Service Manual

Articulated Dump Truck - 714/718

Section 1 - General Information

Section 2 - Care and Safety

Section 3 - Routine Maintenance

Section B - Body and Framework

Section C - Electrics

Section E - Hydraulics

Section F - Transmission

Section G - Brakes

Section H - Hydraulic Steering

Section K - Engine

Section S - Suspension



Publication No.

9813/0550-3



Copyright © 2004 JCB SERVICE. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any other means, electronic, mechanical, photocopying or otherwise, without prior permission from JCB SERVICE.

Issued by JCB Technical Publications, JCB Service, World Parts Centre, Beamhurst, Uttoxeter, Staffordshire, ST14 5PR, England. Tel +44 1889 590312 Fax +44 1889 565377

World Class Customer Support

MidWestTech | JCB 714, 718 Articulated Dump Truck Service Manual | Publication 9813-0...

Order the manual at mid-west-tech.com >

Contents Page No.

Identification
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 1-1
Identifying Your Machine 1-2
Machine Identification Plate 1-2
Component Identification Plates 1-3

Torque Settings
Zinc Plated Fasteners and Dacromet Fasteners 1-5
Introduction 1-5
Bolts and Screws 1-5

Service Tools
Numerical List Section B - Body and Framework 1-9
Section B - Body and Framework 1-10
Numerical List Section C - Electrics 1-13
Section C - Electrics 1-14
Numerical List Section E - Hydraulics 1-15
Section E - Hydraulics 1-17
Numerical List Section F - Transmission 1-20
Section F - Transmission 1-21
Numerical List Section K - Transmission 1-24
Section K - Engine 1-25

Service Consumables
Sealing and Retaining Compounds 1-27

Terms and Definitions
Colour Coding 1-29
Hydraulic Schematic Colour Codes 1-29

Hydraulic Hoses
Connecting/Disconnecting Hydraulic Hoses 1-31
Introduction 1-31
Connecting the Hydraulic Hoses 1-31
Disconnecting the Hydraulic Hoses 1-32
Quick Release Couplings 1-33

Disabled Machine
Moving a Disabled Machine 1-35
Introduction 1-35
Emergency Lowering of the Body 1-35
Lifting the Machine 1-36
Prepare the Machine for Towing 1-37
Transporting the Machine 1-39
Articulation Lock 1-40
Drive Position 1-40

MidWestTech | JCB 714, 718 Articulated Dump Truck Service Manual | Publication 98... Order the manual at mid-west-tech.com >

Schematic Circuits

ADT 714: CAD 331/17522-7-1

Component Key:

1 Ground Driven Pump
2 Emergency Steer Valve
3 Priority Steer Valve
4 Load Sensing Steer Valve
5 Steer Rams
6 Tipping Valve Block
7 Front and Rear Chassis Umbilical
8 Main Body Lift Rams
9 Main Return Filter
10 Brake Modulating Valve
11 Front Axle Brake Piston
12 Rear Axle Brake Piston
13 Service Brake Accumulator
14 Accumulator Charge Valve
15 Park Brake Valve
16 Driveshaft Mounted Disc
17 Park Brake Accumulator
18 Main Tank Return Manifold
19 Tank
20 Strainers
21 Secondary Supply Pump
22 Main Supply Pump
23 Over Centre Valve
24 Combination Check Valve
25 Tip Control Lever
26 Hydraulic Cooler

MidWestTech | JCB 714, 718 Articulated Dump Truck Service Manual | Publication 98...
Order the manual at mid-west-tech.com >

1	2	3	4	1	2	3	4	1	2	3	4
Dimension C	Crown wheel Deviation	Shim 2 (Crown wheel side)	Shim 3 (Diff. carrier side)	Dimension C	Crown wheel Deviation	Shim 2 (Crown wheel side)	Shim 3 (Diff. carrier side)	Dimension C	Crown wheel Deviation	Shim 2 (Crown wheel side)	Shim 3 (Diff. carrier side)
-19 to -10	-0.20	1.40	0.80	1 to 10	-0.20	1.30	0.70	21 to 30	-0.20	1.20	0.60
	-0.10	1.30	0.90		-0.10	1.20	0.80		-0.10	1.10	0.70
	0.00	1.20	1.00		0.00	1.10	0.90		0.00	1.00	0.80
	0.10	1.10	1.10		0.10	1.00	1.00		0.10	0.90	0.90
-9 to 0	-0.20	1.40	0.70	11 to 20	-0.20	1.30	0.60				
	-0.10	1.30	0.80		-0.10	1.20	0.70				
	0.00	1.20	0.90		0.00	1.10	0.80				
	0.10	1.10	1.00		0.10	1.00	0.90				

C139570

Fig 246. Shim Table

1	Dimension C
2	Crown wheel deviation
3	Shim 2 (crown wheel side)
4	Shim 3 (differential carrier side)

MidWestTech | JCB 714, 718 Articulated Dump Truck Service Manual | Publication 98... Order the manual at mid-west-tech.com >

5 Secure housing cover **12** by means of socket head screws **20** in the remaining positions. Remove the two adjusting screws and fit the further screws **20**.

Torque limit ..... 5.5 Nm (4 lbf ft).

6 Fit pressure regulators **17** and fix by means of fixing plates **19** and socket head screws **18**.

Note: *Install fixing plates with the claw showing downward. Pay attention to the radial installation position of the pressure regulators, see ⇨ Fig 77. (F-169).*

Torque limit ..... 5.5 Nm (4 lbf ft).

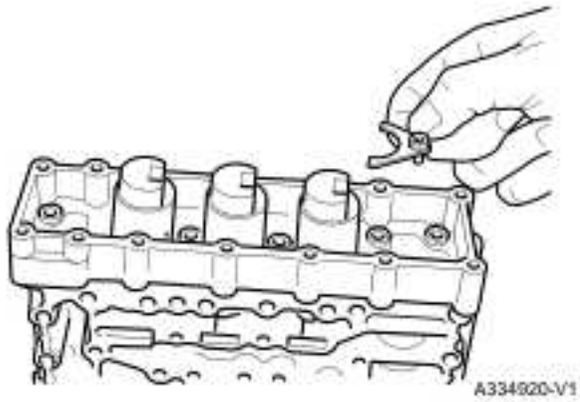


Fig 77.

7 Install components **31**/**32** (1 off), **33**/**34** (3 off) and **35**/**36** (3 off).

Preload compression springs of the follow-on slides **35**/**36** and locate spool provisionally by means of cylindrical pins 5 mm Ø (arrowed in ⇨ *Fig 78. (F-169)*).

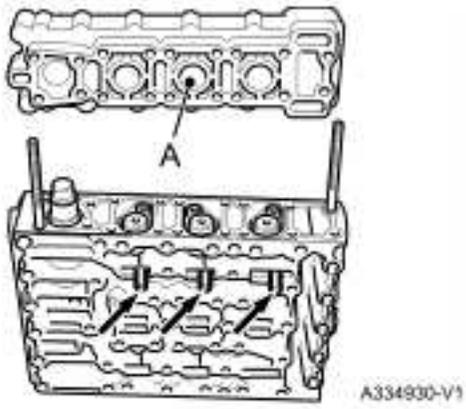


Fig 78.

8 Assemble gasket **16** and housing cover **15**. Position the housing cover **15** uniformly against shoulder, using adjusting screws (M5) in the two outermost locations for screws **30**. Remove the cylindrical pins fitted at step 7.

Note: *Pay attention to the different housing covers. Install the recess **A** (19 mm Ø) facing the main pressure valve **31**/**32**.*

9 Fasten housing cover **15** by means of socket head screws **30** in the remaining positions. Remove the two adjusting screws and fit the further screws **30**.

Torque limit ..... 5.5 Nm (4 lbf ft)

10 Fit pressure regulators **29** and fix by means of fixing plates **28** and socket head screws **27**.

Note: *Install fixing plates with the claw showing downward. Pay attention to the radial installation position of the pressure regulators, see ⇨ Fig 79. (F-170).*

Torque limit ..... 5.5 Nm (4 lbf ft)

MidWestTech | JCB 714, 718 Articulated Dump Truck Service Manual | Publication 98... Order the manual at mid-west-tech.com >

Earth Points

Introduction

The ground or earth refers to the reference point in an electrical circuit from which voltages are measured, a common return path for electric current, or a direct physical connection to Earth. Electrical circuits may be connected to ground or earth to prevent user contact with dangerous voltage if the electrical insulation fails.

Earth points can be useful when tracing electrical faults typically when several electrical devices are malfunctioning.



Fig 2.

Earth Point Locations

1 Transmission Earth

2 Harness Earth

3 Cab Earth

4 Rear Earth

5 Front Earth

6 Chassis Earth

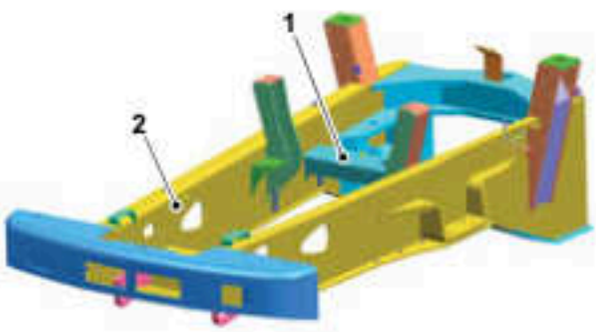


Fig 1.

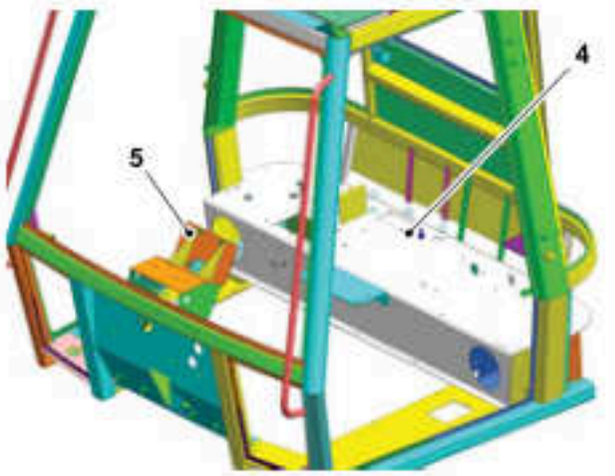


Fig 3.

MidWestTech | JCB 714, 718 Articulated Dump Truck Service Manual | Publication 98... Order the manual at mid-west-tech.com >

Dedendum Tooth Position

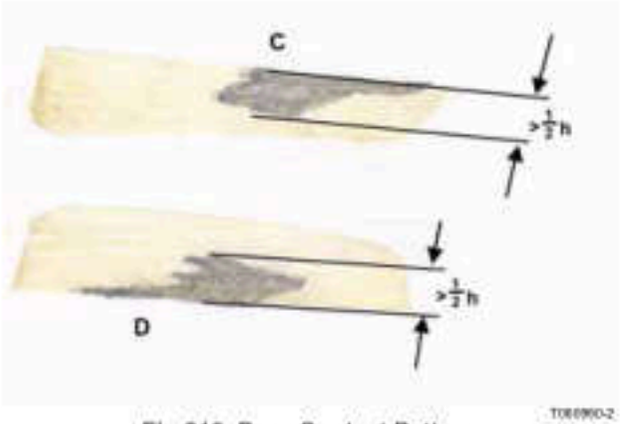


Fig 210. Poor Contact Pattern

C Convex
D Concave

The contact pattern on the convex and concave flanks is too far in the root section, although more than 50% of the flank in the **h** direction is covered.

On the convex flank, the contact pattern has an impression at the toe / root and on the concave flank on the heel/root.

Adjustment: Add a smaller shim to the pinion.

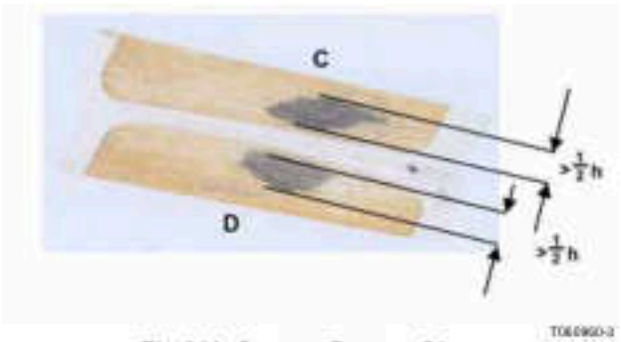


Fig 211. Contact Pattern Okay

The contact pattern is in the flank and a minimum 50% of the flank in the **h** direction is covered.

The contact pattern in the example is relatively small. But, the contact pattern has an impression on the middle of the tooth and would cover the flank optimally with a greater load.

Addendum Tooth Position

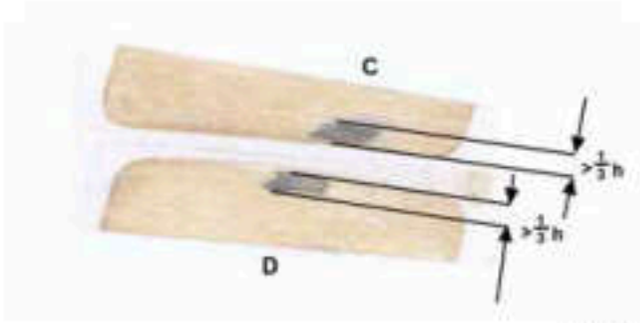


Fig 212. Poor Contact Pattern

C Convex
D Concave

The contact pattern on the convex and concave flanks is too far in the top section.

The contact pattern is too small and is not at a tangent to the flank middle line.

Adjustment: Add a thicker shim to the pinion.

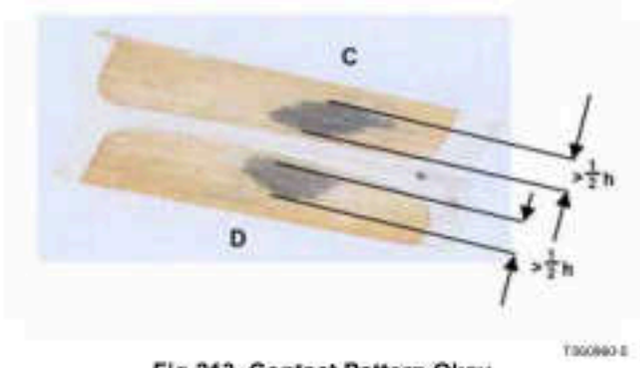


Fig 213. Contact Pattern Okay

The convex contact pattern must be visible in the direction of the tooth centre depth.

A minimum 50% of the flank in the direction of the tooth depth is covered.

MidWestTech | JCB 714, 718 Articulated Dump Truck Service Manual | Publication 98... Order the manual at mid-west-tech.com >