 28. (1-28)*

Part Number	Description	Tool Detail Reference
892/00253	Pressure Test Kit	⇨ Fig 17. (1-26)
892/00255	Pressure Test Adaptor	⇨ Fig 23. (1-27)
892/00256	Pressure Test Adaptor	⇨ Fig 23. (1-27)
892/00257	Pressure Test Adaptor	⇨ Fig 23. (1-27)
892/00258	Pressure Test Adaptor	⇨ Fig 23. (1-27)
892/00259	Pressure Test Adaptor	⇨ Fig 23. (1-27)
892/00260	Pressure Test Adaptor	⇨ Fig 23. (1-27)
892/00261	Pressure Test Adaptor	⇨ Fig 23. (1-27)
892/00262	Pressure Test Adaptor	⇨ Fig 27. (1-28)
892/00263	Pressure Test Adaptor	⇨ Fig 18. (1-26)
892/00264	Pressure Test Adaptor	⇨ Fig 18. (1-26)
892/00265	Pressure Test Adaptor	⇨ Fig 18. (1-26)
892/00268	Flow Monitoring Unit	⇨ Fig 20. (1-26)
892/00269	Sensor Head	⇨ Fig 20. (1-26)
892/00270	Load Valve	⇨ Fig 20. (1-26)
892/00274	Adapter	⇨ Fig 27. (1-28)
892/00275	Adapter	⇨ Fig 20. (1-26)
892/00279	Gauge	⇨ Fig 27. (1-28)
892/00309	A.R.V. Pressure Test Kit	⇨ Fig 29. (1-29)
892/00335	A.R.V. Cartridge Removal Tool	⇨ Fig 29. (1-29)
892/00340	Test Block Body	⇨ Fig 29. (1-29)
892/00341	Setting Body	⇨ Fig 29. (1-29)
892/00343	Spanner	⇨ Fig 29. (1-29)
892/00345	Anti-cavitation Lock Out Bung	⇨ Fig 29. (1-29)
892/00706	Test Probe	⇨ Fig 27. (1-28)
892/00948	Charging Tool	⇨ Fig 28. (1-28)
892/01042	Charging Tool	⇨ Fig 28. (1-28)
892/01043	Adapter	⇨ Fig 28. (1-28)
992/09300	Spanner	⇨ Fig 25. (1-28)
992/09400	Spanner	⇨ Fig 25. (1-28)
992/09500	Spanner	⇨ Fig 25. (1-28)
992/09600	Spanner	⇨ Fig 25. (1-28)
992/09700	Spanner	⇨ Fig 25. (1-28)
992/10000	Spanner	⇨ Fig 25. (1-28)
992/10100	Spool Clamp	⇨ Fig 26. (1-28)
993/68300	Adjusting Pin	⇨ Fig 29. (1-29)

The following parts are replacement items for kits and would normally be included in the kit numbers above.

Replacement items for kit no. 892/00253

Part Number	Description	Tool Detail Reference
892/00201	Replacement Gauge	*Fig 17. (1-26)*
892/00202	Replacement Gauge	*Fig 17. (1-26)*
892/00203	Replacement Gauge	*Fig 17. (1-26)*
892/00254	Replacement Hose	*Fig 17. (1-26)*

Tool Detail Reference Section E- Hydraulics

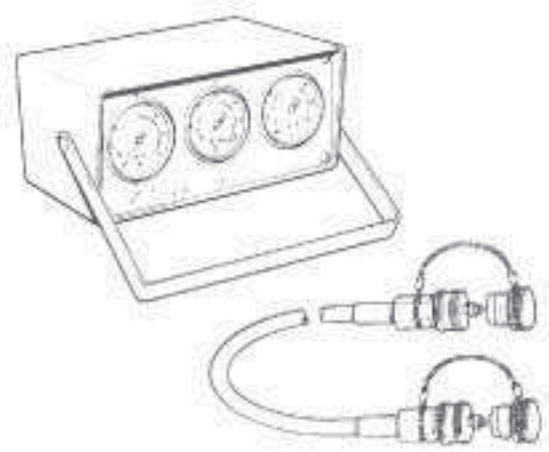


Fig 17. Hydraulic Circuit Pressure test Kit

892/00253 Pressure Test Kit
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

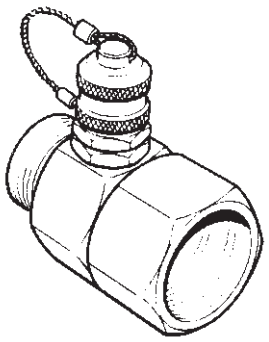


Fig 18. Pressure Test `T' Adapters

892/00262 1/4 in 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 BSP x 5/8 in F BSP x Test Point
892/00264 3/4 in BSP x 3/4 in F BSP x Test Point
892/00265 1 in M BSP x 1 in F BSP x Test Point

Fig 19. Bonded Washers

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

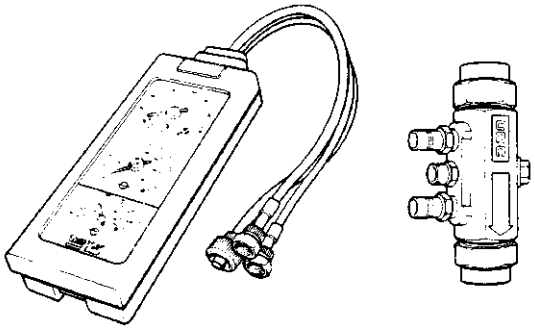


Fig 20. Flow Test Equipment

892/00268 Flow Monitoring Unit
892/00269 Sensor Head 0 to 100 l/min (0 to 22 UK gal/min)
892/00270 Load Valve
1406/0021Bonded Washer

1604/0006 Adapter 3/4 in M x 3/4 M BSP
1612/0006 Adapter 3/4 in F x 3/4 M BSP
816/20008 Adapter 3/4 in F x 1/2 M BSP
892/00275 Adapter 1/2 in F x 3/4 M BSP

Fig 21. Female Cone Blanking Cap

892/00055 1/4 in BSP
892/00056 3/8 in BSP
892/00057 1/2 in BSP
892/00058 5/8 in BSP
892/00059 3/4 in BSP
892/00060 1 in BSP

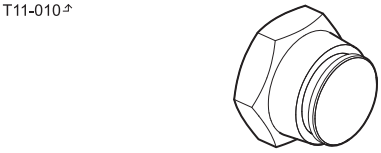


Fig 22. Male Cone Blanking Cap

816/00294 1/4 in BSP
816/00189 3/8 in BSP
816/00190 1/2 in BSP
816/00197 5/8 in BSP
816/00196 3/4 in BSP
816/00193 1 in BSP

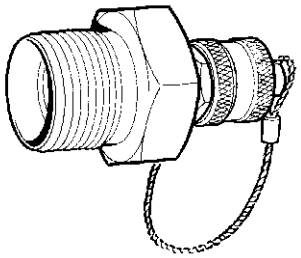


Fig 23. Pressure Test Adapters

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

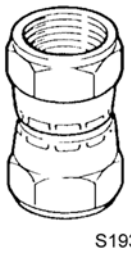


Fig 24. Female Connectors

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

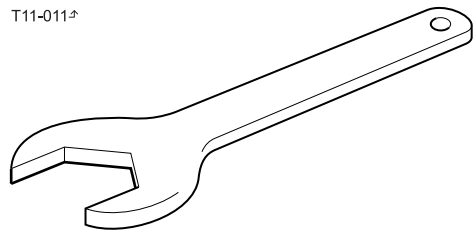


Fig 25. Hexagon Spanners for Ram Pistons and End Caps

992/09300 55 mm
992/09400 65 mm
992/09500 75 mm
992/09600 85 mm
992/09700 95 mm
992/10000 125 mm

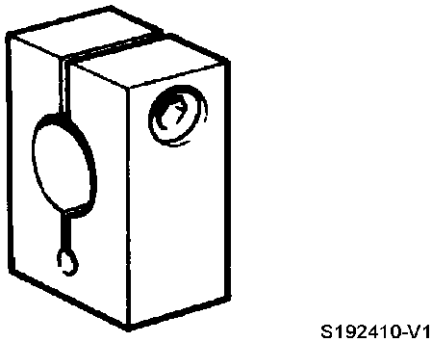


Fig 26. Spool Clamps

892/00039 Spool Clamp
992/10100 Spool Clamp

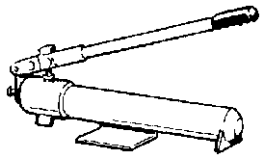


Fig 27. Hand Pump Equipment

892/00223 Hand Pump
892/00137 Micro-bore Hose 1/4 in BSP x 5 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
892/00279 Gauge 0 - 400 bar (0 - 6000 lbf/in^2)

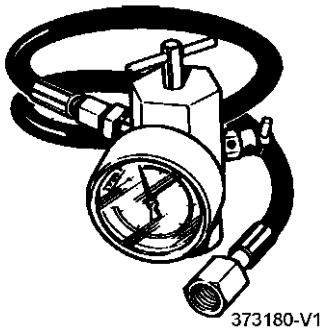


Fig 28. Accumulator Charge Equipment

892/00239 Charging Tool (Diaphragm Accumulators)
892/01042 Charging Tool (Diaphragm Accumulators)
892/01043 Adapter (use with 892/01042)
892/00948 Charging Tool (Piston Accumulators)

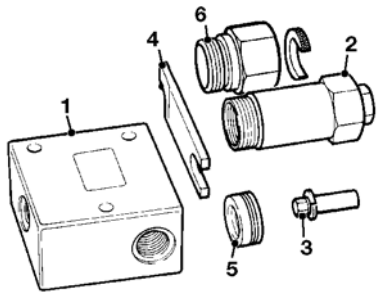


Fig 29. Components for Valve Block A.R.V. Testing

892/00309 A.R.V. Pressure Test Kit
1 892/00340 Test Block Body
2 892/00341 Setting Body
3 993/68300 Adjusting Pin
4 892/00343 Spanner
5 892/00345 Anti-cavitation Lock Out Bung
6 892/00335 A.R.V. Cartridge Removal Tool

Numerical List Section F - Transmission

The tools listed in the table are special tools required for removal and replacement of Body and Framework parts. These tools are available from JCB Service.

Note: *Service tools required for axle dismantling and assembly are listed in 9813/8610. Service tools required for gearbox dismantling and assembly are listed in 9813/3350*

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.*

Part Number	Description	Tool Detail Reference
892/00812	Drive coupling spanner	⇨ *Fig 30. (1-31)*
892/00865	Computer Test Harness	⇨ *Fig 31. (1-31)*
892/00866	Computer Test Indicator Box	⇨ *Fig 31. (1-31)*
892/00867	Computer Test Interrogator Box	⇨ *Fig 31. (1-31)*
892/01066	Interrogation lead	⇨ *Fig 32. (1-31)*

Tool Detail Reference Section F - Transmission

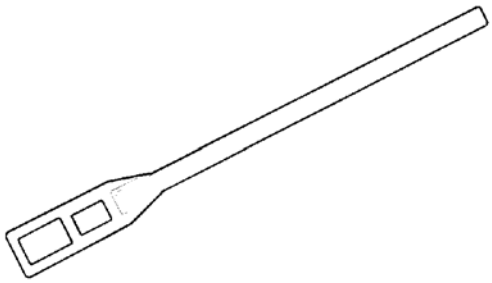


Fig 30. 892/00812 Drive Coupling Spanner

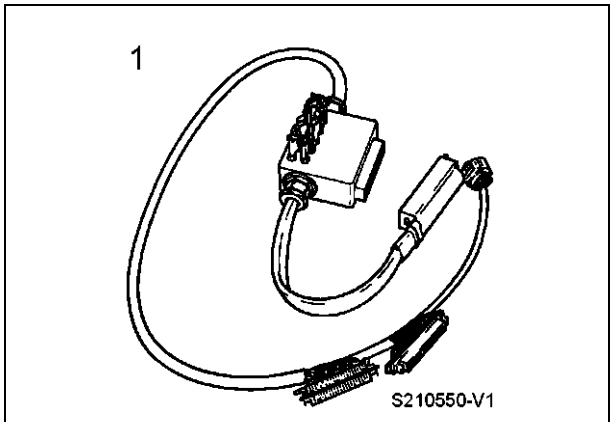
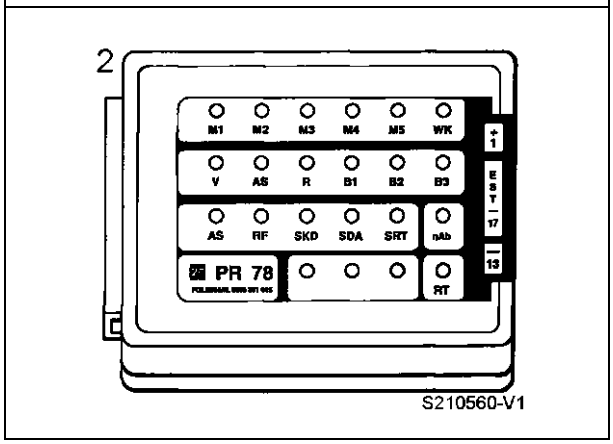
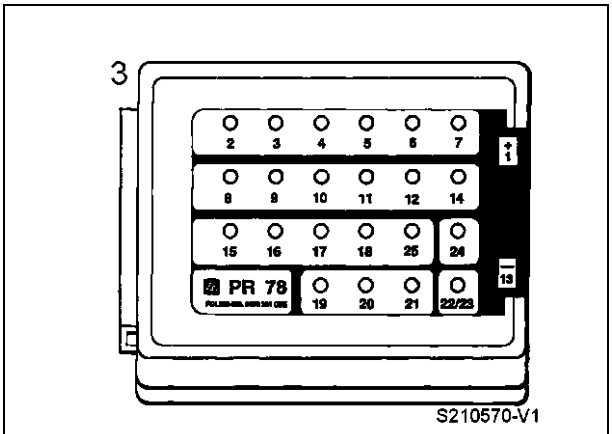


Fig 31.





892/00865 Computer test harness
892/00866 Computer test indicator box
892/00867 Computer test interrogator box

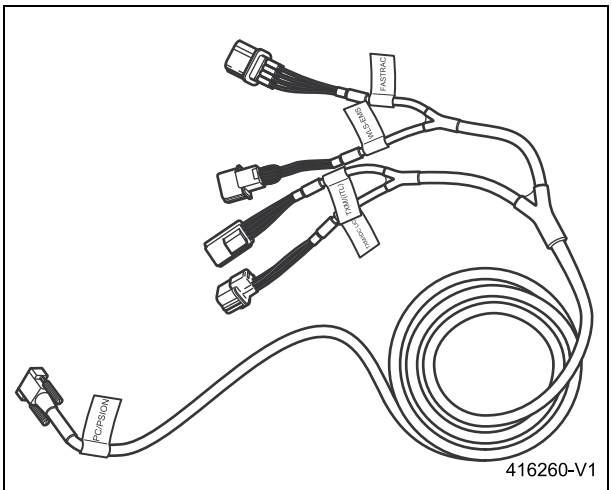


Fig 32. 892/01066

Numerical List Section K - Engine

The tools listed in the table are special tools required for removal and replacement of Body and Framework parts. 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.*

Part Number	Description	Tool Detail Reference
892/00041	De-glazing Tool	⇨ *Fig 33. (1-33)*

Tool Detail Reference Section K - Engine

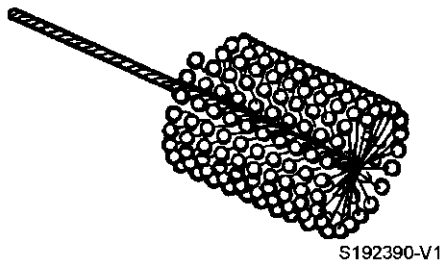


Fig 33. 892/00041

Note: *De-glazing Tool for Cylinder Bores (to assist bedding-in of new piston rings)*

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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: – 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