CEBM011100

Shop Manual

KOMATSU®

WB140PS-2N
WB150PS-2N

BACKHOE LOADER

SERIAL NUMBERS

WB140PS-2N	A40001	and UP
WB150PS-2N	A70001	and UP

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The Publications listed below are available for this particular machine(s).

DESCRIPTION	FORM NUMBER
PARTS BOOK - PAPER:	
Chassis and Engine (WB140PS-2N)	BEPB021400
Chassis and Engine (WB150PS-2N)	BEPB021500
OPERATION AND MAINTENANCE MANUAL:	
Chassis and Engine	CEAM010800
SHOP MANUAL	
Chassis	CEBM011100
Engine	WEBM4D9801
SAFETY MANUAL	
Machine specific	BL10-3

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10 STRUCTURE AND FUNCTION

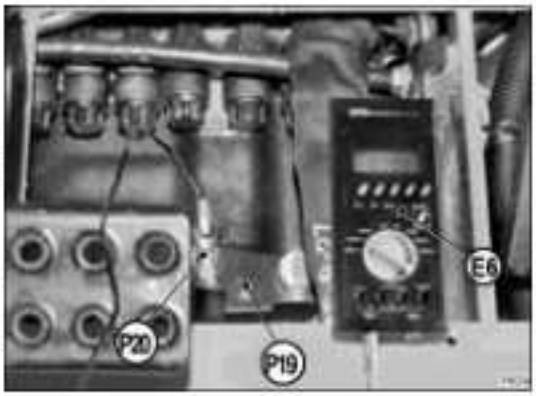
POWER TRAIN 10-4
TRANSMISSION 10-6
DIAGRAM OF THE POWER TRAIN 10-6
HYDRAULIC CONVERTER-TRANSMISSION CIRCUIT DIAGRAM 10-7
TRANSMISSION 10-8
DRIVE SHAFTS 10-13
DRIVE SHAFT FOR FORWARD AND REVERSE MOVEMENT 10-13
DRIVE SHAFT 10-13
DRIVEN GEAR SHAFT 10-14
DRIVEN SHAFT 4WD 10-14
CONTROL VALVE BLOCK 10-15
FRONT AXLE 10-17
DIFFERENTIAL 10-17
FINAL-REDUCTION-JOINT 10-19
STEERING CYLINDER 10-21
REAR AXLE 10-23
DIFFERENTIAL 10-23
FINAL REDUCTION 10-25
BRAKES 10-27
DIFFERENTIAL LOCKING 10-29
HYDRAULIC PUMP 10-31
FUNCTION 10-36
STRUCTURE 10-36
OPERATION 10-37
PUMP OPERATION 10-37
CONTROL OF DELIVERY 10-38
PC VALVE, LS VALVE, SERVO PISTON 10-39
LS VALVE 10-40
FUNCTION 10-40
OPERATION 10-41
PC VALVE 10-46
FUNCTION 10-46
OPERATION 10-47
WORKING MODE SOLENOID VALVE 10-51
FUNCTION 10-51
OPERATION 10-51
STEERING UNIT 10-53
TECHNICAL DATA 10-53
OPERATION 10-53
HYDRAULIC CIRCUIT 10-54

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SHOVEL CONTROL VALVE 10-56
2-SPOOL 10-56
3-SPOOL 10-60
BACKHOE CONTROL VALVE 10-64
6-SPOOL 10-64
7-SPOOL 10-71
FOR TELESCOPIC ARM 10-71
FOR HAMMER 10-71
8-SPOOL 10-75
FOR HAMMER AND TELESCOPIC ARM 10-75
CLSS (CLOSED CENTER LOAD SENSING SYSTEM) 10-78
DESCRIPTION 10-78
CHARACTERISTICS 10-78
STRUCTURE 10-78
OPERATION 10-79
UNLOADING VALVE 10-81
FUNCTION 10-81
OPERATION 10-81
INTRODUCTION OF THE LS PRESSURE 10-84
OPERATION 10-84
DELIVERY COMPENSATION 10-85
INTRODUCTION 10-85
FUNCTION 10-85
OPERATION 10-85
LIFD CONTROL SYSTEM 10-88
FUNCTION 10-88
OPERATION 10-88
LS DECOMPRESSION VALVE 10-89
DESCRIPTION 10-89
OPERATION 10-89
PRESSURE CUT-OFF VALVE 10-90
DESCRIPTION 10-90
OPERATION 10-90
PRIORITY VALVE (ONLY FOR THE 2-3-SPOOL CONTROL VALVE) 10-91
FUNCTION 10-91
SOLENOID VALVE 10-92
SOLENOID VALVE BLOCK ST1 - DIFFERENTIAL LOCKING - BACKHOE BOOM LOCKING. 10-92
SAFETY VALVE 10-93
BRAKE PUMP 10-95
SHOVEL CYLINDERS 10-97
RAISING CYLINDER 10-97
DUMPING CYLINDER 10-97
DUMP CYLINDER 10-98
RAISE CYLINDER 10-98
BACKHOE CYLINDERS 10-99
BOOM 10-99
ARM 10-99
BUCKET 10-100

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CLUTCH ENGAGEMENT PRESSURE



1. Remove the cab floor.
2. Remove the plug (P20) and connect the pressure gauge **E6.**
3. Start the engine and heat the engine and all the fluids up to working temperature. In particular make sure that the power train oil reaches a temperature of 80±5 °C (176° F).
4. Bring the engine up to MIN (idling) and check the pressure on the pressure gauge **E6**.
   - ★ Normal pressure: Min. 13.7 kg/cm^2 (195 psi) - Max. 15.8 kg/cm^2 (225 psi).
5. Gradually increase engine speed to 2200 rpm. Take a new reading from the pressure gauge **E6.**
   - ★ Normal pressure: Min. 14.8 kg/cm^2 (210 psi) - Max. 16.8 kg/cm^2 (244 psi).
6. Bring the engine back to MIN and compare the pressure with the normal value.
   - ★ Normal pressure: Min. 13.7 kg/cm^2 (195 psi) - Max. 15.8 kg/cm^2 (225 psi).
7. Remove the pressure adapter and replace the plug (P20).

   Nm Cap: 23 Nm (17 lbf ft)
8. Repeat the same test for the FORWARD gear, reading the pressure from the orifice protected by the plug (P19).
   - ● If the pressures are different for the two travel directions, there is a loss of pressure on the clutch piston with lower pressure.

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Axle beam body bent	
CAUSES	**REMEDY**
Vehicle overloaded	Replace axle beam body.
Vehicle accident	
Load bump	
Worn out or pitted bearings	
CAUSES	**REMEDY**
Insufficient lubrication; contaminated oil	Replace bearings. Use correct lubrication: fill to the right level and replace at recommended intervals.
Excessive use	
Normal wear out	
Pinion nut loosened	
Oil leakage from gaskets and seals	
CAUSES	**REMEDY**
Prolonged functioning at high oil temperature	Replace the gasket or seal and matching surface if damaged. Use correct lubrication and replace at recommended intervals.
Oil gasket assembled incorrectly	
Seal lip damaged	
Contaminated oil	
Excessive wearing out of input flange spline	
CAUSES	**REMEDY**
Exhaustive use	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**
Exhaustive use	Replace bevel gear set.
Continuous overload	
Pinion and ring teeth breakage	
CAUSES	**REMEDY**
Exhaustive use	Replace bevel gear set.
Continuous overload	
Side gear spline worn out	
CAUSES	**REMEDY**
Excessive use	Replace differential gear group. Replace halfshaft if required.

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INSTALLATION

- To install, reverse the removal procedure.

1. Fill the tank with hydraulic oil up to maximum level.



Hydraulic oil: 92 liters (24.3 gal)

★ Fill the pump body and the pump, bringing the tank up to pressure. For the method, see "TESTING AND ADJUSTMENTS" in Section 20 of this manual.





Screws for suction flange: 100 Nm (73.8 lbf ft)



Screws for delivery flange: 60 Nm (44.3 lbf ft)





Screws on gearbox side: Loctite 262



Screws on gearbox side: 70 Nm (51.6 lbf ft)



Nut on axle side: 70 Nm (51.6 lbf ft)





Pump retaining screws: Loctite 262



Pump retaining screws: 220 Nm (162 lbf ft)

2. Start the engine to circulate the oil in all hydraulic circuits.

3. Stop the engine, check the oil level in the tank and, if necessary, top it up.

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NAME	DESCRIPTION	NAME	DESCRIPTION	NAME	DESCRIPTION	NAME	DESCRIPTION
EV1	OPENED GRAB SOLENOID VALVE	H11	4WD WARNING LIGHT	K01	STARTER RELAY	R31	FUEL LEVEL SENDER
EV2	CLOSED GRAB SOLENOID VALVE	H12	FUEL RESERVE WARNING LIGHT	K02	PREHEATING RELAY	R32	WATER TEMPERATURE SENDER
EV3	DIFFERENTIAL LOCK SOLENOID VALVE	H13	KOMATSU LOGO LIGHT	K03	FUEL SHUT OFF RELAY	S1	ECONOMY POWER PUSH BUTTON
EV4	REAR 1^BOOM UNLOCK SOLENOID VALVE	H14	KOMATSU LOGO LIGHT	K04	3ª SPEED BLOWER RELAY (A/C VERSION)	S10	HAMMER BUTTON
F1A	LOW BEAM FUSE 15A	H15	CIGARETTE LIGHTER LAMP (OPTIONAL)	K05	RETURN TO DIG RELAY	S13	BATTERY STOP SWITCH
F1B	RIGHT TRAFFIC LIGHT FUSE 3A	H16	CABIN LAMP	K06	POWER ECONOMY UNIT	S15	HAND BRAKE SWITCH
F1C	LEFT TRAFFIC LIGHT 3A	H17	FRONT WORKING LAMP	KC	LOAD FAN HEATER RELAY	S16	BRAKE OIL LOW LEVEL SWITCH
F2A	ROTATING LAMP FUSE 10A	H18	FRONT WORKING LAMP	K2	REVERSE SPEED RELAY	S17	PEDAL SWITCH
F2B	RADIO CABIN LAMP FUSE 7.5A	H19	BEACON LAMP	K4	GEAR NEUTRAL POSITION RELAY	S18	PEDAL SWITCH
F2C	WARNING FUSE 10A	H2	GENERATOR WARNING LIGHT	K5	LOW BEAM RELAY	S19	STOP LIGHT SWITCH
F3A	STARTING FUSE 7.5A	H20	REAR WORKING LIGHT	K6	MAIN BEAM RELAY	S1A	4 WD SWITCH ON FRONT DASHBOARD , SHUTTLE
F3B	SWITCH+WARNING LIGHT+RETURN TO DIG FUSE 10A	H21	REAR WORKING LIGHT	K7	EGM POWER SUPPLY	S1L	REAR WORKING LIGHT SWITCH, LAT. DASH
F3C	OPTIONAL VALVE FUSE 7.5A	H22	INDICATORS WARNING LIGHT	K8	HORN RELAY	S2	REAR 1^ BOOM UNLOCK SWITCH
F4A	4WD VALVE-WINDSHIELD WIPER/WASHER FUSE 7.5A	H23	HIGH BEAM WARNING LIGHT	K9	FLASHER UNIT	S21	ENGINE WATER HIGH TEMP. SWITCH
F4B	FORWARD-REVERSE SPEED FUSE 10A	H24	LOW LEVEL BRAKE OIL WARNING LIGHT	KT1	FUEL SHUT OFF TIMER	S22	AIR FILTER BLOCKED SWITCH
F4C	HIGH BEAM FUSE 15A	H25	DIFFERENTIAL LOCK WARNING LIGHT	KT2	PREHEATING TIMER	S23	ENGINE OIL LOW PRESSURE SWITCH
F5A	BLOWER MOTOR SWITCH 15A	H28	RIGHT FRONT INDICATOR	M1	STARTER MOTOR	S24	FUEL GAUGE
F5B	REAR WORKING LIGHT SWITCH FUSE 15A	H29	LEFT FRONT INDICATOR	M2	WASHER PUMP	S27	NPN SENSOR
F5C	FRONT WORKING LIGHT SWITCH FUSE 15A	H3	ENGINE WATER HIGH TEMPERATURE WARNING LIGHT	M3	WINDSHIELD WIPER MOTOR	S30	1ª SPEED PRESSURE SWITCH
F6A	WINDSHIELD WIPER-WASHER SWITCH FUSE 15A	H30	REAR LEFT INDICATOR	M4	BLOWER MOTOR	S31	2ª SPEED PRESSURE SWITCH
F6B	LIGHTS SWITCH POWER FUSE 7.5A	H32	REAR RIGHT INDICATOR	M5	FUEL PUMP	S32	3ª SPEED PRESSURE SWITCH
F6C	WARNING POWER FUSE 10A	H36	REAR RIGHT STOP LIGHT AND SIDE LIGHT	M8	WINDSHIELD WIPER MOTOR	S33	4ª SPEED PRESSURE SWITCH
F7A	MONITOR POWER FUSE 7.5A	H37	REAR LEFT STOP LIGHT AND SIDE LIGHT	H3	ENGINE WATER HIGH TEMP. WARNING LIGHT	S34	GENERAL GEAR OIL PRESSURE SWITCH
F7B	HORN FUSE 10A	H38	COURTESY LIGHT	M1	STARTER MOTOR	S35	GEAR OIL TEMPERATURE SWITCH
F7C	FUEL SHUT OFF FUSE 7.5A	H4	ENGINE OIL PRESSURE WARNING LIGHT	M2	WASHER PUMP	S36	RPM SENSOR
F8	HEATER FAN FUSE 15A	H5	AIR FILTER WARNING LIGHT	M3	WINDSHIELD WIPER MOTOR	S37	REAR DOOR SWITCH
FUG1	GENERAL FUSE 60A	H6	HYDRAULIC OIL FILTER WARNING LIGHT	M4	BLOWER MOTOR	S2A	WINDSHIELD WIPER-WASHER SW. , FRONT DASH
FUG2	PREHEATING FUSE 80A	H7	OPTIONAL WARNING LAMP	M5	FUEL PUMP	S2L	WINDSHIELD WIPER-WASHER SW., LAT. DASH
FUG3	FUEL SHUT OFF POWER FUSE 30A	H8	OPTIONAL WARNING LAMP	M8	WINDSHIELD WIPER MOTOR	S3	PLATE UNLOCK SWITCH (EUROPE VERSION)
FUG4	GENERATOR FUSE 80A	H9	ENGINE WATER HIGH TEMPERATURE WARNING LAMP	P1	RPM INSTRUMENT	S3A	FRONT WORKING LIGHT SW. FRONT DASH
G1	BATTERY	HA1	HORN	P2	HOUR COUNTER	S3L	BEACON SWITCH ON LAT. DASHBOARD
G2	GENERATOR	HA2	BUZZER	P3	FUEL LEVEL INDICATOR	S4	BLOWER MOTOR SWITCH
H1	PREHEATING WARNING LIGHT	HA3	REAR HORN	P4	WATER TEMPERATURE INSTRUMENT	S4A	WARNING SWITCH ON FRONT DASHBOARD
H10	CONVERTER OIL HIGH TEMP. WARNING LIGHT	HA4	BUZZER	R30	HEATING START	S4L	HORN SWITCH ON LAT. DASHBOARD

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