CEBM025500

Shop Manual

KOMATSU®

PC200LC-8

HYDRAULIC EXCAVATOR

SERIAL NUMBERS PC200LC-8 A90301 and up

ENGINE SAA6D107E-1

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DY2CKA Washer Drive Discon

User code	Failure code	Trouble	Window washer drive system disconnection (Pump controller system)
—	DY2CKA		
Contents of trouble	• When output to window washer drive system was turned OFF (when ground circuit was connected), disconnection was detected in circuit.		
Action of controller	• None in particular (Since no current flows, washer motor does not operate). • If cause of failure disappears, system resets itself.		
Problem that appears on machine	• Window washer does not operate.		
Related information	• Method of reproducing failure code: Turn starting switch ON. • Failure code may also be associated with frequent replacement of the 10 Amp Fuse located in Fuse socket #4 of the fuse panel. In addition, check the condition of the heating coil element in the cigarette lighter, short circuit can occur and the #4 fuse will blow. When this happens the monitor panel registers failure code DY2CKA.		

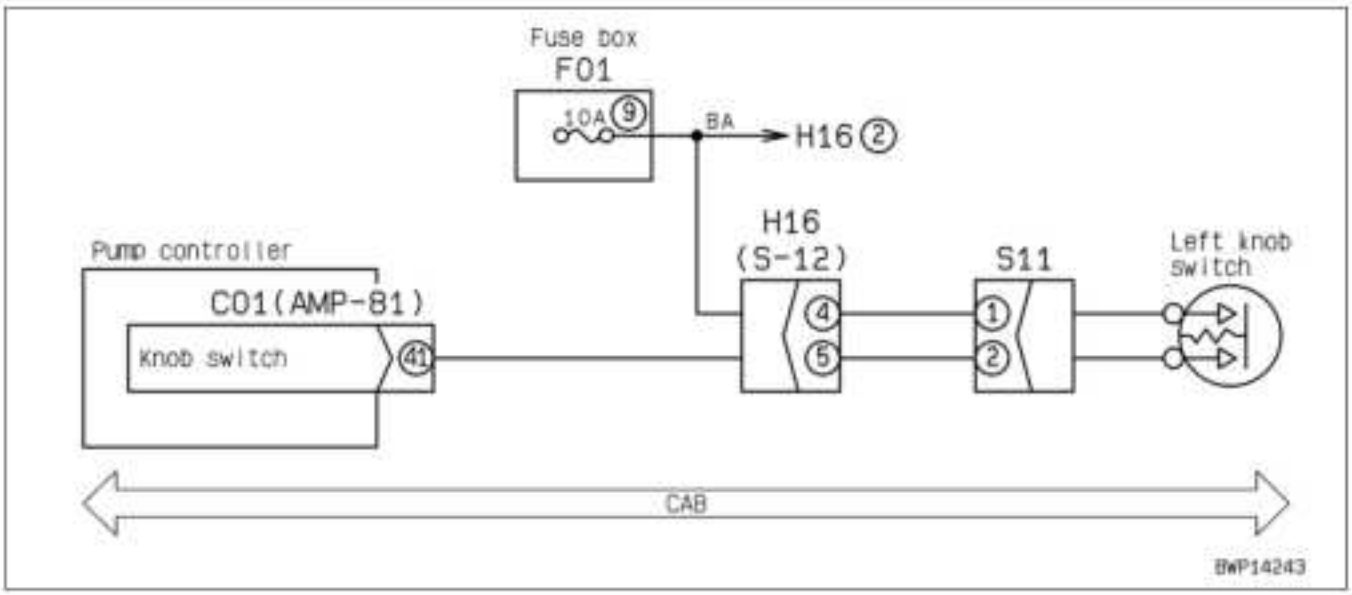
	Cause		Standard value in normal state/Remarks on troubleshooting			
Possible causes and standard value in normal state	1	Defective fuse No. 4	If fuse is broken, circuit probably has ground fault. (See cause 5.)			
	2	Defective washer motor (Internal short circuit or ground fault)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			M06 (male)	Resistance		
			Between (1) – (2)	5 – 20 Ω		
			Between (1), (2) – chassis ground	Min. 1 MΩ		
	3	Defective assembled-type diode D02 (Internal short circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			D02 (female)	Continuity (Resistance)		
			Between (3) – (7)	No continuity (Min. 1 MΩ)		
	4	Disconnection in wiring harness (Disconnection in wiring or defective contact in connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			Wiring harness between F01 (4) – J03 – M06 (female) (1)	Resistance	Max. 1 Ω	
			Wiring harness between C01 (female) (3) – J04 – M06 (female) (2)	Resistance	Max. 1 Ω	
	5	Ground fault in wiring harness (Short circuit with GND circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.			
			Wiring harness between F01 (4) – J03 – M06 (female) (1), – D02 (female) (3)	Resistance	Min. 1 MΩ	
			Wiring harness between C01 (female) (3) – J04 – M06 (female) (2), – D02 (female) (7)	Resistance	Min. 1 MΩ	
	6	Defective pump controller	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			C01 (female)	Voltage		
			Between (3) – chassis ground	20 – 30 V		

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E-20 Power Maximizing Function Does Not Operate Normally

Trouble	(1) When left knob switch is pressed, one-touch power maximizing monitor is not displayed. (2) When left knob switch is pressed, work equipment power is not increased.				
Related information	• One-touch power maximizing function does not work when working mode is not power mode (P) or economy mode (E). • Condition of left knob switch signal can be checked with monitoring function. (Code: 02200 Switch input 1)				
Possible causes and standard value in normal state	Cause		Standard value in normal state/Remarks on troubleshooting		
	1	Defective fuse No. 9	If fuse is broken, circuit probably has ground fault. (See cause 4.)		
	2	Defective left knob switch (Internal disconnection)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			S11 (male)	Left knob switch	Resistance
			Between (1) – (2)	Released	Min. 1 MΩ
				Pressed	Max. 1 Ω
	3	Disconnection in wiring harness (Disconnection in wiring or defective contact in connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between F01-9 – S11 (female) (1)	Resistance	Max. 1 Ω
			Wiring harness between S11 (female) (2) – C01 (female) (41)	Resistance	Max. 1 Ω
	4	Ground fault in wiring harness (Short circuit with GND circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between F01-9 – S11 (female) (1) and chassis ground	Resistance	Min. 1 MΩ
			Wiring harness between S11 (female) (2) – C01 (female) (41) and chassis ground	Resistance	Min. 1 MΩ
	5	Defective pump controller	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			C01 (female)	Left knob switch	Resistance
			Between (41) – chassis ground	Released	Min. 1 MΩ
				Pressed	Max. 1 Ω
	6	Defective machine monitor	Machine monitor may be defective. (Since trouble is in system, troubleshooting cannot be performed.)		

Circuit diagram related to left knob switch



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Installation

- Installation is done in the reverse order of removal.

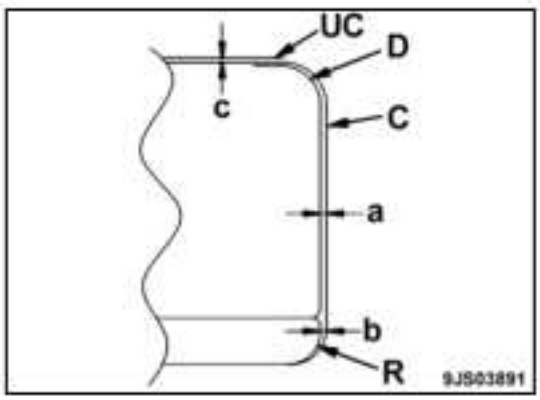
[*1]

Mounting bolt threaded section: Adhesive compound (LT-2)

Mounting bolts: 1,180 - 1,470 N•m (870.32 - 1084.21 lbf ft)

[*2]

★ Installing and adjusting counterweight.



A. Using shims, adjust the differences in level or gaps between the counterweight and the exterior of body work.

Shims: 20Y-46-11410

B. Fix the counterweight so that the clearances in the direction of front and rear are even and within the limit of 10 ±5 mm (0.39 ±0.16 in) for both from the doors and from the revolving frame.

C. The difference in level in left to right direction between the exterior of the door (D) and the counterweight (C)
(a): 10 ±4 mm (0.39 ±0.157 in)

The difference in level in left to right direction between the revolving frame (R) and the counterweight (C)
(b): 5 mm (0.196 in) or less

The difference in level in up and down direction between the exterior upper cover (UC) and the counterweight (C)
(c): 0 ±5 mm (0 ±0.198 in) are the respective limits for the mounting adjustment.

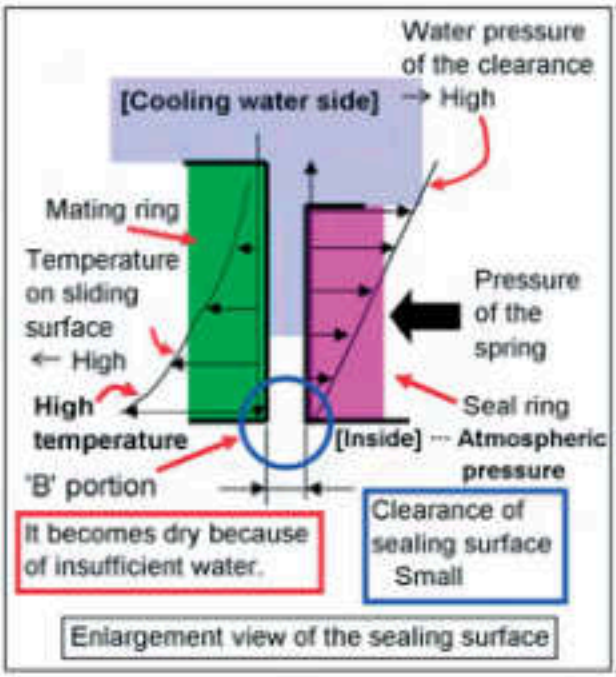
★ Rear view (Enlarged drawing for right hand side)

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6. If the clearance between sliding surfaces is small.
If the clearance of sliding surfaces is small because of certain a reason (defective mounting of the water seal, etc.) lubrication by water will be insufficient. As a result, mating ring and seal ring are contacting fully and sliding with dry condition on "B portion".

⇓

Seal ring is made of carbon whose self lubricating ability is good. But if this condition continues, abnormal wear and crack(s) will occur by heat, and water leakage occur.

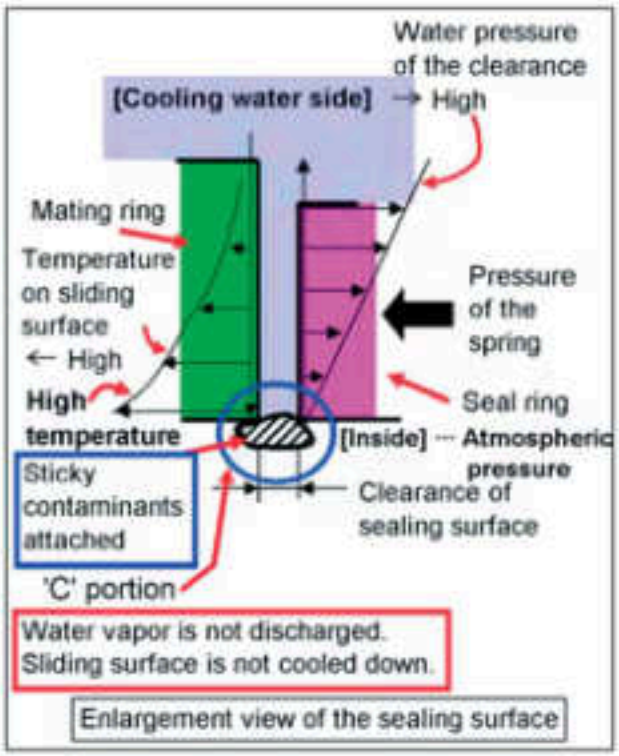


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7. If any sticky contaminants attach inside the water seal (oil, dirt, etc.
Water vapor is not discharged at "C portion" and cooling down of the sliding surfaces becomes insufficient.

⇓

Same as above, if this condition continues, abnormal wear and crack(s) will occur by heat, and water leakage will occur.



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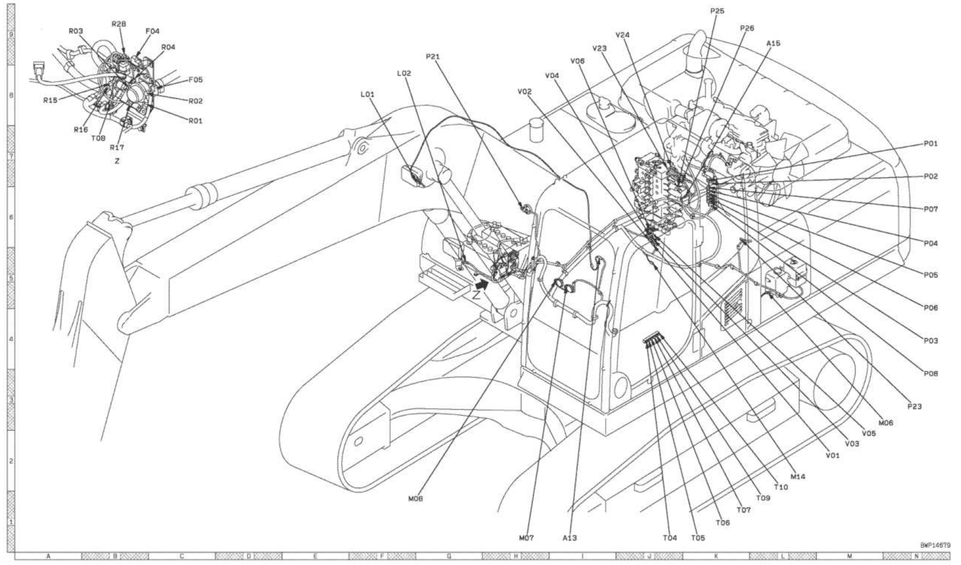
When replacing the water seal, observe the following:

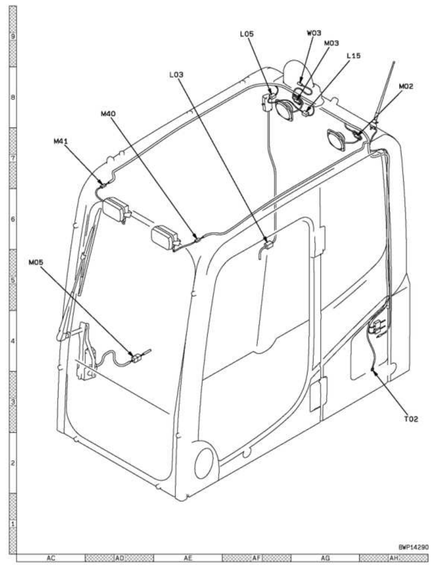
- Install the water seal to the specified position when assembling the water pump.
If the seal ring of the water seal is installed floated, installed length of the spring of the seal ring becomes too small. And then, surface pressure of the sliding surface becomes high which leads to the failures described above.
- Take care not to allow any oil, dust, etc. to attach the sliding surface of the water seal.

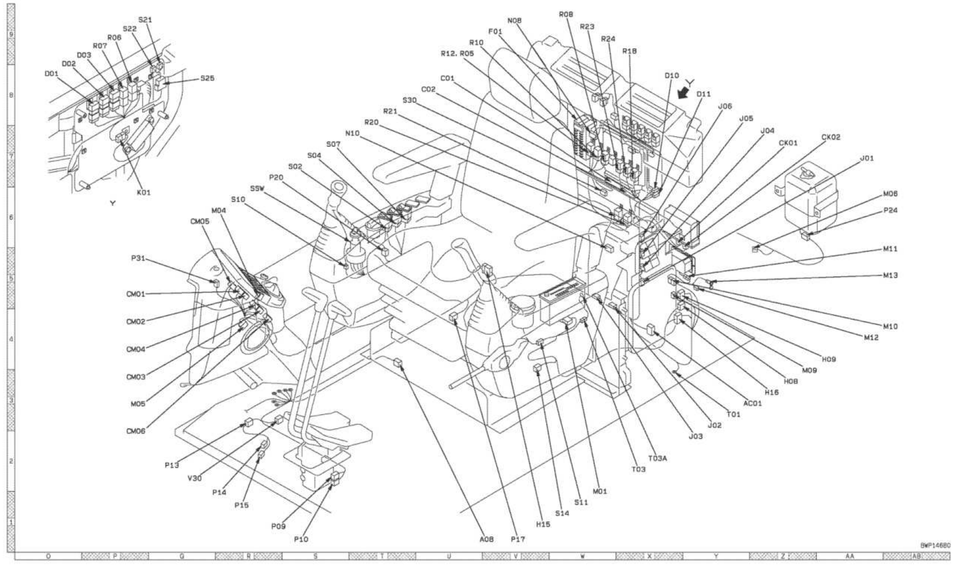
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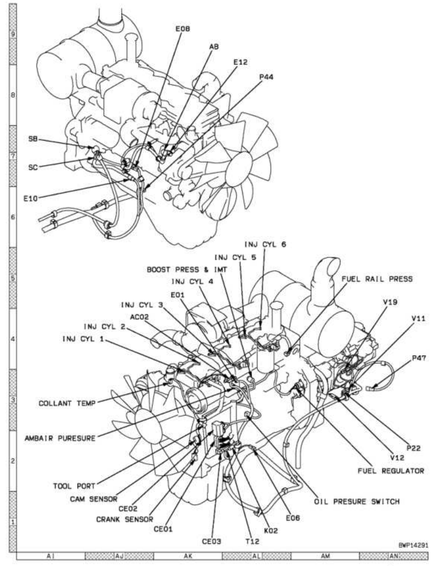
Connector No.	Model	Number of pins	Component name	Address of stereogram
A08	SWP	12	Intermediate connector	V-1
A13	DT	2	Intermediate connector	I-1
A15	DT	2	Intermediate connector	L-9
AB	Terminal	2	Alternator (Terminal B)	AK-9
AC01		8	Air conditioner unit	Y-3
AC02	X	1	Air conditioner compressor electromagnetic clutch	AJ-4
AMBAIR PRESSURE		3	Ambient pressure sensor	AJ-2
BOOST PRESS & IMT		3	Boost pressure/temperature sensor	AK-5
C01	AMP	81	Pump controller	U-8
C02	AMP	40	Pump controller	U-8
CAM SENSOR		3	Engine Bkup speed sensor	AJ-1
CE01	DRC	60	Engine controller	AK-1
CE02	DRC	50	Engine controller	AJ-1
CE03	DTP	4	Engine controller	AK-1
CK01	AMP	14	KOMTRAX communication module	Z-7
CK02	AMP	10	KOMTRAX communication module	AA-7
CM01	070	18	Machine monitor	P-5
CM02	070	12	Machine monitor	P-4
CM03	070	18	Machine monitor	P-3
CM04	070	12	Machine monitor (Unconnected)	P-4
CM05	070	8	Machine monitor (For connection of camera)	Q-6
CM06	070	4	Machine monitor (GPS antenna)	P-2
COOLANT TEMP		2	Engine coolant temperature sensor	AJ-3
CRANK SENSOR		3	Engine Ne speed sensor	AJ-1
D01	SWP	8	Assembled-type diode	O-8
D02	SWP	8	Assembled-type diode	O-8
D03	SWP	8	Assembled-type diode	P-9
D10		2	Diode	X-8
D11		2	Diode	Y-8
E01	Terminal	1	Electrical intake air heater	AK-5
E06	DT	2	Intermediate connector	AL-1
E08	X	1	Intermediate connector	AK-9
E10	D	1	Intermediate connector	AI-6
E12		2	Alternator (Terminals IG and L)	AL-9
ENGINE BRAKE		2	(Spare connector for engine used as brake)	
F01	—	2	Fuse box	V-9
F04	L	2	Fusible link	C-9
F05	M	2	Fusible link	C-8
FUEL RAIL PRESS		3	Common rail pressure sensor	AM-5
FUEL REGULATOR			Supply pump solenoid (IMV)	AN-2
H08	M	4	Intermediate connector	Z-3
H09	M	8	Intermediate connector	AA-4
H15	090	22	Intermediate connector	V-1
H16	S	12	Intermediate connector	Z-3
INJ CYL 1	DT	2	Injector #1	AJ-4
INJ CYL 2	DT	2	Injector #2	AJ-4
INJ CYL 3	DT	2	Injector #3	AK-5
INJ CYL 4	DT	2	Injector #4	AK-5
INJ CYL 5	DT	2	Injector #5	AL-5
INJ CYL 6	DT	2	Injector #6	AL-6
J01		20	Junction connector (Black)	AA-7
J02		20	Junction connector (Black)	Y-3
J03		20	Junction connector (Green)	Y-2
J04		20	Junction connector (Green)	Z-7
J05		20	Junction connector (Pink)	Y-8
J06		20	Junction connector (Orange)	Y-8
JC01		16	Junction connector	
JC02		16	Junction connector	
JC03		16	Junction connector	
K01	M	2	Pump (PC) resistor	P-8
K02	DT	3	CAN terminal resistance	AL-1
L01	DT	2	Working lamp (Boom)	F-8
L02	DT	2	Right headlamp	F-8
L03		2	Room lamp	AE-8
L05		2	Intermediate connector [Rotary lamp specification]	AF-9
L09	DT	2	Rear working lamp [Rear working lamp specification]	
L15		2	Rotary lamp [Rotary lamp specification]	AG-9
LPP		2	(Spare connector for fuel lift pump)	
M01	PA	9	Radio	W-2
M02		2	Speaker (Left)	AH-8
M03		2	Speaker (Right)	AG-9
M04		2	Cigarette lighter	R-8
M05	M	6	Wiper motor	P-3, AC-5
M06	KES0	2	Window washer motor	M-3, AB-8
M07	090	2	Horn (High tone)	H-1
M08	090	2	Horn (Low tone)	G-1
M09	M	2	Optional power supply connector (1)	Z-4
M10	M	2	Optional power supply connector (2)	AB-4
M11	M	4	DC/DC converter	AB-5
M12	M	2	Optional power supply connector (12 V)	AA-4
M13	M	2	12V outlet	AB-5
M14	D	2	Travel alarm	L-2
M40		2	Headlamp [Headlamp specification]	AD-8
M41		2	Headlamp [Headlamp specification]	AC-7
N08	D	12	Service connector	V-9
N10		4	Air conditioner unit	T-7
OIL PRESSURE SWITCH		Terminal	Engine oil pressure switch (Low pressure)	AM-1
P01	AMP	3	Bucket curl PPC pressure sensor	N-7

Connector No.	Model	Number of pins	Component name	Address of stereogram
P02	X	2	Boom lower PPC pressure switch	N-7
P03	AMP	3	Swing left PPC pressure sensor	N-4
P04	AMP	3	Arm curl PPC pressure sensor	N-6
P05	AMP	3	Bucket dump PPC pressure sensor	N-5
P06	AMP	3	Boom raise PPC pressure sensor	N-5
P07	AMP	3	Swing right PPC pressure sensor	N-6
P08	X	2	Arm dump PPC pressure switch	N-3
P09	X	2	Travel PPC pressure switch	S-1
P10	X	2	Travel steering PPC pressure switch	S-1
P13	X	2	Intermediate connector	Q-2
P14	X	2	Attachment pedal front PPC pressure switch [Attachment specification]	R-2
P15	X	2	Attachment pedal rear PPC pressure switch [Attachment specification]	R-1
P16	X	2	Attachment pedal front PPC pressure switch [Attachment specification]	
P17		2	Air conditioner high/low pressure switch	V-1
P20	M	3	Fuel control dial	R-7
P21	X	1	Fuel level sensor	G-9
P22	D	2	Hydraulic oil temperature sensor	AN-2
P23	D	2	Air cleaner clogging switch	N-3
P24	X	2	Radiator coolant level switch	AB-6
P25	AMP	3	F pump pressure sensor	K-9
P26	AMP	3	R pump pressure sensor	K-9
P30	X	2	Attachment pedal rear PPC pressure switch [Attachment specification]	
P31		2	Air conditioner daylight sensor	P-5
P44	D	2	Engine oil level sensor	AL-8
P47	DT	2	Water-in-fuel sensor	AN-4
R01	Terminal	1	Battery relay (Terminal E)	C-8
R02	Terminal	1	Battery relay (Terminal BR)	C-8
R03	Terminal	1	Battery relay (Terminal M)	A-9
R04	Terminal	1	Battery relay (Terminal B)	C-9
R05	Relay	5	Light relay	U-9
R06	Relay	5	Starting motor cutout relay (PPC lock)	P-9
R07	Relay	5	Starting motor cutout relay (Personal code)	P-9
R08	Relay	5	Horn relay	W-9
R10	Relay	5	Rear light relay [Rear light specification]	U-9
R12	Relay	5	Cab light relay [Cab light specification]	U-9
R15	Terminal	1	Electrical intake air heater relay (Coil circuit)	A-8
R16	Terminal	1	Electrical intake air heater relay (Contact circuit)	B-8
R17	X	2	Starting motor safety relay (Terminals S and R)	B-7
R18	Relay	5	Automatic preheater relay	X-9
R28	Terminal	1	Starting motor safety relay (Terminal C)	B-9
R20	Relay	5	Air conditioner blower relay	T-8
R21	Relay	5	Air conditioner compressor relay	T-8
R23	Relay	5	Engine controller relay (1)	W-9
R24	Relay	5	Engine controller relay (2)	W-9
S02	SWP	6	Light switch	S-7
S04	SWP	6	Swing lock switch	S-7
S07	SWP	6	Rotary lamp switch [Rotary lamp specification]	S-7
S10	090	2	Right knob switch	R-6
S11		2	Left knob switch	W-1
S14	M	3	PPC oil pressure lock switch	W-1
S21	—	12	Emergency pump drive switch	P-9
S22	—	6	Swing holding brake release switch	P-9
S25	090	8	Intermediate connector	Q-8
S30	S	8	Model selection connector	T-8
SB	Terminal	2	Starting motor (Terminal B)	AI-7
SC	Terminal	1	Starting motor (Terminal C)	AI-7
T01	Terminal	2	Floor frame ground	Y-3
T02	Terminal	1	Cab ground	AH-3
T03		1	Intermediate connector	X-2
T03A	Terminal	1	Radio body ground	X-2
T04	Terminal	1	Revolving frame ground	J-1, V-1
T05	Terminal	1	Revolving frame ground	K-1
T06	Terminal	1	Revolving frame ground	K-1
T07	Terminal	1	Revolving frame ground	K-1
T08	Terminal	1	Revolving frame ground	B-7
T09	Terminal	1	Revolving frame ground	L-1
T10	Terminal	1	Revolving frame ground	L-2
T12	Terminal	1	Engine cylinder block ground	AL-1
TOOL PORT			Communication connector	AJ-2
V01	D	2	PPC lock solenoid valve	M-2
V02	D	2	2-stage relief solenoid valve	H-8
V03	D	2	Swing holding brake solenoid valve	M-2
V04	D	2	Travel speed shifting solenoid valve	I-8
V05	D	2	Travel junction solenoid valve	M-2
V06	D	2	Attachment return selector solenoid valve [Attachment specification]	I-9
V11	D	2	F-PC-EPC valve	AN-4
V12	D	2	R-PC-EPC valve	AN-2
V19	D	2	LS-EPC valve	AN-5
V23	D	2	Merge-divider EPC valve (Main)	I-9
V24	D	2	Merge-divider EPC valve (LS)	J-9
V30	DT	2	Attachment flow regulator EPC valve [Attachment specification]	Q-2
W03	M	2	Window rear limit switch	AG-9









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