



Service Manual

**3CX, 4CX, 214, 215, 217
& VARIANTS**

Backhoe Loader

**From M/c No.
460001 To 499999
920001 On
900001 On (N.Am only)**

PUBLISHED BY THE
TECHNICAL PUBLICATIONS DEPARTMENT
OF JCB SERVICE; © WORLD PARTS CENTRE,
STAFFORDSHIRE, ST14 7BS, ENGLAND
Tel. (01889) 590312
PRINTED IN ENGLAND

Publication No. 9803/3270 & 9803/3270U

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Introduction

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.

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.

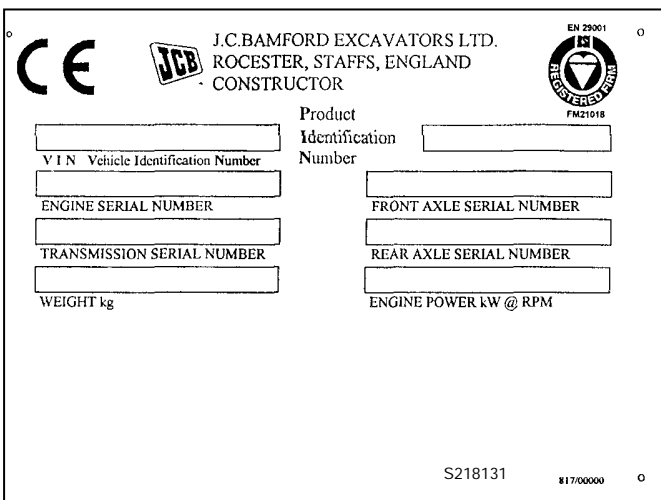
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Machine Identification Plate

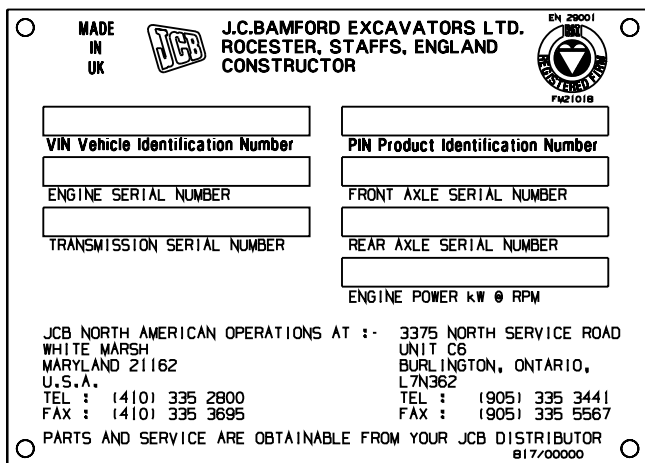
Your machine has an identification plate mounted on the loader tower. The serial numbers of the machine and its major units are stamped on the plate.

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.



U.K. and R.O.W.



North America

A246740

Typical Vehicle Identification Number (VIN)

SLP 3CX T S V E 0460001
A B C D E F G

- A** World Manufacturer Identification
- B** Machine Model
- C** Steer Type (T= 2WS, F=4WS)
- D** Build Type (S=Sideshift, C=Centremount, L=Loader)
- E** Year of Manufacture:

R = 1994	1 = 2001
S = 1995	2 = 2002
T = 1996	3 = 2003
V = 1997	4 = 2004
W = 1998	5 = 2005
X = 1999	6 = 2006
Y = 2000	7 = 2007
- F** Manufacturer Location (E = England)
- G** Product Identification Number (PIN)

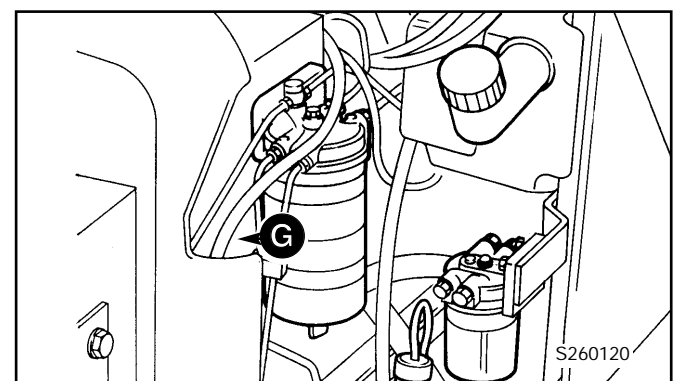
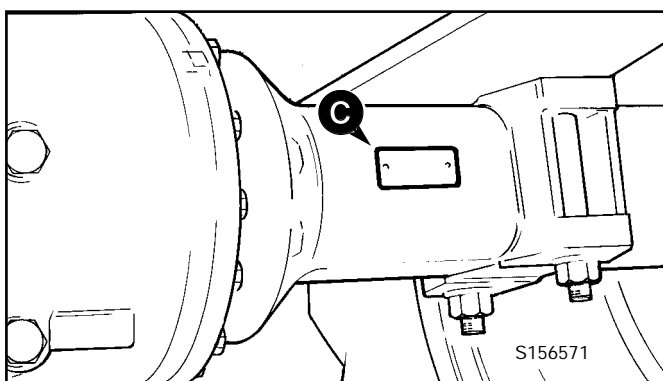
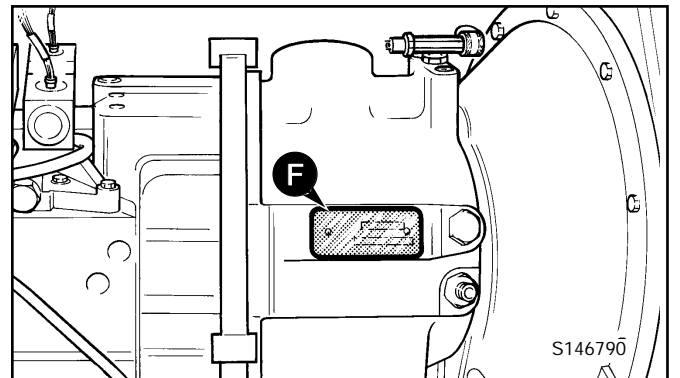
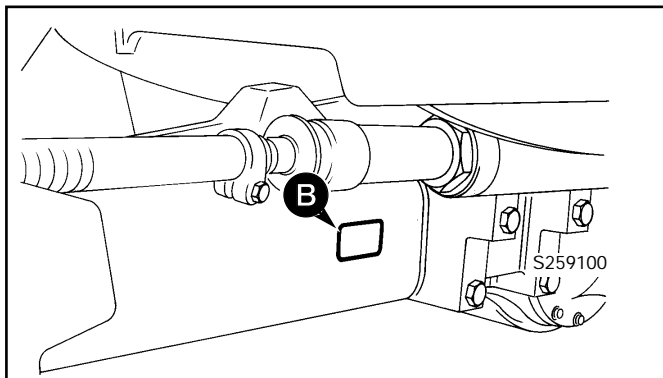
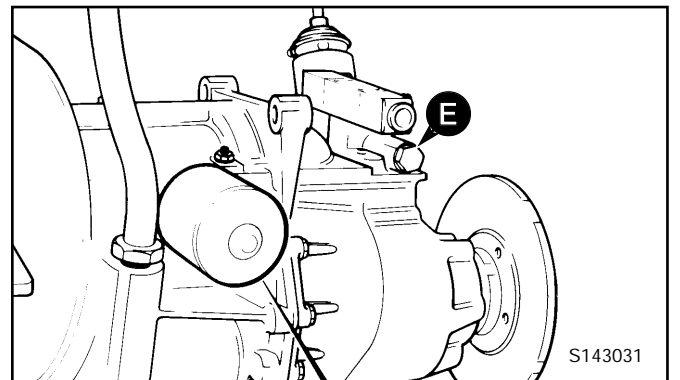
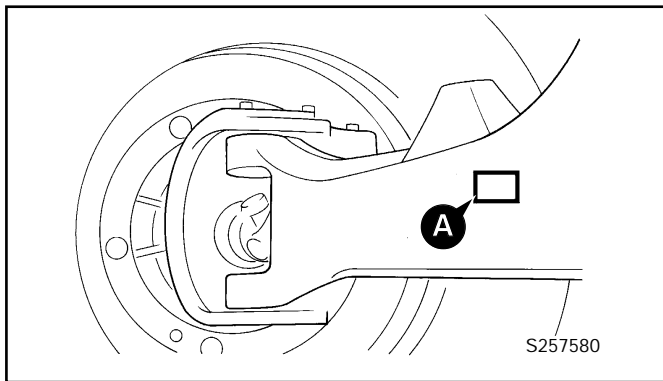
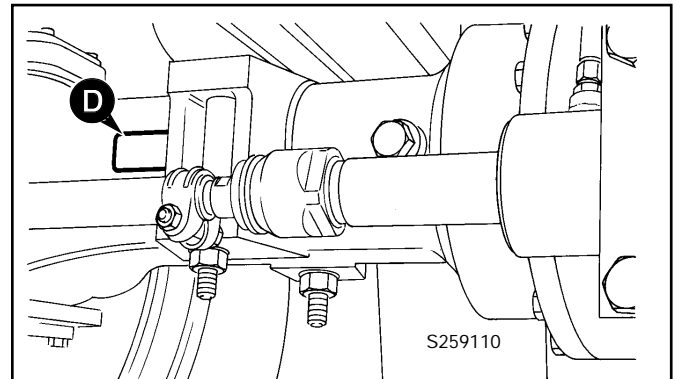
Typical Engine Identification Number

AB 50262 U 500405 P
A B C D E

- A** Engine Type
AB = 4 cylinder turbo
- B** Build Number
- C** Country of Origin
- D** Engine Sequence Number
- E** Year of Manufacture

Serial Plates

- A** Front Axle (2WS machine)
- B** Front Axle (4WS machine)
- C** Rear Axle (2WS machine)
- D** Rear Axle (4WS machine)
- E** Syncro Shuttle Transmission
- F** Powershift Transmission
- G** Engine



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.

UNF Grade 'S' Bolts

Bolt Size in	(mm)	Hexagon (A/F) in	Nm	Torque Settings	
				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)	11/8	407	41.5	300
7/8	(22.2)	15/16	650	66.3	480
1	(25.4)	11/2	970	99.0	715
11/4	(31.7)	17/8	1940	198.0	1430
11/2	(38.1)	21/4	3390	345.0	2500

Metric Grade 8.8 Bolts

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

Rivet Nut Bolts/Screws

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.

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Service Tools Numerical List

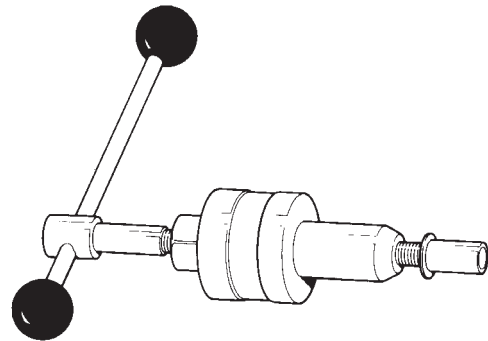
The following parts are replacement items for kits and would normally be included in the kit numbers quoted on pages 1/3-1 and 1/3-2.

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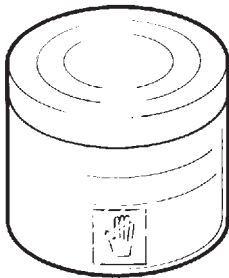
Service Tools (cont'd)**Section B - Body & Framework**

826/01099	M6 x 16mm Rivet Nut
826/01101	M6 x 19mm Rivet Nut
826/01103	M8 x 18mm Rivet Nut
826/01102	M8 x 21mm Rivet Nut
826/01104	M10 x 23mm Rivet Nut
826/01105	M10 x 26mm Rivet Nut

Installation Tool Available from:
 Bollhoff Fastenings Ltd.
 Midacre
 The Willenhall Estate
 Rose Hill
 Willenhall
 West Midlands, WV13 2JW



S261210



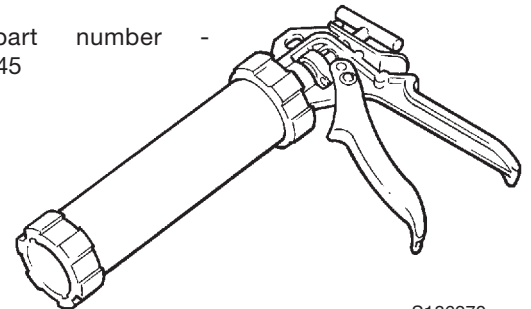
Hand Cleaner - special blend for the removal of polyurethane adhesives.

JCB part number - 4104/1310
 (454g; 1 lb tub)

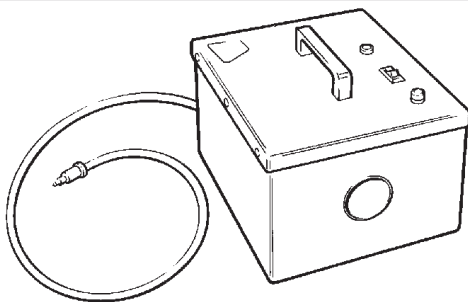
S186240

Cartridge Gun - hand operated - essential for the application of sealants, polyurethane materials etc.

JCB part number -
 892/00845



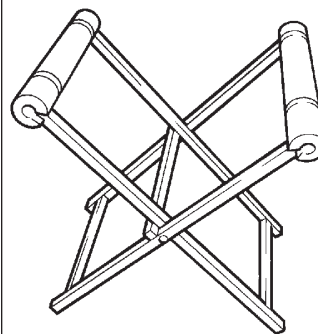
S186270



12V Mobile Oven - 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).

JCB part number - 992/12300

S186250



Folding Stand for Holding Glass - essential for preparing new glass prior to installation.

JCB part number -
 892/00843

S186280

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