SPECIFICATIONS TABLES

Operating mass	Cab	kg	3410
	Canopy	kg	3315
Engine output		kW	17.5
		min^{-1}	2400
Bucket capacity	Heaped capacity	m^3	0.068
	Struck capacity	m^3	0.051

Performance

Standard loading mass		kg	123
Slew speed		min^{-1}	10
Travel speed	1st	km/h	2.3
	2nd	km/h	4.3
Maximum tractive force		kN	33.9
Gradeability		%	58
		Degree	30
Ground Pressure	Cab	kPa	32.9
	Canopy	kPa	31.8
Noise Level	Sound-power level	dB(A)	LWA 94
	Sound-pressure level	dB(A)	LPA 79

Machine dimensions

Overall length in transport condition		mm	4275
Overall width		mm	1560
Overall width	Track retracted	mm	—
Overall working equipment height in transept position	Cab	mm	2530
	Canopy	mm	2545

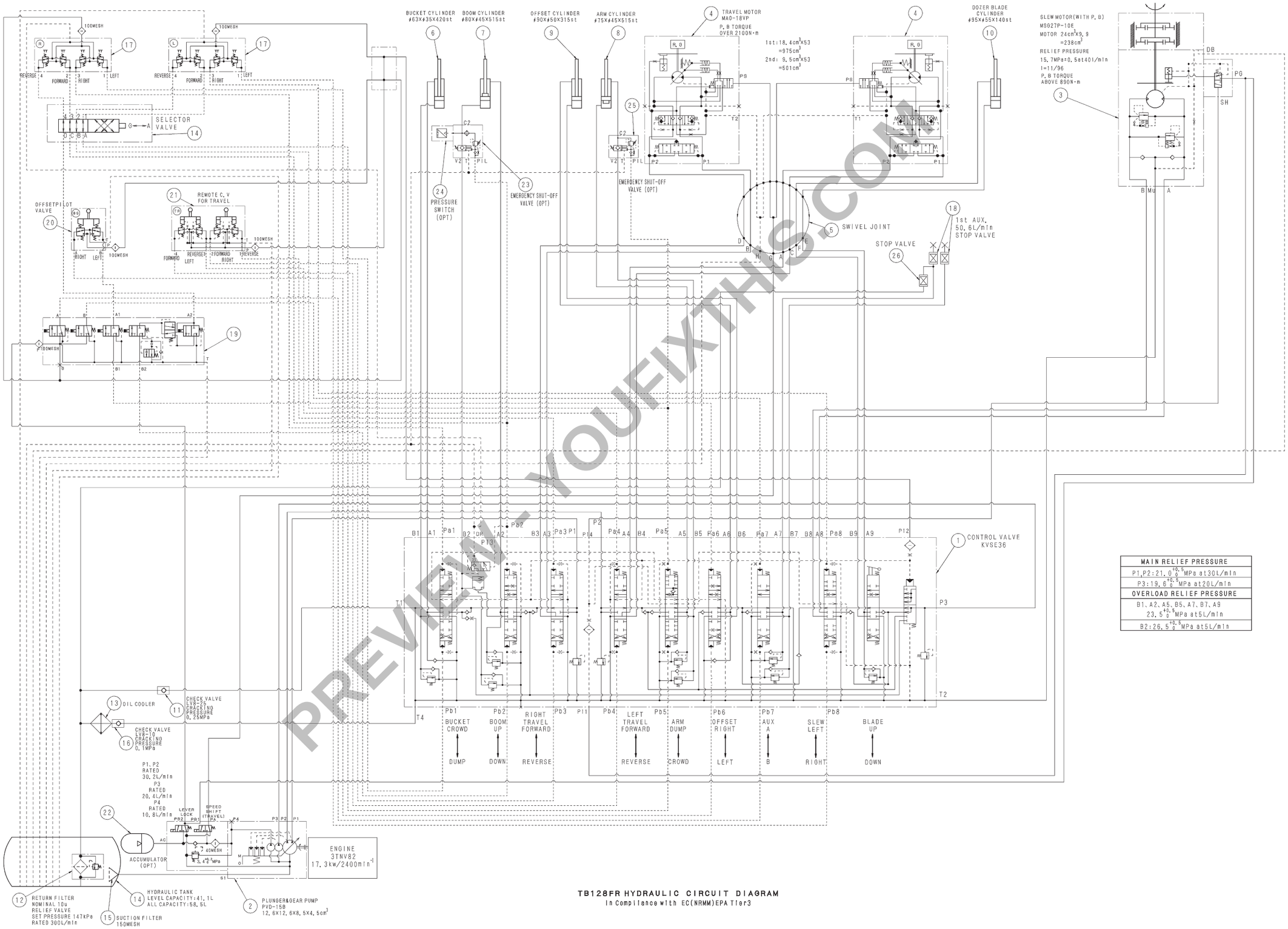
Dimensions of base machine

Overall length of base machine		mm	1380
Overall width of base machine		mm	1560
Overall width of base machine	Track retracted	mm	—
Upper structure overall width		mm	1505
Upper structure overall width	Left	mm	780
	Right	mm	725
Cab overall length		mm	990
Overall height of base machine	Cab	mm	2530
	Canopy	mm	2545
Slew radius		mm	865
Upper structure rearmost distance from axis of rotation		mm	845
Clearance height under upper structure		mm	600
Crawler base		mm	1545
Crawler overall length		mm	2000
Undercarriage overall width		mm	1560
Undercarriage overall width	Track retracted	mm	—
Track gauge		mm	1260
Track gauge	Track retracted	mm	—
Track shoe width		mm	300
Ground clearance of undercarriage		mm	300

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HYDRAULIC CIRCUIT DIAGRAM



MAIN RELIEF PRESSURE
P1,P2:21.0 $^{+0.5}_{0}$ MPa at30L/min
P3:19.6 $^{+0.5}_{0}$ MPa at20L/min
OVERLOAD RELIEF PRESSURE
B1、A2、A5、B5、A7、B7、A9 23.5 $^{+0.5}_{0}$ MPa at5L/min
B2:26.5 $^{+0.5}_{0}$ MPa at5L/min

TB128FR HYDRAULIC CIRCUIT DIAGRAM
In Compliance with EC(NRMM)EPA Tier3

2FAJ001Z

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OVERALL MACHINE

No operation is possible.

1	Check the hydraulic oil level	Insufficient	Add hydraulic oil.
		Sufficient ↓	
2	Check the hydraulic pump	Faulty	• Repair or replace the hydraulic pump. • Replace the coupling.

1. Check the hydraulic oil level.

Check the hydraulic oil tank level.

☞ "4. Disassembly and assembly, Hydraulic oil tank"

When adding, use the same brand of oil currently being used.

☞ "2. Service data, Fuel and lubricant table"

2. Check the hydraulic pump.

- Check the discharge pressure of the pumps P1 and P2 (piston pumps).

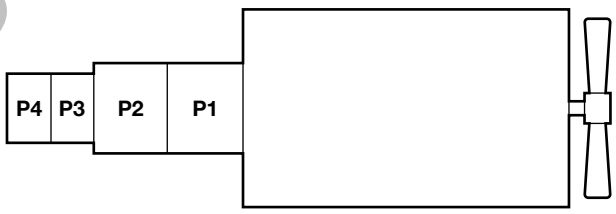
☞ "2. Service data, Performance criteria"

☞ "5. Troubleshooting, Piston pump"

- Check the pumps P3 and P4 (gear pumps).

☞ "2. Service data, Performance criteria"

☞ "5. Troubleshooting, Piston pump"



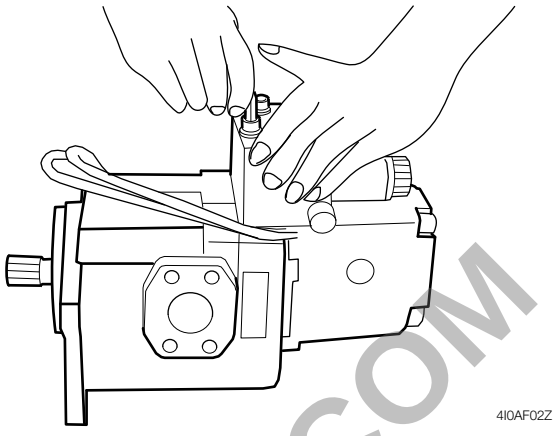
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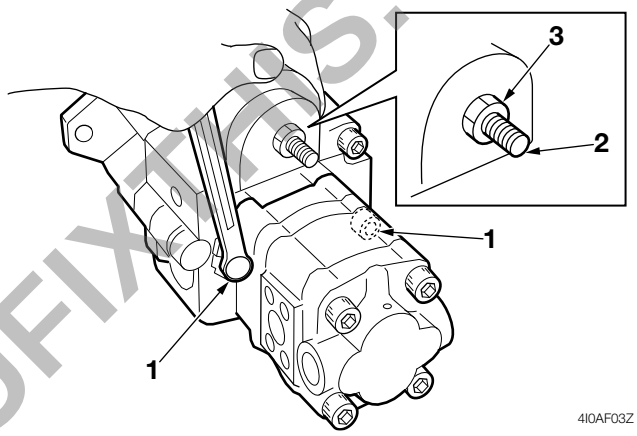
Disassembly

1. Take out the three cap screws and remove the solenoid valve.

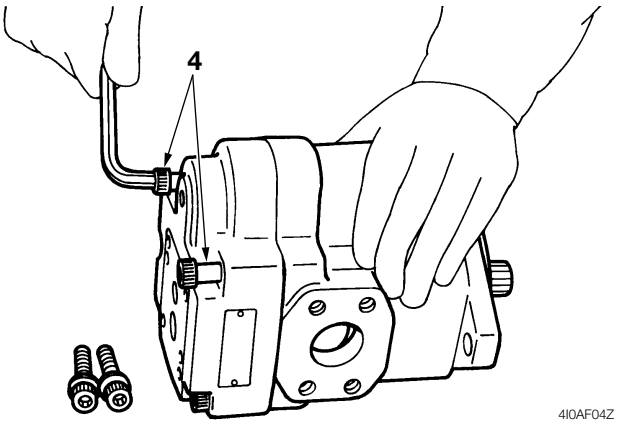


2. Take out the two cap screws (1) and remove the gear pump.

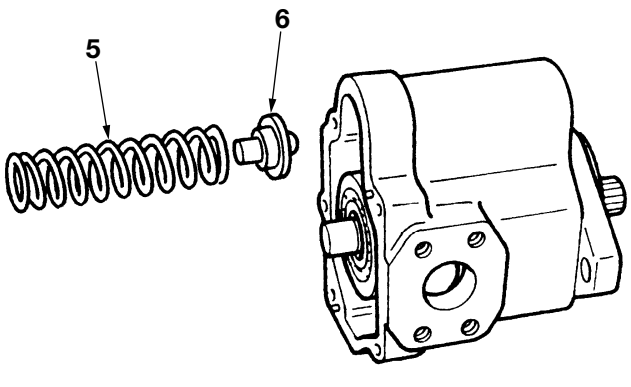
3. Loosen the lock nut (3) and remove the setscrew (2).
   - Note down the free length of the setscrew before disassembling.



4. Disassemble the body S and the body H.
   a. Of the five cap screws (4), remove the two upper ones, and then temporarilyreplace them with the two bolts (M10 x 65). Turn these bolts approx. 10 mm.
   b. Gently loosen the remaining three cap screws (4).
   c. Loosen the two temporary bolts (M10 x 65) and separate the assembly into the body S and the body H.
      - Lightly tap the slot where the spring of body H is inserted with a plastic hammer.



5. Remove the spring (5) and the spring holder (6) of the body H from the body S.



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SAFETY ALERT SYMBOL



This symbol represents the safety alert. The message that follows the symbol contains important information regarding human safety.
Read and understand the message to avoid personal injury or death.

Safety label

Safety labels are used to alert operators or other people exposed to the risks of injury or damage. There are the following three types of labels.
Read the labels carefully as they are important for your safety.

⚠ DANGER

The word "DANGER" indicates an imminently hazardous situation which, if not avoided, is likely to result in serious injury or death.

⚠ WARNING

The word "WARNING" indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

⚠ CAUTION

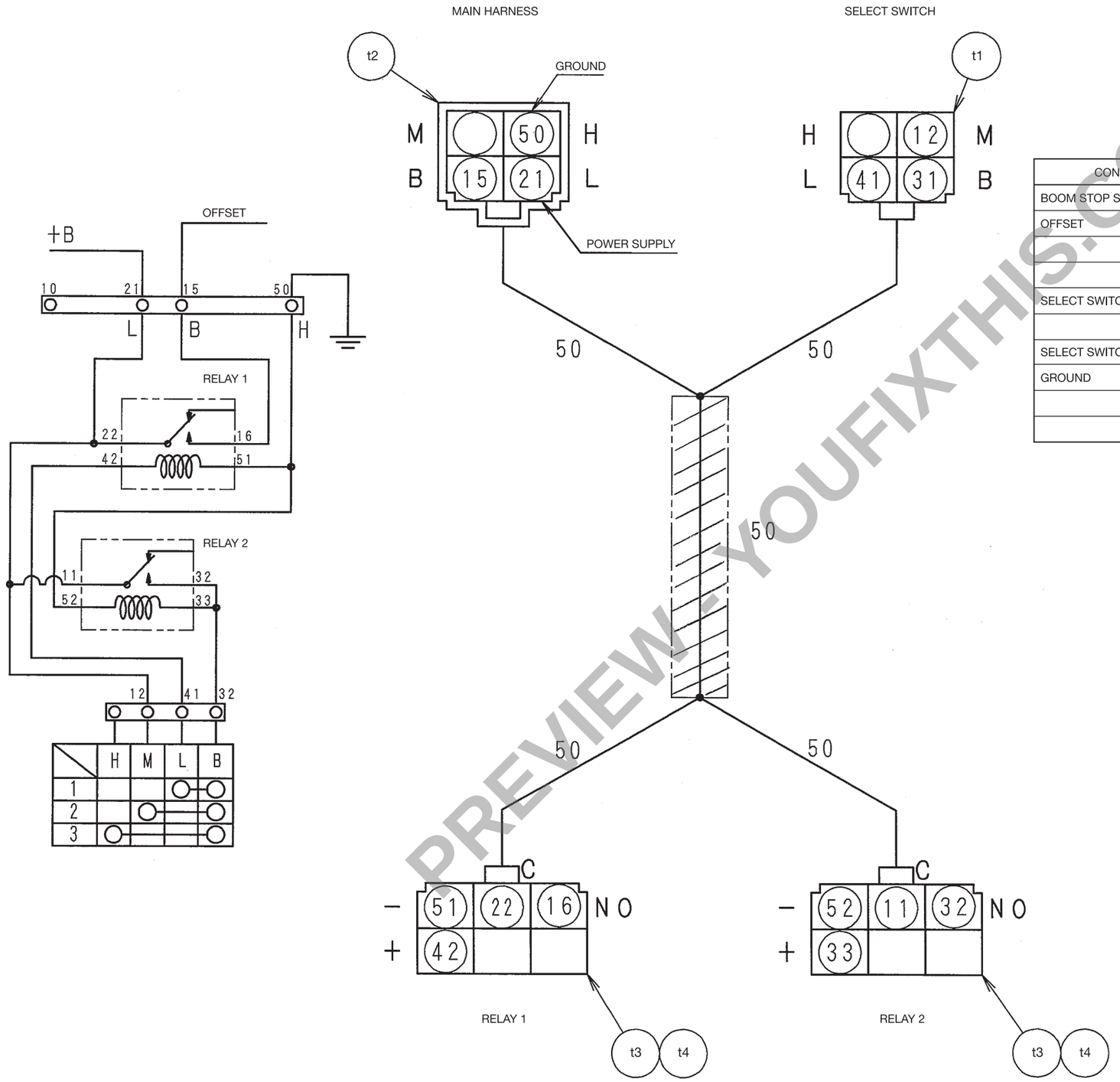
The word "CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

IMPORTANT: The word "IMPORTANT" is used to alert operators and maintenance personnel about situations which could result in damage to the machine and its components.

This manual is intended for trained and qualified personnel only. Warnings or cautions described in this manual do not necessarily cover all safety measures. It is also impossible to cover all hazards and risks which may be associated with the maintenance of the machine in every environment. For maintenance work, each person must take adequate safety precautions against possible hazards in the respective working environment.

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CONNECTIONS	TABLE OF CONNECTIONS		CONNECTIONS	SIZE	WIRE COLOR	LENGTH
BOOM STOP SOLENOID	15	16	RELAY1 NO	1.25	RW	150
OFFSET	21	22	RELAY 1C	1.25	R	150
		11	POWER SUPPLY	1.25	RG	50
		12	POWER SUPPLY	1.25	RG	100
SELECT SWITCH B	31	32	RELAY 2 NO	1.25	Y	150
		33	RELAY 2 COIL +	1.25	Y	75
SELECT SWITCH L	41	42	RELAY 1COIL +	0.85	L	150
GROUND	50	51	RELAY 1 COIL -	0.85	B	150
		52	RELAY 2 COIL -	0.85	B	75

t4	AMP 170031-1	TERMINAL F
t3	SUMITOMO 6020-6161	6P CONNECTOR F
t2	YAZAKI 7322-2446	4P CONNECTOR M
t1	YAZAKI 7323-2446	4P CONNECTOR F
NO.	STANDARD	NAME

Drawing No.	1/1
03542-21600	

2HAJ006Z

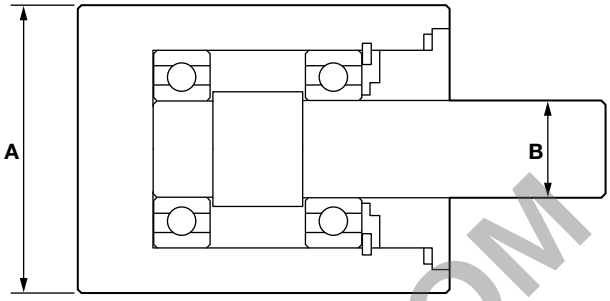
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SERVICE STANDARDS

Carrier roller

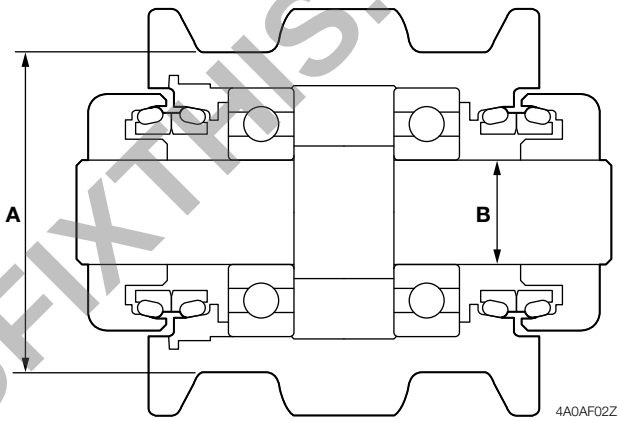
Code	Criteria (mm)	
	Standard dimension	Allowable value
A	76.3	72.3
B	25	—



4A0AF01Z

Track roller

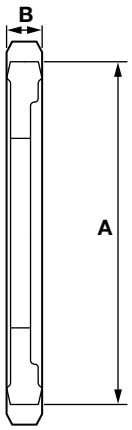
Code	Criteria (mm)	
	Standard dimension	Allowable value
A	93	87
B	30	—



4A0AF02Z

Drive sproket

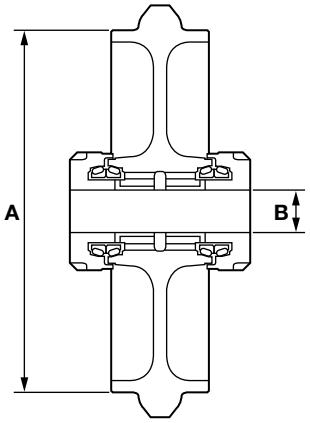
Code	Criteria (mm)	
	Standard dimension	Allowable value
A	344.2	336.2
B	36	28



4A0AF03Z

Idler

Code	Criteria (mm)	
	Standard dimension	Allowable value
A	306	302
B	40	—



4A0AF04Z

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Inspecting the hydraulic oil tank level and refilling

⚠ WARNING

Oil may spurt out if caps or filters are removed or pipes are disconnected before releasing the pressure in the hydraulic system.

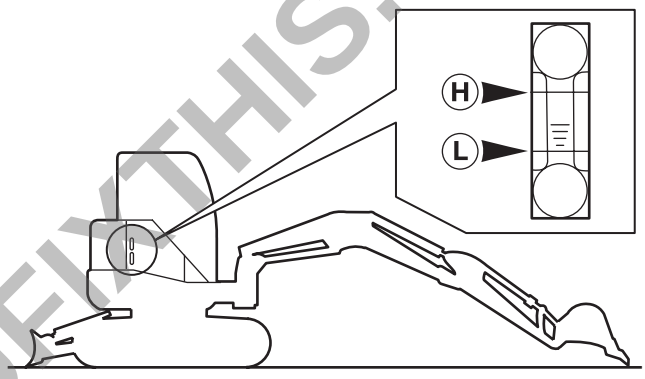
- **Slowly loosen the vent plug (1) to relieve the internal pressure of the hydraulic oil tank.**

Inspection

The oil level changes with the oil temperature. Inspect the oil level while keeping the machine posture as shown in the figure.

Machine setup for inspecting the hydraulic oil level

1. Start the engine and run it at low speed.
2. Offset the boom all the way to the left.
3. Fully retract the arm cylinder and bucket cylinder and lower the bucket to the ground.
4. Stop the engine.
5. Inspect the oil level using the sight gauge.
   At an oil temperature of about 20°C, the level in the tank should be halfway between the upper limit (H) and the lower limit (L). If it is below the lower limit (L), refill.
   At an oil temperature of about 50 to 80°C, the level should be near the upper limit (H).



4H0AJ02Z

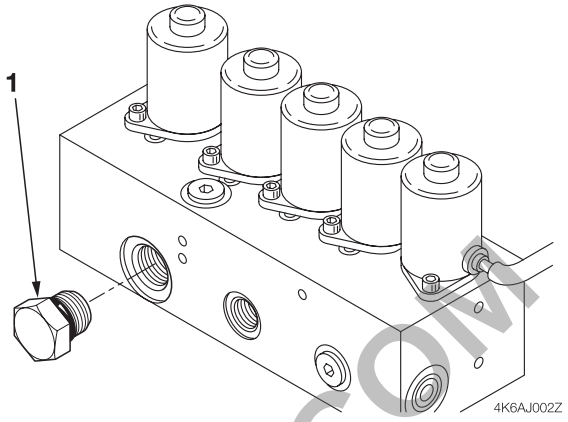
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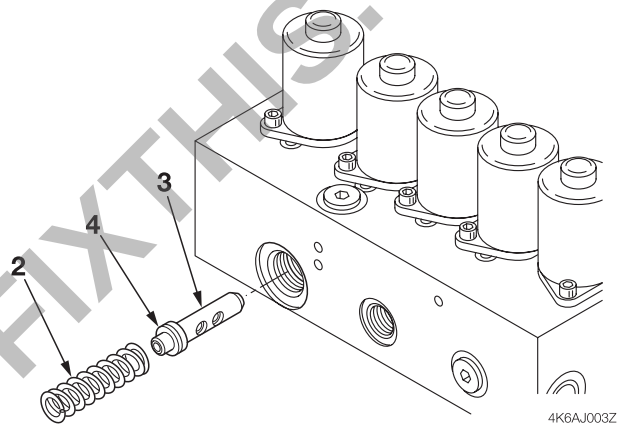
Disassembly

Pressure reducing valve

1. Remove the plug (1) from the body.
   Plug: 49 N·m
2. Remove the O-ring from the plug (1).

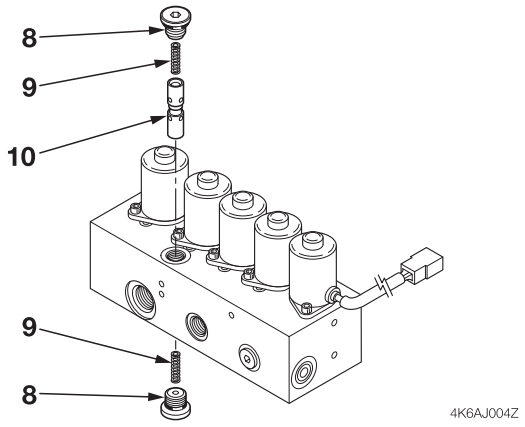


3. Remove the spring (2) and the plunger (3).
   - Do not damage or lose the shim (4) for adjusting pressure.



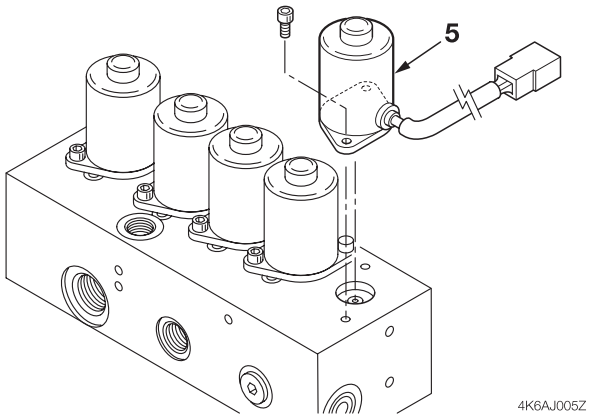
Flow control valve

1. Remove the plugs (8) from the body.
2. Remove the O-ring from the plug (8).
3. Remove the spring (9) and the plunger (10).



Solenoid

1. Take out the cap screws and remove the solenoid coil (5).
   - Place alignment marks on the solenoid and the body so that they can be installed in the original positions when assembling.
   - Take care not to let the push rod drop out.
   Cap screw: 3.92 N·m
2. Remove the O-ring from the solenoid (5).



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Inspection and adjustment

Use limit for parts

Part	Area checked	Criteria	Action
Floating seal	Sliding surface	Abnormal scratches, wear or scorching on the surface	Replace
Angular bearing	Rolling surface	Abnormal scratches, wear or flaking on the ball or race.	Replace
Planetary gear	Gear tooth surface	Abnormal scratches, wear or flaking of the tooth surface (if pitting covers 10% or more of the area engaging with the tooth surface).	Replace
Inner race	Rolling surface	Abnormal scratches, wear or flaking on the rolling surface	Replace
Needle	Needle surface	Abnormal scratches, wear or flaking on the surface	Replace
Thrust washer	Sliding surface	Abnormal scratches, wear or scorching on the surface	Replace
Housing, sun gear, drive gear	Gear tooth surface	Abnormal scratches, wear or flaking of the tooth surfaces (if pitting covers 10% or more of the area engaging with the tooth surface).	Replace
Thrust plate	Sliding surfaces	Abnormal scratches, wear or scorching on the surface	Replace
O-ring	—	—	Replace
Shaft	Oil seal surface	Abnormal scratches, wear or scorching on the surface	Replace
Ball bearing	Sliding surfaces	Abnormal scratches or flaking on the ball or race.	Replace
Oil seal	—	—	Replace
Swash plate	Sliding surface with the piston assembly	Abnormal scratches (0.02 mm or more), wear or scorching on the surfaces	Replace
Cylinder block	Cylinder block-to-piston assembly clearance	0.04 mm or more	Replace
	Sliding surface with the valve plate	Abnormal scratches (0.02 mm or more), wear or scorching on the surfaces	Repair by lapping (#1000) or replace
Piston assembly	Piston assembly-to-cylinder block clearance	0.04 mm or more	Repair by lapping (#1000) or replace both cylinder block and piston assembly.
	Sliding surface with the swash plate	Abnormal scratches (0.02 mm or more), wear or scorching on the surfaces	
	Play of piston shoe	0.04 mm or more	
Valve plate	Sliding surface with the cylinder block	Abnormal scratches (0.02 mm or more), wear or scorching on the surfaces	

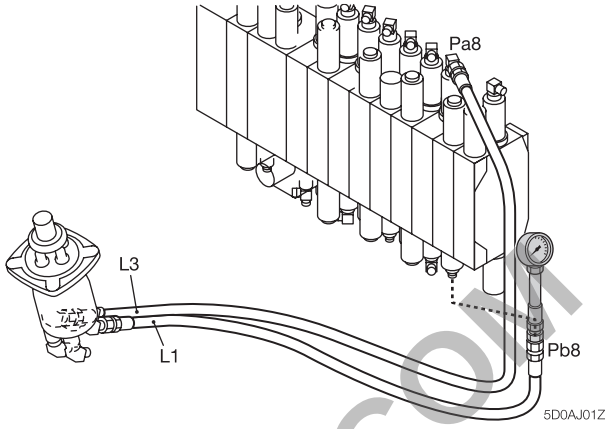
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2. Check the pilot valve

Disconnect the hose connecting the pilot valve and the control valve (slew block) from the control valve. Fit the pressure gauge to the hose just disconnected.

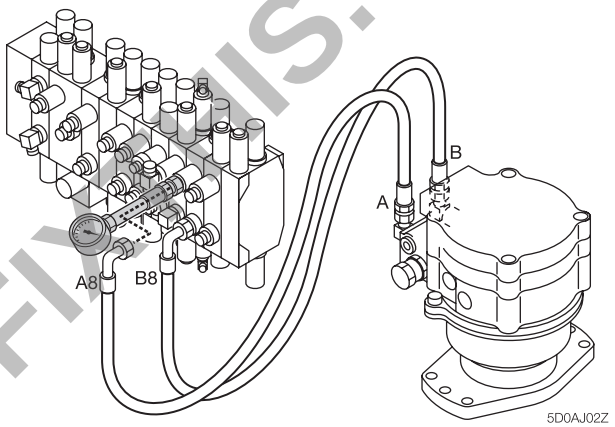
- Insert a plug into the control valve port.
- Operate the lever (slew) and measure the pressure.
- If the pressure is between 0 and 3.4 MPa depending on the lever angle, the pilot valve is normal.



3. Check the spool operation

Disconnect the hose connecting the control valve (slew block) and the slew motor from the control valve. Fit the pressure gauge to the discharge port on the control valve.

- Operate the lever (slew) and measure the pressure.
- If the measured value is as below, the spool is normal.
  Supply pressure: 19.6 MPa



4. Check the slew pressure

Measure the pressure at the right and left slew relief valves.

- If the measured value is within specifications, the slew pressure is normal.

☞ "2. Service data, Performance criteria"

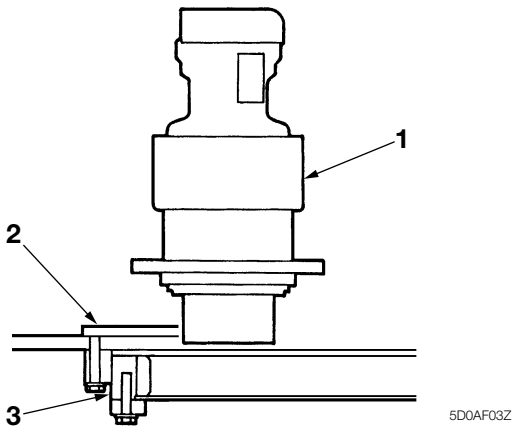
If the pressure adjustment is possible, the adjustment of the slew relief valve is faulty. If the pressure adjustment is not possible, the slew relief valve is faulty.

5. Check the slew motor

Separate the slew motor (1) from the turntable (2), and then try turning the turntable (2).

- Does not turn..... The slew bearing (3) is faulty.
- Turns ..... The slew motor (1) is faulty.

☞ "4. Disassembly and assembly, Travel motor"



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