Service Manual

407B ZX, 408B ZX, 409B Z, 410B ZX, 411B ZX

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Lubricants and Capacities - North America (407 - 409B ZX)

Table 5.

ITEM	CAPACITY	FLUID/LUBRICANT	SPECIFICATION
Engine Oil			
(AS Build)	8.0 litres (2.2 US Gal)(1)	JCB 15w/40 Engine Oil	CF-4/SG, SAE 15w/40
		-10°C to +50°C (14°F to 122°F)	
		JCB Engine Oil 10w	CF-4/SG, SAE 10w
		-20°C to +10°C (-4°F to 50°F)	
Axle Hubs (each)	1.75 litres (0.5 US Gal)	JCB GL-5 80w/90 or 85w/140	API GL-5(2)
Front Differential	6.0 litres (1.6 US Gal)	JCB GL-5 80w/90 or 85w/140	API GL-5(2)
Rear Differential/ Transfer Gearbox	7.0 litres (1.8 US Gal)	JCB GL-5 80w/90 or 85w/140	API GL-5(2)
Hydraulic System			
Up to Serial No. 757366	70 litres (18.5 US Gal)	JCB Engine Oil 10w	CF-4/SG, SAE 10w
From Serial No. 757367	70 litres (18.5 US Gal)	JCB Extreme Performance Multigrade Hydraulic Fluid 46	ISO VG46
Cooling System	15.5 litres (4.1 US Gal)	Water/Anti-freeze (⇨ *Coolant Mixtures (🗋 3-47)*)	ASTM D3306-74
Fuel System	100 litres (26.4 US Gal)	Diesel Oil (⇨ *Types of Fuel (🗋 3-42)*)	ASTM D975-66T Nos. 1D, 2D.
Grease Points		JCB HP Grease	Lithium based, No. 2
Braking System		Light Hydraulic Fluid **CAUTION: DO NOT USE ORDINARY BRAKE FLUID**	ISO VG15

(1) The figure quoted is the TOTAL system capacity. Use the 'MAX' and 'MIN' marks on the dipstick when refilling the system.
(2) Must be suitable for use with oil immersed brakes and limited slip differentials (LSD).

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Servo (407B ZX, 408B ZX, 409B ZX, S/N. 757100 on)

⇨ *Fig 3. (📄 E-11)*

Component Key

1	Steer Ram
2	Steer Valve
3	Steer Shock Valves
4	D/A Valve
5	Pump Control Piston
6	Thermostatic Valve
7	Hydrostatic Pump
8	Hydrostatic System Charge Pump
9	Inching Valve
10	Forward/Reverse Solenoid
11	Charge Relief Valve
12	Loop Relief Valve
13	Loop Relief Valve
14A	Hydrostatic Pump Case Drain
14B	Hydrostatic Motor Case Drain
15	Travel Direction Valve
16	Purge and Relief Valve
17	Brake Pressure Defeat Valve
18	Pressure Override Valve
19	Hi/Low Range Valve
20	Hydrostatic Motor
21	Transmission Oil Cooler
22	Filler/Breather
23	Hydraulic Return Line Filter
24	Hydraulic Tank
25	Cooling Fan Pump
26	Cooling Fan Motor
27	Main Hydraulic Pump
28	Steering Priority Valve
29	Main Relief Valve
30	Steering Relief Valve
31	Shovel Spool
32	Lift Spool
33	Auxiliary 1 Spool
34	Auxiliary 2 Spool
35	Shovel Ram Head Side A.R.V.
36	Shovel Ram Rod Side A.R.V.
37	Lift Ram Head Side A.R.V.
38	Servo Control Isolator Valve
39	Servo Control Valve
40	Shovel Ram
41	Lift Rams
42	Quickhitch Locking Ram
43	Power Diverter Valve
44	Auxiliary 1 Circuit Quick Release Couplings
45	Auxiliary 2 Circuit Quick Release Couplings
46	Hose Burst Check Valve (option)
47	Hose Burst Check Valve (option)
48	Hose Burst Check Valve (option)
49	Creep Speed Kit (option)
50	(A to H) Test Points
51	Brake Valve
52	Brake Caliper
53	Brake Reservoir
54	Hydrostatic Motor Control Piston
55	Loop Flushing Valve
56	Smooth Ride System (option)

Note: *The schematic shown is for servo machines. for manual machines, Items 38 and 39 and associated pipework are not fitted.*

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Removal

1 Remove the rear axle, complete with transfer gearbox, from the machine (⇨ *Rear Axle (407B ZX, 408B ZX, 409B ZX) (1-4)*) and drain the axle.

2 Remove bolts **1-1** and withdraw hub assembly complete from the axle. Repeat for the other side.

3 Remove bolts **1-2** and retaining washers **1-3**.

4 Withdraw driveshaft **1-4** from each side of the axle .

5 Take the weight of the transfer gearbox.

6 Undo bolts **1-5** and remove the transfer gearbox together with drive head from the axle.

Replacement

1 Replacement is a reverse of the removal procedure.

2 Clean the mating flanges on the axle transfer gearbox and hubs. Use JCB Multi-Gasket when refitting.

3 Torque tighten bolts **1-1**, **1-2** and **1-5**.

Table 1. Torque Settings

Item	Nm	kgf m	lbf ft
1	102	10	75
2	56	6	41
3	56	6	41

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Numerical List Section E - Hydraulics

The tools listed in the table are special tools required for testing, removing and replacing hydraulics. These tools are available from JCB Service .

Note: *Tools other than those listed will be required. It is expected that such general tools will be available in any well equipped workshop or be available locally from any good tool supplier.*

Part Number	Description	Tool Detail Reference
1406/0011	Bonded Washer	⇨ Fig 21. (1-15)
1406/0014	Bonded Washer	⇨ Fig 21. (1-15)
1406/0018	Bonded Washer	⇨ Fig 21. (1-15)
1406/0021	Bonded Washer	⇨ Fig 21. (1-15)
1406/0029	Bonded Washer	⇨ Fig 21. (1-15)
1604/0006	Adapter	⇨ Fig 22. (1-15)
1612/0006	Adapter	⇨ Fig 22. (1-15)
816/00189	Blanking Cap	⇨ Fig 24. (1-16)
816/00190	Blanking Cap	⇨ Fig 24. (1-16)
816/00193	Blanking Cap	⇨ Fig 24. (1-16)
816/00196	Blanking Cap	⇨ Fig 24. (1-16)
816/00197	Blanking Cap	⇨ Fig 24. (1-16)
816/00294	Blanking Cap	⇨ Fig 24. (1-16)
816/20008	Adapter	⇨ Fig 22. (1-15)
816/55038	Pressure Test Adapter	⇨ Fig 20. (1-15)
816/55040	Pressure Test Adapter	⇨ Fig 20. (1-15)
892/00039	Spool Clamp	⇨ Fig 27. (1-17)
892/00055	Blanking Plug	⇨ Fig 23. (1-16)
892/00056	Blanking Plug	⇨ Fig 23. (1-16)
892/00057	Blanking Plug	⇨ Fig 23. (1-16)
892/00058	Blanking Plug	⇨ Fig 23. (1-16)
892/00059	Blanking Plug	⇨ Fig 23. (1-16)
892/00060	Blanking Plug	⇨ Fig 23. (1-16)
892/00074	Female Connector	⇨ Fig 25. (1-16)
892/00075	Female Connector	⇨ Fig 25. (1-16)
892/00076	Female Connector	⇨ Fig 25. (1-16)
892/00077	Female Connector	⇨ Fig 25. (1-16)
892/00137	Micro-Bore Hose	⇨ Fig 28. (1-17)
892/00180	Seal Fitting Tool	⇨ Fig 30. (1-17)
892/00181	Plastic Boss	⇨ Fig 30. (1-17)
892/00223	Hand Pump	⇨ Fig 28. (1-17)

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