Service Manual

Open front screen

JZ140 ZTS

Publication No.

9803/6530-1

World Class
Customer Support

Open front screen

General Information

Publication No.
9803/6530-1

World Class
Customer Support

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:

JZ140

Schematic Codes

Colour Codes

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).

Identifying your Machine

Identification Plates

Data Plate

Your machine has a Data Plate, located on the outside the cab as shown at **A**. The machine serial number is inscribed at **B** which is the baseplate of the rear frame and the engine number is at **C**.

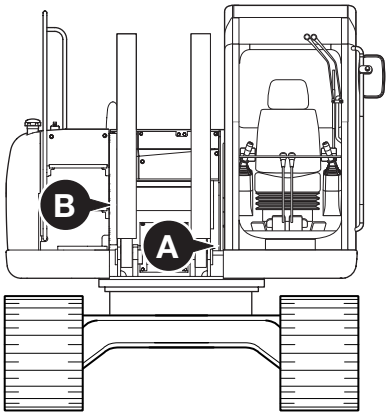


Fig 1.

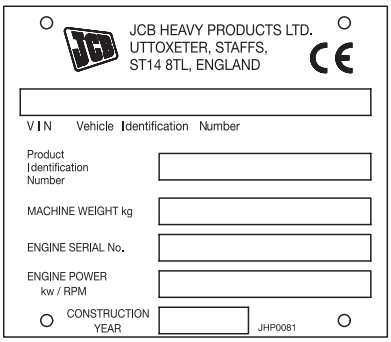


Fig 2.

Typical Vehicle Identification Number (VIN)

1	2	3	4	5	6	7
SLP	JZ	14	C	4	E	1137000

1 World Manufacturer Identification (SLP = JCB)

2 Machine Type (JZ = Tracked)

3 Machine Model (14 = 140)

4 Generation

5 Year of Manufacture (1 = 2001, 2 = 2002, 3 = 2003, 4 = 2004, 5 = 2005, 6 = 2006)

6 Manufacturers Location (E = England)

7 Machine Serial Number (1137001)

Typical Engine Identification Number

If the engine is replaced by a new one, the data plate serial number will be wrong. Either stamp the new number on the plate or stamp out the old one. This will prevent the wrong number being quoted when you order replacement parts.

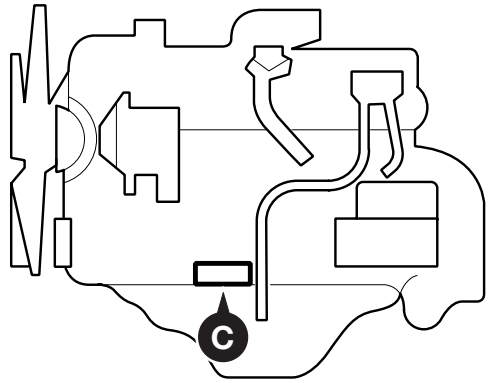


Fig 3.

a	b	c	d	e
AB	50316	J	000001	2

a Engine Type (AB= 4 cylinder turbo)

b Engine Parts List

c Country of Manufacture

d Engine Serial Number

e Year of Manufacture

Torque Settings

Introduction - Zinc Plated Fasteners and Dacromet Fasteners

Some external fasteners on machines are assembled 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 as follows:

Fastener Type	Colour	Part Number
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 fasteners.*

Note: *A Dacromet bolt should not be used in conjunction with a Zinc and Yellow plated nut, as this could change the torque characteristics of the torque settings further. For the same reason, a Dacromet nut should not be used in conjunction with a Zinc and 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 areas where rust could occur. Dacromet bolts are only used for external applications. They are not used in application such as gearbox and engine joint seams or internal applications.*

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

Bolt size			Torque Settings		
Dia.	(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

Rivet Nut Bolts/Screws

Bolt size		Torque Settings		
Dia.	(mm)	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

Metric Grade 8.8 Bolts

Bolt size			Torque Settings		
Dia.	(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

Metric Grade 10.9 Bolts

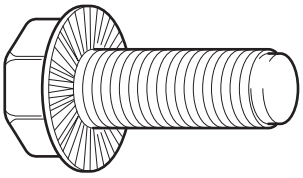
Bolt size			Torque Settings		
Dia.	(mm)	Hexagon (A/F) mm	Nm	kgf m	lbf ft
M6	(6)	10	16	1.6	12
M8	(8)	13	39	4	29
M10	(10)	17	78	8	57
M12	(12)	19	137	14	101
M16	(16)	24	343	35	253
M20	(20)	30	657	67	485
M24	(24)	36	1157	118	853

Zinc Plated Fasteners (golden finish)

Metric - All Internal Hexagon Headed Cap Screws

Diameter	Torque Settings		
mm	Nm	kgf m	lbf ft
M3	2	0.2	1.5
M4	6	0.6	4.5
M5	11	1.1	8
M6	19	1.9	14
M8	46	4.7	34
M10	91	9.3	67
M12	159	16.2	117
M16	395	40	292
M18	550	56	406
M20	770	79	568
M24	1332	136	983

Verbs Ripp Bolts



A343780

Fig 1.

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

Hydraulic Hose to Adapter Connections

BSP Size (inches)	Nm	kgf m	lbf ft
1/8	14	1.4	10
1/4	24	2.5	18
3/8	33	3.3	24
1/2	44	4.8	35
5/8	58	6.0	43
3/4	84	8.6	62
1	115	11.8	85
1 1/2	244	24.9	180

Hydraulic Adapter into Component Connections with bonded washers

BSP Size (inches)	Nm	kgf m	lbf ft
1/8	20	2.1	15
1/4	34	3.4	25
3/8	75	7.6	55
1/2	102	10.3	75
5/8	122	12.4	90
3/4	183	18.7	135
1	203	20.7	150
1 1/2	305	31	225

Dacromet Fasteners (mottled silver finish)

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

plating process: do not lubricate.

Metric Grade 8.8 Bolts

Bolt Size	Torque Settings		
Dia	Nm	kgf m	lbf ft
M6 x 1.0	9	0.9	7
M8 x 1.25	22.5	2.3	17
M10 x 1.5	47.5	4.8	35
M12 x 1.75	80	8.2	59
M14 x 2	133	13.6	98
M16 x 2	200	20.4	148
M18 x 2.5	278	28.4	205
M20 x 2.5	392	40	289
M24 x 3	675	69	498
M30 x 3.5	1348	138	994

Metric Grade 10.9 Bolts

Bolt Size	Torque Settings		
Dia	Nm	kgf m	lbf ft
M6 x 1.0	13.5	1.4	10
M8 x 1.25	35	3.6	26
M10 x 1.5	62.5	6.4	46
M12 x 1.75	115	11.7	85
M14 x 2	175	17.9	129
M16 x 2	300	30.6	221
M18 x 2.5	395	40	291
M20 x 2.5	559	57	412
M24 x 3	962	98	710
M30 x 3.5	1920	196	1416

Metric Grade 12.9 Bolts

Bolt Size	Torque Settings		
Dia	Nm	kgf m	lbf ft
M6 x 1.0	15	1.5	11
M8 x 1.25	40	4.1	29
M10 x 1.5	80	8.2	59
M12 x 1.75	133	13.6	98
M14 x 2	225	23	166
M16 x 2	350	35.7	258
M18 x 2.5	463	47	342
M20 x 2.5	654	67	482
M24 x 3	1125	115	830
M30 x 3.5	2247	229	1657

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.

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
4104/1310	Hand Cleaner	*Fig 1. (1-10)*
826/01099	M6 x 16mm Rivet Nut	*Fig 2. (1-10)*
826/01101	M6 x 19mm Rivet Nut	*Fig 2. (1-10)*
826/01102	M8 x 21mm Rivet Nut	*Fig 2. (1-10)*
826/01103	M8 x 18mm Rivet Nut	*Fig 2. (1-10)*
826/01104	M10 x 23mm Rivet Nut	*Fig 2. (1-10)*
826/01105	M10 x 26mm Rivet Nut	*Fig 2. (1-10)*
892/00842	Glass Lifter	*Fig 3. (1-10)*
892/00843	Folding Stand for Holding Glass	*Fig 4. (1-10)*
892/00844	Long Knife	*Fig 5. (1-11)*
892/00845	Cartride Gun	*Fig 6. (1-11)*
892/00846	Glass Extractor (Handles)	*Fig 7. (1-11)*
892/00847	Nylon Spatula	*Fig 8. (1-11)*
892/00848	Wire Starter	*Fig 9. (1-11)*
892/00849	Braided Cutting Wire	*Fig 10. (1-11)*
926/15500	Rubber Spacer Blocks	*Fig 11. (1-12)*
992/12300	12V Oven	*Fig 12. (1-12)*
992/12400	240V Oven 2 Cartridge	*Fig 13. (1-12)*
992/12600	240V Oven 6 Cartridge	*Fig 13. (1-12)*
992/12800	Cut-Out Knife	*Fig 14. (1-12)*
992/12801	‘L’ Blades	*Fig 15. (1-12)*

Tool Detail Reference Section B - Body and Framework

Note: *Not all service tools are illustrated. Illustrations are shown in tool number order.*

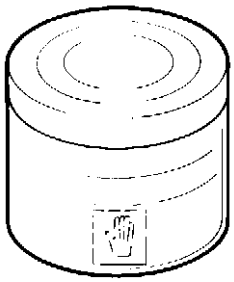


Fig 1. 410/1310

Note: *Special blend for the removal of polyurethane adhesives*

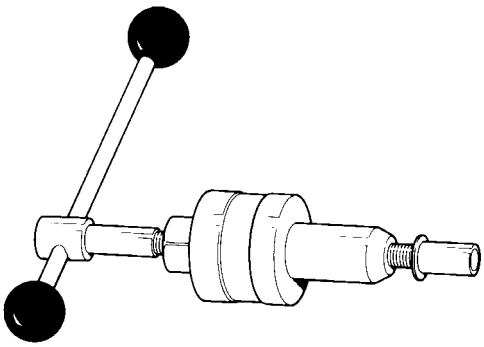


Fig 2.

Installation Tool Available from:

Bollhoff Fastenings Ltd.

Midacre

The Willenhall Estate

Rose Hill

Willenhall

West Midlands, WV13 2JW

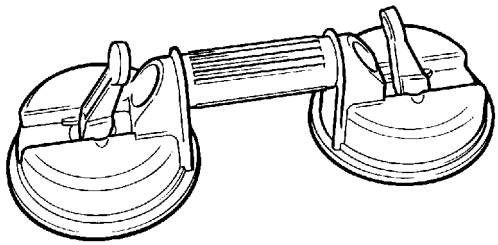


Fig 3. 892/00842

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.*

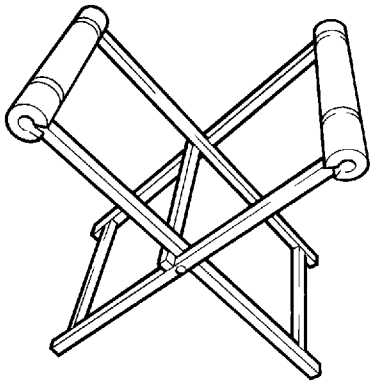


Fig 4. 892/00483

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

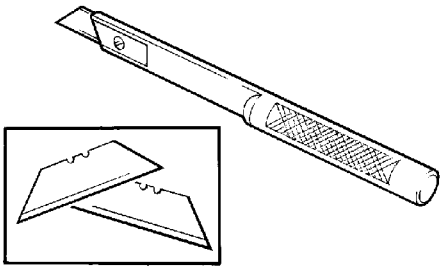


Fig 5. 892/00844

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

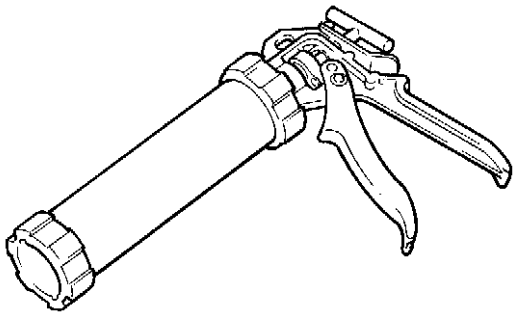


Fig 6. 892/00845

Note: *- hand operated - essential for the application of sealants, polyurethane materials etc.*

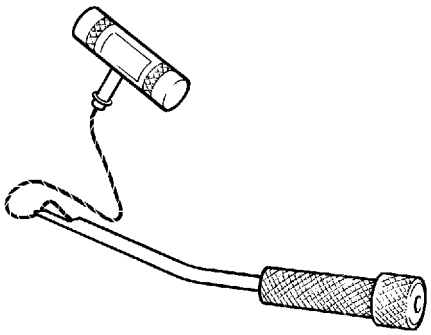


Fig 7. 892/00846

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

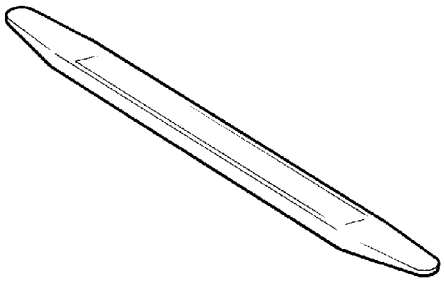


Fig 8. 892/0847

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

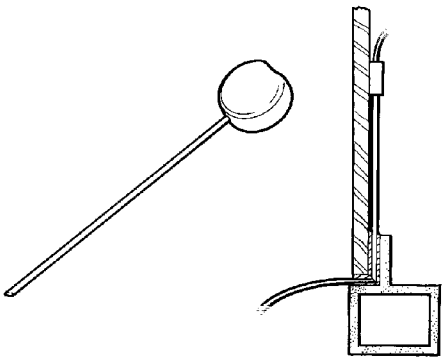


Fig 9. 892/00848

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

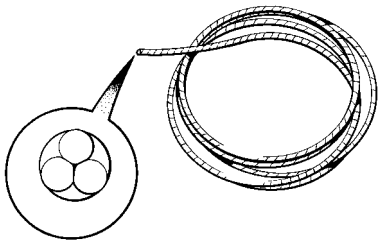


Fig 10. 892/00849

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

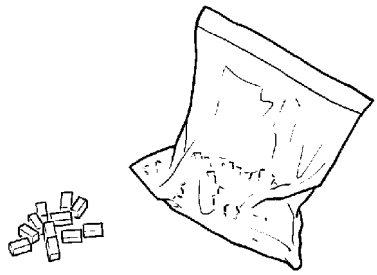


Fig 11. 926/15500

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

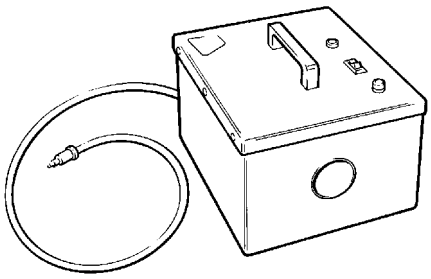


Fig 12. 992/12300

Note: *- 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).*

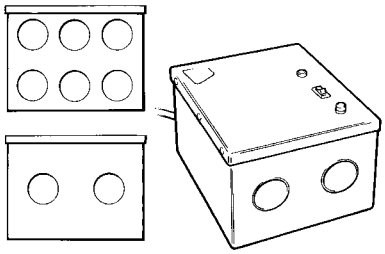


Fig 13.

Note: *-available with 2 or 6 cartridge capacity (992/12400 - 2 Cartridge x 240V, 992/12600 - 6 Cartridge x 240V) - required to pre-heat adhesive prior to use. No plug supplied. 110V models available upon request - contact JCB Technical Service.*

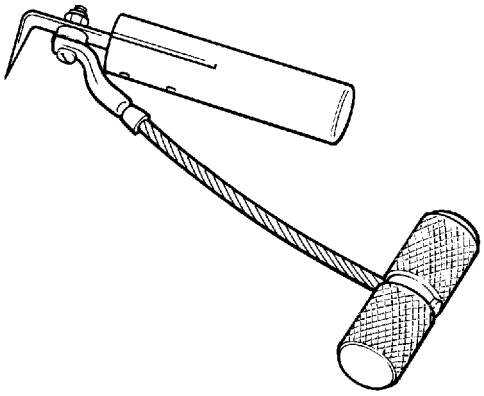


Fig 14. 992/12800

Note: *- used to remove broken glass.*

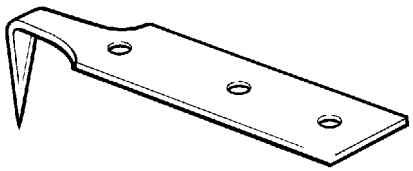


Fig 15. 992/12801

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

Our support email:

ebooklibonline@outlook.com