

VMT380, VMT430

[Section 1 - General Information](#)

[Section 2 - Care and Safety](#)

[Section 3 - Maintenance](#)

[Section C - Electrics](#)

[Section E - Hydraulics](#)

[Section H - Steering](#)

[Section K - Engine](#)

[Section L - Vibration](#)



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Customer Support

General Information

Service Manual - VMT380, VMT430

[Section 1 - General Information](#)

[Section 2 - Care and Safety](#)

[Section 3 - Maintenance](#)

[Section C - Electrics](#)

[Section E - Hydraulics](#)

[Section H - Steering](#)

[Section K - Engine](#)

[Section L - Vibration](#)



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Section 1 - General Information

Contents	Page No.
Introduction	
About this Manual	1-1
Machine Model and Serial Number	1-1
Using the Service Manual	1-1
Section Numbering	1-1
Left Side, Right Side	1-2
Identifying Your Machine	1-3
Machine Identification Plate	1-3
Component Identification Plates	1-4
Torque Settings	
Zinc Plated Fasteners and Dacromet Fasteners	1-7
Introduction	1-7
Bolts and Screws	1-7
Vibromax Specific Torque Settings	1-11
Hydraulic Connections	1-13
'O' Ring Face Seal System	1-13
'Torque Stop' Hose System	1-16
Service Tools	
Numerical List	1-17
Tool Detail Reference	1-18
Body and Framework	1-18
Electrics	1-20
Hydraulics	1-21
Service Aids	
Sealing and Retaining Compounds	1-27
Terms and Definitions	
Colour Coding	1-29
Hydraulic Schematic Colour Codes	1-29

Introduction

About this Manual

Machine Model and Serial Number

This manual provides information for the following model(s) in the JCB machine range:

- VMT 390 from serial no. 2803540 onwards.
- VMT 430 from serial no. 2803540 onwards.

Using the Service Manual

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.

The illustrations in this publication are for guidance only. Where the machines differ, the text and/or the illustration will specify.

General warnings in Section 2 are repeated throughout the manual, as well as specific warnings. Read all safety statements regularly, so you do not forget them.

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.

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.

The manufacturer's policy is one of continuous improvement. The right to change the specification of the machine without notice is reserved. No responsibility will be accepted for discrepancies which may occur between specifications of the machine and the descriptions contained in this publication.

Finally, please remember above all else safety must come first!

Section Numbering

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 and Safety - includes warnings and cautions pertinent to aspects of workshop procedures etc.
- 3 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 and Framework, etc.

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

Left Side, Right Side

In this manual, 'left' **A** and 'right' **B** mean your left and right when you are seated correctly in the machine.

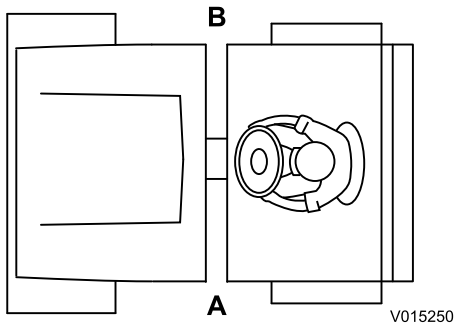


Fig 1.

Identifying Your Machine

Machine Identification Plate

Your machine has an identification plate mounted as shown. → [Fig 2.](#) (□ 1-3).

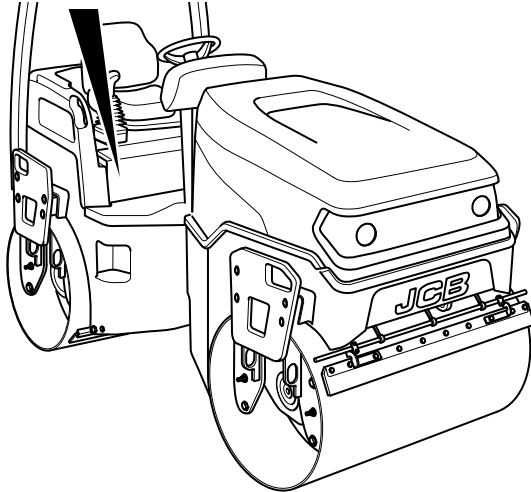
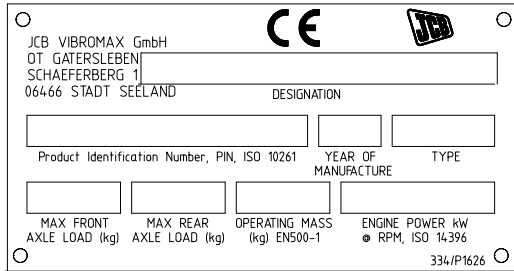


Fig 2.

Typical Product Identification Number (PIN)

1	2	3	4
JCB	VT380	C	01234567

- 1 World Manufacturer Identification (JCB)
- 2 Machine Type and Model (VT380 = VMT380)
- 3 Randomly Generated Check Letter
- 4 Machine Serial Number (01234567)

Component Identification Plates

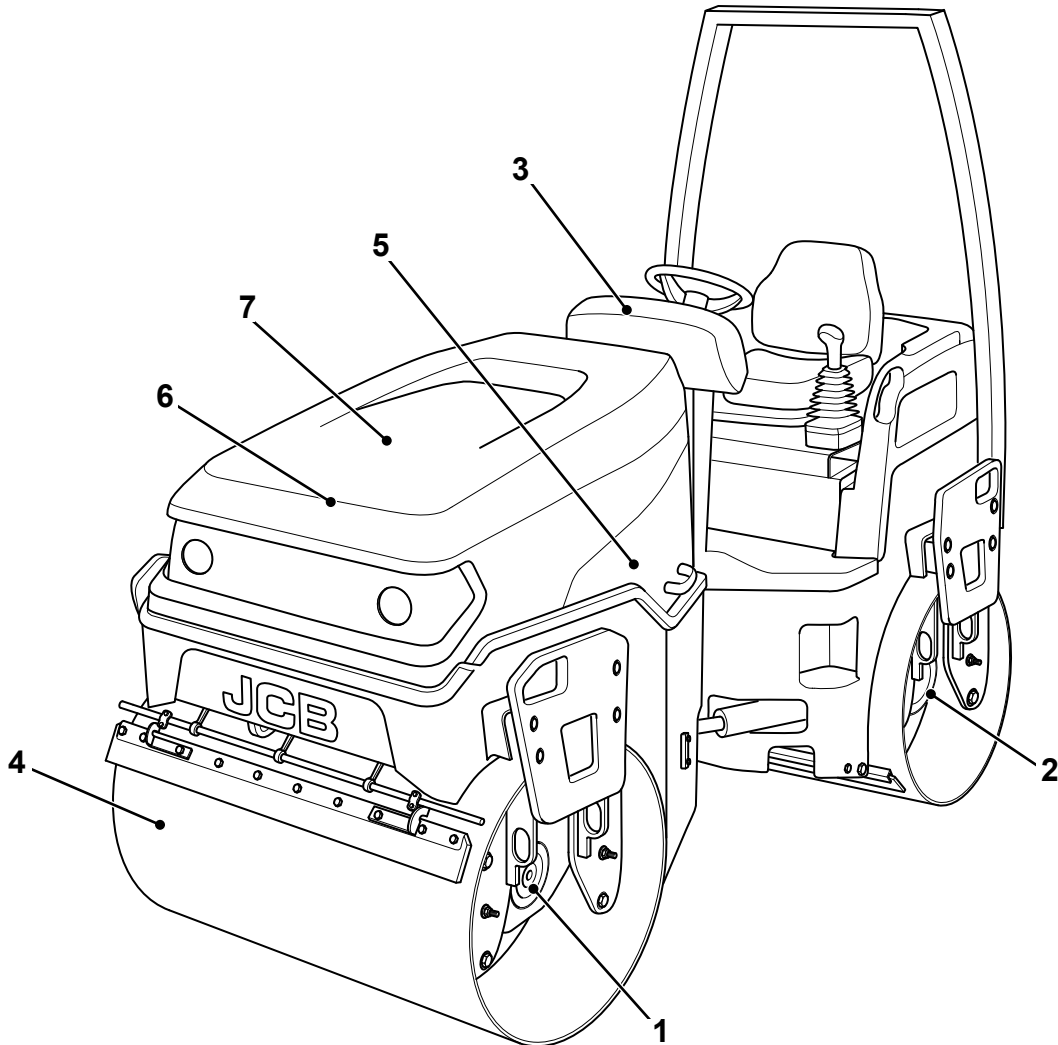


Fig 3.

Table 1.

1	Front drive motor serial number
2	Rear drive motor serial number
3	Steering unit serial number
4	Front vibration motor serial number
5	Rear vibration motor serial number
6	Hydraulic pump serial number
7	Engine serial number

Engine Identification Number

The full engine serial number is on the engine label which is located on the main block. → [Fig 4. \(□ 1-5\)](#)

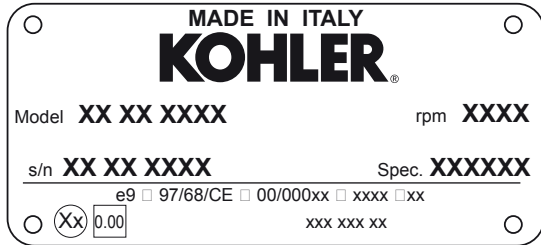


Fig 4.

Roll Over Protection Structure (ROPS)

Your machine is built to the ROPS standard and has an identification label fitted on the ROPS frame. A typical identification label is shown below. → [Fig 5. \(□ 1-5\)](#)

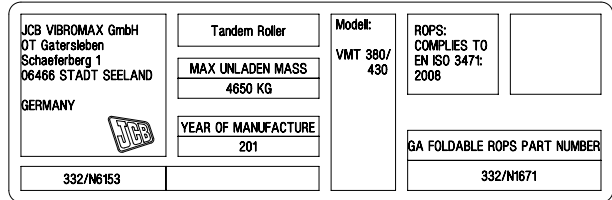


Fig 5.

FOPS Data Plate

WARNING

Do not use the machine if the falling objects protection level provided by the structure is not sufficient for the application. Falling objects can cause serious injury.

8-2-8-17

If the machine is used in any application where there is a risk of falling objects then a falling-objects protective structure (FOPS) must be installed. For further information contact your JCB Dealer

The falling objects protection structure (FOPS) is fitted with a dataplate. The dataplate indicates what level protection the structure provides.

There are two levels of FOPS:

- **Level I Impact Protection** - impact strength for protection from small falling objects (e.g. bricks, small concrete blocks, hand tools) encountered in operations such as highway maintenance, landscaping and other construction site services.
- **Level II Impact Protection** - impact strength for protection from heavy falling objects (e.g. trees, rocks) for machines involved in site clearing, overhead demolition or forestry.

The FOPS available for the machine is tested to ISO 10262 level 2 and complies with EN 13627:2000.

JCB VIBROMAX GmbH OT Gatersleben Schaeferberg 1 06466 STADT SEELAND GERMANY 	Tandem Roller	Modell: VMT 380/ 430	FOPS: COMPLIES TO EN ISO 3449: 2005	
	MAX UNLADEN MASS 4650 KG		YEAR OF MANUFACTURE 201	GA FOPS PART NUMBER 332/N5550
332/N6341				

Fig 6.

Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

T11-002

Introduction

Some external fasteners on JCB machines are manufactured 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. ⇒ [Table 1. Fastener Types \(1-7\)](#).

Table 1. Fastener Types

Fastener Type	Colour	Part No. Suffix
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 fastener.

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

Bolts and Screws

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

Note: Dacromet fasteners are lubricated as part of the plating process, do not lubricate.

Torque settings are given for the following conditions:

Condition 1

- Un-lubricated fasteners
- Zinc fasteners
- Yellow plated fasteners

Condition 2

- Zinc flake (Dacromet) fasteners
- Lubricated zinc and yellow plated fasteners
- Where there is a natural lubrication. For example, cast iron components

Verbus Ripp Bolts

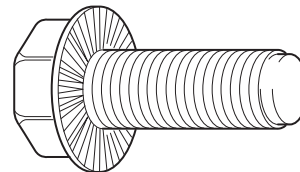


Fig 1.

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



Section 1 - General information Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 2. Torque Settings - UNF Grade 'S' Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
in.	mm	in.	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
1/4	6.3	7/16	11.2	1.1	8.3	10.0	1.0	7.4
5/16	7.9	1/2	22.3	2.3	16.4	20.0	2.0	14.7
3/8	9.5	9/16	40.0	4.1	29.5	36.0	3.7	26.5
7/16	11.1	5/8	64.0	6.5	47.2	57.0	5.8	42.0
1/2	12.7	3/4	98.0	10.0	72.3	88.0	9.0	64.9
9/16	14.3	13/16	140.0	14.3	103.2	126.0	12.8	92.9
5/8	15.9	15/16	196.0	20.0	144.6	177.0	18.0	130.5
3/4	19.0	1 1/8	343.0	35.0	253.0	309.0	31.5	227.9
7/8	22.2	1 15/16	547.0	55.8	403.4	492.0	50.2	362.9
1	25.4	1 1/2	814.0	83.0	600.4	732.0	74.6	539.9
1 1/8	31.7	1 7/8	1181.0	120.4	871.1	1063.0	108.4	784.0
1 1/4	38.1	2 1/4	1646.0	167.8	1214.0	1481.0	151.0	1092.3

Table 3. Torque Settings - Metric Grade 8.8 Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
ISO Metric Thread	mm	mm	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M5	5	8	5.8	0.6	4.3	5.2	0.5	3.8
M6	6	10	9.9	1.0	7.3	9.0	0.9	6.6
M8	8	13	24.0	2.4	17.7	22.0	2.2	16.2
M10	10	17	47.0	4.8	34.7	43.0	4.4	31.7
M12	12	19	83.0	8.5	61.2	74.0	7.5	54.6
M16	16	24	205.0	20.9	151.2	184.0	18.8	135.7
M20	20	30	400.0	40.8	295.0	360.0	36.7	265.5
M24	24	36	690.0	70.4	508.9	621.0	63.3	458.0
M30	30	46	1372.0	139.9	1011.9	1235.0	125.9	910.9
M36	36	55	2399.0	244.6	1769.4	2159.0	220.0	1592.4



Section 1 - General information Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 4. Metric Grade 10.9 Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
ISO Metric Thread	mm	mm	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M5	5	8	8.1	0.8	6.0	7.3	0.7	5.4
M6	6	10	13.9	1.4	10.2	12.5	1.3	9.2
M8	8	13	34.0	3.5	25.0	30.0	3.0	22.1
M10	10	17	67.0	6.8	49.4	60.0	6.1	44.2
M12	12	19	116.0	11.8	85.5	104.0	10.6	76.7
M16	16	24	288.0	29.4	212.4	259.0	26.4	191.0
M20	20	30	562.0	57.3	414.5	506.0	51.6	373.2
M24	24	36	971.0	99.0	716.9	874.0	89.1	644.6
M30	30	46	1930.0	196.8	1423.5	1737.0	177.1	1281.1
M36	36	55	3374.0	344.0	2488.5	3036.0	309.6	2239.2

Table 5. Metric Grade 12.9 Fasteners

Bolt Size		Hexagon (A/F)	Condition 1			Condition 2		
ISO Metric Thread	mm	mm	Nm	kgf m	lbf ft	Nm	kgf m	lbf ft
M5	5	8	9.8	1.0	7.2	8.8	0.9	6.5
M6	6	10	16.6	1.7	12.2	15.0	1.5	11.1
M8	8	13	40.0	4.1	29.5	36.0	3.7	26.5
M10	10	17	80.0	8.1	59.0	72.0	7.3	53.1
M12	12	19	139.0	14.2	102.5	125.0	12.7	92.2
M16	16	24	345.0	35.2	254.4	311.0	31.7	229.4
M20	20	30	674.0	68.7	497.1	607.0	61.9	447.7
M24	24	36	1165.0	118.8	859.2	1048.0	106.9	773.0
M30	30	46	2316.0	236.2	1708.2	2084.0	212.5	1537.1
M36	36	55	4049.0	412.9	2986.4	3644.0	371.6	2687.7



Section 1 - General information Torque Settings

Zinc Plated Fasteners and Dacromet Fasteners

Table 6. Torque Settings - Rivet Nut Bolts/Screws

Bolt Size		Nm	kgf m	lbf ft
ISO Metric Thread	mm			
M3	3	1.2	0.1	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

Table 7. Torque Settings - Internal Hexagon Headed Cap Screws (Zinc)

Bolt Size	Nm	kgf m	lbf ft
ISO Metric Thread			
M3	2.0	0.2	1.5
M4	6.0	0.6	4.5
M5	11.0	1.1	8.0
M6	19.0	1.9	14.0
M8	46.0	4.7	34.0
M10	91.0	9.3	67.0
M12	159.0	16.2	117.0
M16	395.0	40.0	292.0
M18	550.0	56.0	406.0
M20	770.0	79.0	568.0
M24	1332.0	136.0	983.0



Section 1 - General information

Torque Settings

Vibromax Specific Torque Settings

Vibromax Specific Torque Settings

Where no special torque data is specified, the following standard torque figures should be applied.

Table 8. Standard Torque Specifications +/- 10%

SIZE	GRADE 8.8		GRADE 10.9		GRADE 12.9	
	Nm	lb/ft	Nm	lb/ft	Nm	lb/ft
5mm	5.5	4	7.5	5.5	9	6.6
6mm	9	6.6	12.5	9.2	15	11
8mm	22.5	16.5	31.5	23	36	26.5
10mm	44	32	62	45	75	55
12mm	77.5	57	110	81	130	95
14mm	120	88	170	125	210	155
16mm	190	140	265	195	320	236
18mm	260	192	365	269	435	320
20mm	370	273	520	383	620	457
22mm	500	369	700	516	840	619
24mm	640	471	900	665	1080	796
27mm	950	702	1350	996	1620	1195
30mm	1300	955	1800	1328	2160	1593

Table 9. Nuts for Tubes and Hoses

DIAMETER AND PITCH	Nm	lb/ft
16mm X 1.5	20	14.5
18mm X 1.5	35	26
20mm X 1.45	45	33.2
24mm X 1.5	60	44

Table 10. Fittings, Connections and Plugs

DIAMETER AND PITCH	Nm	lb/ft
10mm X 1.5	20	14.5
12mm X 1.5	35	26
14mm X 1.5	45	33.2
16mm X 1.5	60	44
18mm X 1.5	70	51
22mm X 1.5	100	73
27mm X 1.5	200	147
33mm X 1.5	280	207
42mm X 1.5	380	281

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