



Service Manual

JS330

from machine no. 712501

JS450

from machine no. 714501

JS460/500

from machine no. 714550

JS460/500

machine no. 2410051 - 2410300

PUBLISHED BY THE
TECHNICAL PUBLICATIONS DEPARTMENT
OF JCB SERVICE: ©
WORLD PARTS CENTREkj.b.kjb
UTTOXETER, STAFFORDSHIRE, ST14 7BS,
ENGLAND

Tel. ROCESTER (01889) 590312

PRINTED IN ENGLAND

Publication No. 9803/6420

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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 the whole 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.

Note: In this manual the term 'swing' may sometimes be used in place of 'slew' and the term 'arm' may sometimes be used in place of 'dipper'.

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JS330/JS450/460 and Variants

Tighten the bolts and nuts according to the table. Before and after daily work, check the bolts and nuts for looseness and for those missing. Tighten if loose and renew if missing.

Tighten the bolts and nuts after the first 50 hours of the running-in stage and every 250 hours thereafter.

Tightening Torque Table

No	Tightening Point	Bolt Diameter	Wrench mm	Tightening Torque		
				Nm	kgf m	lbf ft
				JS330/JS450-460	JS330/JS450-460	JS330/JS450-460
1†	Travel Motor	M24	36	900~1051	92~107	663~775
2†	Drive Sprocket	M20/M24	30/36	521~608/900~1051	53~62/92~107	384~448/663~775
3†	Take-up Roller	M16	24	267~312	27~32	197~230
4†	Upper (Carrier) Roller (Standard)	M16	24	267~312	27~32	197~230
	(Heavy Duty)	M18	27	371~432	38~44	273~318
5†	Lower (Track) Roller	M20/24	30/36	521~608/900~1051	53~62/92~107	384~448/603~775
6†	Track Guard	M20/24	30/36	521~608/900~1051	53~62/92~107	384~448/603~775
7	Shoe Bolt (Standard)	M20	30	755~931	77~95	557~687
	(Heavy Duty)	M22	32	980~1180	100~120	723~871
8	Counter weight	M27/M42	41/65	1335~1540/1470	136~158/150	985~1136/1084
9†	Turntable Bearing (Lower Frame)	M24	36	900~1050	92~107	664~775
10†	Turntable Bearing (Slew Frame)	M24	36	900~1050	92~107	664~775
11†	Slew Equipment	M24	36	900~1050	92~107	664~775
12†	Engine (Engine Mount)	M20	30	289~337	30~34	213~248
13†	Engine Bracket	M12&M14	19&22	108~127/176~196	11~13/18~20	79~93/130~144
14	Radiator	M16	24	127~147	13~15	93~108
15†	Hydraulic Pump	M12	19	63~73	6.4~7.4	46~54
16†	Oil Tank	M16	24	196	20	144
17†	Fuel Tank	M16	24	245	25	180
18†	Control Valve	M16/M20	24/30	196/343	20/35	144/253
19†	Rotating Joint	M12&M16	19&24	65~95/245~290	7~10/25~30	48~70/180~214
20	Cab	M16	24	128~142	13~15	94~105
21	Battery	M10	17	20~29	2~3	14.7~21.4

Note: Use JCB Threadlocker and Sealer (High Strength) on those marked † and tighten to the torque listed in the above table.

The tightening torques for the bolts and nuts not listed above are as follows:

Bolt Diameter (size)			M6	M8	M10	M12	M14	M16	M18	M20
Hex. bolt	Wrench	mm	10	13	17	19	22	24	27	30
	Tightening Torque	Nm	6.9	15.7	32.3	58.8	98.0	137.2	196.0	274.4
		kgf m	.69	1.7	3.3	5.9	9.9	13.9	20	28
		lbf ft	5	12	24	43	72	101	145	203
Hex. socket head bolt	Wrench	mm	5	6	8	10	12	14	14	17
	Tightening Torque	Nm	8.8	21.6	42.1	78.4	117.6	176.4	245.0	343.0
		kgf m	.89	2.2	4.3	8.0	12	17.9	24.9	34.9
		lbf ft	6.5	16	31	58	87	130	180	253

Torque Settings

Note 1: The figures quoted are for non-plated fasteners and are to be used only when there is no torque setting specified in the relevant procedure in this service manual.

Note 2: The 4T grade settings DO NOT APPLY to fasteners used on the engine. If any 4T specification fasteners are found on the engine, these must be tightened to the figure quoted in the relevant engine manual.

Bolt Size	Strength Grade of Bolt or Stud											
	4T			8.8			10.9			12.9		
	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M3	0.39	0.04	0.28	-	-	-	-	-	-	-	-	-
M4	0.78	0.08	0.57	-	-	-	-	-	-	-	-	-
M5	1.67	0.17	1.2	-	-	-	-	-	-	-	-	-
M6	2.84	0.29	2.1	8.04	0.82	5.9	11.3	1.15	8.3	-	-	-
M8	7.06	0.72	5.2	19.6	2.00	14.5	27.7	2.82	20.4	48	4.90	35.4
M10	14.0	1.43	10.3	39.1	3.99	28.8	55.0	5.61	40.6	94	9.2	66.4
M12	24.6	2.51	18.1	68.5	6.98	50.5	96.2	9.81	71	166	16.9	122
M16	61.9	6.31	45.7	173	17.6	127.6	242	24.7	178.5	400	40.8	295
M20	122	12.4	90	337	34.4	249	475	48.4	350	-	-	-
M22	167	17.0	123	464	47.3	342	652	66.5	481	-	-	-
M24	210	21.4	155	584	59.5	431	821	83.7	606	-	-	-
M27	311	31.7	229	864	88.1	637	1220	124	900	-	-	-
M30	420	42.8	310	1170	119	863	1650	168	1217	-	-	-
M33	576	58.7	425	1600	163	1180	2260	230	1667	-	-	-
M36	736	75.1	543	2050	209	1512	2880	294	2124	-	-	-
M39	961	98.0	709	2680	273	1977	3760	383	2773	-	-	-
M42	1190	121	878	3300	336	2434	4640	473	3422	-	-	-
M45	1490	152	1099	4140	422	3054	5820	593	4293	-	-	-
M48	1780	182	1312	4960	506	3659	6970	711	5141	-	-	-

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