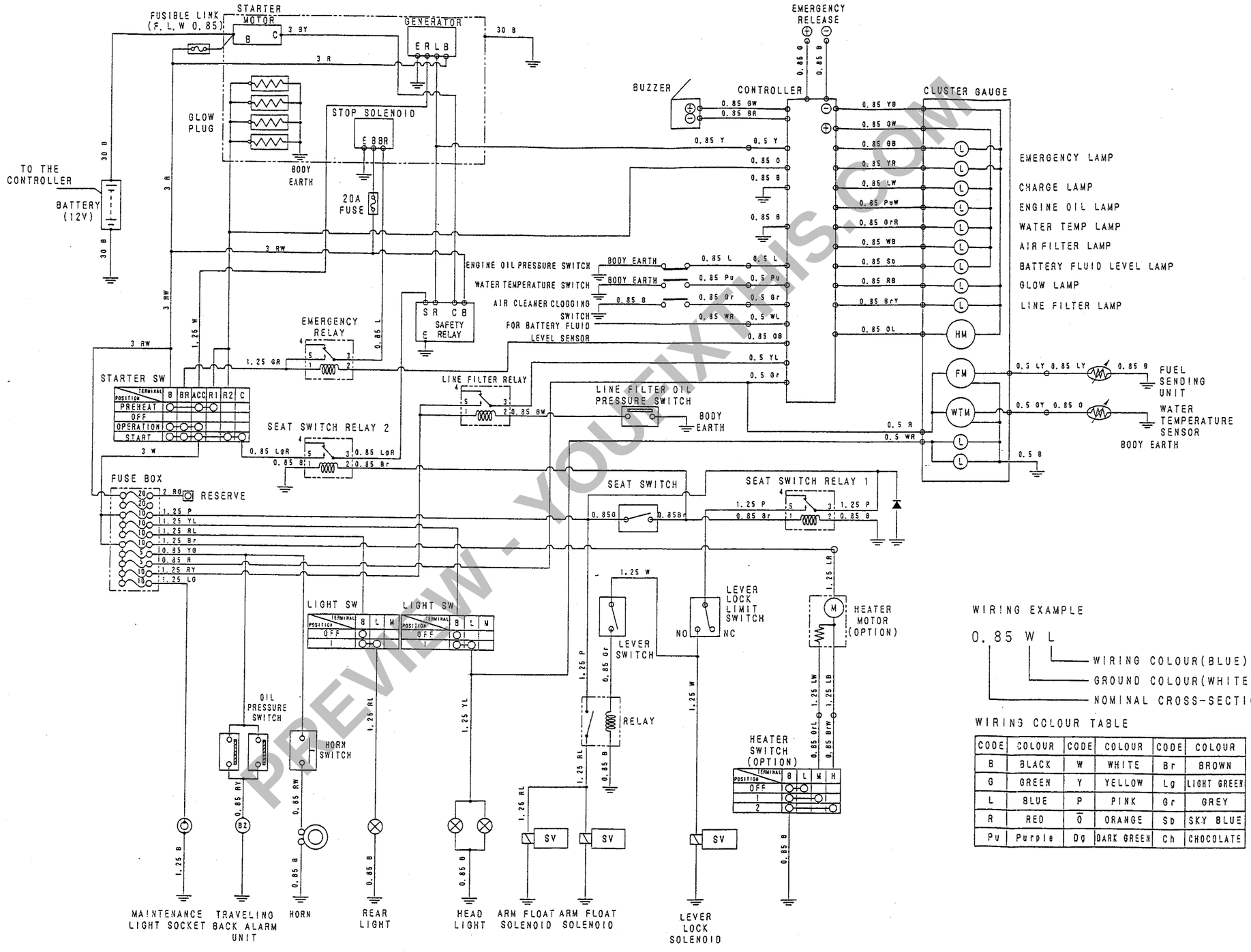
ELECTRICAL SYSTEM

ELECTRICAL WIRING DIAGRAM



WIRING EXAMPLE

0.85 W L

- WIRING COLOUR(BLUE)
- GROUND COLOUR(WHITE)
- NOMINAL CROSS-SECTIONAL AREA

WIRING COLOUR TABLE

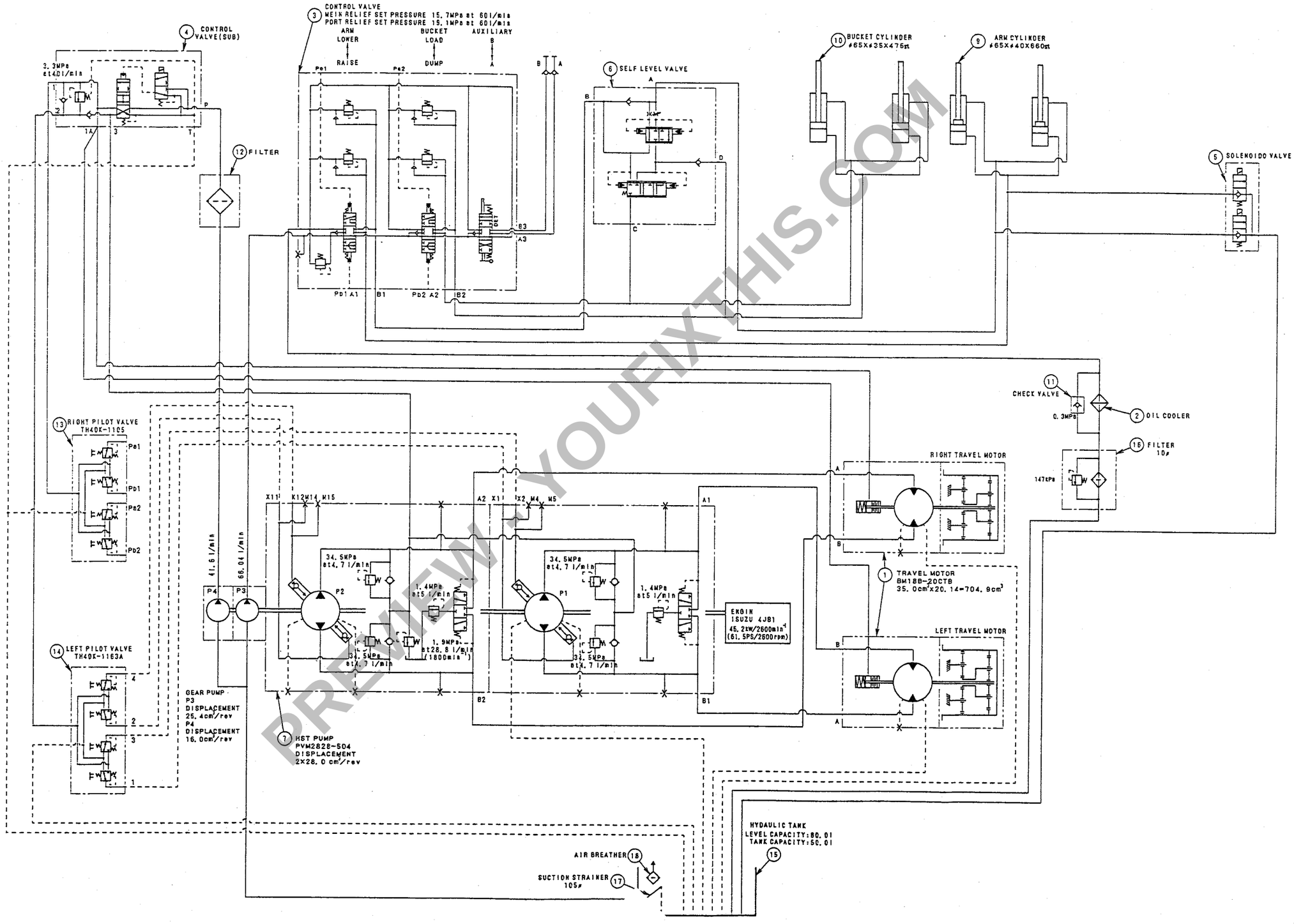
CODE	COLOUR	CODE	COLOUR	CODE	COLOUR
B	BLACK	W	WHITE	Br	BROWN
G	GREEN	Y	YELLOW	Lg	LIGHT GREEN
L	BLUE	P	PINK	Gr	GREY
R	RED	O	ORANGE	Sb	SKY BLUE
Pu	Purple	Dg	DARK GREEN	Ch	CHOCOLATE

T6C800

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HYDRAULIC SYSTEM

HYDRAULIC CIRCUIT DIAGRAM



T6C700

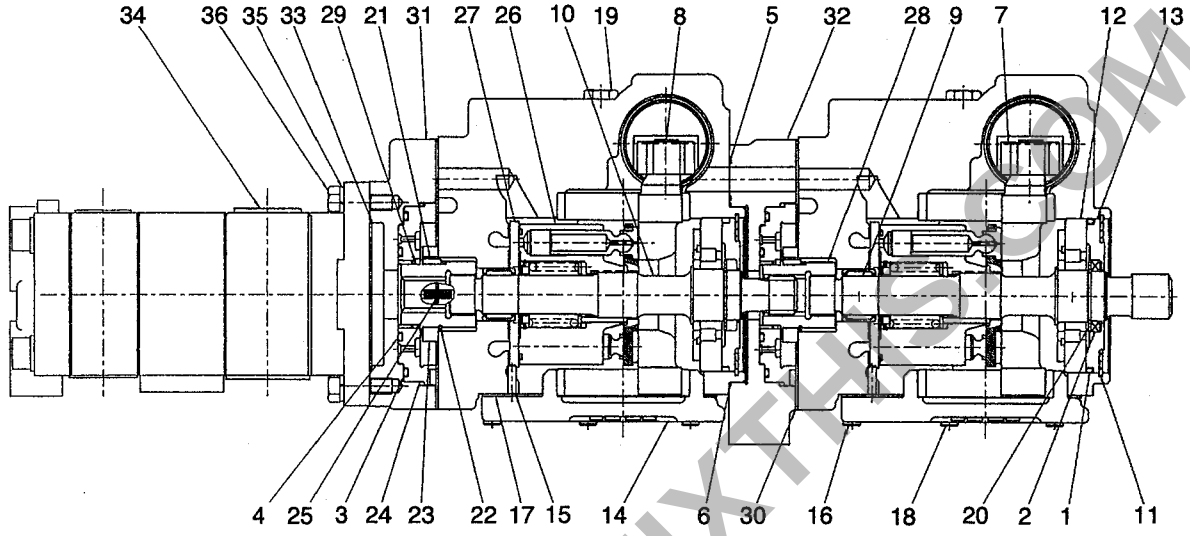
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HST PUMP

CONSTRUCTION

Serial No. 21260001~21260025
Pump Assembly (1/4)



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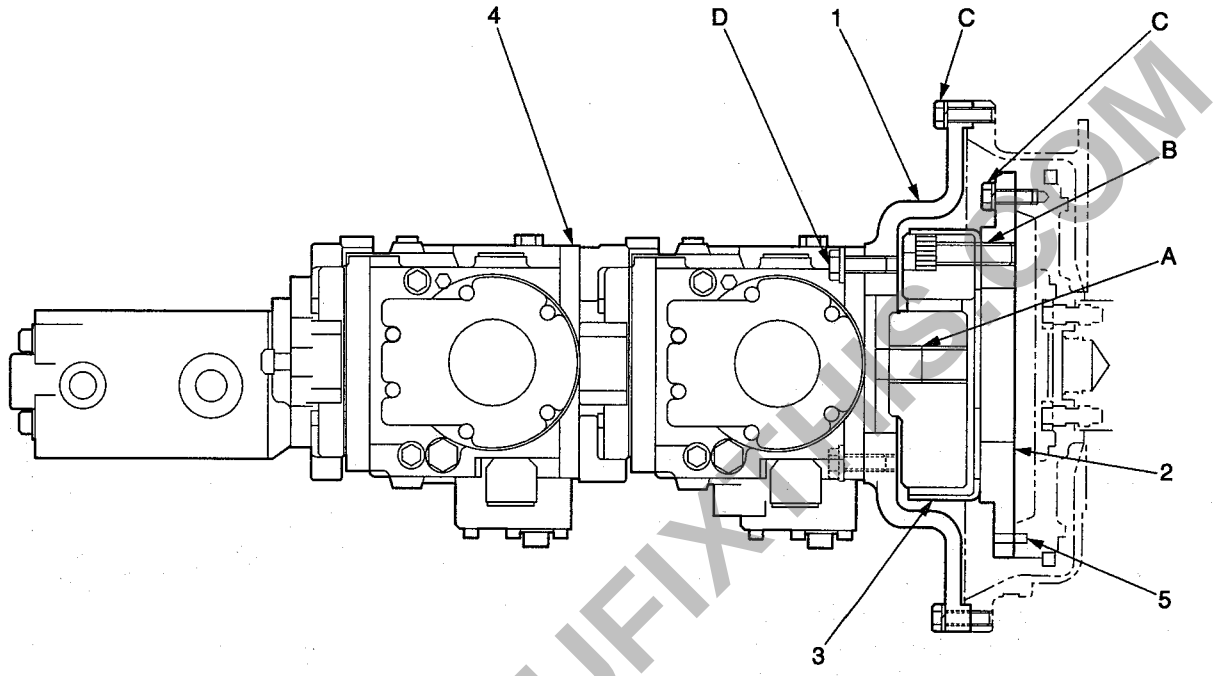
1. O-ring
2. Seal
3. O-ring
4. O-ring
5. O-ring
6. O-ring
7. Bearing
8. Swash Plate
9. Shaft
10. Shaft
11. Ring
12. Bearing
13. Seal Carrier
14. Cover
15. Pin
16. Cap Screw
17. Gasket
18. Cap Screw
19. Plug
20. Ring
21. Key
22. Ring
23. Spacer
24. Cover
25. Pin
26. Cylinder Block
27. Valve Plate
28. Coupling
29. Coupling
30. Gasket
31. Pad A
32. Pad B
33. O-ring
34. Gear Pump
35. Washer
35. Bolt

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DRIVE SYSTEM

CONSTRUCTION

Pump Coupling



T6C100

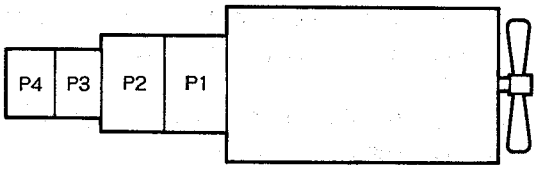
A: Fill with molybdenum disulfide grease.
B: Apply locking compound while taking care not to put it on the rubber part.
C: Tightening Torque: 54.9 N·m (5.6 kgf·m)
D: Tightening Torque: 102 N·m (10.4 kgf·m)

1. Housing
2. Flange
3. Coupling
4. HST Pump
5. Pin

The pump coupling connects the engine flywheel and the hydraulic pump's drive shaft. It is constructed so that it absorbs vibrations, torsions, impact and out of center of the engine and hydraulic pump.

- Refer to the table concerning the responsibility of each of the pumps shown in the drawing at right.

P1	Left Travel
P2	Right Travel
P3	Lift Arm, Bucket, Auxiliary
P4	Charge Pressure, Pilot Pressure



T5-C103

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Purging Air from the HST Pump

⚠WARNING

When refitting the HST pump after repair or replacement, be sure to purge air before starting the operation. Failure to do so can cause injury or death due to unexpected machine movement.

1. Before installing the HST pump on the machine, fill the servo control chambers with hydraulic oil.
   a. Plug the pilot ports (X1), (X2), (X11) and (X12) temporarily.
   b. Supply hydraulic oil through the servo pressure gauge ports (M4), (M5), (M14) and (M15) to fill the servo control chambers.

2. Install the HST pump on the machine

3. Fill the hoses which are connected to the pilot ports (X1) and (X11) with hydraulic oil.
   - To fill, hold the hose openings at the same level as the pilot valves.
     Pouring oil with the hose openings held below the pilot valves may result in insufficient air purge, while pouring oil with the hose openings held above the pilot valves will make the oil flow from only the pilot valves into the tank.

4. Remove the plugs in the pilot ports (X1) and (X11) and immediately connect the respective hoses to those ports to prevent unnecessary loss of hydraulic oil.

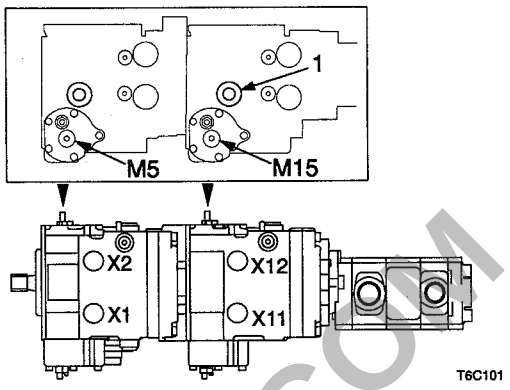
5. Remove the plugs in the pilot ports (X2) and (X12) and connect the respective hoses to those ports.

6. Connect the all remaining hoses to the pump.

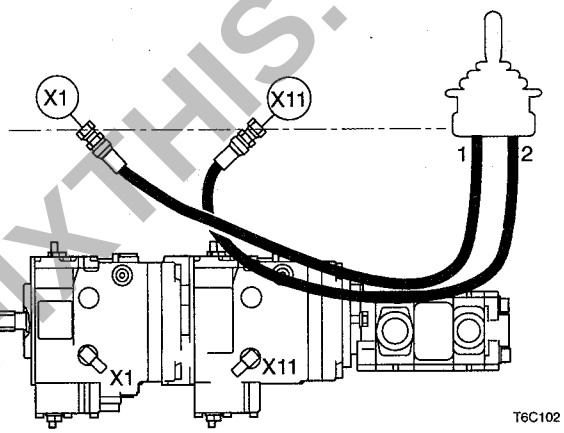
7. Supply hydraulic oil through the plug hole (1) to fill the pump casing.

8. Start and run the engine at idle for about 5 minutes to purge air from the pump casing.

9. Slowly move the control levers to purge air from the main and pilot lines.



T6C101



T6C102

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TROUBLESHOOTING

HST System

Symptom	Cause	Remedy
Difficult or impossible to find neutral position.	• Pilot valve out of line. • HST pump adjustment screws have been improperly or insufficiently tightened.	• Repair or replace. • Tighten or loosen the HST pump adjustment screws to readjust the neutral position. Replace the HST pump if the adjustment cannot be performed properly.
Machine can only operate in forward or reverse.	• Bad pilot valve. • Insufficient pressure being supplied to pilot valve. • Insufficient charge pressure. • Orifice plugged. • Bad high-pressure relief valve. • Pilot spool has been nicked or burned. • Bad travel motor.	• Repair or replace . • Check the gear pump P4 and the (sub) control valve; repair or replace. • Check the gear pump P4, the (sub) control valve, and the low-pressure relief valve; repair or replace. • Clean • Repair or replace. • Repair or replace. • Repair or replace.
Machine operates neither in forward nor reverse. Fails to move in a straight line in forward.	• The level in the hydraulic tank is low. • Bad pilot valve. • Insufficient pressure being supplied to pilot valve. • Insufficient charge pressure. • Orifice plugged. • Bad high-pressure relief valve. • Pilot spool has been nicked or burned. • Bad travel motor.	• Fill up the tank with hydraulic oil to the required level. • Repair or replace. • Check the gear pump P4 and the (sub) control valve; repair or replace. • Check the gear pump P4, the (sub) control valve, and the low-pressure relief valve; repair or replace. • Clean • Repair or replace. • Repair or replace. • Repair or replace.
System is overheating during operation.	• The level in the hydraulic tank is low. • Bad oil cooler. • Bad high-pressure relief valve. • Release pressure for parking brake is too low. • Travel motor overheated. • HST pump overheated.	• fill up the tank with hydraulic oil to the required level. • Repair or replace. • Repair or replace. • Check the gear pump P4 and the (sub) control valve; repair or replace. • Repair or replace. • Repair or replace.

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SPECIFICATION TABLES

SPECIFICATIONS

Serial Number		21260001 ~
Type		Canopy
Standard Bucket Capacity (SAE Rated)	m^3	0.365
Weight in Transport Condition	kg	3010
Dimensions		
Overall Lenght: with bucket / without bucket	mm	3310/2630
Overall Width: with bucket / without bucket	mm	1675/1530
Overall Height	mm	2015
Minimum Ground Clearance	mm	275
Front Clearance Radius: with bucket / without bucket	mm	2055/1380
Rear Clearance Radius	mm	1500
Overall Width of Crawler	mm	1530
Overall Length of Crawler	mm	1830
Bucket Width	mm	1675
Angle of Departure	degree	26
Working Range		
Maximum Lift Height to Bucket Pin	mm	3025
Maximum Dumping Height	mm	2380
Maximum Dump Angle Fully Raised	degree	38
Maximum Bucket Rollback at Ground Level	degree	30
Reach Fully Raised	mm	705
Performance		
Bucket Force	kN (kgf)	25.3 (2575)
Travel Speed	km/h	0 ~ 8.5
Gradeability	degree	30
Ground Pressure	kPa (kgf/cm^2)	40.1 (0.409)
Tipping Load (SAE J732)	kg	1700
Operating Capacity (* SAE J818)	kg	595
Cycle Time		
Raise-Full Load (Lift Arm)	Sec.	4.2
Lower-No Load (Lift Arm)	Sec.	2.5
Dump-Full Load (Bucket)	Sec.	2.7
Curl-Full Load (Bucket)	Sec.	2.1

* Operating capacity to equal no more than 35% of tipping load.

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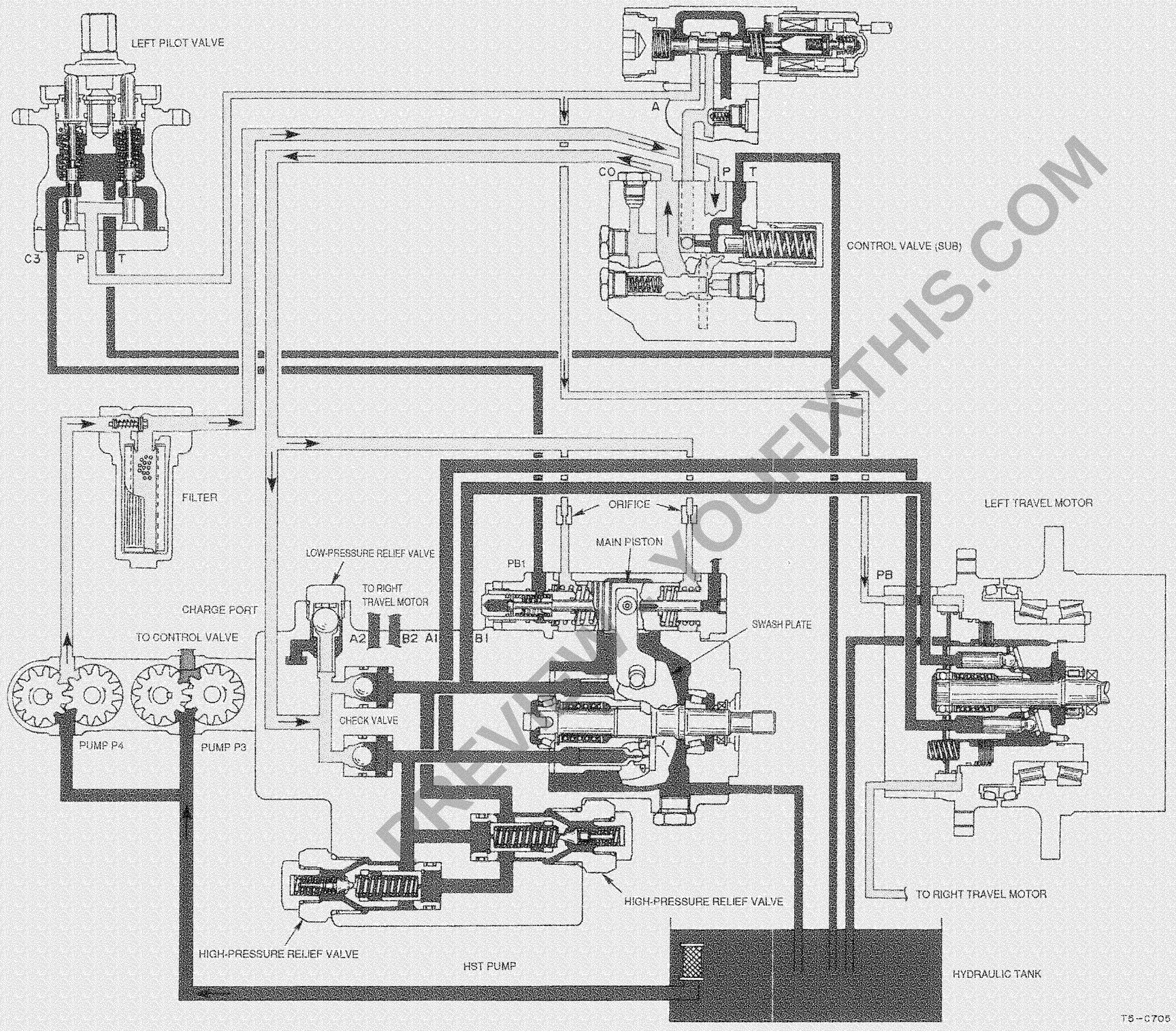
RECOMMENDED LUBRICANTS

Item	Hydraulic Oil	Reduction Gears	Grease Fittings
Interval	Every 1,000 hrs.	(First 500 hrs.) Every 1,000 hrs.	Every 10 hrs. Every 50 hrs.
	Diesel engine oil API Class CE SAE 10W–30 or 10W–40	API GL-4 or GL-5 SAE 90	EP-2 Lithium-base grease

1. When the oil is dirty or has deteriorated, replace it at shorter intervals than called for above.
2. As much as possible, when supplying oil and grease, use the same brand of lubricant. When replacing hydraulic oil, be sure to replace it all at once. Do not mix different brands of hydraulic oil.

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Neutral

The oil from pump P4 flows in the control valve (sub) then to the pump P1 charge port and separates.

Part of this oil passes through the orifice in the discharge control section, enters the left and right spring chambers, applies pressure on both sides of the main piston and stops the main piston in neutral.

For pump P1, since the main piston and swash plate are linked, the swash plate is set in the vertical position and no oil is discharged.

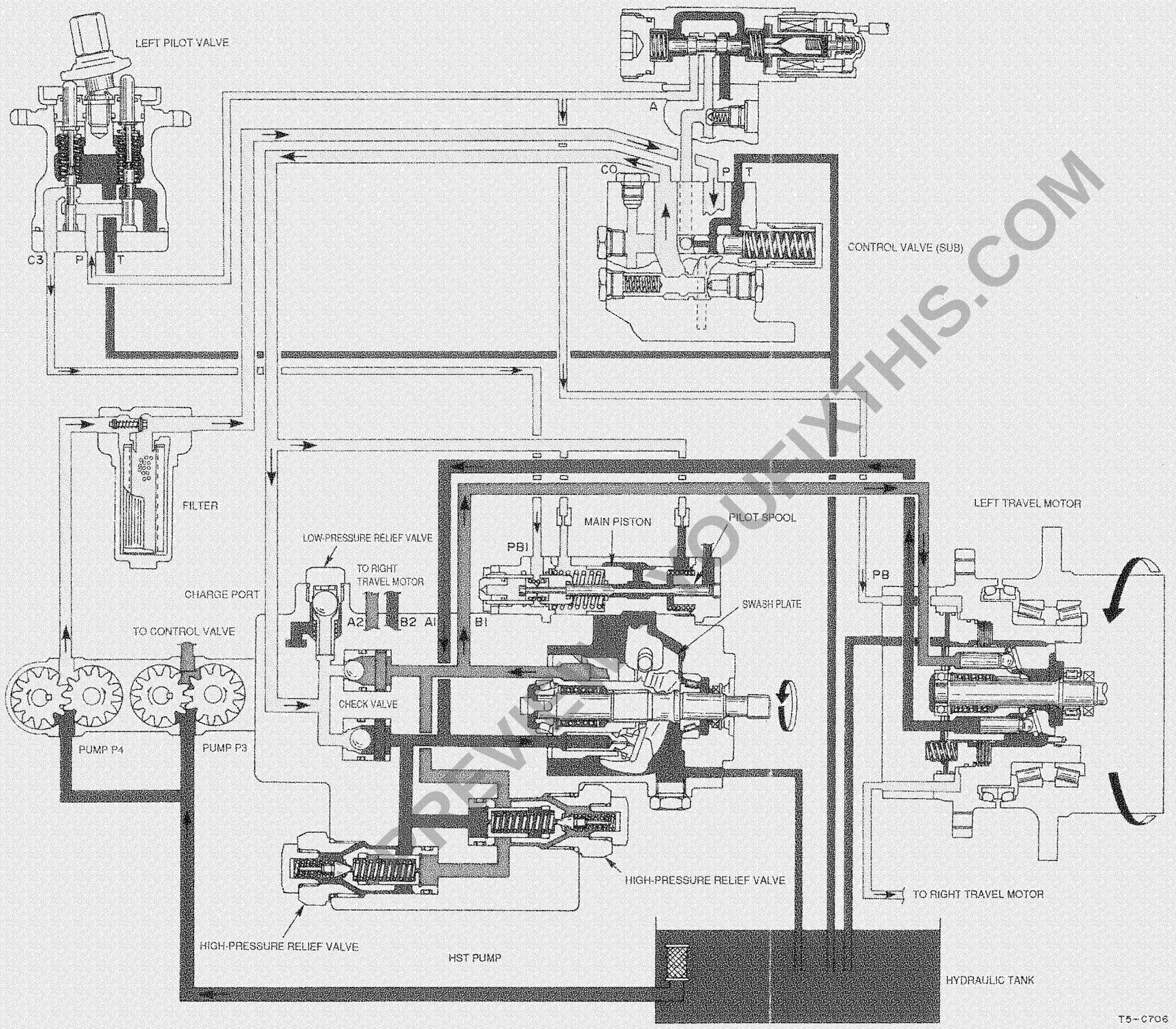
No oil flows into the left travel motor, so the motor is in the stop mode. Also, the pressure of pump P4 from the control valve (sub) acts on parking brake release port PB, releasing the parking brake.

The other part of the oil which has flowed from pump P4 to the charge port and separated passes through the check valve and fills the main circuit.

When the pressure of the main circuit increases and the pressure of the charge port becomes higher than the set pressure of the low pressure relief valve, the oil is drained and flows into the housing.

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Forward travel

When the pilot valve is operated, the pilot pressure enters discharge control section pilot port PB1 and moves the pilot spool to the right. Because of this, the oil which has flowed to the charge port from pump P4 and entered the right spring chamber when in neutral passes through the groove in the pilot spool and is drained into the housing. When there is no more pressure in the right spring chamber, a pressure difference is generated between the left and right spring chambers, and the swash plate tilts by the amount that the main piston has moved to the right.

For pump P1, the cylinder block piston moves back and forth at a stroke corresponding to the angle of inclination of the swash plate, and oil is taken in and discharged. At this time, the discharge side main circuit is kept at the appropriate pressure by a high pressure relief valve.

When oil flows into the left travel motor, the cylinder block piston pushes the fixed swash plate, generating a rotary force which drives the travel motor.

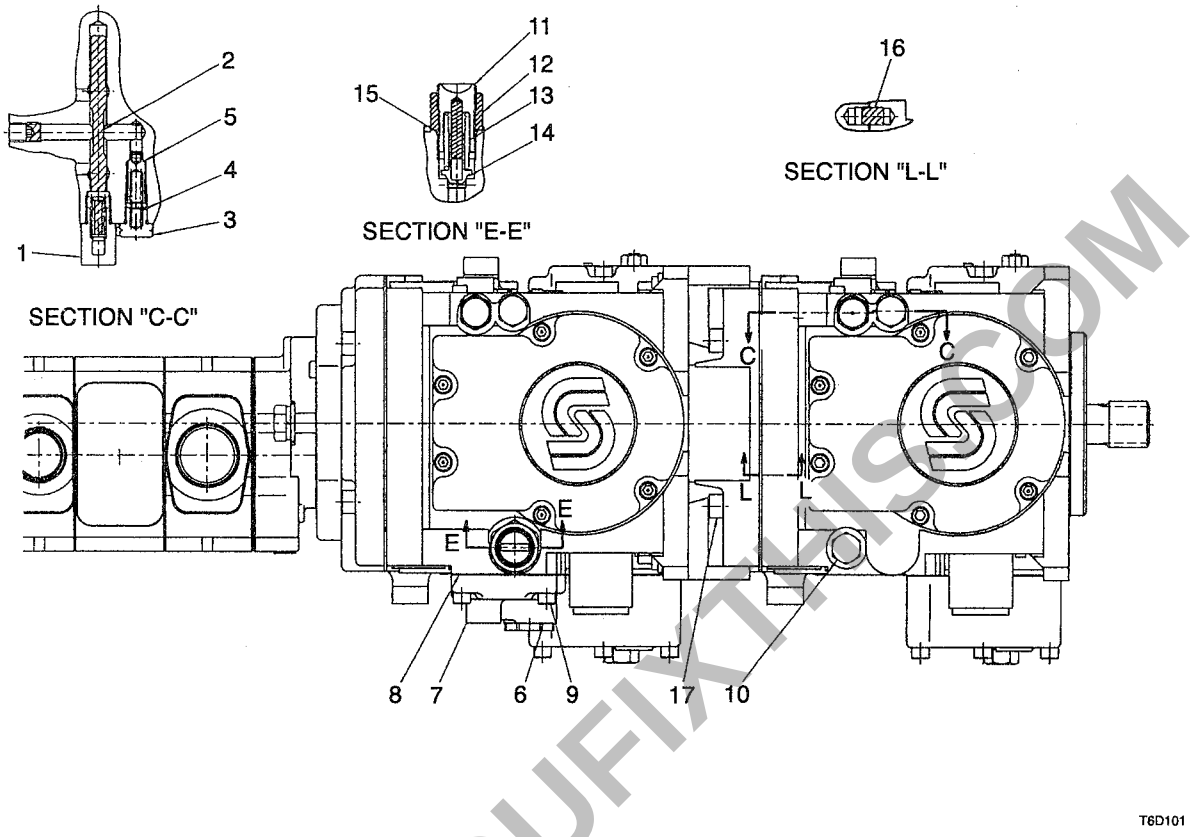
The oil returning from the left travel motor returns to the pump P1 intake side main circuit.

The other part of the oil which has flowed from pump P4 to the charge part and separated passes through the check valve and flows into the pump P1 intake side main circuit. This replenishes the oil which has been drained into the tank from the closed circuit, exchanging the oil. When the intake side main circuit pressure increases and the pressure of the charge port becomes higher than the set pressure of the low pressure relief valve, the oil flows into the housing and is drained.

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Pump Assembly (2/4)



1. Plug
2. Spool
3. Plug
4. Spring
5. Poppet
6. Plug
7. Adaptor
8. Gasket
9. Cap Screw
10. Plug
11. Plug
12. Nut
13. Spring
14. Poppet
15. O-ring
16. Pin
17. Cap Screw

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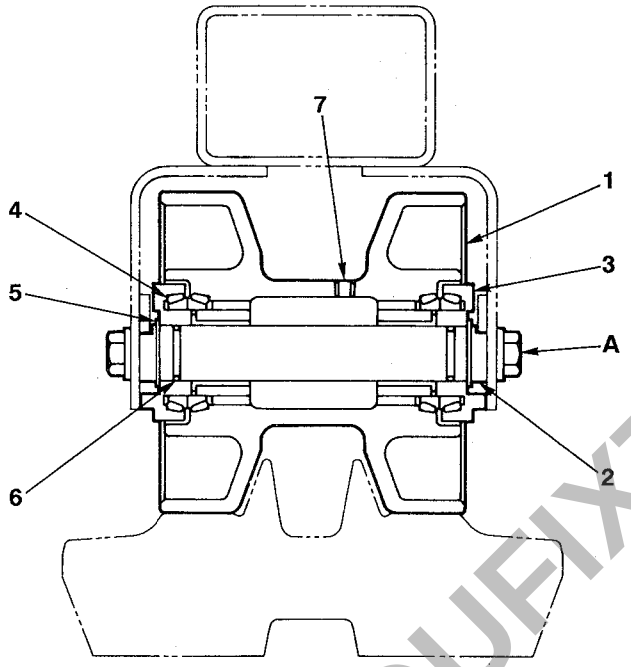
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TRAVEL SYSTEM

CONSTRUCTION

Track Roller

■ 08801-30000

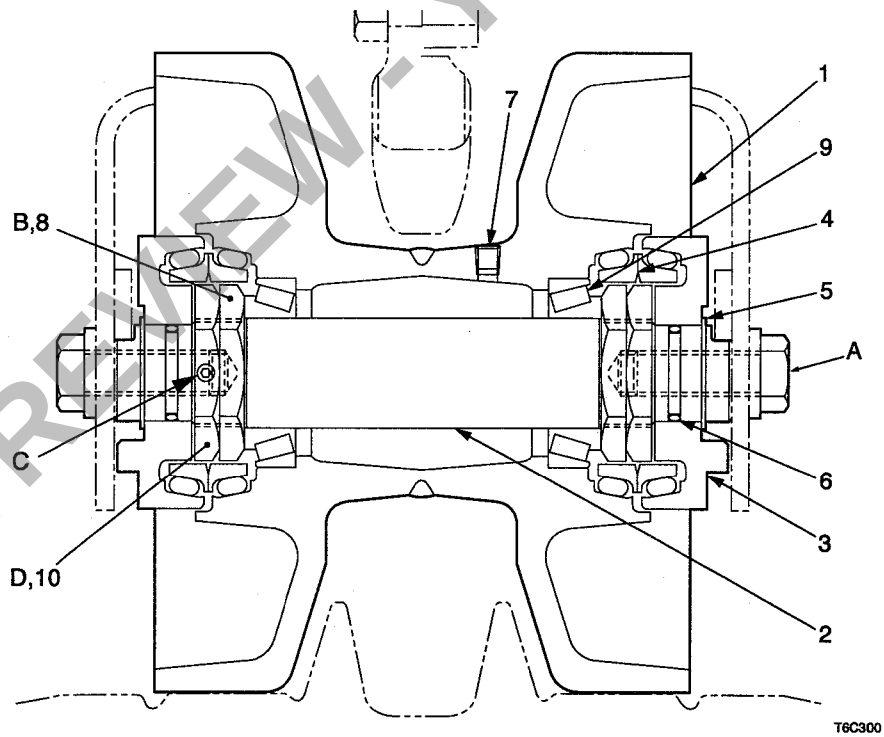


A: Tightening torque 241.2 N·m (24.6 kgf·m) [Apply thread lock]

T5–C302

1. Roller
2. Shaft
3. Cover
4. Floating Seal
5. Snap Ring
6. O-Ring
7. Oil Filler Plug

■ 08801-35100



T6C300

A: Tightening torque 241.2 N·m (24.6 kgf·m) [Apply thread lock]
B: Tightening torque 55.9 N·m (5.7 kgf·m)
C: Tightening torque 6.7 N·m (0.68 kgf·m)
D: Tightening torque 69.6 N·m (7.1 kgf·m)

1. Roller
2. Shaft
3. Cover
4. Floating Seal
5. Snap Ring
6. O-Ring
7. Oil Filler Plug
8. Nut
9. Bearing
10. Nut

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