Service Manual

Wheeled Loading Shovel - 406/409

Section 1 - General Information

Section 2 - Care and Safety

Section 3 - Routine Maintenance

Section A - Attachments

Section B - Body and Framework

Section C - Electrics

Section D - Controls

Section E - Hydraulics

Section F - Transmission

Section G - Brakes

Section H - Steering

Section K - Engine



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Contents **Page No.**

Maintenance

Service Requirements 3-1
Introduction 3-1
Owner/Operator Support 3-1
Service/Maintenance Agreements 3-1
Initial Service and Inspection 3-1
Fit for Purpose Tests for Lifting Equipment 3-2
Obtaining Replacement Parts 3-2
Health and Safety 3-3
Lubricants 3-3
Battery 3-5
Service Schedules 3-7
Introduction 3-7
How to Use the Service Schedules 3-7
Calendar Equivalents 3-7
Pre-Start Cold Checks, Service Points and Fluid Levels 3-8
Functional Test and Final Inspection 3-11
Fluids, Lubricants and Capacities 3-13
Specifications 3-13
Fuels 3-14
Tools 3-16
Tool Locations 3-16
Carrying Tools onto the Machine 3-16
Prepare the Machine for Maintenance 3-17
Introduction 3-17
How to Make the Machine Safe (Loader Arm Lowered) 3-18
How to Make the Machine Safe (Loader Arm Raised) 3-18
Safety Mechanism 3-19
Cleaning the Machine 3-21
Introduction 3-21
Preparing the Machine for Cleaning 3-22
Cleaning the Engine Cooling System 3-23
Checking for Damage 3-24
Check the Machine Body and Structure 3-24
Check the Seat and Seat Belt 3-24
Check the Hydraulic Hoses and Fittings 3-24
Check the Electrical Circuits 3-24
Check the Tyres 3-25
Checking the ROPS/FOPS Structure 3-25
Greasing 3-26
Introduction 3-26
Preparing the Machine for Greasing 3-26
Loader Arms and Shovel 3-27
Articulation Pivot Points 3-28
Driveshaft Pivot Points 3-28
Steering Pivot Points 3-28
Quickhitch Locking-Pins 3-29
Cab Door Hinges 3-29
Automatic Greasing System (if fitted) 3-30
Access Panels 3-34
Engine Cover 3-34
Heating and Ventilation 3-35
Cleaning the Cab Heater Filter (machines without air conditioning) 3-35
Cleaning the Cab Heater Filter (machines with air conditioning) 3-36
Cleaning the Cab Re-circulation Filter 3-36

MidWestTech | JCB 406, 409 Wheeled Loading Shovel Service Manual | Publication 9... Order the manual at mid-west-tech.com >

Contents Page No.

Brakes 3-37
Park Brake 3-37
Service Brake 3-39
Electrical System 3-42
Battery 3-42
Jump Starting the Engine 3-43
Fuses and Relays 3-45
Engine 3-48
Oil and Filter 3-48
Drive Belt 3-50
Air Filter 3-53
Fuel System 3-55
Introduction 3-55
Fuel Filter 3-56
Sedimenter Bowl 3-57
Cleaning the Fuel Strainer 3-58
Priming the Fuel System 3-59
Hydraulic System 3-60
Introduction 3-60
Release the Hydraulic Pressure 3-60
Oil and Filters 3-61
Transmission 3-64
Transmission Drop-box (if fitted) 3-64
Axles 3-66
Tyres and Wheels 3-69
Tyre Inflation 3-69
Checking the Wheel Nut Torques 3-70
Windscreen Washers 3-71
Filling the Reservoir 3-71
Fire Extinguisher (if fitted) 3-72
Checking the Fire Extinguisher 3-72

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2	**Cab Panel**		
	721/11709	4	⇨ *Cab Panel- 721/11709 Issue 4 (C-72)*
Main components connected to this harness:			Starter switch
			Fuses and relays
			Heater controls
			Wiper controls
			Smooth ride system
			Instrument panel
			Column switch
			Road light switch
			Seat
			Brake light switch
			Park brake light switch
			Rear fog light switch
			Hazard switch
			Neutral dump relay
			Joystick
			Speed switches
			Quickhitch switch
			Horn switch
3	**Front Chassis**		⇨ *Front Chassis - 721/112014 Issue 3 (C-77)*
	721/12014	3	
Main components connected to this harness			Front headlamps
			Horn
			Quickhitch solenoid
4	**Cab Roof**		⇨ *Cab Roof - 721/11711 Issue 2 (C-78)*
	721/11711	2	
Main components connected to this harness			Interior light
			Numberplate lamp harness
			Front work lamps
			Rear work lamps
			Beacon
5	**Cab Roof Options**		⇨ *Cab Roof Options - 721/11712 Issue 3 (C-80)*
	721/11712	3	
Main components connected to this harness			Radio and speakers
			Clock
			Face fan

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Technical Data

General Data

Transmission Pump

Type	Main Pump - 40cc/rev (2.4cu in/rev)
Charge Pressure Setting	25 - 28 bar @ 2760 rpm (Flight Speed)
Charge Pump Displacement	8cc/rev (0.49cu in/rev)
High Pressure Setting at Port A	420 bar (6091.6 lbf in²)
High Pressure Setting at Port B	420 bar (6091.6 lbf in²)

Main Hydraulic Pump

Note: *The twin hydraulic pumps (main and fan) used on the 406 range of machines from Serial No. 1163000 to 1163006 have individual suction hoses to each pump. From Serial No. 1163007 a single suction line feeds both pumps.*

Type	Fixed Displacement - 20cc/rev
Flow @ 2200 rev/min (No Load)	63 l/min (16.64 gal/min)
Max Cont. Pressure	230 bar (3336 lbf in²)
Flow @ 2150 rev/min (Full Load)	58 l/min (15.3 gal/min)

Fan Pump

Type	Fixed Displacement - 8cc/rev
Flow @ 2000 rev/min (zero pressure)	22 l/min (5.8 gal/min)
Flow @ 2000 rev/min (system pressure	20 l/min (5.3 gal/min)

Fan Motor

Type	Fixed
Maximum Fan Speed	2500 rpm @ 60 °C (140 °F) Oil Temperature (14in Fan)

Transmission Motor

Type	Bent Axis - Variable Piston Motor
Flow / Displacement	80cc (4.9cu)
High Pressure Setting at Port A	420 bar (6091.6 lbf in²)
High Pressure Setting at Port B	420 bar (6091.6 lbf in²)

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Table 43. Foaming Oil

Possible Cause	Action
Low oil level.	Fill reservoir to the correct level with the correct grade of oil.
Air is leaking into suction line.	Tighten all fittings, check the condition of the line.
Incorrect type of oil.	Drain reservoir and fill with clean oil of the correct grade.

Table 44. Shaft seal leakage

Possible Cause	Action
Worn shaft seal or cut seal lip.	Replace the shaft seal.
Worn shaft seal area.	Replace the driveshaft and seal.
Wrong pump shaft direction of rotation.	Check for the correct rotation of the pump shaft.

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Fig 75.

5 Remove the guide-disc **A** from the driveshaft.



Fig 76.

6 Work from the opposite side of the blower-housing to remove the four nuts **A** and washers that attach the alternator to the blower-housing.

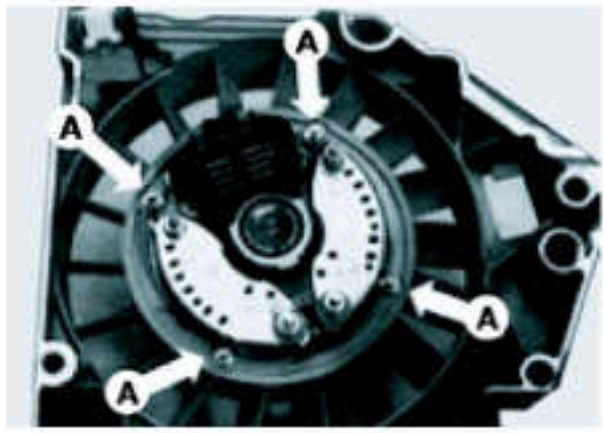


Fig 77.

7 Make sure the front of the blower-housing is supported. Work from the rear of the blower-housing and carefully push the alternator assembly from the blower-housing. ⇨ *Fig 78. (C-100)*.



Fig 78.

Inspection

1 Examine the alternator body **A** for damage, for example burrs that can cause the alternator to bind when it is pushed into the blower-housing.

2 Check the blower-housing **B** for cracks or damage to the alternator mounting bore.

3 Check the condition of the guide-disc **D** and spacer **C**.

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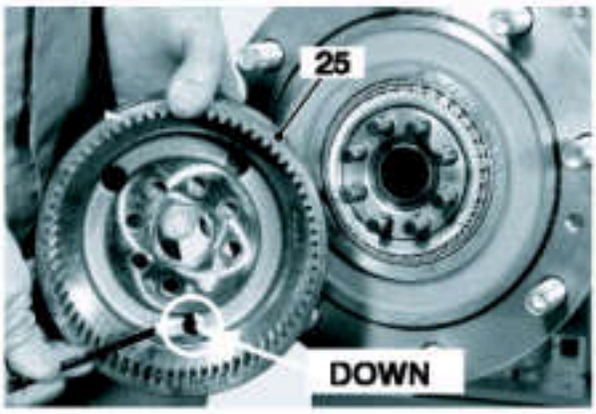


Fig 16.



Fig 17.

10 Lightly lubricate the face of the safety-flange **14**, which touches the annulus-carrier **13** with JCB HB grease. Install the safety-flange.

11 Apply a layer of JCB Threadlocker and Sealer to the nuts **23**, then screw them onto the studs **24**.

12 Torque the nuts **23** in two stages with a criss-cross method. ⇨ *Table 3. Torque Settings (F-15)*

13 Check that the hub has a continuous rolling-torque of 7 - 20 Nm (62 - 177 lbf-in.). ⇨ *Fig 18. (F-15)*

Note: *If the rolling-torque is outside the limits, make sure that: the hub-seal and the bearing-tracks (If removed) are installed correctly. It may be necessary to replace the inner and outer hub-bearings to get the correct rolling-torque.*



Fig 18.

14 Check the condition and position of the O-ring **27**, replace if necessary. ⇨ *Fig 19. (F-15)*

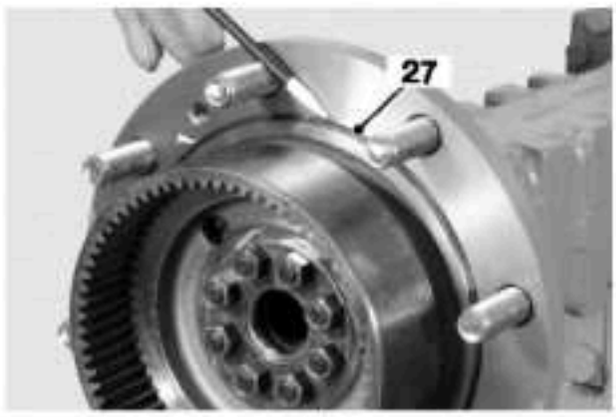


Fig 19.

15 Install the axle half shaft **29**, make sure that its correctly put into the brake discs and the differential unit.

16 Install the assembled planetary gear-housing **18** onto the wheel hub **28**.

17 Install and torque the two screws **20**. ⇨ *Table 3. Torque Settings (F-15)*.

Table 3. Torque Settings

Item	Notes	Nm	Kgf/m	lbf/ft
23	1st Stage	90	9.1	66.4
	2nd Stage	100	10.2	73.8
20		40 - 50	4.0 - 5.0	29.5 - 37

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