UEBM002200

SHOP MANUAL

KOMATSU®

PC160LC-7K
PC180LC-7K

MACHINE MODEL	SERIAL NUMBER
PC160LC-7K	**K40001 AND UP**
PC180LC-7K	**K40001 AND UP**

- This shop manual may contain attachments and optional equipment that are not available in your area. Please consult your local Komatsu distributor for those items you may require.
  Materials and specifications are subject to change without notice.
- PC160LC/PC180LC-7K mount the SAA4D102E-2 engine.
  For details of the engine, see the 102 Series Engine Shop Manual.

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DIMENSIONS

	Item	Unit	PC160LC-7	PC180LC-7
A	Overall length	mm	8,565	
B	Overall height	mm	3,027	
C	Overall width	mm	2,490	2,800
D	Track shoe width	mm	500	600
E	Height of cab	mm	2,970	
F	Tail swing radius	mm	2,435	
G	Track overall length	mm	3,965	4,065
H	Length of track on ground	mm	3,170	3,270
	Min. ground clearance	mm	440	

WORKING RANGES

	Item	Unit	PC160LC-7	PC180LC-7
A	Max. digging reach	mm	8,960	
B	Max. digging depth	mm	5,960	
C	Max. digging height	mm	9,180	
D	Max. vertical wall depth	mm	5,690	
E	Max. dumping height	mm	6,370	
F	Min. dumping height	mm	2,400	
G	Max. reach at ground level	mm	8,800	

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SPECIFICATIONS

Machine model				PC160LC-7K	PC180LC-7K
Serial Number				40001 and up	40001 and up
Bucket capacity			m^3	0.65	
Operating weight			kg	16,400	17,700
Performance	Working ranges	Max. digging depth	mm	5,960	
		Max. vertical wall depth	mm	5,690	
		Max. digging reach	mm	8,960	
		Max. reach at ground level	mm	8,800	
		Max. digging height	mm	9,180	
		Max. dumping height	mm	6,370	
	Max. digging force (using power max. function)		kN {kg}	112.8 {11,500} (122.6 {12,500})	
	Swing speed		rpm	12	
	Swing max. slope angle		deg.	20	
	Travel speed		km/h	Lo: 3.4 Hi: 5.5	
	Gradeability		deg.	35	
	Ground pressure (standard shoe width)		kPa {kg/cm²} (mm)	46.1 {0.47} (500)	40.2 {0.41} (600)
Dimensions	Overall length (for transport)		mm	8,565	
	Overall width (of upper structure)		mm	2,490	
	Overall width of track		mm	2,490	2,800
	Overall height (for transport)		mm	3,027	
	Ground clearance to bottom of upper structure		mm	1,034	1,055
	Min. ground clearance		mm	440	
	Tail swing radius		mm	2,435	
	Min. swing radius of work equipment		mm	2,990	
	Height of work equipment at min. swing radius		mm	7,185	
	Length of track on ground		mm	3,170	3,270
	Track gauge		mm	1,990	2,200
	Height of machine cab		mm	2,970	
Engine	Model			SAA4D102E-2	
	Type			4-cylinder, direct injection, emissionised, turbocharged, after-cooled diesel.	
	No. of cylinders - bore x stroke		mm	4 – 102 x 120	
	Piston displacement		ℓ {cc}	3.92 {3,920}	

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Machine model				PC160LC-7	PC180LC-7
Serial Number				40001 and up	
Engine	Performance	Flywheel horsepower	kW/{HP/rpm}	82/{111/2,200}	
		Max. torque	Nm/rpm {kgm/rpm}	451/1,500 {46/1,500}	
		Max. speed at no load	rpm	2,450	
		Min. speed at no load	rpm	1,050	
		Min. fuel consumption	g/kWh {g/HPh}	226 {168}	
	Starting motor			24V, 4.5 kW	
	Alternator			24V, 60 A	
	Battery			12V, 95 Ah x 2	
	Radiator core type			Corrugated aluminum	
Under-carriage	Carrier roller			2 on each side	
	Track roller			7 on each side	
	Track shoe			Assembly-type triple grouser, 44 on each side	Assembly-type triple grouser, 45 on each side
Hydraulic system	Hydraulic pump	Type x No.		HPD71, variable capacity piston type	
		Delivery	ℓ {cc}	Piston type: 156 x 2	
		Set pressure	MPa (kg/cm^2)	31.4 {320}	
	Control valve	Type x No.		7-spool type x 1	
		Control method		Hydraulic type	
	Hydraulic motor	Travel motor		HMV110ADT-2, Variable capacity piston type (with brake valve, parking brake x 2)	
		Swing motor		MSG-85P-17TR fixed capacity, Piston type (with safety valve, holding brake x 2)	
	Hydraulic culinder	Type		Boom (※ 1)	Arm (※ 1, ※ 2)	Bucket
				Double acting piston	Double acting piston	Double acting pis-ton
		Inside diameter of cylin-der	mm	110	120	105
		Diameter of piston rod	mm	75	85	70
		Stroke	mm	1,175	1,342	1,027
		Max. distance between pins	mm	2,810	3,246	2,528
		Min. distance between pins	mm	1,635	1,904	1,501
	Hrdraulic tank			Closed box type		
	Hydraulic filter			Tank return side		
	Hydraulic cooler			CF40-1 (Air cooled)		

※ 1. With cushion on head side ※ 2. With cushion on bottom side

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Unit: mm

No.	Check item	Criteria					Remedy
		Standard size			Repair limit		
15	Unload valve spring	Free length x Outside diameter	Installed length	Installed load	Free length	Installed load	
		47.2 × 17.3	32.5	180 N {18.9 kg}	—	144 N {14.7 kg}	
16	Sequence valve spring	58.9 × 13	53	83.4 N {8.5 kg}	—	68.7 N {6.8 kg}	
17	Pump merge-divider valve spool return spring	49.8 × 18.8	33	98 N {10 kg}	—	78.4 N {8 kg}	If damaged or deformed, replace spring
18	Check valve spring	16.4 × 8.9	11.5	13.7 N {1.4 kg}	—	11 N {1.1 kg}	
19	Lift check valve spring	77.3 × 20.7	40	135 N {13.8 kg}	—	108 N {11 kg}	
20	Cooler bypass valve spring	72.7 × 20.6	42.5	135 N {13.8 kg}	—	108 N {11 kg}	
21	Check valve spring	41.5 × 8.5	31.5	5.9 N {0.6 kg}	—	4.7 N {0.48 kg}	

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CLASSIFICATION AND STEPS FOR TROUBLESHOOTING

Classification of troubleshooting

Mode	Content
Code display	Troubleshooting when Error Code (electrical system) and Failure Code (mechanical system) are displayed.
E mode	Troubleshooting of electrical system
H mode	Troubleshooting of hydraulic and mechanical systems
(Engine)	Troubleshooting of engine assembly (refer to the shop manual for engine in 102 series)

Steps for troubleshooting

If some phenomenon occurs on a machine that looks like a failure, identify the corresponding troubleshooting No. and proceed to the explanations for diagnosis.

1. **Troubleshooting steps when calling User Code display in the monitor panel**
   In the User Code display, select and depress [✓] switch to display Error Code. Following displayed Service Code for the electrical system, carry out the troubleshooting along the corresponding code display.

2. **Troubleshooting steps when the electrical system Error Code or mechanical system Failure Code is recorded in the failure history:**
   If not calling User Code in the monitor panel, check the electrical system Error Code or mechanical system Failure Code, using the failure history function of the monitor panel.
   - ★ If Error Code in the electrical system is recorded, delete the all codes once and revive the code in the display again to check if the same abnormality still persists.
   - ★ Failure Code in the mechanical system cannot be deleted.

3. **Troubleshooting steps without User Code display and no failure history is available**
   If there is no display of User Code nor the failure history in the monitor panel, it is possible that a failure that the monitor panel cannot diagnose by itself may have occurred in any of the electrical, hydraulic or mechanical system. In such a case, reexamine the phenomenon, find out the most similar phenomenon from among "Failure like Phenomena and Troubleshooting No." and carry out E mode or H mode troubleshooting related to the phenomenon in question.

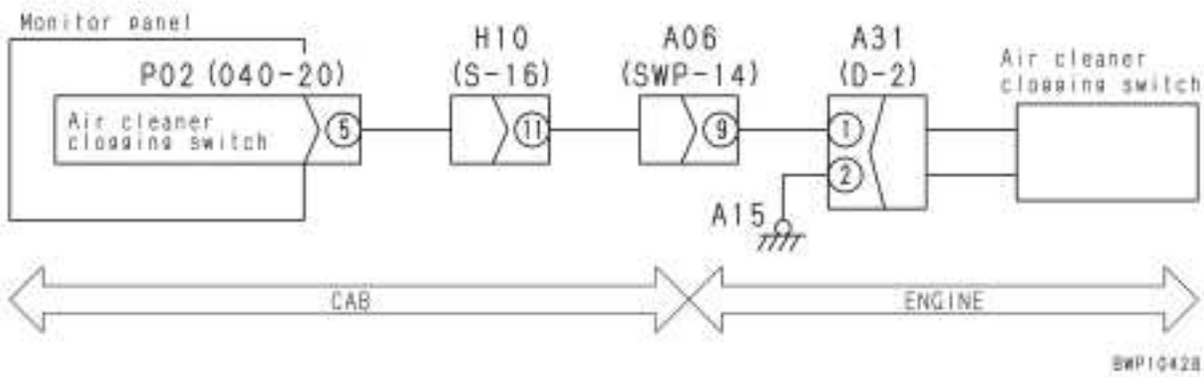
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Failure Code in Mechanical System AA10NX (Air cleaner clogging)

User Code	Error Code	Failure Code	Failure phenomenon	Air cleaner clogged (in mechanical system)
—	—	AA10NX		
Failure content	• While the engine was running, the signal circuit in the air cleaner clogging switch was opened (i.e. disconnected from grounding circuit).			
Response from controller	• None in particular			
Phenomenon occurring on machine	• There is a possibility that the engine is damaged, if it is used continuously without corrective action.			
Relative information	• This Failure Code is recorded, when the air cleaner clogging caution symbol is displayed in the monitor panel while the engine is running. • Input from the air cleaner clogging switch (ON or OFF) can be confirmed in the monitor panel. (Code No. 046: Monitor input 2)			

Presumed cause and standard value in normalcy		Cause	Standard value in normalcy and references for troubleshooting			
	1	Air cleaner clogged (when the system is in normal condition)	★Check the air cleaner for clogging. If it is clogged, clean or replace it with new one.			
	2	Air cleaner clogging switch defective (Internal disconnection)	★Turn the engine starting switch OFF for the preparations, and keep the engine running during the troubleshooting.			
			A31 (male)	Air cleaner	Resistance value	
			Between (1) and (2)	When in normal condition	Below 1 Ω	
				When clogged	Above 1 MΩ	
	3	Disconnection of wiring harness (Disconnection or defective contact with connector)	★Turn the engine starting switch OFF for the preparations, and hold it running during the troubleshooting.			
			Wiring harness between P02 (female) (5) and A31 (female) (1)		Resistance value	Below 1 Ω
			Between wiring harness A31 (female) (2) and grounding		Resistance value	Below 1 Ω
	4	Monitor panel defective	★Turn the engine starting switch OFF for the preparations, and keep the engine running during the troubleshooting.			
			P02	Air cleaner	Voltage	
			Between (5) and grounding	When in normal condition	Below 1 V	
				When clogged	20 – 30 V	

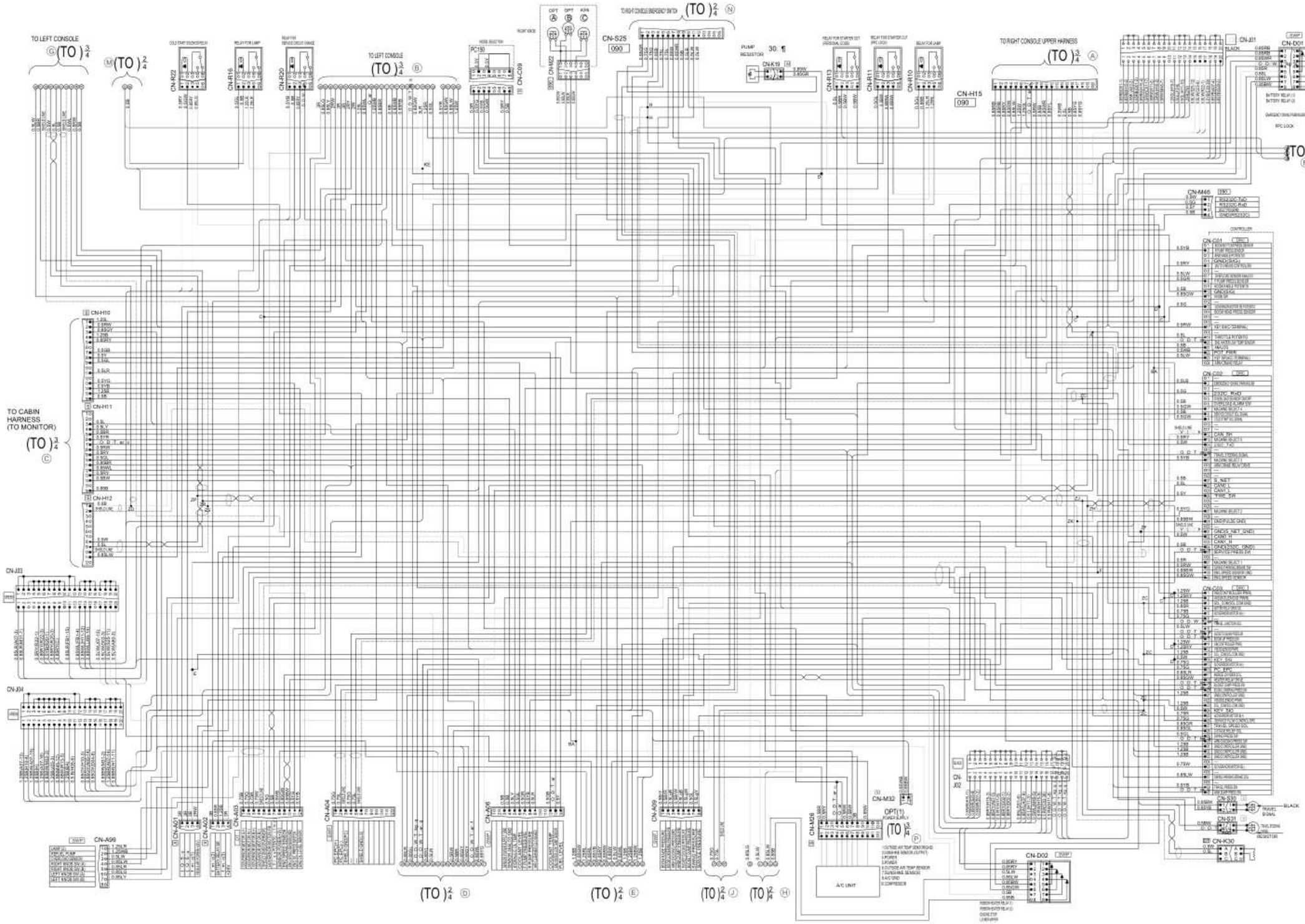
Related circuit diagram



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ELECTRICAL CIRCUIT DIAGRAM (1/4)

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