WEBM007500

SHOP MANUAL

WB97S-5

BACKHOE-LOADER

SERIAL NUMBER

WB97S-5 F00003 and up

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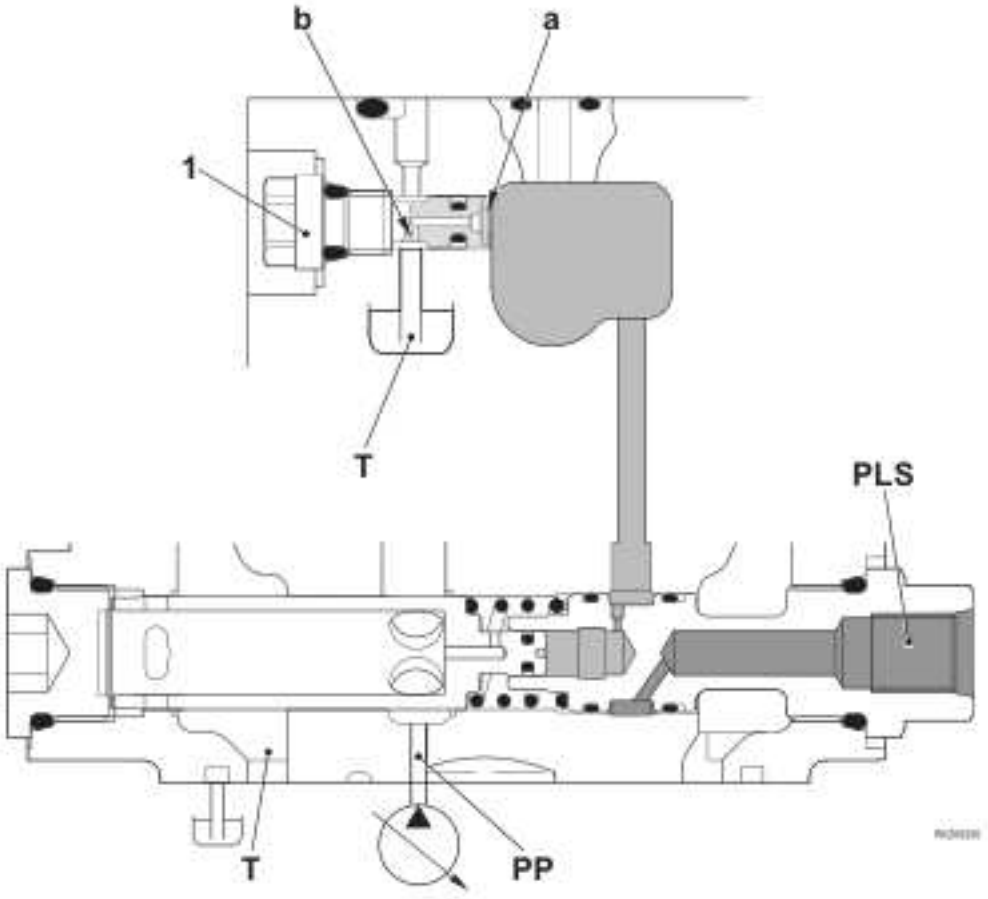
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3.4 LS BY-PASS PLUG

Description

- The **LS** by-pass plug unloads residual pressure from the Load Sensing's **PLS** circuit.
- This makes the increment rate of Load Sensing's **PLS** pressure smoother.
  Moreover, by eliminating oil (through the bottleneck), a loss of pressure is generated in the flow that is controlled by the spool, and stability is increased as a result, thereby reducing the actual differential pressure **LS**.



Functioning

- Pressurised oil in the Load Sensing **PLS** circuit flows through filter **a**, through orifice **b** and into the tank circuit **T**.

PP = Pump circuit
PLS = Load Sensing circuit
T = Drain circuit

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★ The technical data of follow table are referred to a machine with max. 500 kg shovel, 600 mm (max. 160 kg) backhoe bucket and standard arm (or jig arm) closed.

Machine model					WB97S-5	
Classification	Check item		Test conditions	Unit	Standard value	Normal value
Hydraulic drift working equipment	Shovel	Complete working equipment (Shovel teeth tip lower)	Measuring posture: see Fig. C • In this position check in feedback of each cylinder and the leakage with applied load on the tip of shovel teeth. • On level ground. • Shovel: load 1800 Kg 4 in 1 bucket: load 1550 kg • Engine stopped • Oil temperature: 45–55 °C • Check measures as soon as engine stops. • Check changes every 5 min. and the total change in 15 min.	mm	150	300
		Raise cylinder (Cylinder in)			12	20
		Shovel cylinder (Cylinder out)			35	50
	Backhoe	Complete working equipment (Bucket teeth tip lower)	Measuring posture: see Fig. D • In this position check the extension of each cylinder and the leakage with normal load on the bucket. • On level ground. • Bucket: load with standard arm: 340 kg Bucket load with jig arm: 0 kg Fully extend jig arm • Engine stopped • Oil temperature: 45–55 °C • Check measures as soon as engine stops. • Check changes every 5 min. and the total change in 15 min.	mm	200	350
		Boom cylinders (Cylinder out)			10	20
		Arm cylinders (Cylinder out)			10	20
		Bucket cylinder (Cylinder in)			8	15

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Oil leakage form gaskets and seals	
CAUSES	**REMEDY**
Prolonged functioning at high temperature of the oil	Replace the gasket or seal and matching surface if damaged. Use correct lubrication, fill up to the right level and substitute at recommended intervals
Oil gasket assembled incorrectly	
Seal lip damaged	
Contaminated oil	

Excessive wearing out of input flange spline	
CAUSES	**REMEDY**
Excessive use axial pinion	Replace the flange. Check that the pinion spline is not excessively worn out. Replace bevel gear set if required.
Pinion nut loosened	
Pinion axle backlash	

Fatigue failure of pinion teeth	
CAUSES	**REMEDY**
Excessive use axial pinion	Replace bevel gear set
Continuous overload	

Pinion and ring teeth breakage	
CAUSES	**REMEDY**
Crash load of differential components	Check and/or replace other differential components

Side gear spline worn out	
CAUSES	**REMEDY**
Excessive use axial pinion	Replace differential gear group. Replace halfshaft if required

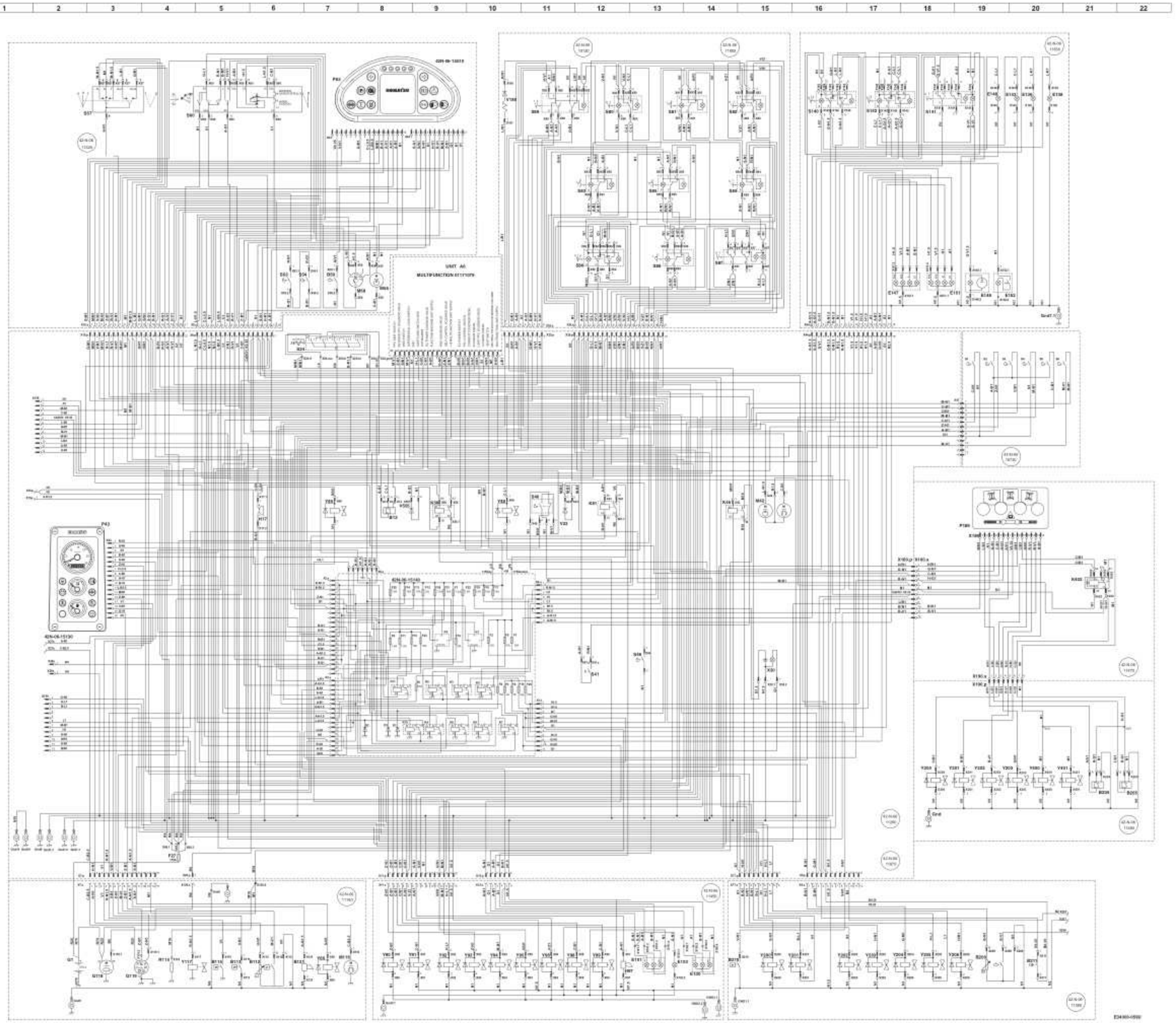
Thrust washer surface worn out or scratched	
CAUSES	**REMEDY**
Insufficient lubrication; contaminated oil; incorrect lubrication	Replace all scratched washers and those with 0.1mm thickness lower than the new ones. Use correct lubrication, fill up to the right level and substitute at recommended intervals

Inner diameter of tapered roller bearing worn out	
CAUSES	**REMEDY**
Excessive use axial pinion	Replace bearing. Check pinion axial backlash. Use correct lubrication, fill up to the right level and substitute at recommended intervals
Excessive pinion axial backlash	
Insufficient lubrication; contaminated oil	

Bent or broken halfshaft or halfshaft broken at wheel side	
CAUSES	**REMEDY**
Vehicle intensively operated or overloaded	Replace the axle shaft Check beam body distortion. Check wheel bearing and replace if necessary.
Wheel support loosened	
Beam body bent	

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ELECTRICAL DIAGRAM (STANDARD VERSION)



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