

Document Title: <b>Description</b>	Function Group: <b>600</b>	Information Type: <b>Service Information</b>	Date: <b>2014/5/27</b>
Profile:			

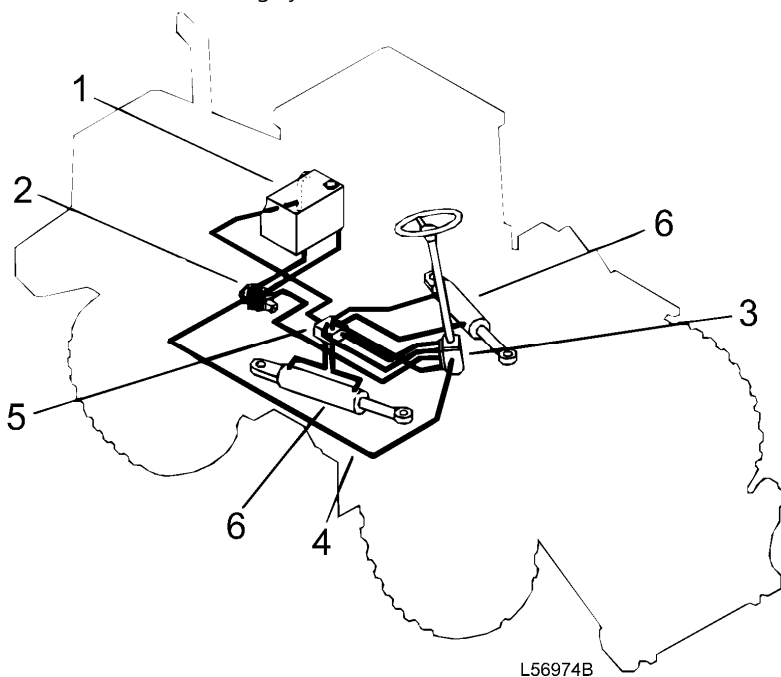
## Description

The loader is provided with hydrostatic articulated frame steering consisting of pump, steering valve (ORBITROL) and two cylinders. The L120C also has a shift valve for disconnecting the piston rod end of the cylinders, during lighter steering conditions.

The machine can be equipped with lever steering (CDC) and secondary steering.

The steering system hydraulic pump, which is driven via the right power take-off on the transmission, is a so called load-sensing axial piston pump. The pump for the brake and servo systems is mounted in tandem with the steering pump. The working hydraulics and the brake systems have the hydraulic oil tank in common.

The outlet ports on the steering valve are connected to the piston end of one of the steering cylinders and the piston rod end of the other steering cylinder.



**Figure 1**  
**Load-sensing hydrostatic steering system L90C**

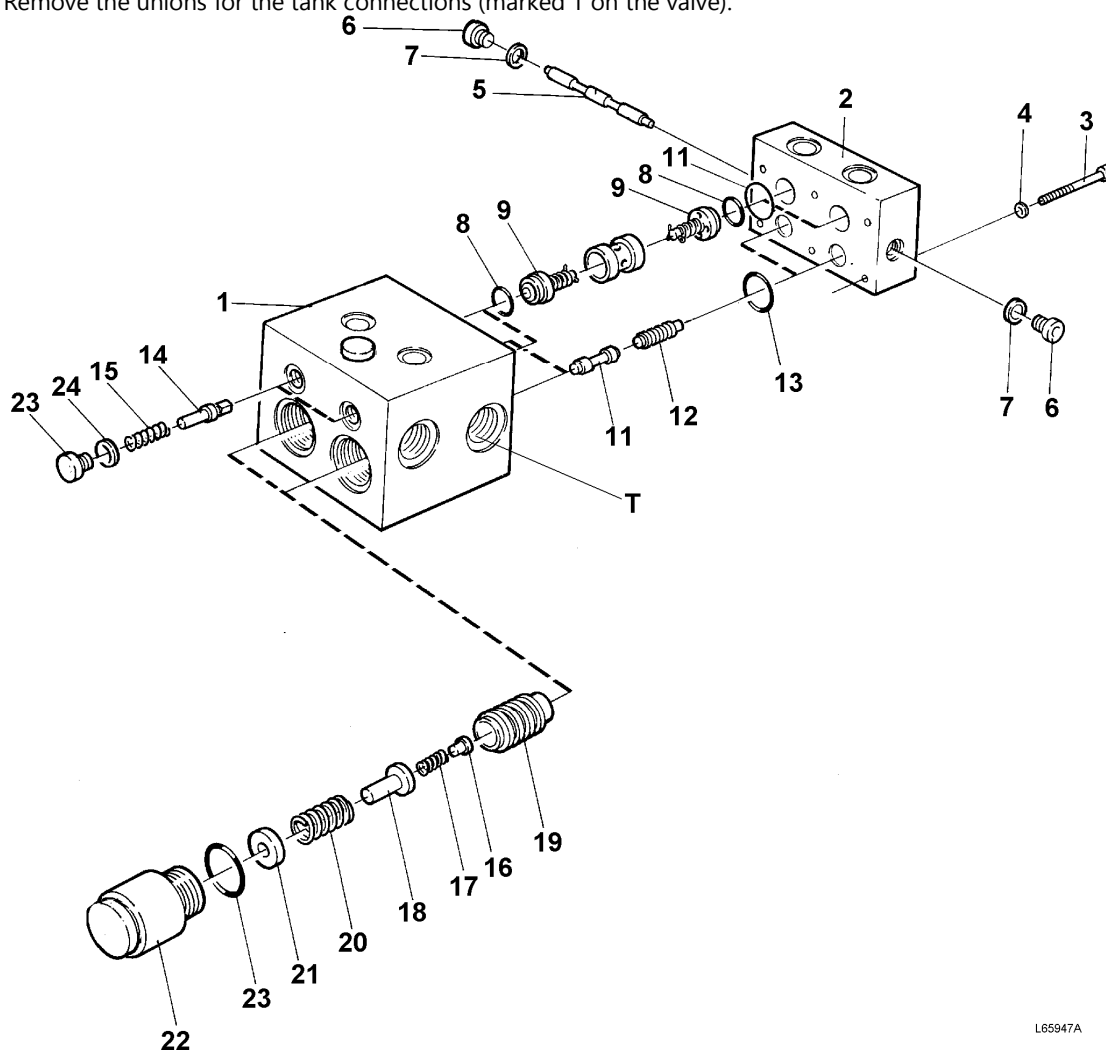
1. Hydraulic tank
2. Steering pump
3. Steering valve
4. Load-sensing (LS) line
5. Valve block with anti-cavitation valves and back-up valve for return pressure
6. Steering cylinders

Document Title: <b>Shift valve, reconditioning (removed)</b>	Function Group: <b>645</b>	Information Type: <b>Service Information</b>	Date: <b>2014/5/27</b>
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## Shift valve, reconditioning (removed)

Op nbr 64578

1. Remove the unions for the tank connections (marked T on the valve).



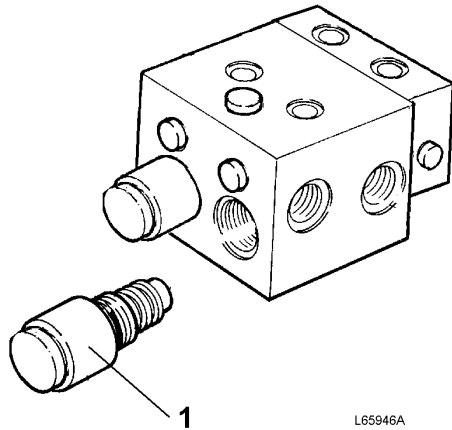
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**Figure 1**  
**Shift valve**

1	Valve housing	13	O-ring
2	End plate	14	Poppet
3	Hexagon socket head bolt	15	Spring
4	Washer	16	Non-return valve

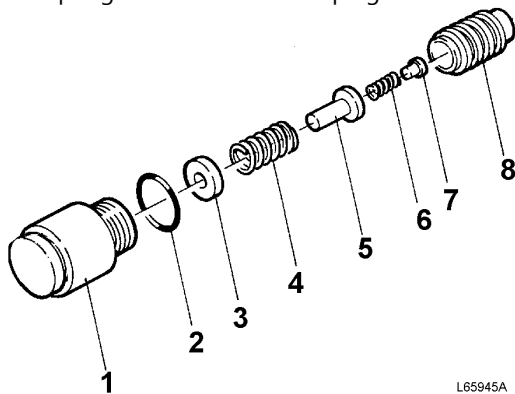
5	Shuttle valve	17	Spring
6	Plug	18	Piston
7	Gasket	19	Piston
8	O-ring	20	Spring
9	Anti-cavitation valve	21	Shims
10	O-ring	22	Housing
11	Control spool	23	Plug
12	Piston	24	Gasket
T	Tank connection		

2. Remove the damping valves together with housing.



**Figure 2**

1. Damping valve with housing
3. Dismantle the damping valves. Clean and check the parts as regards wear and damage. Replace the O-rings and the springs. Assemble the damping valves.

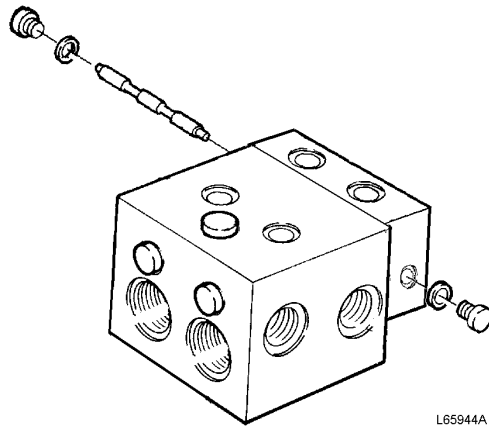


**Figure 3**

1. Housing
2. O-ring
3. Shims
4. Spring
5. Piston
6. Spring
7. Non-return valve
8. Piston

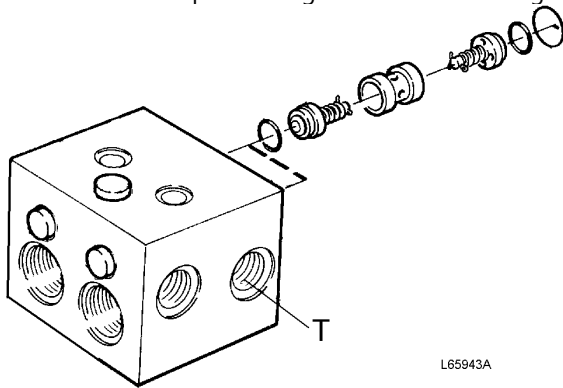
4. Remove the plugs and push out the shuttle valve. Clean and check the parts as regards wear and damage. Install

the shuttle valve, the washers and the plugs.



**Figure 4**  
**Shuttle valve**

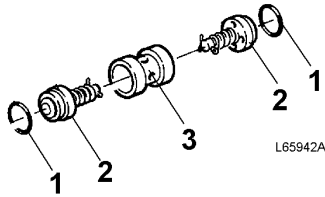
5. Remove the six hexagon socket head bolts and remove the end plate.
6. Use a bent screwdriver or a hexagon key in the tank connection in order to press out the anti-cavitation valves. Clean and check the parts as regards wear and damage.



**Figure 5**

T Tank connection

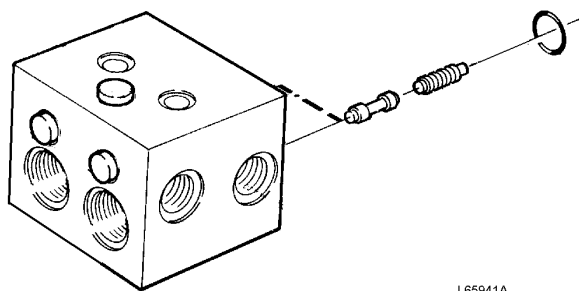
7. Replace the anti-cavitation valves and the O-rings. Install the new valves, the spacers and the new O-rings.



**Figure 6**

1. O-ring
2. Anti-cavitation valve
3. Spacer

8. Press out the control spools and the pistons from the housing (apply the pressure through the connections for the damping valves). Clean and check the parts as regards wear and damage. Replace the O-rings. Install the spools, the pistons and the new O-rings.

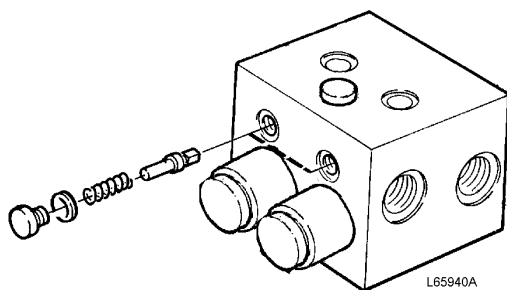


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**Figure 7**

T Tank connection

9. Re-install the damping valves together with housings.
10. Remove the plugs and push out the non-return valves (from the end plate side). Clean and check the parts as regards wear and damage. Replace the springs and install the non-return valves, the new springs and the plugs.



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**Figure 8**

11. Install the end plate and tighten it down with the six hexagon socket head bolts.
12. Install the unions for the tank connections.

Document Title: <b>Specifications, general</b>	Function Group: <b>645</b>	Information Type: <b>Service Information</b>	Date: <b>2014/5/27</b>
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## Specifications, general

<b>Oil pump</b>	
Type	Axial piston pump, variable displacement
Designation	PVE21LTA - 2 - 30 - CVP - 12 - 214 - 882922
Flow at 35.0 r/s, (2100 rpm) and 10 MPa (100 bar) (1450 psi) pressure	91 litres (24 US gal) per minute
Working pressure, high idling speed	21 ±0.35 MPa (210 ±3.5 bar) (3046 ±51 psi)
Stand-by pressure, low idling speed	3.0 ±0.3 MPa (30 ±3 bar) (435 ±44 psi)

<b>Steering valve</b>	
Type	Closed centre
Designation	OSPL 630 LS

<b>Valve block</b>	
Designation	OVPL 28

<b>Shock valves</b>	
Number of valves	Two
Opening pressure at 10 dm <sup>3</sup> (litres) (2.6 US gal) per minute	28 MPa (280 bar) (4061 psi)

<b>Steering cylinder</b>	
Type	Double-acting
Piston rod diameter	50 mm (1.969 in)
Inside diameter / stroke	80/476 mm (3.15/18.74 in)

Document Title: <b>Stand-by pressure and working pressure, checking and adjusting</b>	Function Group: <b>645</b>	Information Type: <b>Service Information</b>	Date: <b>2014/5/27</b>
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## Stand-by pressure and working pressure, checking and adjusting

Op nbr 6451564528

11 666 019 Pressure gauge 0–6 MPa (0–870 psi)

11 666 020 Pressure gauge 0–25 MPa (0–3626 psi)

11 666 035 Hose

### The following applies when checking:

Temperature: **Normal operating temperature**

### Stand-by pressure (Op. No. 64515)



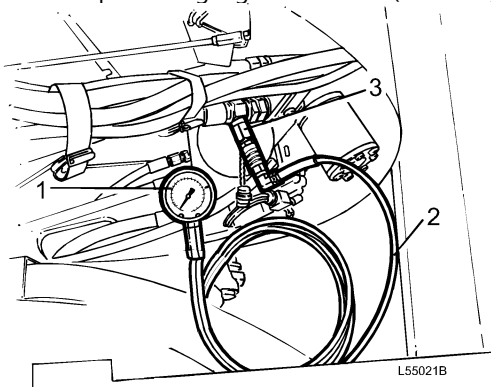
Under no circumstances must the steering wheel be touched while checking the stand-by pressure. The slightest deviation from neutral position will cause the pressure to rise and this may lead to damage to the pressure gauge.

1. Lock the frame joint lock.



**Figure 1**

2. Connect pressure gauge 11 666 019 (0–6 MPa) (0–870 psi) to the pressure outlet on the steering valve.

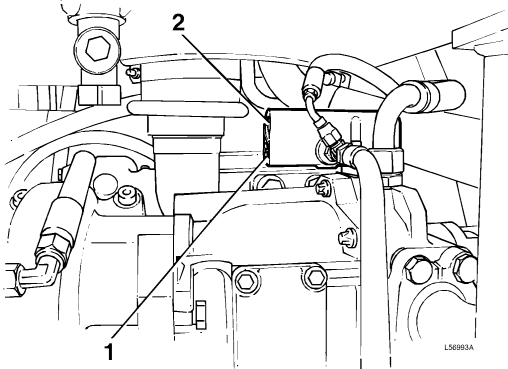


**Figure 2**  
**Checking stand-by pressure**

1. 11 666 019 (0–6 MPa) (0–870 psi)
  2. 11 666 035
  3. Pressure outlet
3. Start the engine and run it at low idling.
4. Check the stand-by pressure with the steering in neutral position (steering not actuated).  
Stand-by pressure: **3.0 ±0.3 MPa (435 ±44 psi)**

## Adjusting

5. Any adjustment is carried out through the right cover behind the cab on the steering pump flow compensator. Remove the plug (hex socket 3/16") over the adjusting screw and adjust the pressure (hex socket 1/4"). Lock the plug with paint after adjusting.

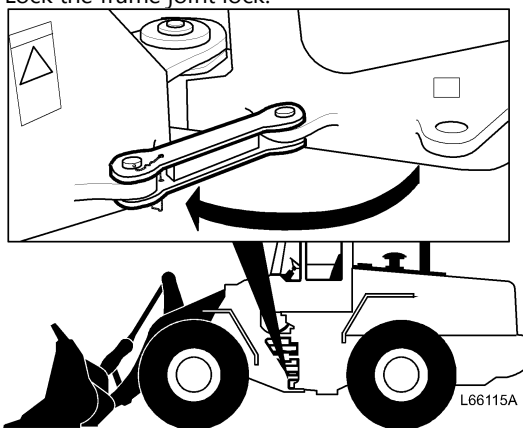


**Figure 3**  
**Adjusting stand-by pressure**

1. Stand-by pressure (lower adjusting position)

## Working pressure (Op. No. 64528)

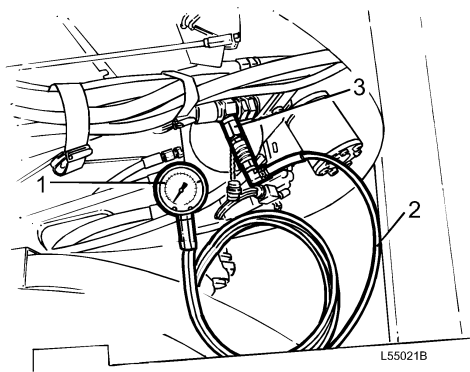
6. Lock the frame joint lock.



**Figure 4**

7. Connect pressure gauge 11 666 020 (0–25 MPa) (0–3626 psi) to the pressure outlet on the steering valve. Start the engine and run it at high idling.



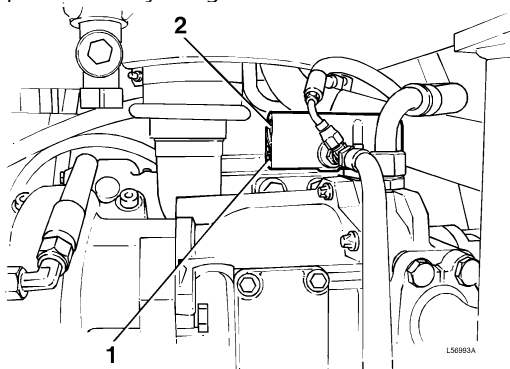


**Figure 5**  
**Checking working pressure**

1. 11 666 020 (0–25 MPa) (0–3626 psi)
  2. 11 666 035
  3. Pressure outlet
8. Steer against full lock position and check the working pressure.  
Working pressure: **21 ±0.35 MPa (3046 ±51 psi)**

## Adjusting

9. Any adjustment is carried out with the screw on the steering pump pressure compensator. Lock the screw with paint after adjusting.



**Figure 6**  
**Adjusting working pressure**

2	Working pressure (upper adjusting position)
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