Service Manual

Loadall

Models:

520-50
from Serial No. 754001

525-50
from Serial No. 789308

525-50S
from Serial No. 1037581

PUBLISHED BY THE
TECHNICAL PUBLICATIONS DEPARTMENT
OF JCB SERVICE; ©
WORLD PARTS CENTRE, WATERLOO
PARK, UTTOXETER,
ST14 5PA, ENGLAND
Tel. 01889 - 590312
PRINTED IN ENGLAND
Publication No. 9803/3620 Issue 9

General Information 1
Care & Safety 2
Routine Maintenance 3
Attachments A
Body & Framework B
Electrics C
Controls D
Hydraulics E
Transmission F
Brakes G
Steering H
Engine K

MidWestTech | JCB Loadall 520-50, 525-50, 525-50S Telehandler Service Manual | Public... Order the manual at mid-west-tech.com >

Service Tools

Numerical List		Page No
1406/0011	Bonded Washer	5-1
1406/0014	Bonded Washer	5-1
1406/0021	Bonded Washer	5-1
1406/0029	Bonded Washer	5-1
1604/0003	Adapter	5-3
1604/0004	Adapter	5-3
1604/0006	Adapter	5-1
1606/0003	Adapter	5-3
1606/0004	Adapter	5-3
1606/0007	Adapter	5-3
1606/0008	Adapter	5-3
1606/0009	Adapter	5-3
1606/0012	Adapter	5-3
1606/0014	Adapter	5-3
1606/0015	Adapter	5-3
1606/0017	Adapter	5-3
1612/0006	Adapter	5-1
4101/0251	Threadlocker and Sealer	8-1
4101/0451	Threadlocker	8-1
4101/0552	Threadlocker and Sealer (High Strength)	8-1
4101/0651	Retainer (High Strength)	8-1
4102/0551	High Strength Threadlocker	8-1
4102/1201	Multi-Gasket	8-1
4102/1951	Threadseal	8-1
4104/0251	Activator (Aerosol)	8-1
4104/0253	Activator (Bottle)	8-1
4104/1557	Cleaner/Degreaser	8-1
816/00189	Blanking Cap	5-2
816/00190	Blanking Cap	5-2
816/00193	Blanking Cap	5-2
816/00196	Blanking Cap	5-2
816/00197	Blanking Cap	5-2
816/00294	Blanking Cap	5-2
816/15118	Pressure Test Adapter	5-3
816/20008	Adapter	5-1
816/55038	Pressure Test Adapter	5-1
816/55040	Pressure Test Adapter	5-1
816/50043	'T' Adapter	5-2
892/00039	Spool Clamp	5-2
892/00041	De-glazing Tool	7-1
892/00047	'T' Adapter	5-2
892/00048	'T' Adapter	5-2
892/00049	'T' Adapter	5-2
892/00051	'T' Adapter	5-2
892/00055	Blanking Plug	5-2
892/00056	Blanking Plug	5-2
892/00057	Blanking Plug	5-2
892/00058	Blanking Plug	5-2
892/00059	Blanking Plug	5-2
892/00060	Blanking Plug	5-2
892/00071	Adapter	5-3
892/00074	Female Connector	5-2
892/00075	Female Connector	5-2
892/00076	Female Connector	5-2
892/00077	Female Connector	5-2
892/00121	Discharge Tester	4-1
892/00137	Micro-Bore Hose	5-3
892/00179	Bearing Press	6-1
892/00180	Seal Fitting Tool	7-1
892/00181	Plastic Boss	7-1
892/00223	Hand Pump	5-3
892/00225	Adapter - Impulse Extractor	6-2
892/00253	Pressure Test Kit	5-1
892/00255	1/4" BSP Test Point	5-3
892/00256	3/8" BSP Test Point	5-3
892/00257	1/2" BSP Test Point	5-3
892/00258	3/4" BSP Test Point	5-3
892/00259	1" BSP Test Point	5-3
892/00260	1 1/4" BSP Test Point	5-3
892/00261	5/8" UNF Test Point	5-3
892/00262	1/4" M BSP 1/4" F BSP	5-1
892/00263	5/8" M BSP 5/8" F BSP	5-1
892/00264	3/4" M BSP 3/4" F BSP	5-1
892/00265	1" M BSP 1" F BSP	5-1
892/00268	Flow Monitoring Unit	5-1
892/00269	Sensor Head	5-1
892/00270	Load Valve	5-1
892/00271	Adapter	5-1
892/00272	Adapter	5-1
892/00274	Adapter	5-3
892/00275	Adapter	5-1
892/00276	Adapter	5-1
892/00277	Adapter	5-1
892/00279	Gauge	5-3
892/00281	AVO Meter	4-1
892/00282	Shunt	4-1
892/00283	Tool Kit Case	4-1
892/00284	Digital Tachometer	4-1
892/00285	Hyd. Oil Temperature Probe	4-1
892/00286	Surface Temperature Probe	4-1
892/00295	End Float Setting Tool	6-1
892/00301	Flow Test Adapter	6-1
892/00302	Flow Test Adapter	6-1
892/00304	Flow Test Adapter	6-1
892/00333	Heavy Duty Socket	6-2
892/00706	Test Probe	5-3
892/00817	Heavy Duty Socket	6-2
892/00818	Heavy Duty Socket	6-2
892/00819	Heavy Duty Socket	6-2
* 892/00836	Lifting Wire Assembly	7-2
892/00891	Seal Fitting Adaptor	6-2
892/00923	Test Block for ARV	5-3
892/00936	Timing Pin	7-2
892/01054	Compression Adaptor	7-2
892/01111	Rocker Assembly Tool	7-2
892/01112	Timing Case Alignment Tool	7-2
892/01113	Thermostat Fitting & Removal Tool	7-2
892/01114	Camshaft Gear Timing Pin	7-2
892/01115	Crankshaft Timing Pin	7-2
992/02800	ARV Extractor	5-2
992/04000	Torque Multiplier	6-2
992/04800	Drive Coupling Spanner	6-1
992/07603	Replacer- Bearing Cup	6-1
992/07608	Bearing Adapter	6-1
992/07609	Bearing Adapter	6-1
992/07610	Bearing Adapter	6-1
992/07611	Bearing Adapter	6-1
992/07612	Bearing Adapter	6-1
992/07613	Bearing Adapter	6-1

MidWestTech | JCB Loadall 520-50, 525-50, 525-50S Telehandler Service Manual | P... Order the manual at mid-west-tech.com >

Service Tools (cont'd)

Numerical List		Page No
• 992/09500	Spanner	5-2
992/09700	Spanner	5-2
992/10100	Spool Clamp	5-2
992/10900	Test Harness for S.L.I	4-1
993/59300	2/4 Wheel Pressure Tester & Clamp	6-2
993/59500	Adapter - Impulse Extractor	6-2
993/99412	Adaptor Harness	4-1

The following parts are replacement items for kits and would normally be included in the kit numbers above.

Replacement item for kit no. 892/00180

892/00181	Replacement Boss	7-1

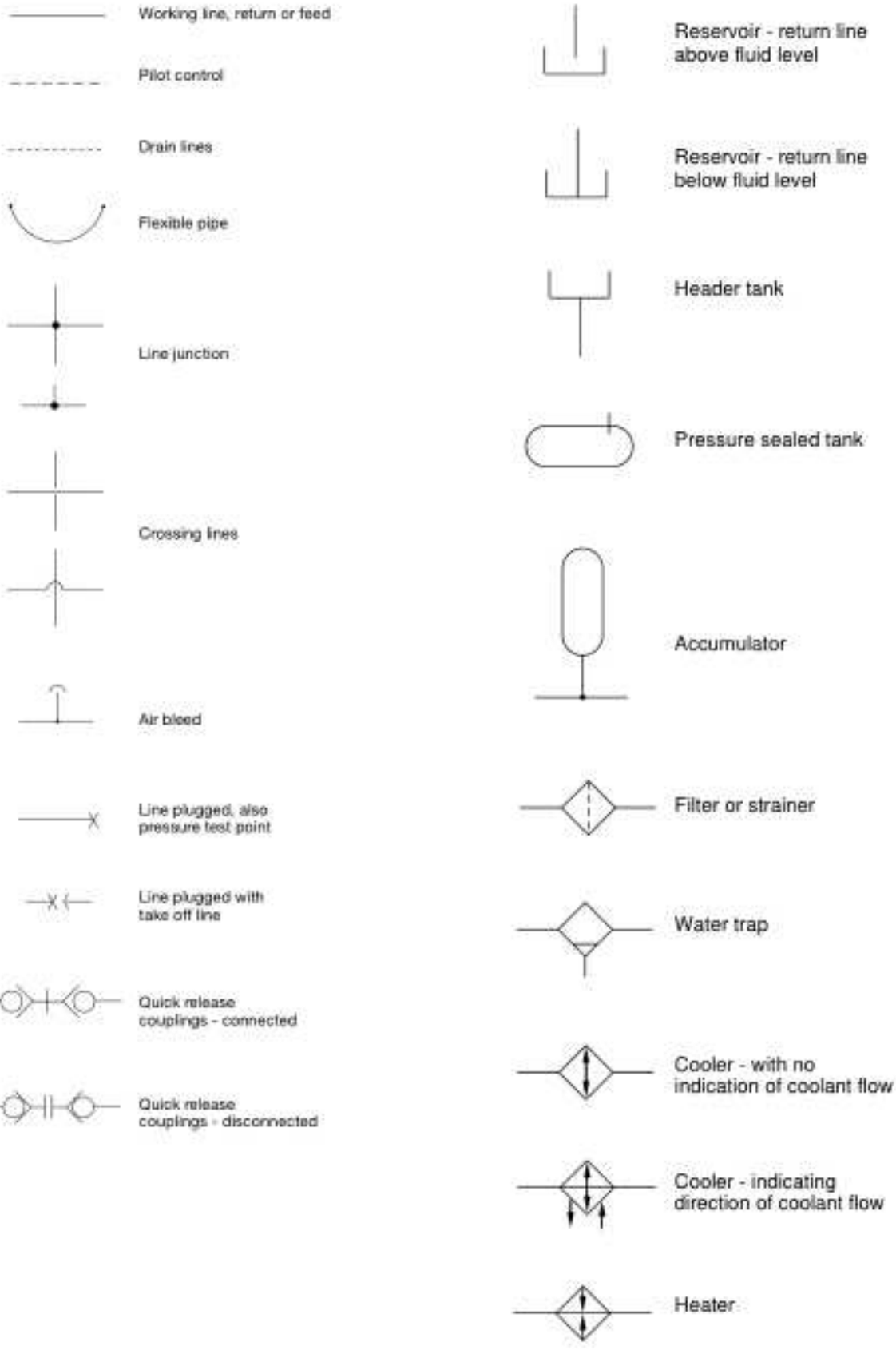
Replacement item for kit no. 892/00253

892/00201	Replacement Gauge	5-1
892/00202	Replacement Gauge	5-1
892/00203	Replacement Gauge	5-1
892/00254	Replacement Hose	5-1

MidWestTech | JCB Loadall 520-50, 525-50, 525-50S Telehandler Service Manual | P... Order the manual at mid-west-tech.com >

INTRODUCTION TO HYDRAULIC SCHEMATIC SYMBOLS (continued)

Energy Transmissions and Conditioning



A189710

A189720

MidWestTech | JCB Loadall 520-50, 525-50, 525-50S Telehandler Service Manual | P... Order the manual at mid-west-tech.com >

Typical Ram (continued)

Assembling (cont'd)

Fit a new 'O' ring **8** into piston head **3**.

Assemble piston head **3** onto piston rod and torque tighten.

Fit locking dowel **2** to piston as follows:

1 Existing piston head and rod, align holes so that dowel can be fitted with tapped extractor hole showing.

2 New piston head and rod, drill and ream piston head and rod to the diameter and depth shown in the table. Remove all swarf and contamination and insert dowel with tapped extractor hole showing.

3 Existing piston head and new rod, drill through existing hole in piston head to the diameter and depth shown in the table. Remove all swarf and contamination and insert dowel with tapped extractor hole showing.

4 New piston head and existing rod, same as 2 above but at 90 degrees to existing hole in rod.

Note: Ensure that the top of the dowel is below the level of the bearing ring groove and use an undersized pilot drill before drilling to the final size shown in the table.

Fit seal **6** to piston head **3** then fit outer seal **5** over piston seal **6**.

Note: Make sure when fitting piston seal **6** that it is correctly located and square in the piston head before fitting outer seal **5**.

Fit seal wear rings **4** and **7** to piston head.

Position cylinder on bench and install rod assembly into cylinder.

Apply JCB Threadlocker to threads of cylinder and torque tighten end cap **1**.

Note: If hydraulic oil contacts uncured locking fluid a weakening of the bond will result. Cure times vary according to the ambient temperature. The following approximate cure time applies at 20 degrees C and is the minimum period between assembly and filling the ram with oil.

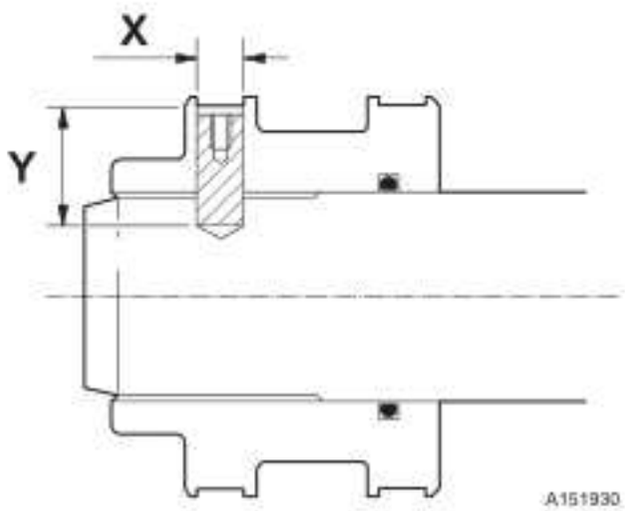
JCB Threadlocker & Sealer (High Strength) or JCB Threadlocker with JCB Activator - 1 hour.

Note: Cold weather operation. When operating in conditions which are consistently below freezing, it is recommended that the rams are operated slowly to their full extent before commencing normal working.

Ram size	Diameter X	Depth Y
120 x 70	12.10mm - 12.02mm	32.0mm - 33.0mm
110 x 60	12.10mm - 12.02mm	32.0mm - 33.0mm
70 x 50	6.10mm - 6.02mm	22.0mm - 23.0mm
70 x 40	6.10mm - 6.02mm	22.0mm - 23.0mm
70 x 25	6.10mm - 6.02mm	22.0mm - 23.0mm

Torque Settings

Item	Nm	kgf m	lbf ft
1	678	69	500 (120 x 70, 110 x 60)
1	450	46	332 (70 x 50, 70 x 40)
1	400	40	295 (70 x 25)
3	405	41	300
3	250	25.5	184 (70 x 25)



MidWestTech | JCB Loadall 520-50, 525-50, 525-50S Telehandler Service Manual | P... Order the manual at mid-west-tech.com >

Assembly (Cont'd)

14 Clean the parking brake mating face.

15 Using service tool kit Pt No. 993/59400, fit base plate **A** onto the parking brake mating face and secure with socket head set screws **B**. Torque tighten to 56 Nm (41.3 lbf ft).

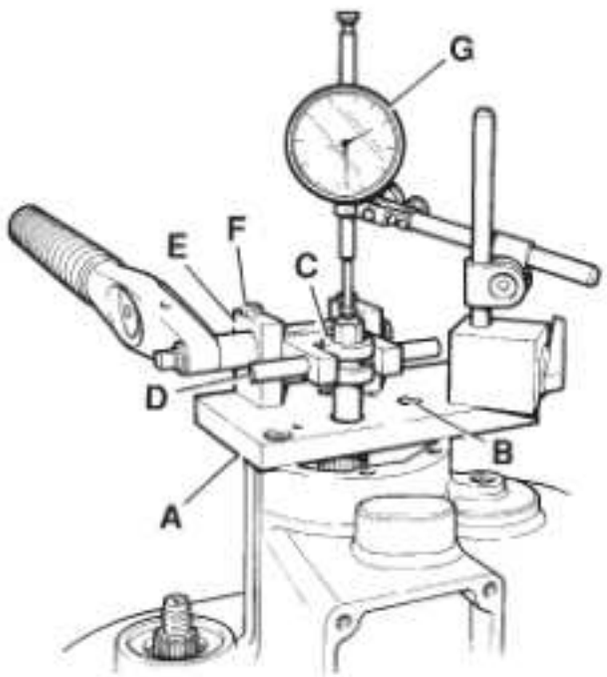
16 Pass the adaptor **C** through the large diameter hole in the base plate and screw into the end of the layshaft.

17 Fit the lever arm pegs **D** into the adaptor annular space. Position the lever unit mounting blocks **E** on the base plate and secure with bolts **F**. Tighten the bolts.

18 Fit a magnetic base dial test indicator (DTI) **G** onto the base plate with the pin resting on the top of the adaptor.

19 Measure layshaft end float as follows (refer to view **W**):

- **a** Using a torque spanner on the nut of the lever unit as shown, apply a torque of 30 Nm (22.1 lbf ft) clockwise while turning the output shaft backwards and forwards using a turning handle. Zero the DTI.
- **b** Apply a torque of 30 Nm (22.1 lbf ft) anti-clockwise while turning the output shaft backwards and forwards using a turning handle. Take the layshaft end float reading from the DTI.



W

20 Calculate the required shim thickness.

Example:

- **a** End Float Tolerance : 0.03 to 0.08 mm. (Identical clearance for all shafts.)
- **b** Measured End Float : 0.20 mm
- **c** To give an end float within the tolerance, subtract 0.05mm from dimension at para. b for the required shim thickness.
  e.g., 0.20 - 0.05 = 0.15 mm.

21 Remove the bolts **F** securing the lever unit mounting blocks **E** and remove the lever unit. Unscrew and remove the adaptor **C**.

22 Remove taper plug **67**.

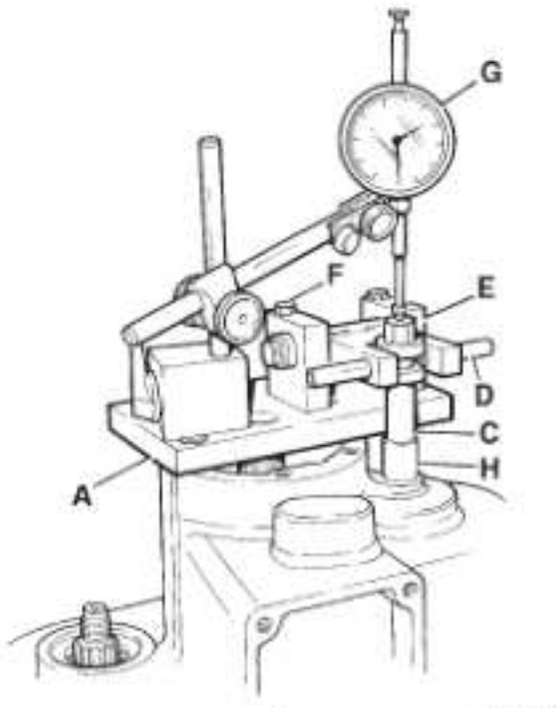
23 Fit the short extension **H** to the adaptor **C**.

24 Using a lever, put the gearbox in gear.

25 Screw the adaptor into the end of the main shaft. Fit the lever arm pegs **D** into the adaptor annular space. Position the lever unit mounting blocks **E** in the appropriate position on the base plate **A** and secure with bolts **F**. Tighten the bolts.

26 Fit a magnetic base DTI **G** onto the base plate with the pin resting on the top of the adaptor.

27 Measure main shaft end float and determine shim thickness by repeating steps 19 and 20. Refer to view **X**.



X

MidWestTech | JCB Loadall 520-50, 525-50, 525-50S Telehandler Service Manual | P... Order the manual at mid-west-tech.com >