Service Manual

VM 115- TIER II

Service Manual - VM 115- TIER II

Section 1 - General Information

Section 2 - Care and Safety

Section 3 - Maintenance

Section B - Body and Framework

Section C - Electrics

Section E - Hydraulics

Section H - Steering

Section K - Engine

Section L - Vibration



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Contents **Page No.**

Introduction
About This Manual ..... 1 - 1
Machine Model and Serial Number ..... 1 - 1
Using this Manual ..... 1 - 1
Cab/Canopy ..... 1 - 1
Left Side, Right Side ..... 1 - 1
Cross References ..... 1 - 1
Machine Description ..... 1 - 2
The JCB Vibromax Vibratory Single Drum Roller ..... 1 - 2
..... 1 - 2
Component Locations ..... 1 - 3
Safety Labels ..... 1 - 5
Introduction ..... 1 - 5
Safety Label Identification ..... 1 - 6
Identifying Your Machine ..... 1 - 8
Machine Identification Plate ..... 1 - 8
Component Identification Plates ..... 1 - 9
Machine Security ..... 1 - 10
Construction Equipment Security And Registration Scheme (CESAR) .1-10

Service Consumables
Sealing and Retaining Compounds ..... 1 - 11

Service Tools
Numerical List ..... 1 - 13
Tool Detail Reference ..... 1 - 15
Section B - Body and Framework ..... 1 - 15
Section C - Electrics ..... 1 - 18
Section E - Hydraulics ..... 1 - 19

Torque Settings
Zinc Plated Fasteners and Dacromet Fasteners ..... 1 - 24
Introduction ..... 1 - 24
Bolts and Screws ..... 1 - 24
Vibromax Specific Torque Settings ..... 1 - 28
Hydraulic Connections ..... 1 - 30
'O' Ring Face Seal System ..... 1 - 30
'Torque Stop' Hose System ..... 1 - 33

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Contents Page No.

Safety Notices
Important Information 2-1
The Operator Manual 2-1
Safety Warnings 2-1
Safety - Yours and Others 2-2
General Safety 2-2
Operating Safety 2-4
Maintenance Safety 2-7

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Contents **Page No.**

Routine Maintenance

Service Requirements 1
Health and Safety 3
Service Schedules 7
Fluids, Lubricants and Capacities 13
Tools 17
Prepare the Machine for Maintenance 18
Cleaning the Machine 19
Check the Machine for Damage 22
Access Panels 25
Brakes 26
Electrical System 27
Engine 33
Fuel System 42
Hydraulic System 48
Transmission 55
Tyres and Wheels 57
Drum 59
Vibration System 62
Windscreen Washer (If fitted) 63

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Fluids, Lubricants and Capacities

Table 2. VM115 (JCB 444 Engine)

ITEM	CAPACITY Litres (Gal)	FLUID/LUBRICANT	INTERNATIONAL SPECIFICATION
Fuel Tank	300 (79.3)	Diesel Oil	⇨ *Fuel (🗋 15)*
Engine (Oil)	15 (3.3)		SAE 15W/40, ACEA E2, A2 API CF4/SG
Engine (Coolant)	14 (3.7)	JCB High Performance (HP) Antifreeze/ JCB HD Flushing fluid ⇨ *Coolant Mixtures (🗋 14).*	ASTM D3306-74
Rear Axle - Dana	15 (3.3)(1)	JCB Gear Oil LS Plus	API-GL5
Hubs	1,75 (0.4)		
Rear Axle - JCB	22 (4.8)(1)	JCB Gear Oil LS Plus	API-GL5
Hubs	2.5 (0.6)		
Hydraulic Tank(2)	60 (13.2)	- Normal JCB Hydraulic fluid HP 46 - Tropics JCB Hydraulic fluid 68	HLP 46 DIN 51524 HLP 68 DIN 51524
Vibration System	3.5 (0.8)		CLP 150 DIN 51517
Drum Drive Gear Bos	1.3 (0.3)	JCB V-Tronic	CLP 150 DIN 51517

(1) Inclusive of hubs
(2) This is nominal tank capacity. The total hydraulic system capacity depends on the equipment being used. Fill with all cylinders closed. Watch level sight glass when filling.

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VM115 - JCB

Table 2.

Item	Description
⇨ *VM115-200 Circuit Diagram - 7242/80505-C (📄 21)*	
AC	Air conditioning/heating
E1	Temperature - switch lighting
E2	Fuel tank - switch lighting
E3	Working lighting system, front left
E4	Working lighting system, front right
E5	Working lighting system, rear left
E6	Working lighting system, rear right
E7	Parking light, left front
E8	Tail light, left
E9	Parking light, right front
E10	Tail light, right
E11	Dipped beam left
E12	Dipped beam, right
E13	Cab lighting system
F0	Main fuse
F1	Fuse circuit 15
F2	Fuse generator
F3	Fuse brake
F4	Fuse vibrator
F5	Fuse gear / compression measurement
F6	Fuse radio class 30
F7	Fuse EMERGENCY OFF
F8	Fuse heating / AC
F9	Fuse lighting system
F10	Fuse socket
F11	Fuse working lighting system
F12	Fuse flashing light
F13	Fuse STZVO (Road Transport Licensing Order) lighting system
F14	Fuse hazard warning lights
F15	Fuse side lights, left
F16	Fuse side lights, right
F17	Fuse dipped beam, left
F18	Fuse dipped beam, right
F19	Fuse cab
F20	Fuse condenser
F21	Fuse compressor
FK1	Fuse AC fan/lighting
FK2	Fuse windscreen/washer
G1	Battery
G2	Generator
H1	Indicator lamp charging current
H2	Indicator lamp drive lever zero position
H3	Indicator lamp brake
H4	Horn
H5	Indicator engine temperature error
H6	Indicator engine oil pressure error
H8	Reversing horn
H9	Indicator lamp hydraulic oil filter
H10	Indicator lamp air cleaner
H11	Indicator lamp automatic vibration
H12	Water in fuel
H13	Indicator lamp light
H15	Hazard Indicator
H16	Flasher indicator
H21	Flashing light, front left
H22	Flashing light, rear left
H23	Flashing light, front right
H24	Flashing light, rear right
K0	Relay engine start
K1	Relay starting interlock and repeat starting interlock
K2	Relay brake
K3	Relay brake zero position
K4	Relay drive lever zero position
K5	Relay brake control
K6	Relay switching on vibration, drive lever
K7	Relay vibration / high speed locking

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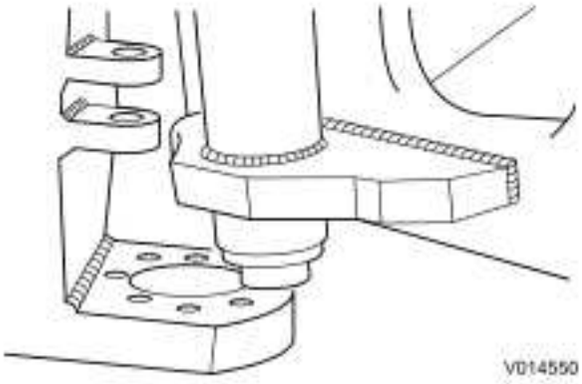


Fig 2.

Assembly

Note: *The bearings in the steering articulation joints are designed to be assembled without grease or other lubricants. Lubrication of these bearings will actually shorten bearing life.*

1 Install bearing cup ⇨ *Fig 1. (🗋 3)* **28** into the steering link **31** until it is fully seated.

2 With the eye bolt inserted in place of capscrew **30** lift the steering link up and over the upper rear frame lug.

3 Lower the link and guide it over the lower rear frame lug ⇨ *Fig 2. (🗋 4)*.

4 Lift the link upward and evenly space the link between the upper and lower lugs.

5 Install a new sealing ring ⇨ *Fig 1. (🗋 3)* **6** into the upper link bearing bore. Make sure it is pressed into place.

6 Install the new bearing cone **5** onto the upper rear frame lug.

7 Install the new bearing cup **4** into the bearing bore and make sure it is fully seated.

8 Install the upper bearing cover **3** using Loctite 271 and capscrews **1.** Torque the capscrews to (247 Nm) 182 ft lbs.

9 Install a new sealing ring into the lower bearing bore and press into place.

10 Install a new bearing cone **15** onto the lower rear frame lug.

11 Install the new bearing cup **16** into the bearing bore and make sure it is fully seated.

12 Install the spring washer **18** and thrust collar **17** into the lower bearing cover **19.** The spring washer's outer diameter should contact the thrust collar.

13 Install the lower bearing cover using Loctite 271 on capscrews **20** and torque the capscrews to (247 Nm) 182 ft lbs.

14 Remove the lifting eye bolt from the steering link and install capscrew **30.**

15 Install new front and rear sealing rings **14** onto the roller frame lugs.

16 Install new front and rear bearing cones **27** onto the roller frame lugs.

⚠ WARNING

Lifting Equipment

You can be injured if you use incorrect or faulty lifting equipment. You must identify the weight of the item to be lifted then choose lifting equipment that is strong enough and suitable for the job. Make sure that lifting equipment is in good condition and complies with all local regulations.

INT-1-3-7_2

17 Move the roller frame into position in the steering link. Roller frame weight = (4910 Kg) 10,827 lbs. Be careful not to damage the bearing parts.

18 Install link plate **28** with the ten capscrews **15** using Loctite 271 and torque the capscrews to (402 Nm) 297 ft lbs.

19 Install the bearing cup **26** into the link plate **28** bore and make sure it is fully seated.

20 Install the spring washer **23** and the thrust collar **24** into the bearing cover **22.** The spring washer's outer diameter must contact the thrust collar.

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Vibration Coupling

Removal and Replacement

Removal

1 Park the machine on firm level ground.

2 Install the articulation safety lock **2**. ⇨ *Fig 9. (🗋 9)*.



P933740

Fig 9.

3 Using a suitable lifting equipment, raise the drum **3**. Lift approximately 20cm. ⇨ *Fig 10. (🗋 9)*.



P933750

Fig 10.

4 Remove the vibration motor securing bolt **4**. ⇨ *Fig 11. (🗋 9)*.



P933760

Fig 11.

Note: *Do not disconnect the hydraulic hoses* **6**. ⇨ *Fig 13. (🗋 10)*.

5 Pull the vibration motor **5** from the motor housing. ⇨ *Fig 12. (🗋 9)*.



P933770

Fig 12.

Note: *Do not disconnect the hydraulic hoses* **6**. ⇨ *Fig 13. (🗋 10)*.

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