Service Manual

406
407
408
409

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Contents

This Service Manual covers the following machines:

406
407
408
409
* 409 Telemaster

407 and 409 Machines commence from Serial Number 632700.

Unless otherwise stated, information for 406 also applies to 407 and information for 408 also applies to 409 and the 409 Telemaster.

General	1
Hydraulics	2
Attachments	3
Body and Framework	4
Engine	5
Transmission	6
Axles	7
Brakes	8
Hydraulic Steering	9
Electrics	10
Service Tools	11

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Note: *New engines DO NOT require a running-in period. The engine/machine should be used in a normal work cycle immediately; glazing of the piston cylinder bores, resulting in excessive oil consumption, could occur if the engine is gently run-in. Under no circumstances should the engine be allowed to idle for extended periods; (e.g. warming up without load). Engines of new machines are filled at the factory with JCB 10W/30 Multigrade oil. This oil should be drained after the first 100 hours operation and the engine filled with the appropriate recommended grade as shown in the lubrication chart. JCB 10W/30 Multigrade should also be used for the first 100 hours operation whenever a new or reconditioned engine is fitted to the machine. After the first 100 hours operation, it is essential that the 10W/30 oil is replaced by the lubricant recommended below.*

ITEM	CAPACITY	FLUID/LUBRICANT	SPECIFICATION
Engine Oil -18 to 0° C -10 to 50° C	**406** 7.2 litres (1.6 UK gal) **408** 10.7 litres (2.4 UK gal)	 JCB Torque Converter Fluid JCB 15W/40 Multigrade	 API CD MIL-L-2104C
Gearbox	**Syncro Shuttle** †19 litres (4.2 UK gal) **Powershift** †19 litres (4.2 UK gal)	 JCB Special Transmission Fluid JCB Special Transmission Fluid	 Ford ESN-M2C 33G Ford ESN-M2C 33G
Transfer box	1.3 litres (0.3 UK gal)	JCB HD 90 Gear Oil	API-GL-5, MIL-L-2105C
Axles - Hurth (406) Differential Housing Hubs (Individual)	 5.0 litres (1.1 UK gal) 0.2 litres (0.04 UK gal)	 JCB Special Gear Oil JCB Special Gear Oil	 Ford ESE-M2C 86B Ford ESE-M2C 86B
Axles - JCB	**406** 5.0 litres (1.1 UK gal) **408** 16 litres (3.6 UK gal)	 JCB Special Gear Oil JCB Special Gear Oil	 Ford ESE-M2C 86B Ford ESE-M2C 86B
Hydraulic System Up to 38° C Above 38°C	**406** 59 litres (13.2 UK gal) **408** 63 litres (14.1 UK gal)	 JCB Special Hydraulic Fluid JCB High Performance Hydraulic Fluid	 ISO 32 ISO 46
Brake System	1.2 litres (0.27 UK gal)	JCB Light Hydraulic Fluid **CAUTION: DO NOT USE ORDINARY BRAKE FLUID**	ISO 15
Cooling System	**406** 12.5 litres (2.8 UK gal) **408** 15.5 litres (3.5 UK gal)	Water/Anti-freeze (see Coolant mixture)	ASTM D3306-74
Fuel System	**406** 65 litres (14.5 UK gal) **408** 90 litres (20.2 UK gal)	Diesel Oil (see Types of Fuel)	ASTM D975-66T Nos. 1D, 2D.
Grease Points		JCB Special MPL Grease	Lithium based, No. 2 consistency

Note: *The total hydraulic system capacity depends on the equipment being used. Fill the system with all rams closed and watch the level indicator.*

† The figure quoted is TOTAL system capacity. Use the **'MAX'** and **'MIN'** marks on the dipstick when refilling the system.

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A badly maintained machine is a danger to the operator and the people working around him. Make sure that the regular maintenance and lubrication jobs listed in the schedules are done to keep the machine in a safe and efficient working condition. A badly maintained machine is a danger to the operator and the people working around him. Make sure that the regular maintenance and lubrication jobs listed in the schedules are done to keep the machine in a safe and efficient working condition.

The schedules are based on machine running hours. Keep a regular check on the hourmeter readings. Do not use a machine which is due for a service. Make sure any defects found during the regular maintenance checks are rectified immediately.

Pre-start Cold Checks Service Points and Fluid Levels	Operation	10 Hr	50 Hr	First 100 Hr	500 Hr	1000 Hr	2000 Hr
ENGINE							
Generally for Leaks	- Check	❑					
Oil level	- Check	❑		❑			
Oil and Filter	† - Change			❑	❑	❑	❑
Fuel Filter	- Drain		❑				
Fuel Filter	† - Change			❑	❑	❑	❑
Coolant Level and Antifreeze Strength	- Check	❑		❑	❑	❑	❑
Air Cleaner Dust Valve	- Clean					❑	❑
Air Cleaner Outer Element	- Change					❑	❑
Air Cleaner Inner Element	- Change						❑
Coolant	- Change						❑
Fuel Lift Pump	- Clean			❑	❑	❑	❑
Fuel Sedimenter	- Drain		❑	❑			
Fan Belt Tension/Condition	- Check		❑	❑	❑	❑	❑
Valve Clearances	- Check and Adjust						❑
Engine Mount Security	- Check			❑	❑	❑	❑
Fuel System for Leaks and Contamination	- Check	❑		❑	❑	❑	❑
TRANSMISSION AND AXLES							
Hub Oil Levels	- Check			❑			
Hub Oil	†† - Change					❑	❑
Oil Filter	- Change			❑	❑	❑	❑
Drive Axle(s) Oil Level	- Check			❑			
Drive Axle(s) Oil	†† - Change					❑	❑
Transmission Oil Level	- Check			❑	❑		
Transmission Oil	- Change					❑	❑
Transmission Strainer	- Clean					❑	❑
Transfer Gearbox Oil Level	- Check				❑		
Transfer Gearbox Oil	- Change			❑		❑	❑
Axle Breather(s)	- Clean			❑			
Drive shaft/Prop. Shaft Security	- Check			❑	❑	❑	❑
Drive Shaft/Prop. Shaft	- Lubricate			❑	❑	❑	❑
Axle Mount Security	- Check			❑			
Transmission Mount Security	- Check			❑			
HYDRAULICS							
* Oil Filter	- Change			❑	❑	❑	❑
Oil	- Sample/Change						❑
Suction Strainer	- Clean						❑
Oil Level	- Check	❑		❑	❑	❑	
Hoses - Damage or Leaks	- Check		❑	❑	❑	❑	❑
Rams - Condition	- Check			❑	❑	❑	❑
Pipework - Damage or Leaks	- Check		❑	❑	❑	❑	❑

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TORQUE SETTINGS

Use only where no torque setting is specified in the text. Values are for dry threads and may be within three per cent of the figures stated. For lubricated threads the values should be REDUCED by one third.

UNF Grade 'S' Bolts

Bolt Size		Hexagon (A/F)	Torque Settings		
in	(mm)	in	Nm	kgf m	lbf ft
1/4	(6.3)	7/16	14	1.4	10
5/16	(7.9)	1/2	28	2.8	20
3/8	(9.5)	9/16	49	5.0	36
7/16	(11.1)	5/8	78	8.0	58
1/2	(12.7)	3/4	117	12.0	87
9/16	(14.3)	1/16	170	17.3	125
5/8	(15.9)	15/16	238	24.3	175
3/4	(19.0)	1 1/8	407	41.5	300
7/8	(22.2)	1 5/16	650	66.3	480
1	(25.4)	1 1/2	970	99.0	715
1 1/4	(31.7)	1 7/8	1940	198.0	1430
1 1/2	(38.1)	2 1/4	3390	345.0	2500

Metric Grade 8.8 Bolts

Bolt Size		Hexagon (A/F)	Torque Settings		
	(mm)	mm	Nm	kgf m	lbf ft
M5	(5)	8	7	0.7	5
M6	(6)	10	12	1.2	9
M8	(8)	13	28	3.0	21
M10	(10)	17	56	5.7	42
M12	(12)	19	98	10	72
M16	(16)	24	244	25	180
M20	(20)	30	476	48	352
M24	(24)	36	822	84	607
M30	(30)	46	1633	166	1205
M36	(36)	55	2854	291	2105

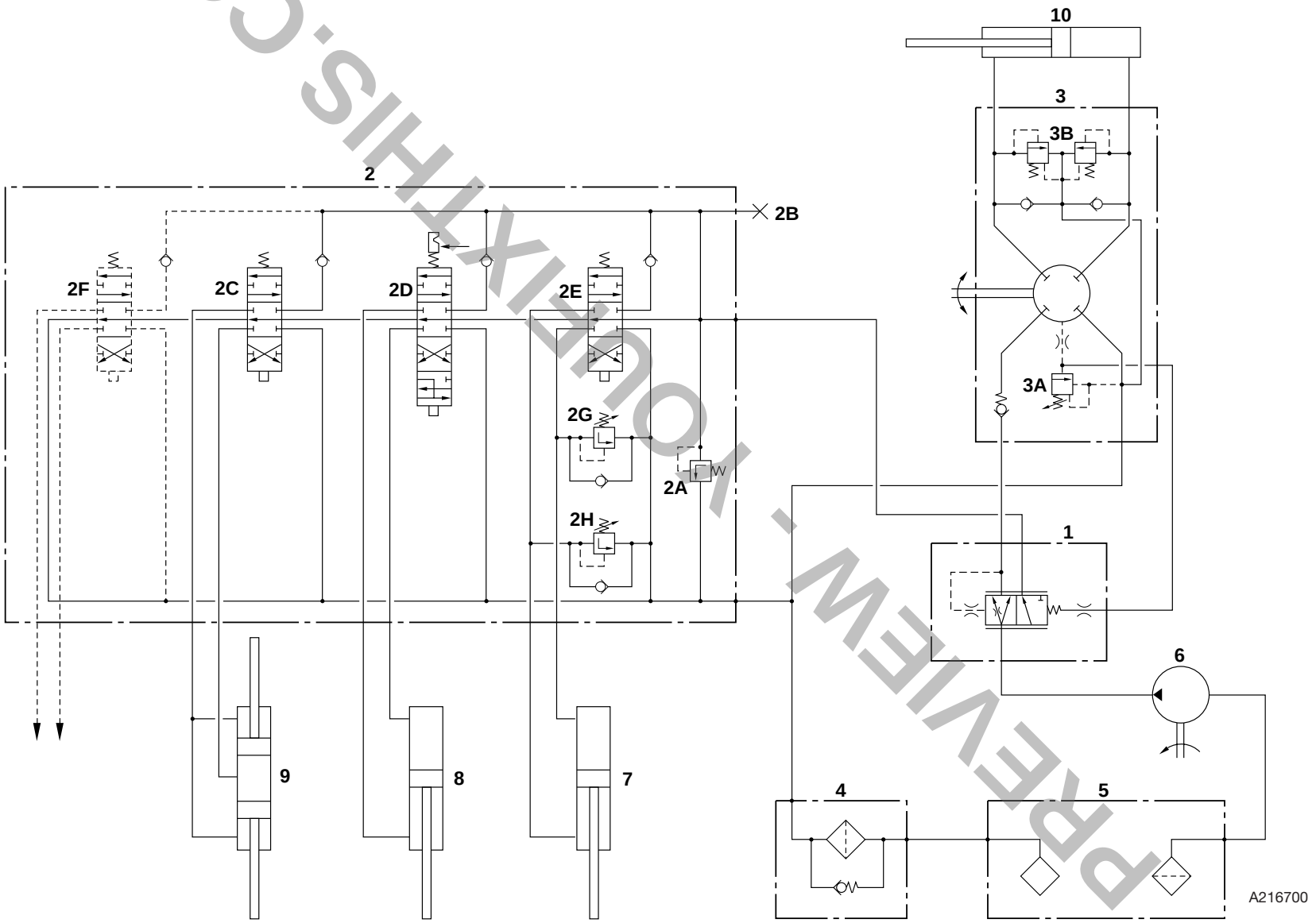
Note: All bolts used on JCB machines are high tensile and must not be replaced by bolts of a lesser tensile specification.

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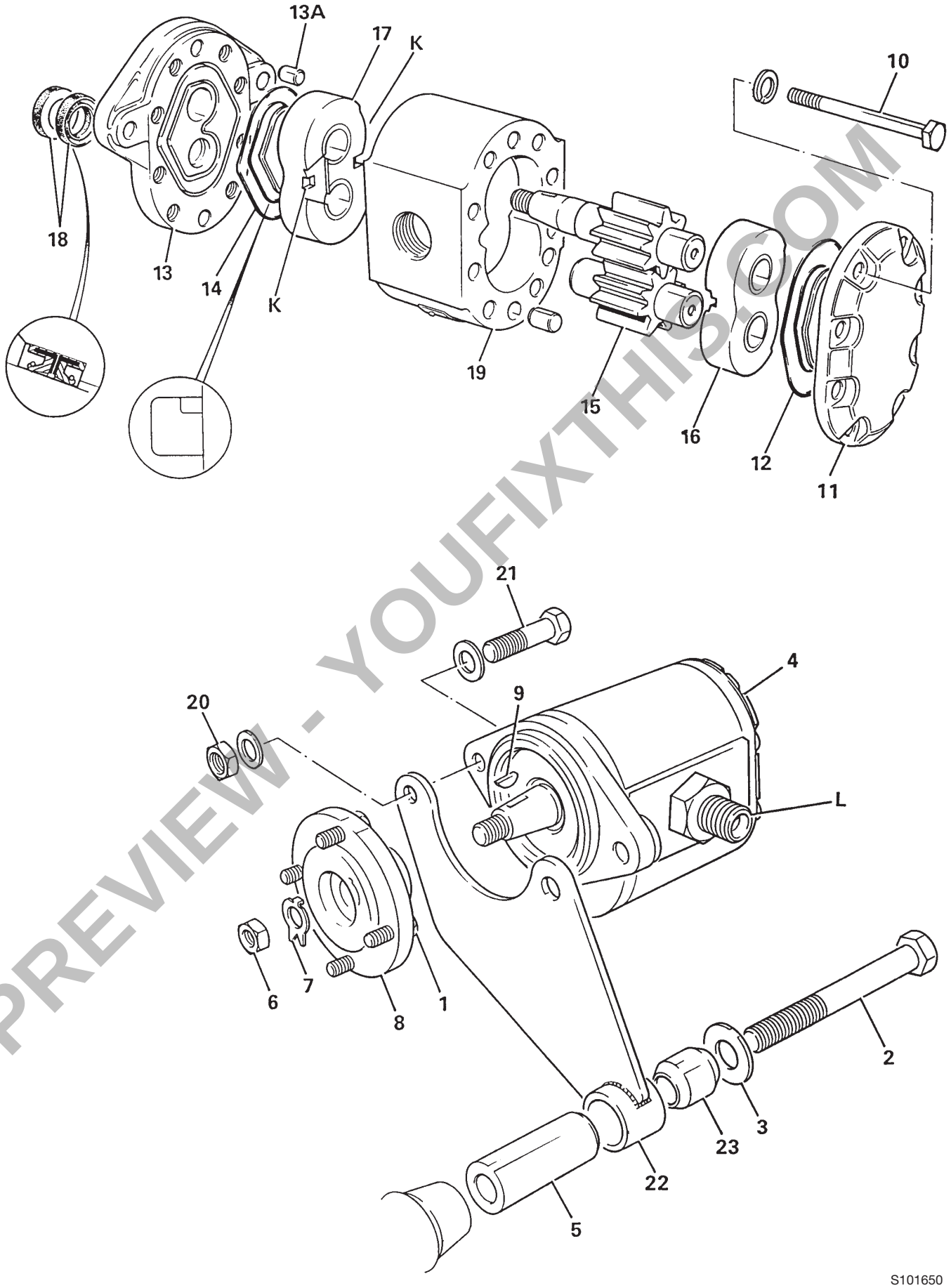
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SCHEMATIC HYDRAULIC CIRCUIT (406 Machine)

1 Steering Priority Valve
2 Loader Control Valve
2A Main Relief Valve
2B Pressure Test Point
2C Quick Hitch Control Spool
2D Lift Control Spool
2E Shovel Control Spool
2F Auxiliary Control Spool
2G Auxiliary Relief Valve
2H Auxiliary Relief Valve
3 Orbitrol Steering Unit
3A Steering System Relief Valve
3B Steering Shock Valves
4 Filter
5 Tank
6 Pump
7 Shovel Ram
8 Lift Ram
9 Quick Hitch Ram
10 Steering Ram



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PUMP (Sundstrand)

Note: Before removing and dismantling the pump, check flow and pressure. If either of these is low and cannot be corrected at the relief valve, the appropriate pump section must be renewed completely. Renewal of components such as gears, bearings and housings will not effect a permanent cure. If the pump output is satisfactory but there is external leakage, the pump should be removed and dismantled for re-sealing only.

Removal and Replacement

Remove number plate carrier to gain access to pump. Disconnect and plug inlet and outlet hoses. Unscrew coupling bolts **1** then remove bolt **2** and withdraw pump from machine.

Replace by reversing the removal sequence.

When renewing resilient bush **23**, coat with concentrated soap solution and press into the boss so that it protrudes a nominal 2 mm (0.080 in) either side. When pump is mounted on machine there must be nil clearance between bush and sleeve **5** in order to avoid loading bracket **22**. Incorrect assembly will cause premature pump shaft failure.

Assemble sleeve **5** with chamfered end toward bracket **22**.

⚠ CAUTION

Because the pump inlet connection is above the maximum fluid level in the hydraulic tank it is essential that, after reinstallation, the pump and the inlet hose are primed with JCB Hydraulic Fluid prior to running the engine.
HYD 3-2

Priming the Pump

Before connecting the outlet hose from the pump, fill the pump with clean hydraulic fluid and allow to drain partially.

Make sure that the engine cannot start (Remove the engine stop fuse on later machines - pull the engine stop handle on earlier machines).

Motor the engine until there is a positive flow of hydraulic fluid from the pump outlet.

Connect the outlet hose.

Dismantling and Assembly

When Dismantling

The numerical sequence shown on the illustration is intended
as a guide to dismantling.

Remove sharp edges and burrs from shaft to avoid seal damage.

Mark covers **11** and **13** and housing **19** to ensure correct replacement. Do not damage machined faces by prising them apart - use a soft faced hammer.

Withdraw the gears **15** and bearings **16** and **17** from the body bore as an assembly, carefully noting their original positions.

* **Inspection**

It is normal for the gears to have cut a slight track in the body bore on the inlet side. The gear track wear cannot be measured accurately but will be related to bearing wear. Examine the bores of the bearing blocks **16**, and **17**, which are coated during manufacture with PTFE. If the grey PTFE is worn through so that the bronze base is visible, the complete pump must be renewed.

Renew pump if faces of bearing blocks are scored or if side faces of gears are chipped or damaged. DO NOT use any abrasives on the bearing blocks or gears as this would destroy critical manufacturing dimensions.

When Assembling

Wash all components, then apply hydraulic oil immediately afterwards to prevent moisture from collecting.

Renew all seals and 'O' rings. Grease the lips of seals **18**.

Install bearings **16** and **17** with recesses **K** positioned on the inlet side facing the gears, and the relieved radii on the outlet side of the pump.

Align housing and covers using marks previously made, after checking that protrusion of dowels **13A** is 3.5 mm (0.138 in).

Locate bolts **1** in drive flange before fitting flange to shaft. Ensure that tab washer **7** is located in the keyway, and bend up tabs after torque tightening nut **6**.

Apply Loctite 577 to threads of inlet and outlet adaptors L.Fit and tighten adaptors **L** to 45 - 50 Nm (4.6 - 5.1 kgf m; 33 - 37 lbf ft).

Refit and prime the pump.

Torque Settings

Item	Nm	kgf m	lbf ft
1	77	7.9	57
2	118	12.0	87
6	95-100	9.7-10.2	70-74
10	85-95	8.7-9.7	63-70
20	117	11.9	86

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ANALOGUE CONTROL UNIT (A.C.U.) FAULT FINDING

FAULT	POSSIBLE CAUSE	CHECK	REMEDY
No power to A.C.U.	Blown fuse	Fuse B8	Replace blown fuse
No 1st Gear.	'Kickdown' switch not working.	Connections.	Replace switch if faulty.
	Column switch not connected correctly.	Interconnections.	
	Low or switch relay inoperative.	Correct operation/wiring.	Replace relays if faulty.
	False output from A.C.U. with correct input from 'Snail' switch.	Test box A.C.U. outputs lamps not lit.	Replace A.C.U. if faulty.
	Incorrect range/no direction selected.	Select 'Forward' with selector in 'Tortoise' then select 'Snail'.	
	Faulty solenoid.	Solenoid input lamps on test box indicate 'Lay Shaft' and 'Low' in Forward and Reverse.	Check and replace solenoids where faulty.
	Connector wired incorrectly.	Wire positions in both A.C.U. connectors.	Replug as required.
No 2nd Gear.	No outputs from A.C.U. with correct inputs.	Test box A.C.U. outputs 'High' lamp not lit.	Replace A.C.U. if faulty.
	1st gear only in low range.	Low and Switch relay connections/operations. 'Snail' switch operations. A.C.U. connections.	Replace/replug relays or replace switch or A.C.U. if faulty.
	Column switch not connected correctly or in wrong range.		
	Outputs from A.C.U. correct but only 1st gear available.	Solenoid input lamps on test box indicate 'Lay Shaft' and 'High' in Forward and Reverse. If not, check main relays (Main/Lay) wiring/relay type.	Replace relay if faulty. Check and replace solenoids if faulty.

Note 1: *'Tortoise' is selected when the gear change switch is lifted to the low range position.*

Note 2: *'Snail' is selected by pressing the Kickdown button.*

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CIRCUIT DIAGRAM - 407/409/409 Telemaster from Serial No. 633676

Main Components and Switches

1 Battery
2 Thermostart
3 Starter Switch
4 Start Relay
5 Starter Solenoid
6 Starter Motor
7 Barking Brake Relay
8 Parking Brake Switch
9 Stop Light Switch
10 Hazard Switch
11 Direction Indicator Switch
12 Flasher Relay
13 Speedometer Transducer
14 Speedometer Resistor
15 Speedometer
16 Water Temperature Gauge
17 Water Temperature Gauge Sender
18 Fuel Gauge
19 Fuel Gauge Sender
20 Hourmeter
21 Water Temperature Switch
22 Transmission Oil Temperature Switch
23 Engine Oil Pressure Switch
24 Transmission Oil Pressure Switch
25 Air Filter Blockage Switch
26 Brake Low Pressure Switch
27 Buzzer
28 Alternator
29 Headlight Dip Switch
30 Headlight Flash Switch
31 Front Wash/Wipe Switch
32 Front Washer Pump
33 Front Wiper Motor
34 Fog Light Switch
35 Road Light Switch
36 Front Work Light Switch
37 Front Work Light Relay
38 Rear Work Light Switch
39 Rear Work Light Relay
40 Reverse Alarm
41 E.S.O.S.
42 Heater Switch
43 Heater Resistor
44 Heater Motor
45 Rear Wash/Wipe Switch
46 Rear Washer Pump
47 Rear Wiper Motor
48 Beacon Switch
49 Radio
50 Junction Box

Lamps

70 Stop Lights
71 L.H. Indicators
72 R.H. Indicators
73 Alternator Warning
74 Parking Brake Warning
75 Water Temperature Warning
76 Transmission Oil Temperature Warning
77 Engine Oil Pressure Warning
78 Transmission Oil Pressure Warning
79 Air Filter Blockage Warning
80 Brake Low Pressure Warning
81 Hazard Warning
82 Main Beam Warning
83 Instrument Illumination
84 Indicator Warning
85 Main Beam
86 Dip Beam
87 Fog Light
88 R.H. Side/Tail Lights
89 L.H. Side/Tail/Lights
90 Front Work Lights
91 Rear Work Lights
92 Fog Light Switch Illumination
93 Road Light Switch Illumination
94 Front Work Light Switch Illumination
95 Rear Work Light Switch Illumination
96 Heater Switch Illumination
97 Rear Wash/Wipe Switch Illumination
98 Beacon Switch Illumination
99 Interior Light
100 Beacon

For **Fuses** refer to page 10/1-6

Note: Connections **A**, **B**, **C**, **D**, **E**, **F** and **G** connect as applicable to transmission and boom circuits on page 10/10-10.

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Contents **Page No.**

Fluids, Lubricants, Capacities & Specifications
- 406/408 1 - 1
- 407/409 1 - 2
* - 409 Telemaster 1 - 3
* - Torque Settings 1 - 10

Service Schedules 2 - 1

Greasing
- Shovel Pivot Pins 3 - 1
- Loader End 3 - 2
- Central Pivot and Steering Ram 3 - 3
- Intermediate Propshaft 3 - 3
- Propshafts (except Intermediate) 3 - 4

Greasing (409 Telemaster)
- Boom Wear Pad Runways 4 - 1
- Boom Pivot Pins 4 - 2

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PRESSURE TESTING (409 Telemaster)

Main Relief Valve

Connect a 0 - 400 bar (0 - 6000 lbf/in^2) pressure gauge to snap connector on charge valve block (refer to SERVICE TOOLS section for probe 892/00706).

* Run engine at maximum speed, operate boom raise service and hold while checking maximum gauge reading against M.R.V. pressure shown in *Technical Data*, HYDRAULIC section.

If necessary adjust by screwing body of M.R.V. **E** in or out as required.

Retest and, finally, tighten locknut.

Auxiliary Relief Valve - Forward Tilt

Connect a 0 - 400 bar (0 - 6000 lbf/in^2) pressure gauge to snap connector on charge valve block (refer to SERVICE TOOLS Section for probe 892/00706).

Run engine at just above idling speed, operate forward tilt control and hold while checking maximum gauge reading against A.R.V. pressure shown in *Technical Data*, HYDRAULIC section.

If necessary adjust by screwing body in or out as required on A.R.V. **G**.

Retest and, finally, tighten locknut.

Auxiliary Relief Valve - Backward Tilt

Note: The following procedure must be used for checking this A.R.V. as it is set higher than the M.R.V.

Remove complete M.R.V. **E** and complete A.R.V. **F**. Fit the A.R.V. in the M.R.V. position for testing. Fit the M.R.V. in the A.R.V. position to prevent oil loss.

Connect a 0 - 400 bar (0 - 6000 lbf/in^2) pressure gauge to snap connector on charge valve block.

Run engine at just above idling speed, operate backward tilt control and hold while checking maximum gauge reading against A.R.V. pressure in *Technical Data*, HYDRAULIC section.

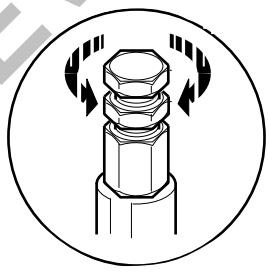
If necessary adjust by screwing body in or out as required.

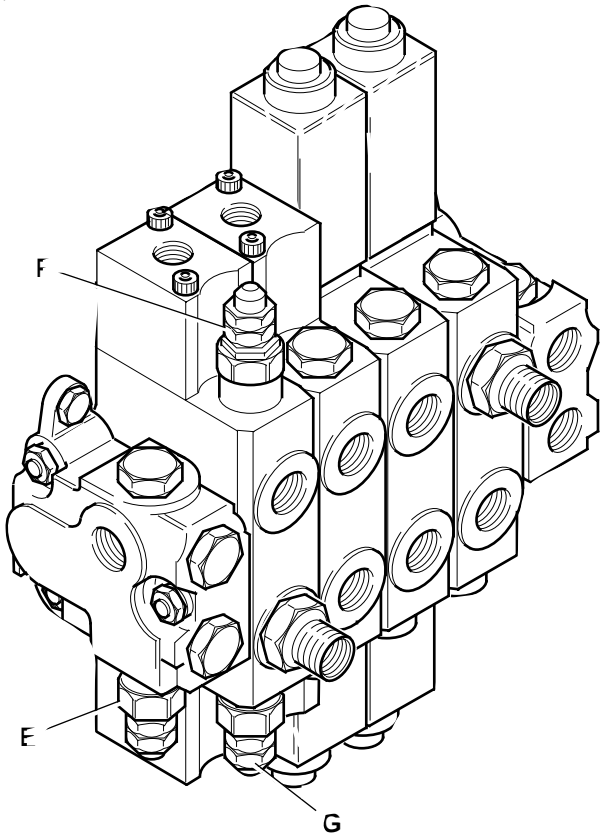
Retest and, finally, tighten locknut.

Return A.R.V. and M.R.V. to their original positions.

Torque Settings

Item	Nm	kgf m	lbf ft
E	44.75	4.5	33
F	9.5	0.96	7





A233150

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FUEL FILTER (1004-LR Engine)

* **Drain** *for interval see Service Schedule*

Drain off any water in bowl by turning tap **A**.

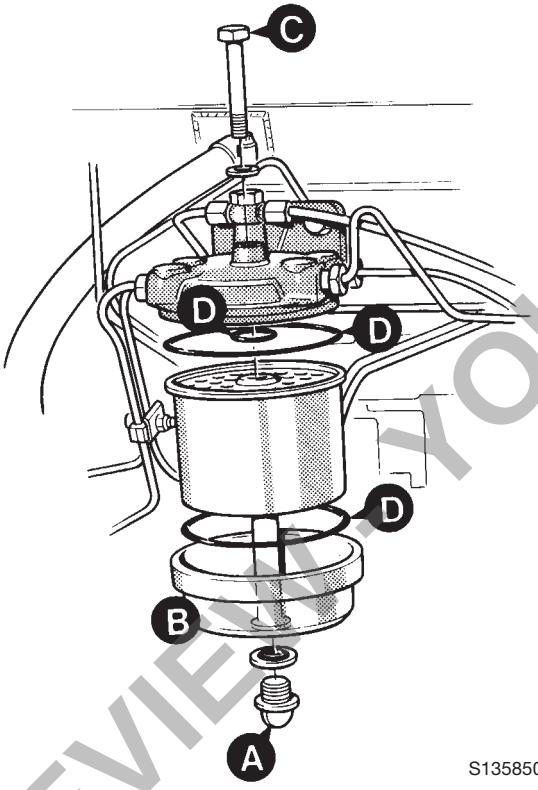
* **Renew** *Element for interval see Service Schedule*

1 Support bowl **B** while unscrewing bolt **C**.

2 Remove bowl and element using a twisting motion.

3 Reassemble using a new element and sealing rings **D**.

4 Bleed the fuel system.



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FUEL SEDIMENT BOWL (1004-LR Engine)

* **Drain** *for interval see Service Schedule*

Drain off any water in bowl by turning tap **E**.

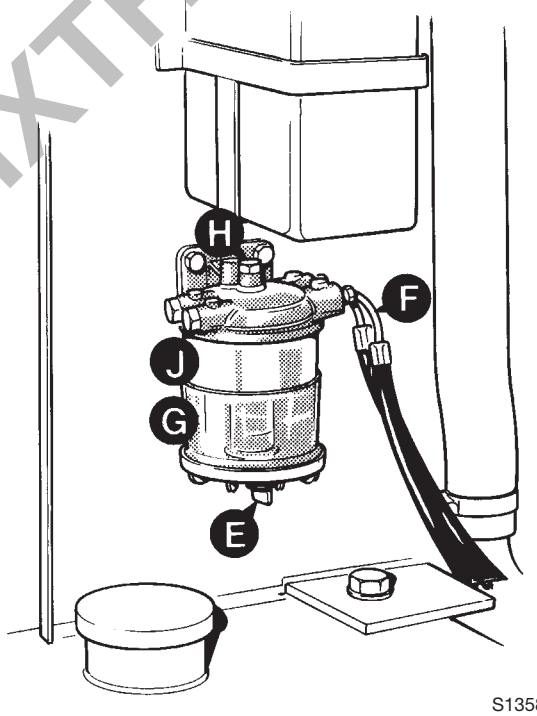
* **Clean** *for interval see Service Schedule*

1 Clamp fuel inlet line **F** to prevent loss of fuel.

2 Support bowl **G** and unscrew bolt **H**.

3 Wash element **J** in clean fuel.

4 Reassemble, remove clamp, and bleed fuel system.



S135860

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TORQUE CONVERTER STALL TEST

Ensure that the engine and transmission are at normal working temperature. Run engine at maximum speed and check the **No Load Speed** (see Engine Technical Data); adjust if necessary. Apply parking brake firmly, select Forward and fully open throttle. Engine speed should be as shown in Technical Data. Select Reverse and repeat test. (See Note).

DO NOT stall the converter for longer than 30 seconds or the transmission fluid will overheat.

If engine speeds are higher than the stated figures check the transmission for clutch slippage or internal leakage.

If engine speeds are below the stated figures either the engine is losing power and should be serviced/overhauled or the torque converter reaction clutch is slipping. To check the engine, select Neutral, open throttle fully and operate a loader service to 'blow off' the main relief valve. Engine speed should not drop appreciably below the maximum governed speed (see Technical Data). If engine speed is correct the torque converter is faulty.

Pressure and Flow Test

Caution: The tests must be carried out only in the following order, step by step.

WARNING: Exercise caution when disconnecting hydraulic hoses and fittings as the oil will be **HOT**.

1 Stop engine, remove transmission filter, and screw adapter **A** (892/00304) on to the threaded spigot. Fit test adapter **B** (892/00301) and secure with adapter **C** (892/00302). Connect flowmeter **D** (892/00229) as shown and connect a 0-20 bar (0-300 lbf/in2) pressure gauge to snap connector **E**.

2 Start engine and run at 1000 rev/min. The flowmeter will show the **Pump Flow** which should be as shown in Technical Data. A low reading indicates a worn pump or blocked suction strainer. The pressure gauge will show the **Main Line Pressure** (see Technical Data). A low reading can be caused by either a faulty pressure maintenance valve or a worn pump. A high reading indicates a faulty pressure maintenance valve or, if the pump flow is low, the oil cooler may be blocked.

3 Stop engine, remove flow test adapters and refit filter. Connect pressure gauge and flowmeter into converter out line as shown at **F**. Run engine at 1000 rev/min with transmission in Neutral and note **Converter Out Pressure** and **Oil Cooler Flow**, which should be as shown in Technical Data. A high pressure together with low flow could be caused by a blocked oil cooler. (See also check 7.)

4 With parking brake firmly applied, select Forward and check flow reading, which should not fall by more than 4.5 litres (1 UK gal; 1.2 US gal) per minute. A low reading indicates a high leakage rate in that particular clutch, which could be caused by worn or broken piston seals or shaft sealing rings. Select Reverse and repeat the test. (See Note).

5 If the clutch leakage rate is high, the **Clutch Pressures** may be checked by connecting the pressure gauge into ports **G** and **H** and repeating test 4. A low reading (see Technical Data) would confirm a high leakage rate in the particular clutch selected.

6 Stop engine, connect the pressure gauge into port J in the transmission, and fit a load valve into the converter out line. Start engine, run at 1000 rev/min and slowly screw down the load valve whilst observing the gauge reading, which should rise to the setting of the **Converter Relief Valve** (see Technical Data). DO NOT allow the pressure to exceed 10.3 bar (150 lbf/in2) or damage to the converter seals will be caused. If the reading is higher than specified, the relief valve must be faulty. A low reading indicates a faulty relief valve, leaking converter 'piston ring' type seal or leaking pump seal.

7 Stop engine and connect pressure gauge and flowmeter into return line from oil cooler to transmission as shown at **K**. Start engine, and with transmission in Neutral check flowmeter reading, which will show the **Cooler Flow Rate** (see Technical Data). The pressure gauge will show the **Lubrication Pressure** (see Technical Data). Low flow and pressure readings could indicate a blocked oil cooler.

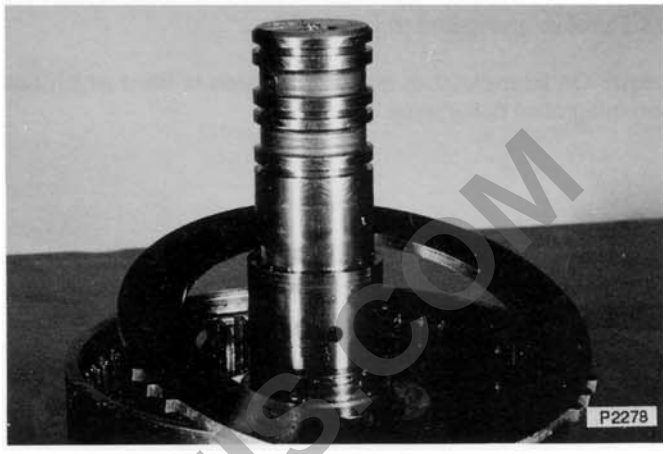
Note: During these tests **DO NOT** apply footbrake as it will operate the clutch cut-off.

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REVERSE CLUTCH - DISMANTLING (cont'd)

9 Remove pressure (end) plate.

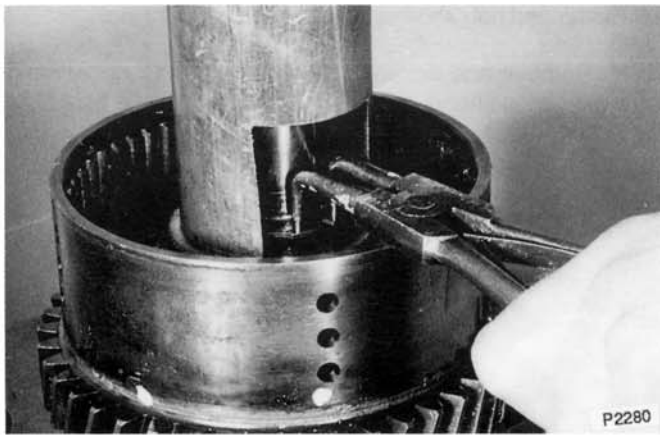


10 Remove the disc spring assembly.

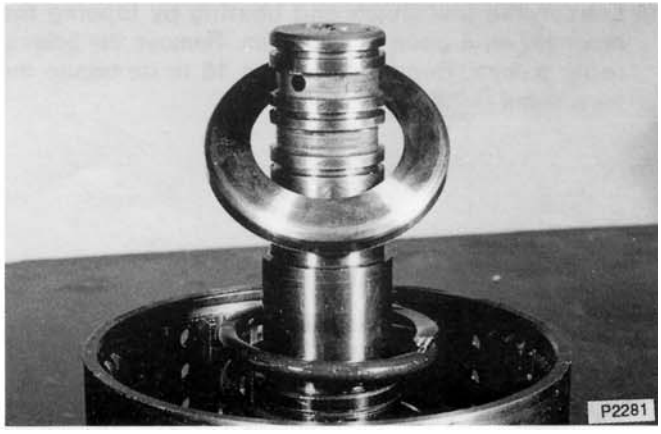
Note: The disc spring is assembled within a liner (not shown) to protect the hub support spline.



11 Position clutch assembly in press to compress piston spring then remove circlip.



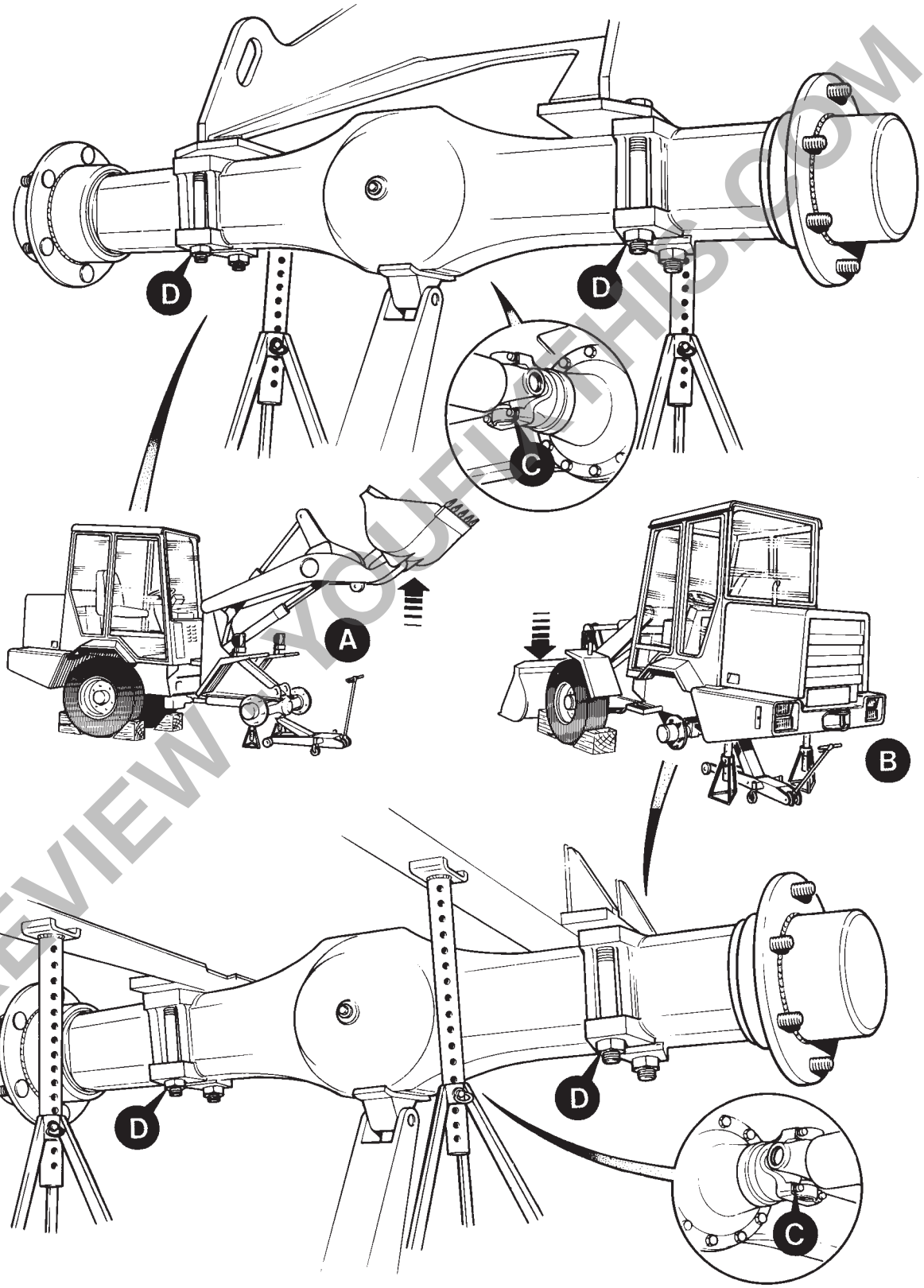
12 Lift off spring retaining plate.



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AXLES - FRONT AND REAR -
406/408 Machines with JCB Axles



S135950

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STEERING COLUMN
(406 Machines with Hurth Axles)

Dismantling and Assembly

The numerical sequence shown on the illustration is intended as a guide to dismantling.

For assembly the sequence should be reversed.

Dismantling

Park the machine on firm level ground, rest the shovel on the ground, install the articulation safety link, and switch off engine.

Remove steering wheel and stalk switch assembly.

Remove screws **A**. Carefully lift the instrument cluster so that its electrical plug can be disconnected then remove the cluster.

To remove the steering column **8**, remove tension pins **7** and carefully withdraw the column from the steering unit. Remove the thrust bearings **9** and **12**, shims **10** and needle bearing **11**.

Assembly

CAUTION: The steering column must not 'bottom out' in the steering unit drive. Remove all dirt etc from the steering unit drive before fitting the steering column. Ensure that all 12 shims **10** are fitted during assembly.

After assembly, remove the articulation safety link.

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POWERSHIFT WIRING LIST - PANEL HARNESS

	Wire No.	Wire Size	Colour	Source	Destination	Comments
	1	44/3	Brown	Starter	Starter Switch	
	2	44/3	Brown/Red	Starter Switch	Main Harness (Thermostart)	
	3	44/3	Brown	Start Solenoid	Splice	
	4	28/3	Brown	Splice	Fuses 10 & 11 Terminal 56b Plug F	
	5	28/3	Brown	Splice	Road Light Switch	
	6	44/3	Brown	Splice	Front Work Light Fuse 14	
	7	21/3	Brown	Fuse Link		
	8	44/3	White	Starter Switch	Fusebox Terminal L	
	9	14/3	Blue	Panel Harness	Speed Transducer Socket 2	
	10	44/3	White	Starter Switch	Fusebox Terminal L	
	11	28/3	White	Fusebox Ignition Feed Link		
	12	44/3	White/Yellow	Starter Switch	Start Relay Terminal RS Plug E	
	13	28/3	Red/Green	Road Light Switch	Column Switch	
	14	28/3	Red/Green	Road Light Switch	Fuses 8 & 9	
	15	14/3	Green/Red	Splice	L.H. Indicator (Front)	
	16	14/3	Red/Green	Road Light Switch	Front Work Light Switch	
	17	14/3	Red/Green	Rear Work Light Switch	Front Work Light Switch	
	18	14/3	Red/Yellow	Fuse 7	Fog Light Switch	
	19	14/3	Blue	Front Work Light Switch	Relay Terminal 53c Plug C	
	20	14/3	Blue	Front Work Light Switch	Warning Light	
	21	14/3	Blue/Black	Rear Work Light Switch	Rear Work Light Relay	
	22	14/3	Blue/Black	Rear Work Light Switch	Warning Light	
	23	14/3	Red/Yellow	Fog Light Switch	Main Harness Fog Light	
	24	14/3	Red/Yellow	Fog Light Switch	Warning Light	
	25	14/3	Green/Slate	Heater Switch Fast	Resistor	
	26	14/3	Green/Slate	Resistor	Heater	
	27	14/3	Green/Yellow	Heater Switch Slow	Resistor	
	28	21/3	Green	Fuse 16	Heater Switch	
	29	14/3	Red	Panel Harness	Speed Transducer Socket 3	
*	30	14/3	Green	Fuse 21	Splice	
	31	21/3	Green	Splice from Fuse 20	Column Switch (Indicator Feed)	
	32	14/3	Green/Blue	Panel Harness D5	Main Harness Transmission Oil Temperature	
	33	14/3	Lt Green/Black	Column Switch	Cab Washer Motor	
	34	14/3	Red/Lt Green	Column Switch	Cab Front Wiper	
	35	14/3	Green	Splice from Fuse 20	Column Switch (Wash/Wipe Feed)	
	36	14/3	Purple/Black	Column Switch	Horn Splice	
	37	14/3	Green/Red	Splice	L.H. Indicator	
	38	14/3	Green/Red	Splice	Warning Light Plug B3	
	39	14/3	Green/White	Splice	R.H. Indicator Splice	
	40	14/3	Green/White	Splice	Warning Light Plug B4	
	41	21/3	Blue/White	Column Switch	Fuse 6	
	42	28/3	Blue/White	Fuse 6	Main Beam Splice	
	43	14/3	Blue/White	Fuse 6	Panel Harness B5	
	44	21/3	Blue/Red	Column Switch	Fuse 7	
	45	28/3	Blue/Red	Fuse 7	Dip Beam Splice	
	46	21/3	Purple	Rear Work Light Relay	Fuse 12	
	47	21/3	Blue/Black	Main Harness Rear Work Light	Rear Work Light Relay	
	48	21/3	Blue/Black	Reverse Relay Electric Shift	Fuse 13	
	49	21/3	Purple	Front Work Light Relay	Fuse 14	
	50	21/3	Blue	Cab Front Work Light	Front Work Light Relay	
	51	14/3	Red	Fuse 9	R.H. Sidelights Splice	
	52	14/3	Red	Fuse 8	L.H. Sidelights Splice	
	53	14/3	Red	Fuse 9	Panel Harness D6	
	54	14/3	Green	Fuse 20	Panel Harness C2	
	55	28/3	Blue/Green	Splice	L.H. Headlight Dip Beam	
	56	44/3	White/Red	Start Relay	Main Harness Start Solenoid	
	57	14/3	Green/Red	Column Switch	Start Relay	
	58	14/3	Black	Relay Earth Splice	Mainframe	
	59	14/3	Black	Relay Earth Splice	Mainframe	
*	60	28/3	Green	Column Switch	Splice	
	61	14/3	Green/Black	Main Harness Fuel Sender	Panel Harness C1	

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