

Wheeled Loading Shovel - 434S

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Section 1 - General Information

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Introduction

About this Publication

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.

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...etc.

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.

All sections are listed on the front cover; tabbed divider cards align directly with individual sections on the front cover for rapid reference.

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.

This Service Manual covers the following machines:

434S Wheeled Loading Shovel from machine serial number 1244000



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Identifying your Machine

Identification Plates

Identification Plate

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

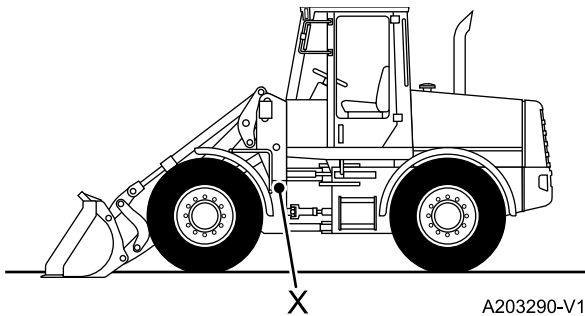


Fig 1.

Explanation of Vehicle Identification Number (VIN)

1	2	3	4	5
SLP	43400	6	E	1244000

- 1 World Manufacturer Identification, SLP = JCB
- 2 Machine Model, 43400 = 434
- 3 Year of Manufacture 6, (W = 1998, X = 1999, Y = 2000, 1 = 2001, 2 = 2002, 3 = 2003, 4 = 2004, 5 = 2005, 6 = 2006, 7 = 2007, etc.)
- 4 Manufacturing Location (E = England)
- 5 Machine Serial Number (1244000)

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.

Unit Identification

The engine serial number is stamped on a plate **2Y** which is fastened to the right side of the cylinder block, near the fuel filter.

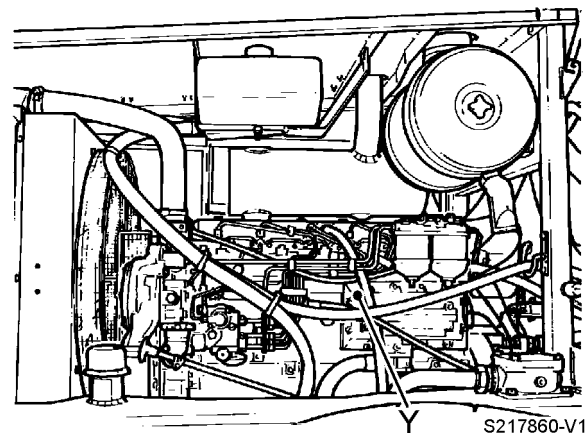


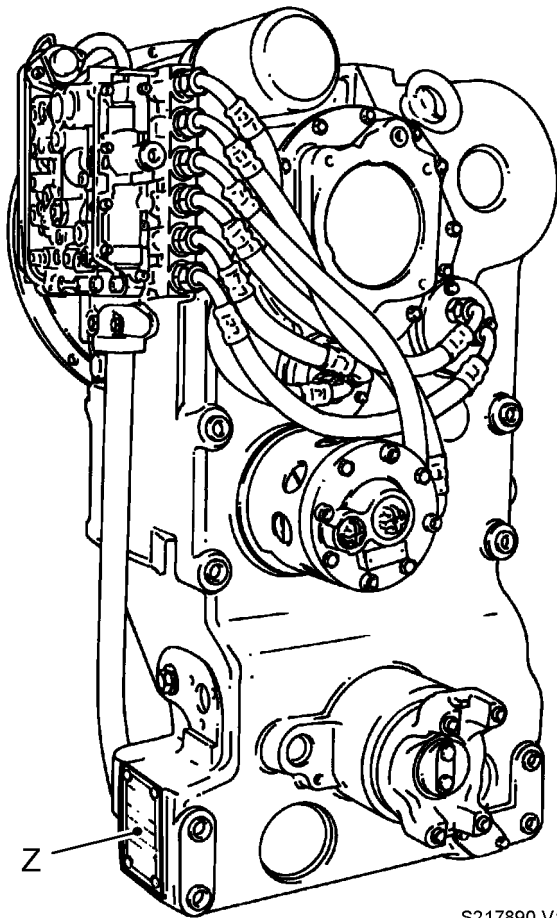
Fig 2.

Typical Engine Identification Number

1	2	3	4	5
YB	50457	U	576887	6

- 1 Engine Type, YB = 6 cylinder turbo
- 2 Build Number
- 3 Country of Origin
- 4 Engine Sequence Number
- 5 Year of Manufacture

The Transmission serial number is stamped on plate **3Z** as shown.



S217890-V1

Fig 3.

Torque Settings

Zinc Plated Fasteners (golden finish)

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.

UNF Grade `S' Bolts

Dia.	Bolt size		Torque Settings		
	(mm)	Hexagon (A/F) mm	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	1 1/8	407	41.5	300
7/8	22.2	1 5/16	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

Dia.	Bolt size		Torque Settings		
	(mm)	Hexagon (A/F) 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
M18	(18)	27	350	36	258
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

Dia.	Bolt size (mm)	Torque Settings (for steel rivet nuts)		
		Nm	kgf m	lbf ft
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.



Section 1 - General Information Torque Settings

Zinc Plated Fasteners (golden finish)

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Service Tools

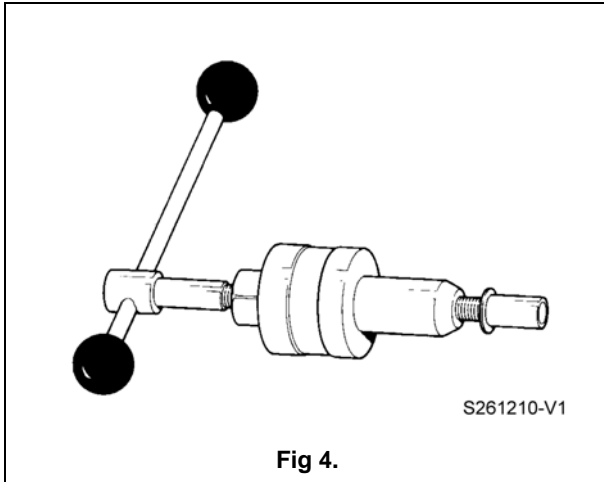
Numerical List Section B - Body and Framework

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
825/99849	Dummy Bush	⇒ Fig 15. (□ 1-10)
825/99851	Bearing Locator	⇒ Fig 15. (□ 1-10)
826/01179	M6 x 16mm Rivet Nut	⇒ Fig 4. (□ 1-8)
826/01106	M6 x 19mm Rivet Nut	⇒ Fig 4. (□ 1-8)
826/01177	M8 x 18mm Rivet Nut	⇒ Fig 4. (□ 1-8)
826/01176	M10 x 23mm Rivet Nut	⇒ Fig 4. (□ 1-8)
826/01333	M10 x 26mm Rivet Nut	⇒ Fig 4. (□ 1-8)
892/00842	Glass Lifter	⇒ Fig 6. (□ 1-8)
892/00843	Glass Stand	⇒ Fig 5. (□ 1-8)
892/00844	Long Knife	⇒ Fig 14. (□ 1-10)
892/00846	Glass Extractor (Handles)	⇒ Fig 11. (□ 1-9)
892/00847	Nylon Spatula	⇒ Fig 7. (□ 1-8)
892/00848	Wire Starter	⇒ Fig 9. (□ 1-9)
892/00849	Braided Cutting Wire	⇒ Fig 13. (□ 1-10)
926/15500	Rubber Spacer Blocks	⇒ Fig 8. (□ 1-9)
992/12800	Cut-Out Knife	⇒ Fig 10. (□ 1-9)
992/12801	'L' Blades	⇒ Fig 12. (□ 1-10)

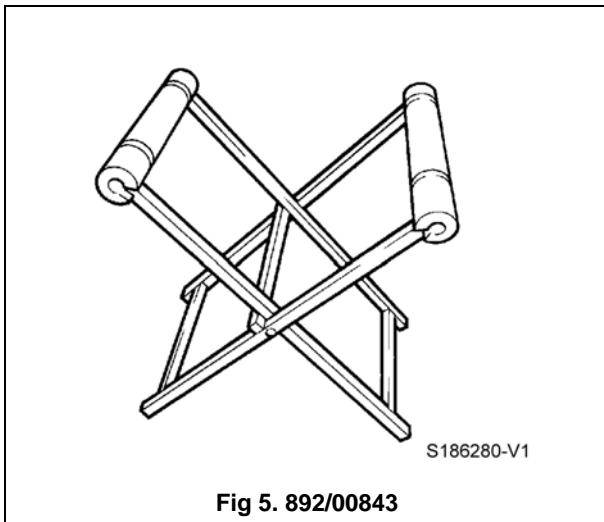
Tool Detail Reference Section B - Body and Framework



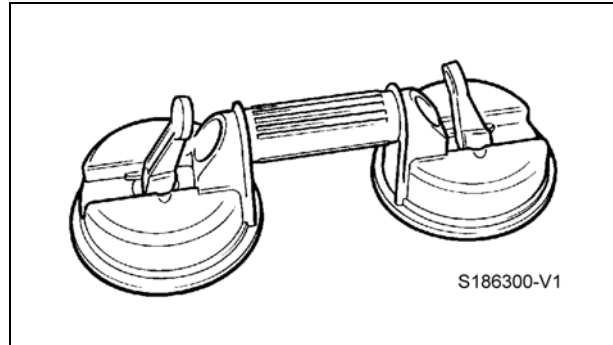
Note: 826/01179 M6 x 16mm Rivet Nut, 826/01106 M6 x 19mm Rivet Nut, 826/01177 M8 x 18mm Rivet Nut, 826/01176 M10 x 23mm Rivet Nut, 826/01333 M10 x 26mm Rivet Nut

Installation Tool Available from:

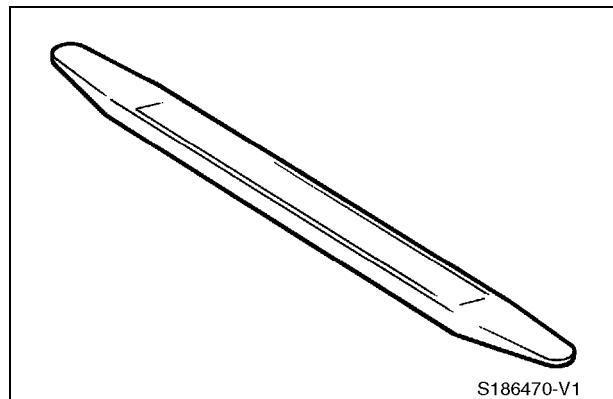
Bollhoff Fastenings Ltd.
 Midacre
 The Willenhall Estate
 Rose Hill
 Willenhall
 West Midlands, WV13 2JW



Note: essential for preparing new glass prior to installation.



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.



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

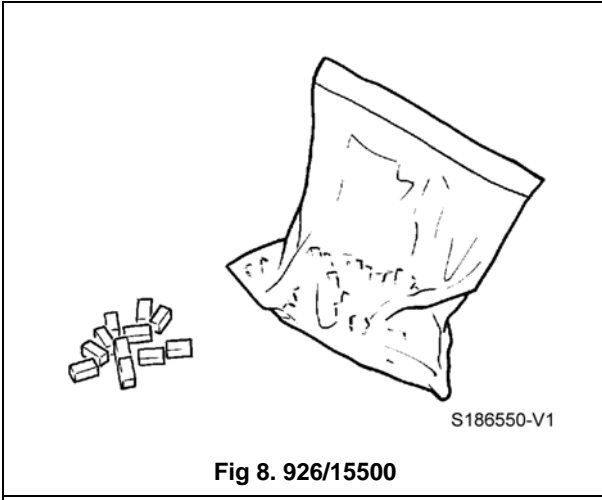


Fig 8. 926/15500

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

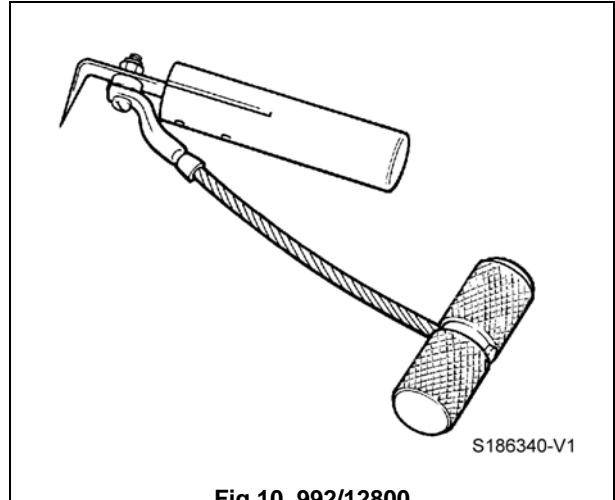


Fig 10. 992/12800

Note: - used to remove broken glass.

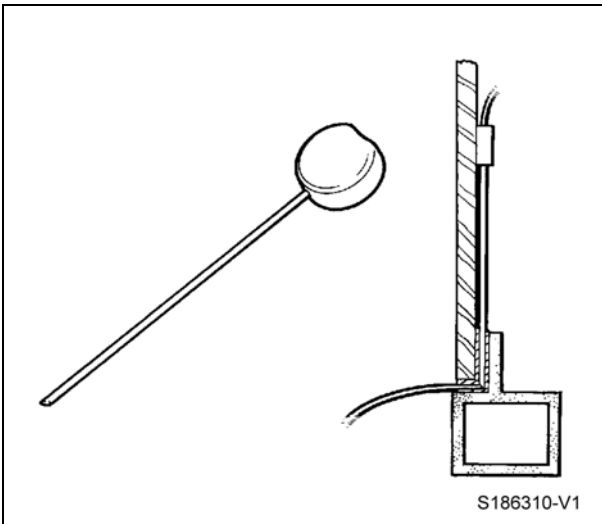


Fig 9. 892/00848

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

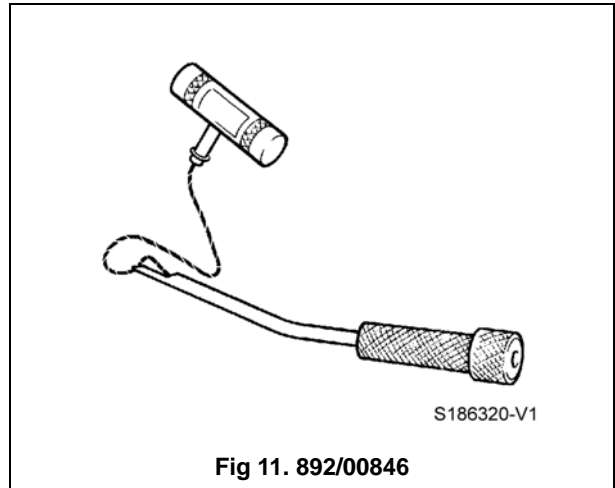
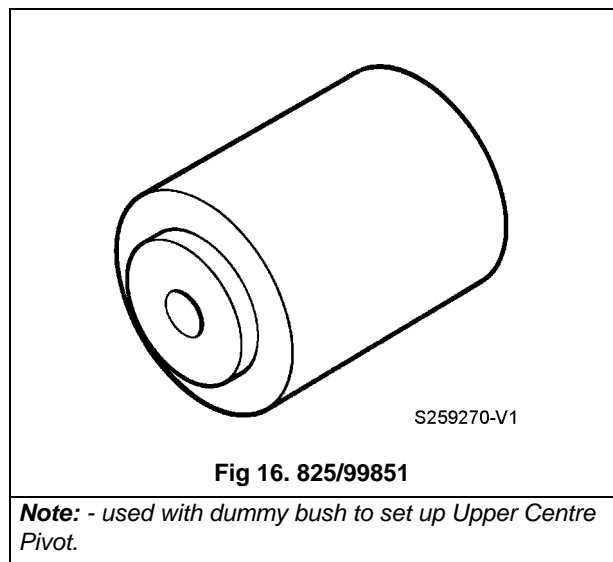
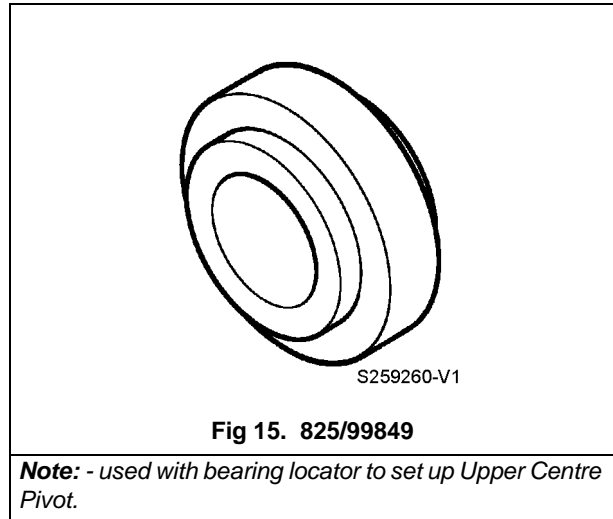
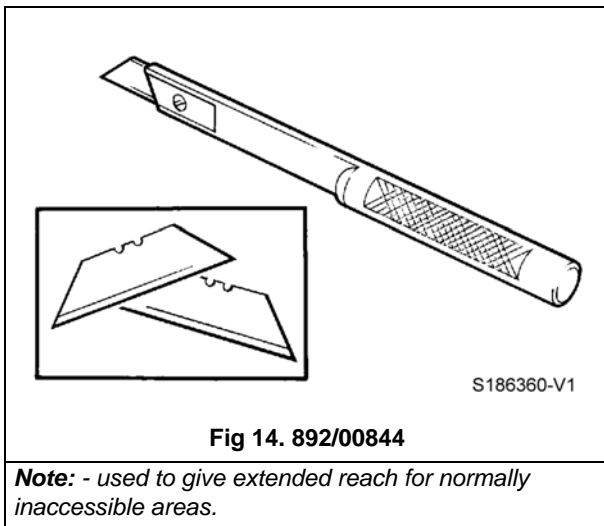
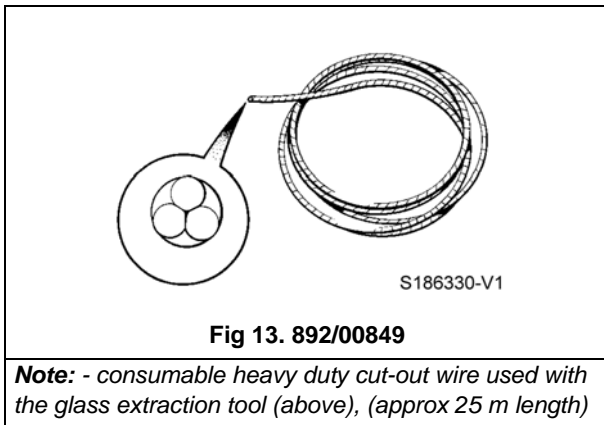
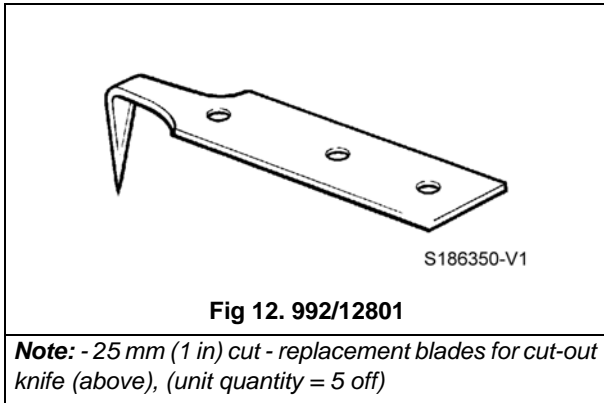


Fig 11. 892/00846

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





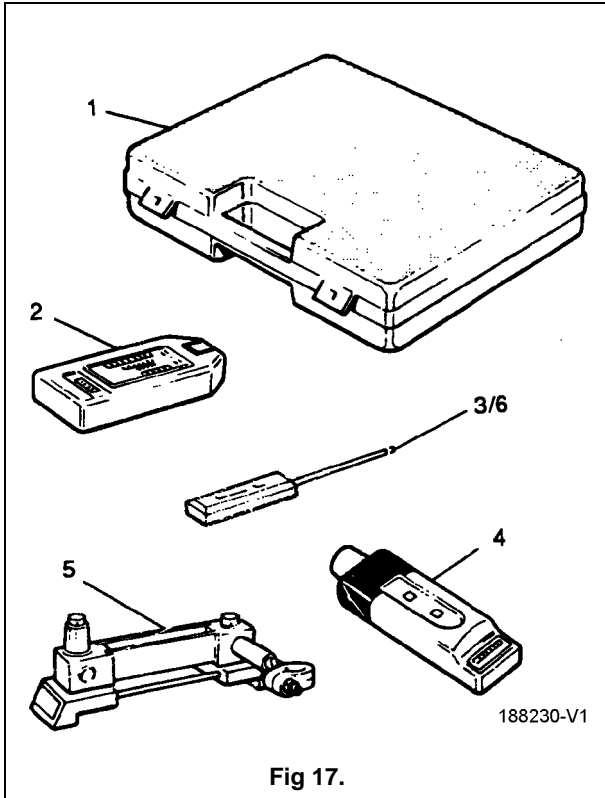
Numerical List Section C - Electrics

The tools listed in the table are special tools required for testing electrics. These tools are available from JCB Service.

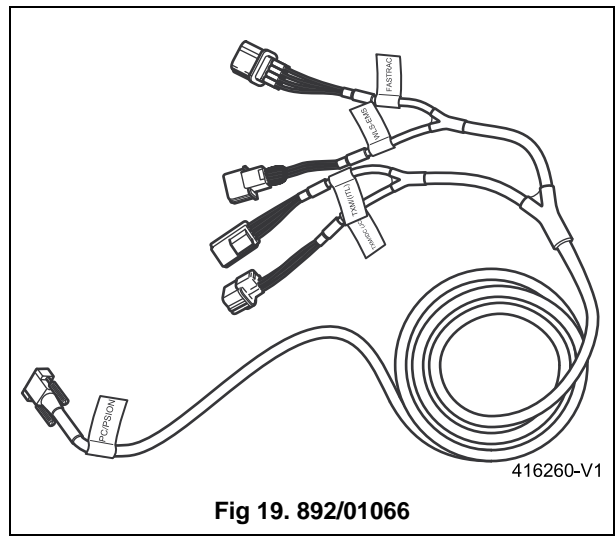
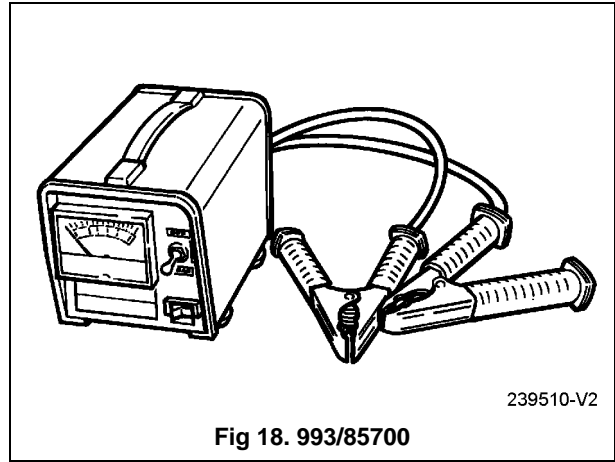
Note: Tools other than those listed will be required. It is expected that such general tools will be available in any well equipped workshop or be available locally from any good tool supplier.

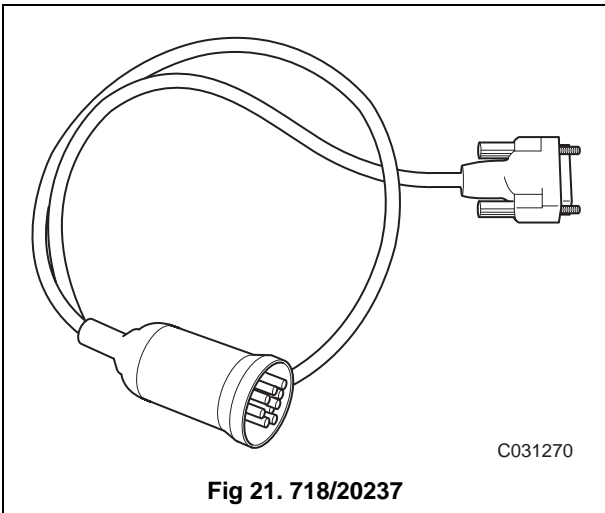
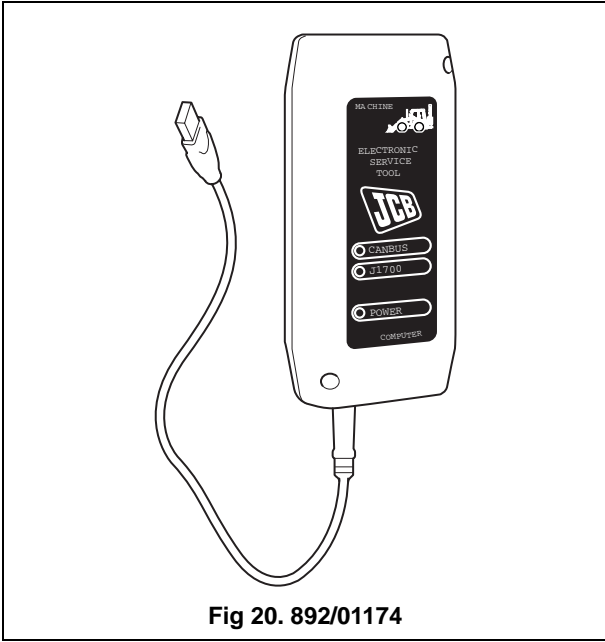
Part Number	Description	Tool Detail Reference
718/20237	Interrogation Lead	⇒ Fig 21. (□ 1-13)
892/00282	Shunt	⇒ Fig 17. (□ 1-12)
892/00283	Tool Kit Case	⇒ Fig 17. (□ 1-12)
892/00284	Digital Tachometer	⇒ Fig 17. (□ 1-12)
892/00285	Hyd. Oil Temperature Probe	⇒ Fig 17. (□ 1-12)
892/00286	Surface Temperature Probe	⇒ Fig 17. (□ 1-12)
892/00298	Fluke Meter	⇒ Fig 17. (□ 1-12)
892/01066	Interrogation Lead	⇒ Fig 19. (□ 1-12)
892/01174	Data Link Adaptor	⇒ Fig 20. (□ 1-13)
993/85700	Battery Tester	⇒ Fig 18. (□ 1-12)

Tool Detail Reference Section C - Electrics



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





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 24. (1-17)
1406/0014	Bonded Washer	⇒ Fig 24. (1-17)
1406/0018	Bonded Washer	⇒ Fig 24. (1-17)
1406/0021	Bonded Washer	⇒ Fig 24. (1-17)
1406/0029	Bonded Washer	⇒ Fig 24. (1-17)
1604/0006	Adapter	⇒ Fig 25. (1-17)
1612/0006	Adapter	⇒ Fig 25. (1-17)
816/00189	Blanking Cap	⇒ Fig 27. (1-18)
816/00190	Blanking Cap	⇒ Fig 27. (1-18)
816/00193	Blanking Cap	⇒ Fig 27. (1-18)
816/00196	Blanking Cap	⇒ Fig 27. (1-18)
816/00197	Blanking Cap	⇒ Fig 27. (1-18)
816/00294	Blanking Cap	⇒ Fig 27. (1-18)
816/15118	Pressure Test Adapter	⇒ Fig 28. (1-18)
816/20008	Adapter	⇒ Fig 25. (1-17)
816/55038	Pressure Test Adapter	⇒ Fig 23. (1-17)
816/55040	Pressure Test Adapter	⇒ Fig 23. (1-17)
892/00039	Spool Clamp	⇒ Fig 31. (1-19)
892/00055	Blanking Plug	⇒ Fig 26. (1-18)
892/00056	Blanking Plug	⇒ Fig 26. (1-18)
892/00057	Blanking Plug	⇒ Fig 26. (1-18)
892/00058	Blanking Plug	⇒ Fig 26. (1-18)
892/00059	Blanking Plug	⇒ Fig 26. (1-18)
892/00060	Blanking Plug	⇒ Fig 26. (1-18)
892/00074	Female Connector	⇒ Fig 29. (1-18)
892/00075	Female Connector	⇒ Fig 29. (1-18)
892/00076	Female Connector	⇒ Fig 29. (1-18)
892/00077	Female Connector	⇒ Fig 29. (1-18)
892/00137	Micro-Bore Hose	⇒ Fig 32. (1-19)
892/00223	Hand Pump	⇒ Fig 32. (1-19)
892/00239	Charging Tool	⇒ Fig 33. (1-19)

Part Number	Description	Tool Detail Reference
892/00253	Pressure Test Kit	⇒ Fig 22. (1-17)
892/00255	Pressure Test Adaptor	⇒ Fig 28. (1-18)
892/00256	Pressure Test Adaptor	⇒ Fig 28. (1-18)
892/00257	Pressure Test Adaptor	⇒ Fig 28. (1-18)
892/00258	Pressure Test Adaptor	⇒ Fig 28. (1-18)
892/00259	Pressure Test Adaptor	⇒ Fig 28. (1-18)
892/00260	Pressure Test Adaptor	⇒ Fig 28. (1-18)
892/00261	Pressure Test Adaptor	⇒ Fig 28. (1-18)
892/00262	Pressure Test Adaptor	⇒ Fig 32. (1-19)
892/00263	Pressure Test Adaptor	⇒ Fig 23. (1-17)
892/00264	Pressure Test Adaptor	⇒ Fig 23. (1-17)
892/00265	Pressure Test Adaptor	⇒ Fig 23. (1-17)
892/00268	Flow Monitoring Unit	⇒ Fig 25. (1-17)
892/00269	Sensor Head	⇒ Fig 25. (1-17)
892/00270	Load Valve	⇒ Fig 25. (1-17)
892/00274	Adapter	⇒ Fig 32. (1-19)
892/00275	Adapter	⇒ Fig 25. (1-17)
892/00279	Gauge	⇒ Fig 32. (1-19)
892/00309	A.R.V. Pressure Test Kit	⇒ Fig 34. (1-19)
892/00335	A.R.V. Cartridge Removal Tool	⇒ Fig 34. (1-19)
892/00340	Test Block Body	⇒ Fig 34. (1-19)
892/00341	Setting Body	⇒ Fig 34. (1-19)
892/00343	Spanner	⇒ Fig 34. (1-19)
892/00345	Anti-cavitation Lock Out Bung	⇒ Fig 34. (1-19)
892/00706	Test Probe	⇒ Fig 32. (1-19)
892/00948	Charging Tool	⇒ Fig 33. (1-19)
892/01042	Charging Tool	⇒ Fig 33. (1-19)
892/01043	Adapter	⇒ Fig 33. (1-19)
992/09300	Spanner	⇒ Fig 30. (1-18)
992/09400	Spanner	⇒ Fig 30. (1-18)
992/09500	Spanner	⇒ Fig 30. (1-18)
992/09600	Spanner	⇒ Fig 30. (1-18)
992/09700	Spanner	⇒ Fig 30. (1-18)
992/10000	Spanner	⇒ Fig 30. (1-18)
992/10100	Spool Clamp	⇒ Fig 31. (1-19)
993/68300	Adjusting Pin	⇒ Fig 34. (1-19)



Section 1 - General Information Service Tools

Numerical List Section E - Hydraulics

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 22. (□ 1-17)
892/00202	Replacement Gauge	⇒ Fig 22. (□ 1-17)
892/00203	Replacement Gauge	⇒ Fig 22. (□ 1-17)
892/00254	Replacement Hose	⇒ Fig 22. (□ 1-17)

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