Service Manual

WLS 432ZX

Service Manual - WLS 432ZX

Publication No.
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World Class
Customer Support

Contents **Page No.**

General Information

Introduction

This publication is designed for the benefit of JCB INDIA LTD. distributor Service Engineers who are receiving, or have received, training by JCB INDIA 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

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. Finally, please remember above all else **SAFETY MUST COME FIRST!**

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 & Safety

Includes warnings and cautions pertinent to aspects of workshop procedures etc.

3 Routine 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 & Framework

The page numbering in each alphabetically coded section is not continuous. This allows for the insertion of new items in later issues of the manual.

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

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.

‘Left Hand’ and ‘Right Hand’ are as viewed from the rear of the machine facing forwards.

Colour Codes

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

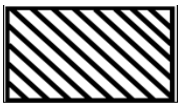
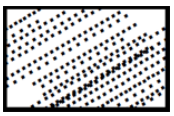
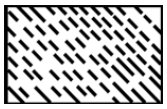
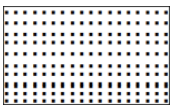
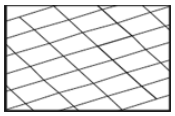
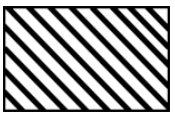
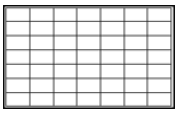
Table 1.

	**Red**	**Full Presssure** Pressure generated from operation of a service. Depending on application this may be anything between neutral circuit pressure and M.R.V. 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**	**Neutral** Neutral circuit pressure.
	**Green**	**Exhaust**
	**Light Green**	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).

Black and White Codes

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

Table 2.

	Neutral Circuit Pressure.
	Pressure generated by the operation of a service. Depending on application this may be anything between Neutral Circuit Pressure and M.R.V. Operation Pressure.
	Pressure that is above Neutral Circuit Pressure but lower than that denoted above.
	Exhaust.
	Oil subjected to a partial vacuum due to a drop in pressure (cavitation).
	Oil trapped within a chamber or line preventing movement of componenets (lock-up).
	Oil pressure used in a controlling device (servo).

Identification Plate

Your machine has an identification plate X mounted on the left hand side of the machine. The serial numbers of the machine and its major units are stamped on the plate ⇨ *Fig 1. (1-4)*

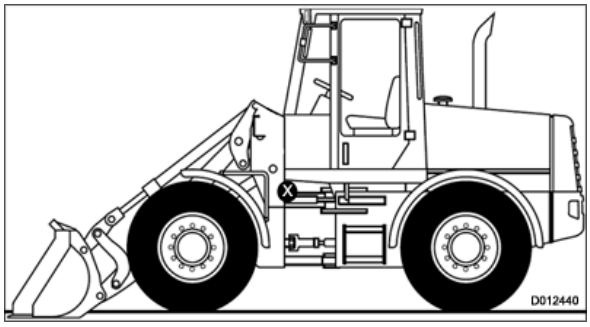


Fig 1.

Explanation of Vehicle Identification Number (VIN)

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 ⇨ *Fig 2. (1-4)*.

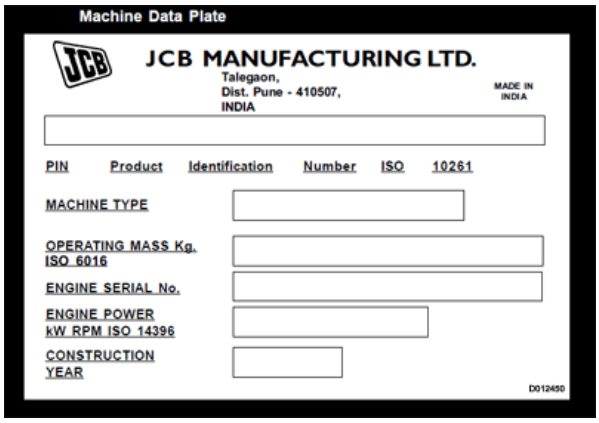


Fig 2.

Torque Settings

Use only where no torque setting is specified in the text. Values are for dry threads and may be within three per cent of the figures stated. For lubricated threads the values should be REDUCED by one third ⇨ *Fig 3. (1-6)*.

Table 3.

Bolt Size		Hexagon (A/F)		Torque Settings	
in	**(mm)**	**in**	**Nm**	**kgf m**	**lbf ft**
1 /4	(6.3)	7 /16	14	1.4	10
5 /16	(7.9)	1 /2	28	2.8	20
3 /8	(9.5)	9 /16	49	5.0	36
7 /16	(11.1)	5 /8	78	8.0	58
1 /2	(12.7)	3 /4	117	12.0	87
9 /16	(14.3)	13 /16	170	17.3	125
5 /8	(15.9)	15 /16	238	24.3	175
3 /4	(19.0)	1 1 /8	407	41.5	300
7 /8	(22.2)	1 15 /16	650	66.3	480
1	(25.4)	1 1 /2	970	99.0	715
1 1 /4	(31.7)	1 7 /8	1940	198.0	1430
1 1 /2	(38.1)	2 1 /4	3390	345.0	2500

Metric Grade 8.8 Bolts

Table 4.

Bolt Size		Hexagon (A/F)		Torque Settings	
	(mm)	mm	Nm	kgf m	lbf ft
M5	(5)	8	7	0.7	5
M6	(6)	10	12	1.2	9
M8	(8)	13	28	3.0	21
M10	(10)	17	56	5.7	42
M12	(12)	19	98	10	72
M16	(16)	24	244	25	180
M20	(20)	30	476	48	352
M24	(24)	36	822	84	607
M30	(30)	46	1633	166	1205
M36	(36)	55	2854	291	2105

Rivet Nut Bolts/Screws

Table 5.

Bolt Size		Torque Settings		(for steel rivet nuts)
	(mm)	Nm	kgf m	kgf m
M3	(3)	1.2	0.12	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

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

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

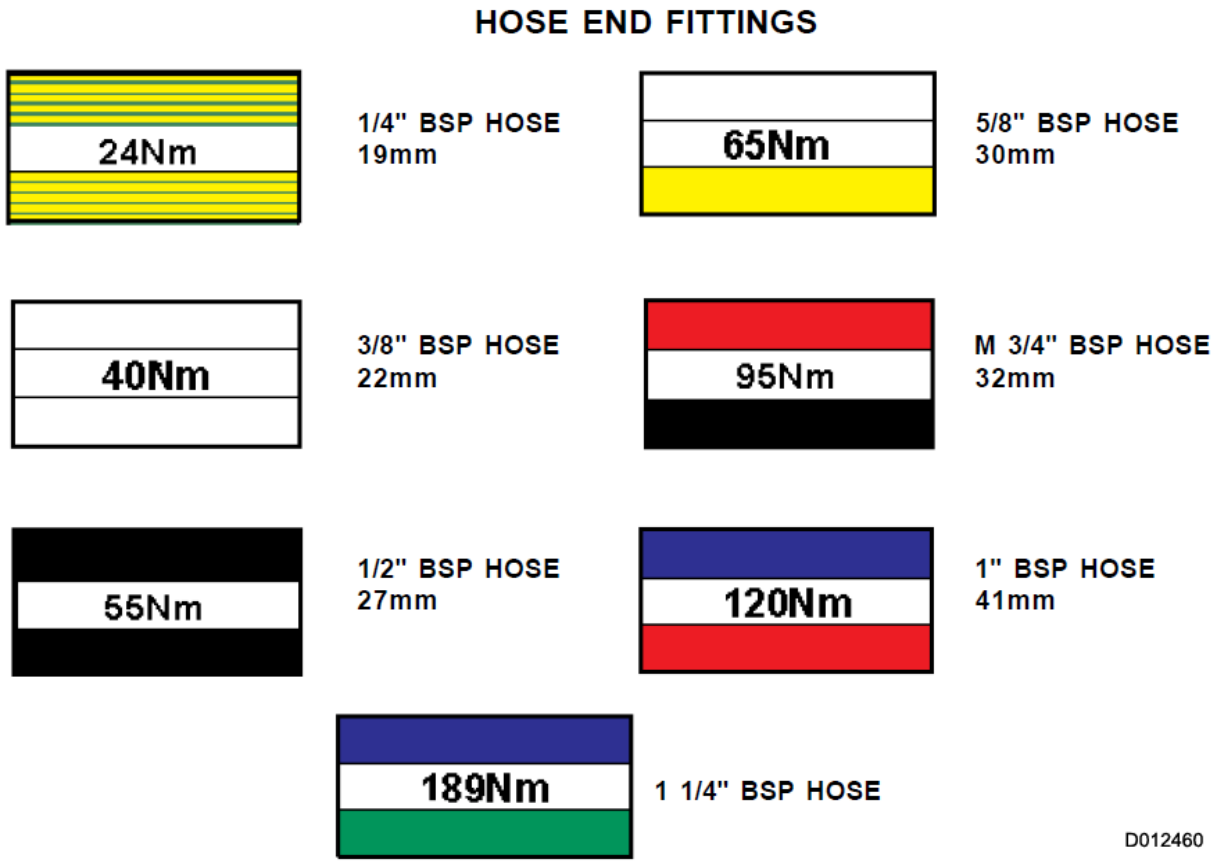


Fig 3.

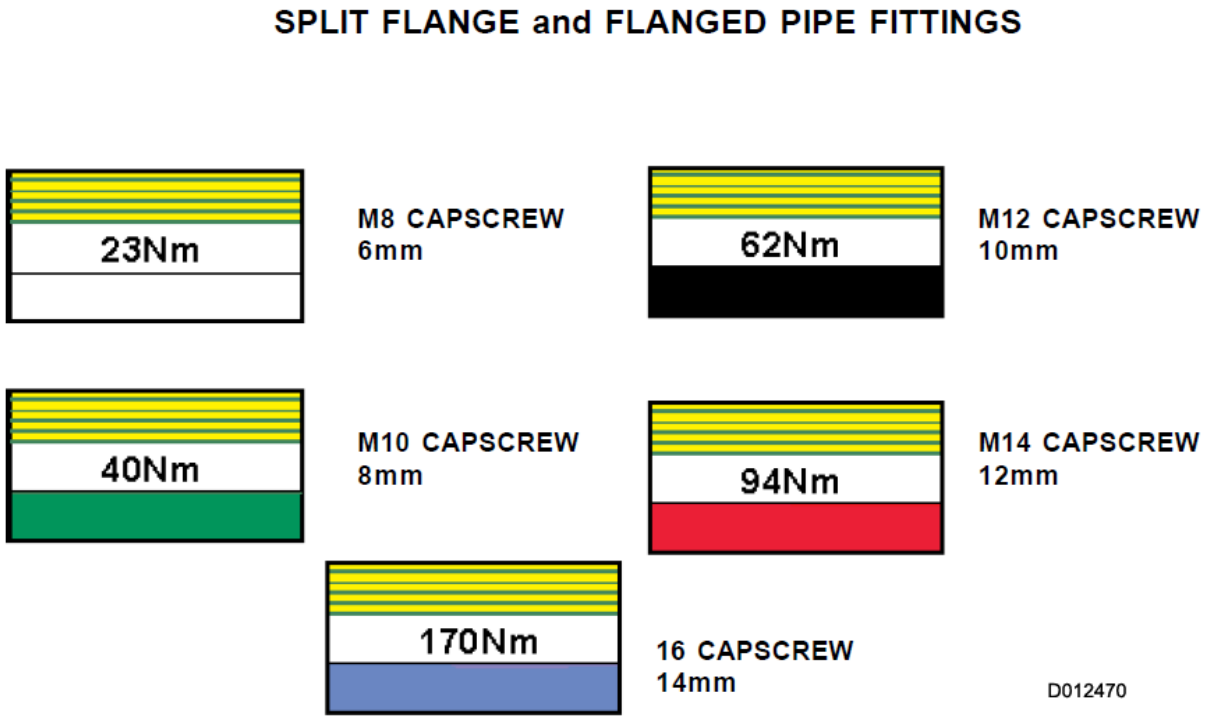
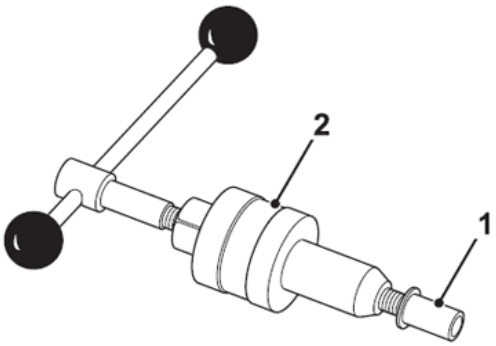


Fig 4.

Service Tools

Section B - Body and Framework



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
The Willenhall
Willenhall
West Midlands, WV13 2JW

Folding Stand for Holding Glass

Essential for preparing new glass prior to installation. JCB part number - 892/00843 ⇨ *Fig 5. (1-8)*

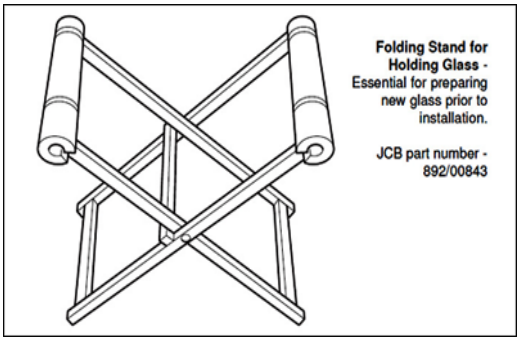


Fig 5.

Glass Lifter

Minimum 2 off - essential for glass installation, 2 required to handle large panes of glass. Ensure suction cups are protected from damage during storage. JCB part number - 892/00842 ⇨ *Fig 6. (1-8)*

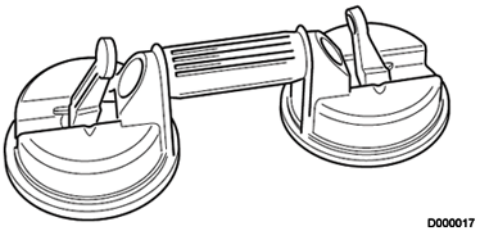


Fig 6.

Nylon Spatula

General tool used for smoothing sealants - also used to re-install glass in rubber glazing because metal tools will chip the glass edge. JCB part number - 892/00847 ⇨ *Fig 7. (1-8)*

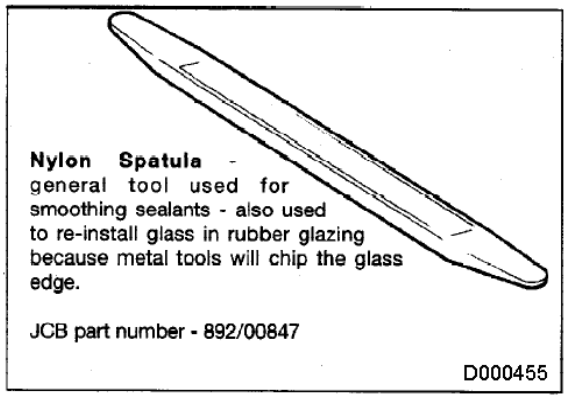


Fig 7.

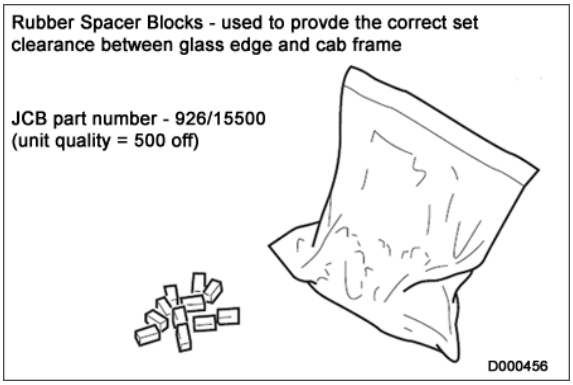


Fig 8.

Service Tools

JCB part number - 892/00846

Wire Starte - sed to access braided cutting wire (below) polyurethan seal ⇨ *Fig 9. (1-9)*.

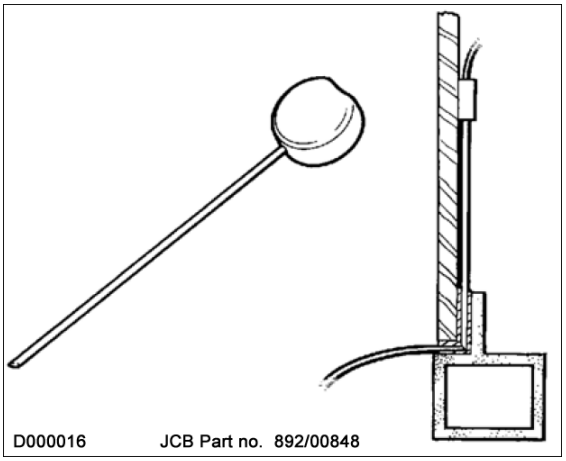


Fig 9.

Glass Extractor (Handles)

Used with braided cutting wire (belwo) to cut out broken glass. JCB part number ⇨ *Fig 10. (1-9)*

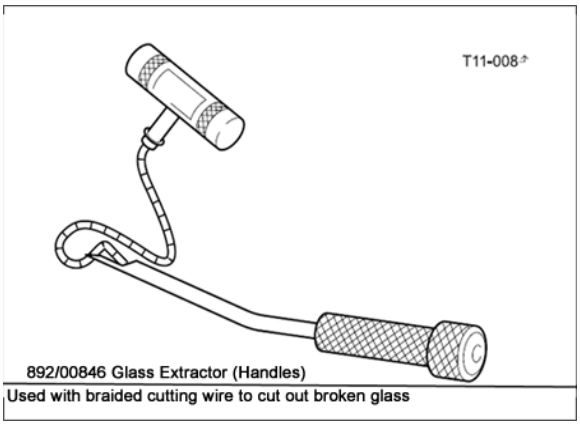


Fig 10.

Braided Cutting Wire

JCB part number - 892/00849 (approx 25 m length) ⇨ *Fig 11. (1-9)*

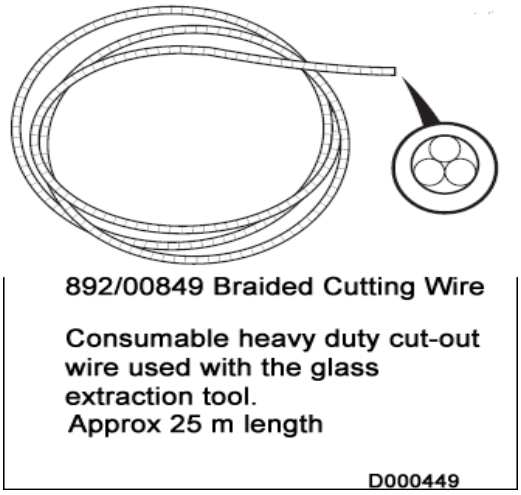


Fig 11.

Cut - Out Knife

Used to remove broken glass JCB part number - 992/12800 ⇨ *Fig 12. (1-9)*

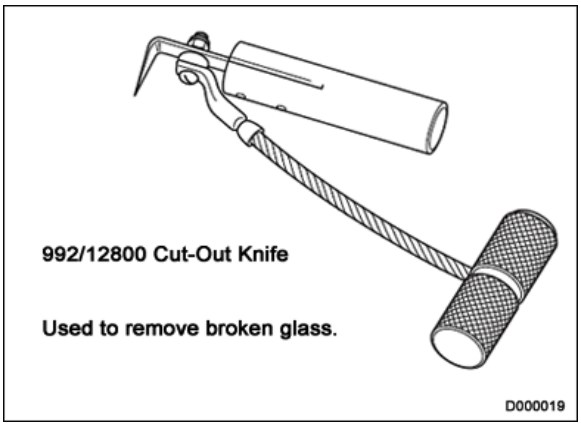


Fig 12.

'L' Blades

25 mm (1 in) cut - replacement blased for cut-out knife (avbove). JCB part number - 992/12801 (unit quanitity = 5 off) ⇨ *Fig 13. (1-10)*

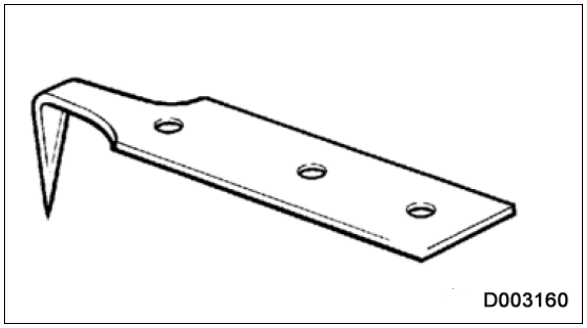
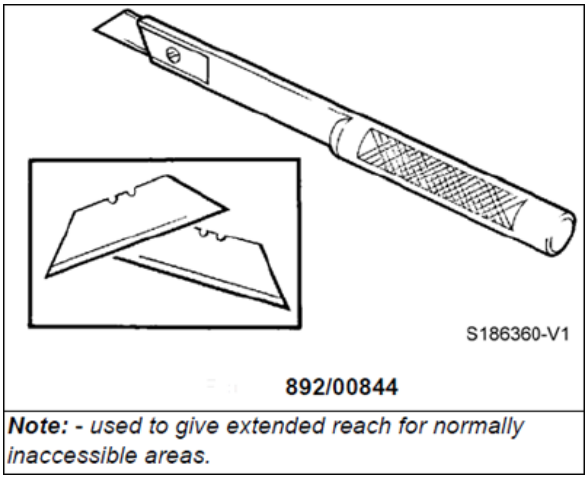


Fig 13.

Section B - Body & Framework

Long Knife

25 mm (1 in) cut - replacement blased for cut-out knife (avbove). JCB part number - 992/12801 (unit quanitity = 5 off) ⇨ *Fig 14. (1-10)*



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

Fig 14.

Bearing Locator

Used with dummy bush to set up Upper Centre Pivot. JCB part number - 825/99851⇨ *Fig 15. (1-10)*

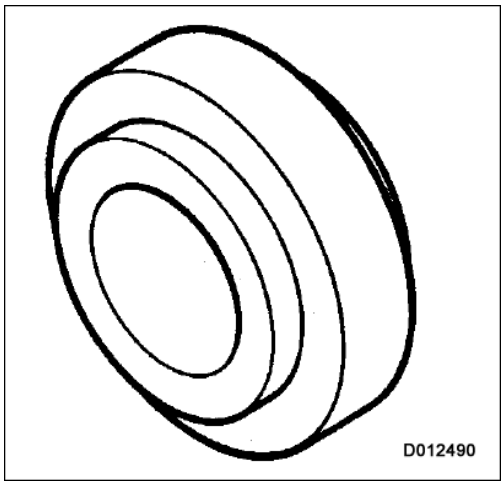


Fig 15.

Dummy Bush

Used with bearing locator to set up Upper Centre Pivot. JCB part number - 825/99849⇨ *Fig 16. (1-10)*

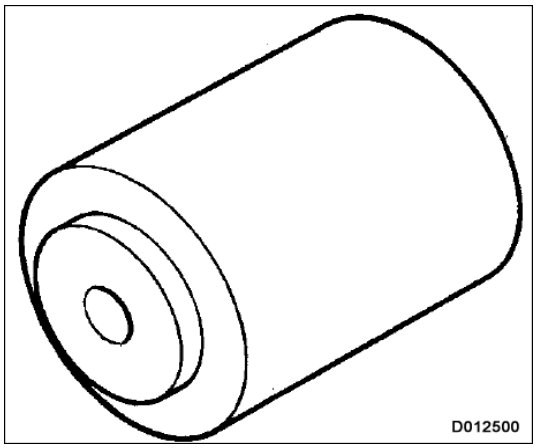
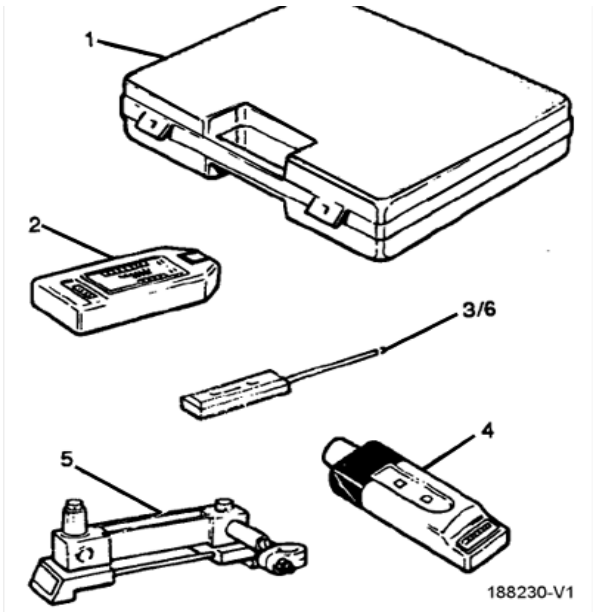


Fig 16.

Service Tools

Section C - Electrics ⇨ *Fig 17. (1-11)* and⇨ *Fig 18. (1-11)*



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 17.

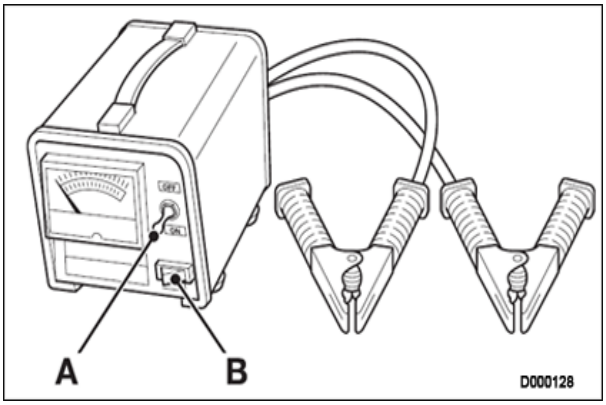


Fig 18.

⇨ *Fig 19. (1-11)* and ⇨ *Fig 20. (1-11)*

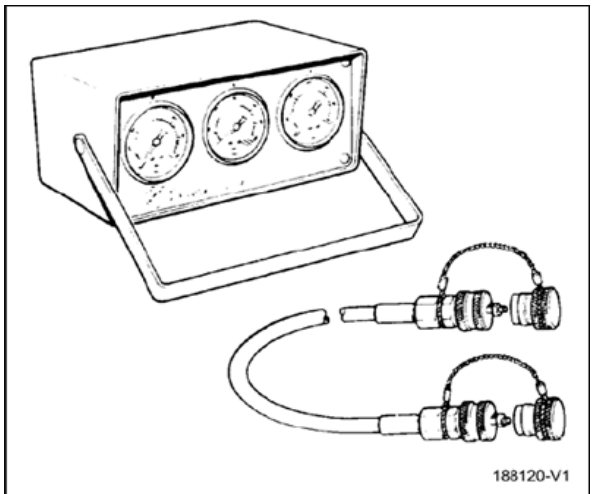


Fig 16. Hydraulic Circuit Pressure test Kit

892/00253 Pressure Test Kit
892/00201 Replacement gauge 0-20 bar (0-300 lbf/in²)
892/00202 Replacement gauge 0-40 bar (0-600 lbf/in²)
892/00203 Replacement gauge 0-400 bar (0-6000 lbf/in²)
892/00254 Replacement Hose D012520

Fig 19.

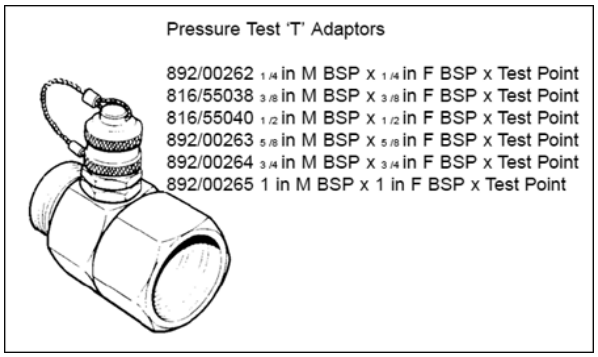


Fig 20.

⇨ *Fig 21. (1-12)* and ⇨ *Fig 22. (1-12)*

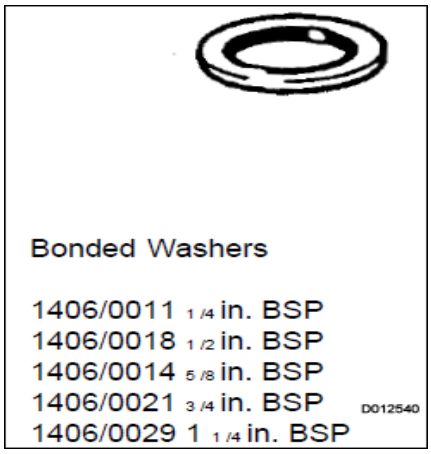
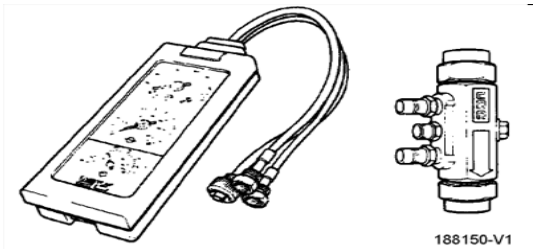
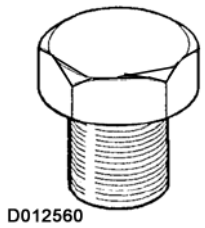


Fig 21.



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 22.



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

Female Cone Blanking Cap 892/00060 1 in BSP

⇨ *Fig 23. (1-12)*

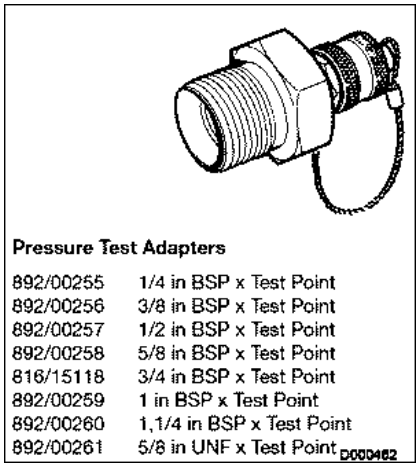
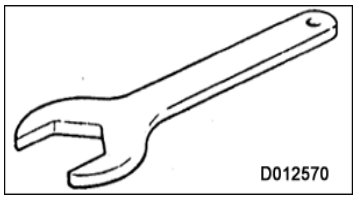
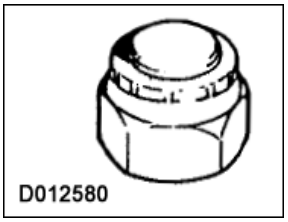


Fig 23.



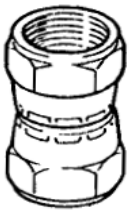
992/09300 55 mm
992/09400 65 mm
992/09500 75 mm
992/09600 85 mm
992/09700 95 mm
992/10000 125mm

Hexagon Spanners for Ram Pistons and End Caps



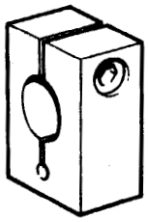
816/00294 1 /4 in. BSP
816/00189 3 /8 in. BSP
816/00190 1 /2 in. BSP
816/00197 5 /8 in. BSP
816/00196 3 /4 in. BSP
816/00193 1 in. BSP

Male Cone Blanking Cap



892/00074 3 /8 in. BSP x 3 /8 in.
892/00075 1 /2 in. BSP x 1 /2 in.
892/00076 5 /8 in. BSP x 5 /8 in.
892/00077 3 /4 in. BSP x 3 /4 in.

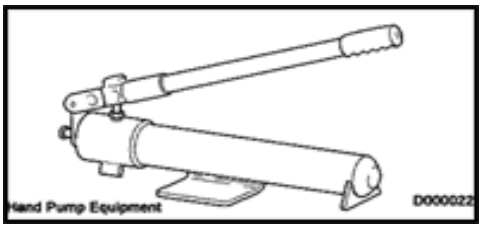
Female Connectors



892/00039 Spool Clamp
992/10100 Spool Clamp

Spool Clamps

Hand Pump Equipment

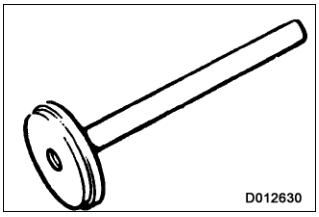


892/00223	Micro-bore Hose 1/4 in. BSP x 5 metres
892/00137	Adapter 1/4 in. M BSP x 3/8 in. M BSP Taper
892/00274	Adapter 1 /4 in. M BSP x 3 /8 in. M BSP Taper
892/00262	1/4 in. M BSP x 1/4 in. F BSP x Test Point
892/00706	Test Probe
892/00279	Gauge 0 - 400 bar (0 - 6000 lbf/in 2)

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)

Section F - Transmission



992/07603 Replacer - Bearing Cup