UEBM001701

SHOP MANUAL

KOMATSU®

PC210, 210LC, 210NLC
PC240LC, 240NLC-7K

MACHINE MODEL	SERIAL NUMBER
PC210-7K	**K40001 AND UP**
PC210LC-7K	**K40001 AND UP**
PC210-NLC-7K	**K40001 AND UP**
PC240LC-7K	**K40001 AND UP**
PC240NLC-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.

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DIMENSIONS

	Item	Unit	PC240LC-7K	PC240NLC-7K
A	Overall length	mm	9,885	9,885
B	Overall height	mm	3,160	3,160
C	Overall width	mm	2,980	3,280
D	Track shoe width	mm	600	700
E	Height of cab	mm	3,015	3,015
F	Tail swing radius	mm	2,940	2,940
G	Track overall length	mm	4,250	4,640
H	Length of track on ground	mm	3,460	3,845
	Min. ground clearance	mm	440	400

WORKING RANGES

	Item	Unit	PC240LC-7K	PC240NLC-7K
A	Max. digging reach	mm	10,180	10,180
B	Max. digging depth	mm	6,920	6,920
C	Max. digging height	mm	10,000	10,000
D	Max. vertical wall depth	mm	6,010	6,010
E	Max. dumping height	mm	7,035	7,035
F	Min. dumping height	mm	2,530	2,530
G	Max. reach at ground level	mm	10,020	10,020

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SPECIFICATIONS
PC210-7K, PC210LC-7K, PC210NLC-7K

Machine model				PC210-7K	PC210LC-7K	PC210NLC-7K
Serial Number				K40001 and up		
Bucket capacity			m³	0.8		
Operating weight			kg	19,300	20,700	
Performance	Working ranges	Max. digging depth	mm	6,620		
		Max. vertical wall depth	mm	5,980		
		Max. digging reach	mm	9,875		
		Max. reach at ground level	mm	9,700		
		Max. digging height	mm	10,000		
		Max. dumping height	mm	7,110		
	Max. digging force		kN {kg}	138.3 {14,100}		
	(using power max. function)			(149.1 {15,200})		
	Swing speed		rpm	12.4		
	Swing max. slope angle		deg.	20		
	Travel speed		km/h	Lo: 3.0 (※ Mi: 4.1)		
				Hi: 5.5		
	Gradeability		deg.	35		
	Ground pressure		kPa {kg/cm²}	36.3 {0.37}		
	[standard shoe width]		[mm]	[700]		
Dimensions	Overall length (for transport)		mm	9,425	9,425	9,425
	Overall width		mm	2,800	3,080	2,540
	Overall width of track		mm	2,800	3,080	2,540
	Overall height (for transport)		mm	3,000	3,000	3,000
	Overall height to chassis		mm	3,000	3,000	3,000
	Ground clearance to bottom of upper structure		mm	1,085	1,085	1,085
	Min. ground clearance		mm	440	440	440
	Tail swing radius		mm	2,750	2,750	2,750
	Min. swing radius of work equipment		mm	3,040	3,040	3,040
	Height of work equipment at min. swing radius		mm	8,005	8,005	8,005
	Length of track on ground		mm	3,270	3,655	3,655
	Track gauge		mm	2,200	2,380	2,040
	Height of machine cab		mm	2,335	2,335	2,335

※ : The "Mi" mode is on the multi-monitor specification machine only.

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Machine model				PC210-7K	PC210LC-7K	PC210NLC-7K
Serial Number				K40001 and up		
Engine	Model			SAA6D102E-2-A		
	Type			4-cycle, water-cooled, in-line, vertical, direct injection, with turbo charger		
	No. of cylinders - bore x stroke		mm	6 - 102 x 120		
	Piston displacement		l {cc}	5.883 {5,883}		
	Performance	Flywheel horsepower	kW/rpm {HP/rpm}	106.7/1,950 {143/1,950}		
		Max. torque	Nm/rpm {kgm/rpm}	610.0/1,500 {62.2/1,500}		
		Max. speed at no load	rpm	2,150		
		Min. speed at no load	rpm	1,030		
		Min. fuel consumption	g/kWh {g/HPh}	215 {160}		
	Starting motor			24V, 4.5 kW		
	Alternator			24V, 35 A		
	Battery			12V, 110 Ah x 2		
	Radiator core type			Corrugated CWX-4		
Under-carriage	Carrier roller			2 on each side		
	Track roller			7 on each side	9 on each side	
	Track shoe			Assembly-type triple grouser, 45 on each side	Assembly-type triple grouser, 49 on each side	
Hydraulic system	Hydraulic pump	Type x No.		HPV95+95, variable displacement		
		Delivery	l/min	Piston type: 214 x 2		
		Set pressure	MPa (kg/cm²)	Piston type: 37.2 {380}		
	Control valve	Type x No.		6-spool type x 1		
		Control method		Hydraulic		
	Hydraulic motor	Travel motor		HMV110ADT-2, Piston type (with brake valve, parking brake): x 2		
		Swing motor		KMF125ABE-5, Piston type (with safety valve, holding brake): x 1		
	Hydraulic cylinder	Type		Boom: Double acting piston	Arm: Double acting piston	Bucket: Double acting piston
		Inside diameter of cylinder	mm	120	135	115
		Diameter of piston rod	mm	85	95	80
		Stroke	mm	1,334.5	1,490	1,120
		Max. distance between pins	mm	3,204.5	3,565	2,800
		Min. distance between pins	mm	1,870	2,075	1,680
	Hrdraulic tank			Closed box type		
	Hydraulic filter			Tank return side		
	Hydraulic cooler			CF40-1 (Air cooled)		

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1) Pump control function during travel

- If the machine travels in a work mode other than mode A, the work mode and the engine speed are kept as they are and the pump absorption torque is increased.

★ For details, see ENGINE/PUMP COMPOSITE CONTROL FUNCTION.

1. Travel speed change function

i) Manual change with travel speed switch

If the travel speed switch is changed between Lo, (※ Mi), and Hi, the governor/pump controller controls the pump capacity and motor capacity at each gear speed as shown at right to change the travel speed.

Travel speed switch	Lo (Low speed)	(※ Mi) (Middle Speed)	Hi (High speed)
Pump capacity (%)	60	90	100
Motor capacity	Max.	Max.	Min.
Travel speed (km/h)	3.0	4.1	5.5

ii) Automatic change by engine speed

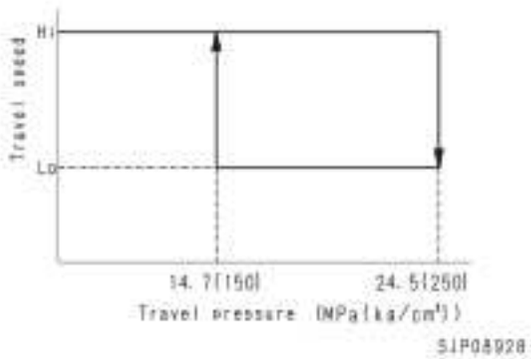
If the engine speed is lowered to 1,500 rpm or less with the fuel control dial during travel;

- the travel speed does not change even if the travel speed switch is changed from Lo, (※ Mi) to Hi,
- the travel speed changes to Mi level automatically if the travel speed has been Hi.

iii) Automatic change by pump discharge pressure

While the machine is traveling with the travel speed switch at Hi, if the load is increased because of an upslope ground, etc. and the travel pressure keeps above 24.5 MPa {250 kg/cm²} for 0.5 seconds, the travel motor capacity is changed automatically and the travel speed is lowered (to the Mi level) (The travel speed switch is kept at Hi, however).

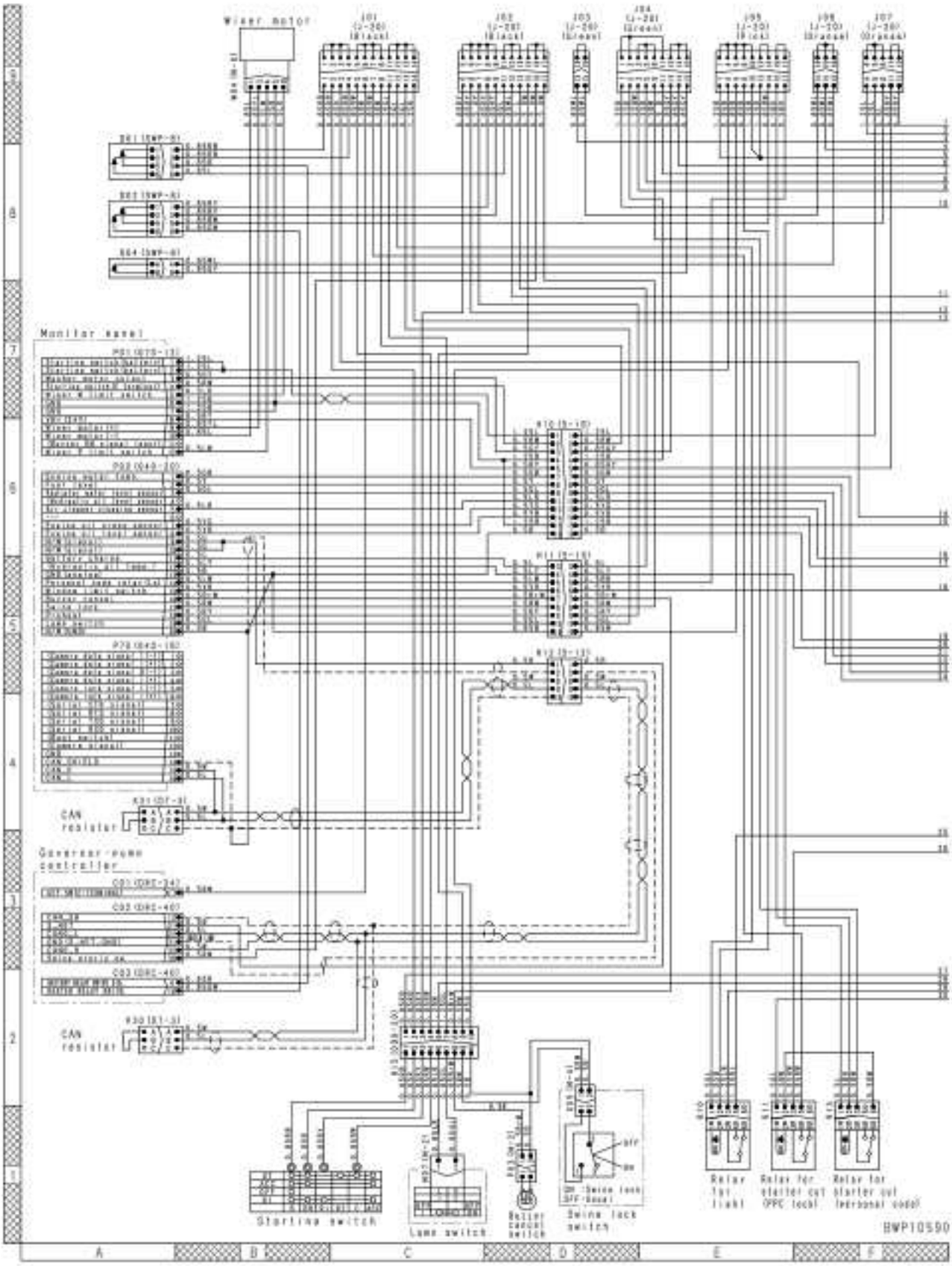
While the machine is travelling at Mi level, if the load is reduced on a flat or downslope ground, etc. and the travel pressure keeps below 14.7 MPa {150 kg/cm²} for 0.5 seconds, the travel motor capacity is changed automatically and the travel speed is set to Hi again.



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Monitor Panel System Circuit Diagram (M Circuit)



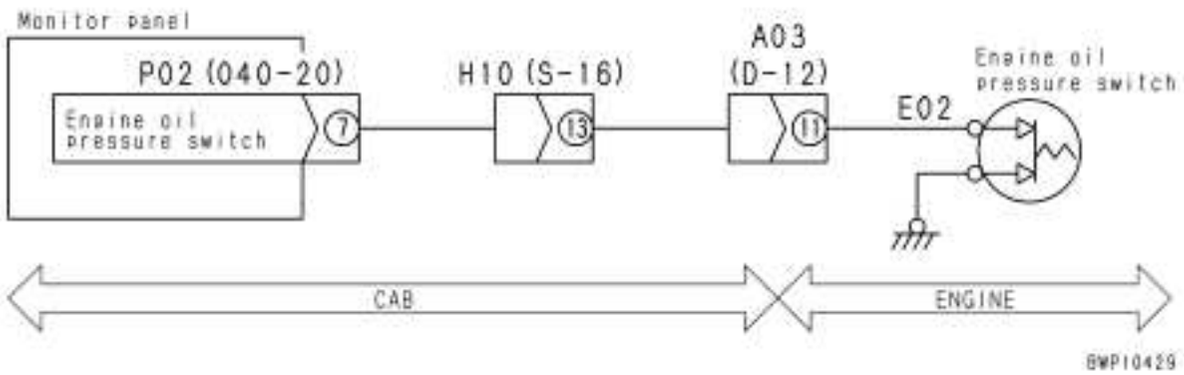
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Failure Code in Mechanical System B@BAZG (Abnormally lowered engine oil pressure)

User Code	Service Code	Failure Code	Failure phenomenon	Engine oil pressure abnormally lowered (in mechanical system)
—	—	B@BAZG		
Failure content	• The signal circuit in the engine oil pressure switch was closed (i.e. connected with grounding), while the engine was running.			
Response from controller	• None in particular			
Phenomenon occurring on machine	• There is a possibility that the engine may seize, if the engine is kept running without corrective action.			
Relative information	• This Failure Code is recorded, if the engine oil pressure caution symbol is displayed in the monitor panel, while the engine is running. • Input from the engine oil pressure switch (ON or OFF) can be confirmed in the monitor function. (Code No. 046: Monitor input 2)			

Presumed cause and standard value in normalcy		Cause	Standard value in normalcy and references for troubleshooting			
	1	Engine oil pressure lowered (the system in normal condition)	★Check the failure cause and damage to the engine, and then make repairs.			
	2	Engine oil pressure switch defective (Internal short-circuiting)	★Turn the engine starting switch OFF for the preparations, and keep the engine running during the troubleshooting.			
			E02 (on switch side)	Engine oil pressure	Resistance value	
			Between terminal and grounding	When in normal condition	Above 1 MΩ	
				When lowered	Below 1 Ω	
	3	Grounding fault of wiring harness (Contact with grounding circuit)	★Turn the engine starting switch OFF for the preparations, and hold it in the OFF position during the troubleshooting.			
			Between wiring harness between P02 (female) (7) and E02 (terminal) and grounding		Resistance value	Above 1 MΩ
	4	Monitor panel defective	★Turn the engine starting switch OFF for the preparations, and keep the engine running during the troubleshooting.			
			P02	Engine oil pressure	Voltage	
			Between ⑦ and grounding	When in normal condition	20 – 30 V	
				When lowered	Below 1 V	

Electrical Circuit Diagram for Engine Oil Pressure Switch in Monitor Panel

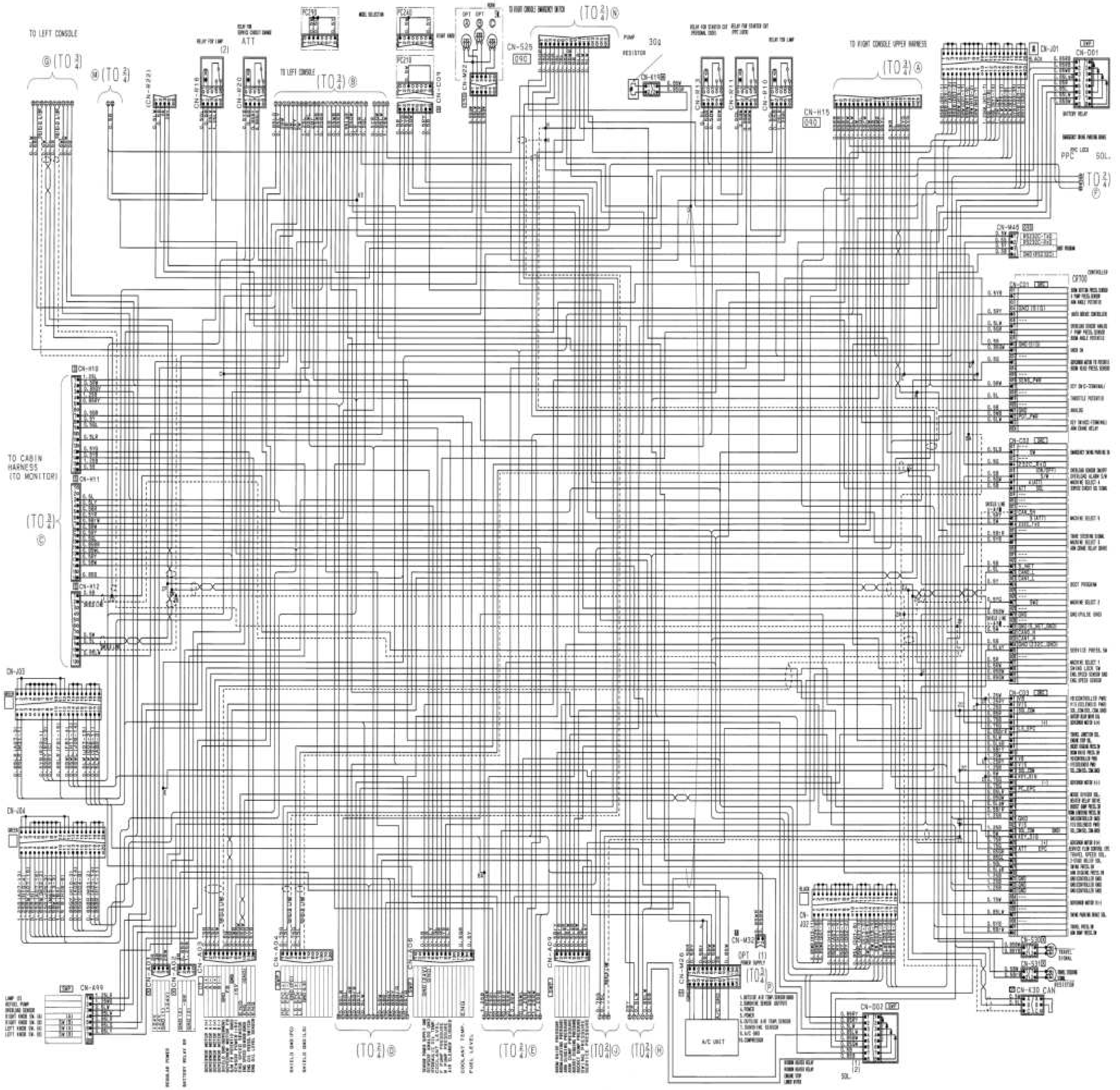


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ELECTRICAL CIRCUIT DIAGRAM (1/4)

FOR MULTI MONITOR

PC210-7K, PC210LC-7K, PC210NLC-7K
PC240LC-7K, PC240NLC-7K



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