CEBM003502

SHOP MANUAL

KOMATSU®

WA420-3MC

WHEEL LOADER

MACHINE MODEL	SERIAL NUMBERS
WA420-3MC	A31001 and up

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Machine model		WA420-3MC	
Serial number		A31001 and up	
Engine	Model	Komatsu SAA6D114E-1	
	Type	Direct injection	
	Aspiration	turbo charged - air to air after cooled	
	No. of cylinders - bore x stroke	6 - 114 mm x 135 mm (4.5 IN x 5.3 IN)	
	Piston displacement	8.27 ℓ (505 in³)	
	Gross power @ 2200 rpm	172 kw (230 HP)	
	Maximum torque (gross) @ 1500 rpm High idle Low idle	 2450 ± 50rpm 775 ± 25 rpm	
	Starting motor	24v, 7.5kW	
	Alternator	24v, 50A	
	Battery	12v, 170Ah x 2	
Power train	Torque converter	3-element, single-stage, single-phase (Komatsu TCA37-2Z)	
	Transmission	Spur gear, constant-mesh multiple-disc ,hydraulic actuated, modulation type	
	Reduction gear	Spiral bevel gear, splash lubrication	
	Differential	Straight bevel gear torque proportioning	
	Final drive	Planetary gear, single stage, splash lubrication	
Axle, wheel	Drive type	Front /rear wheel drive	
	Font axle	Fixed frame, full floating type	
	Rear axle	Center pin support type, full-floating type	
	Wheel rim	19.5 x 25TB	
	Tire	23.5 x 25-20pr L3	26.5 x 25-16pr L3
	Front tire factory inflation pressure	343 **kPa** (50 **psi**)	324 **kPa** (47 **psi**)
	Rear tire factory inflation pressure	304 **kPa** (44 **psi**)	275 **kPa** (40 **psi**)
Brakes	Main service brakes	Front / rear wheel independent system control, sealed multiple disc wet type brake with hydraulic booster	
	Parking brake	Drive shaft, wet type disc brake hydraulically released spring type	

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METHOD OF USING TROUBLESHOOTING CHARTS

1. Category of troubleshooting code number

Troubleshooting code No.	Component
S-__FF	Troubleshooting of engine
M-__FF	Troubleshooting of main monitor
K-__FF	Troubleshooting of maintenance monitor
E-__FF	Troubleshooting of electrical system
T-__FF	Troubleshooting of hydraulic and mechanical system
D-__FF	Troubleshooting of ECSS (Electronically Controlled Suspension System)

2. Method of using troubleshooting table for each troubleshooting mode

1) Troubleshooting code number and problem
The title of the troubleshooting chart gives the troubleshooting code, service code, and failure mode (problem with the machine). (See Example (1).)

2) Distinguishing conditions
Even with the same failure mode (problem), the method of troubleshooting may differ according to the model, component, or problem. In such cases, the failure mode (problem) is further divided into sections marked with small letters (for example, (a)), so go to the appropriate section to carry out troubleshooting.
If the troubleshooting table is not divided into sections, start troubleshooting from the first check item in the failure mode. (See Example (2).)

3) Method of following troubleshooting chart:
- Check or measure the item inside □ and according to the answer follow either the YES line or the NO line to go to the next □. (Note: The number written at the top right corner of the □ is an index number; it does not indicate the order to follow.)
- Following the YES or NO lines according to the results of the check or measurement will lead finally to the Cause column. Check the cause and take the action given in the Remedy column on the right. (See Example (3).)
- Below the [ ] there are the methods for inspection or measurement, and the judgement values. If the judgement values below the □ are correct or the answer to the question inside the □ is YES, follow the YES line; if the judgement value is not correct, or the answer to the question is NO, follow the NO line.
- Below the □ is given the preparatory work needed for inspection and measurement, and the judgement values. If this preparatory work is neglected, or the method of operation or handling is mistaken, there is danger that it may cause mistaken judgement, or the equipment may be damaged. Therefore, before starting inspection or measurement, always read the instructions carefully, and start the work in order from Item 1).

4) General precautions:
When carrying out troubleshooting for the failure mode (problem), precautions that apply to all items are given at the top of the page and marked with ■. (See Example (4).)
The precautions marked ■ are not given in the □ but must always be followed when carrying out the check inside the □.

5) Troubleshooting tools:
When carrying out the troubleshooting, prepare the necessary troubleshooting tools. For details, see TOOLS FOR TESTING, ADJUSTING, AND TROUBLESHOOTING.

6) Installation position, pin number
A diagram or chart is given for the connector type, installation position, and connector pin number connection. When carrying out troubleshooting, see this chart for details of the connector pin number and location for inspection and measurement of the wiring connector number appearing in the troubleshooting flow chart for each failure mode (problem).

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(e) Error code (d4) is displayed

1
Is connection of wiring harnesses normal?

1) Disconnect CNAL4.
2) Is continuity between CNAL4 (female) (1), (2), (3), (5) - chassis ground as shown in table?

YES

2
Is continuity of wiring harnesses normal?

1) Disconnect CNAL2.
2) Is continuity between CNAL2 (female) (1) - (4)and chassis ground as shown in table?

YES

NO

Cause	Remedy
Defective controller	Replace
Disconnection in wiring harness between CNAL2 (female) and CNALA (male), or contact with chassis ground	Inspect then repair or replace
Defective contact or disconnection in wiring harness between CNAL4 (female) and chassis ground or contact with chassis ground	Inspect then repair or replace

Table

Model \ Connector	CNAL4(female)				CNAL2(female)			
	(5)	(2)	(3)	(1)	(1)	(2)	(3)	(4)
WA320	No	No	No	Yes	No	No	No	Yes
WA380	No	No	Yes	No	No	No	Yes	No
WA420	No	Yes	No	No	No	Yes	No	No
WA450	No	Yes	Yes	Yes	No	Yes	Yes	Yes

VLSM0017

(f) No abnormality display is given
(1) Does not work at all

1
Is voltage between CNAL2 (15) and chassis ground normal?

1) 0-3V?
2) Turn starting switch ON.
3) Turn main monitor ECSS switch ON.

YES

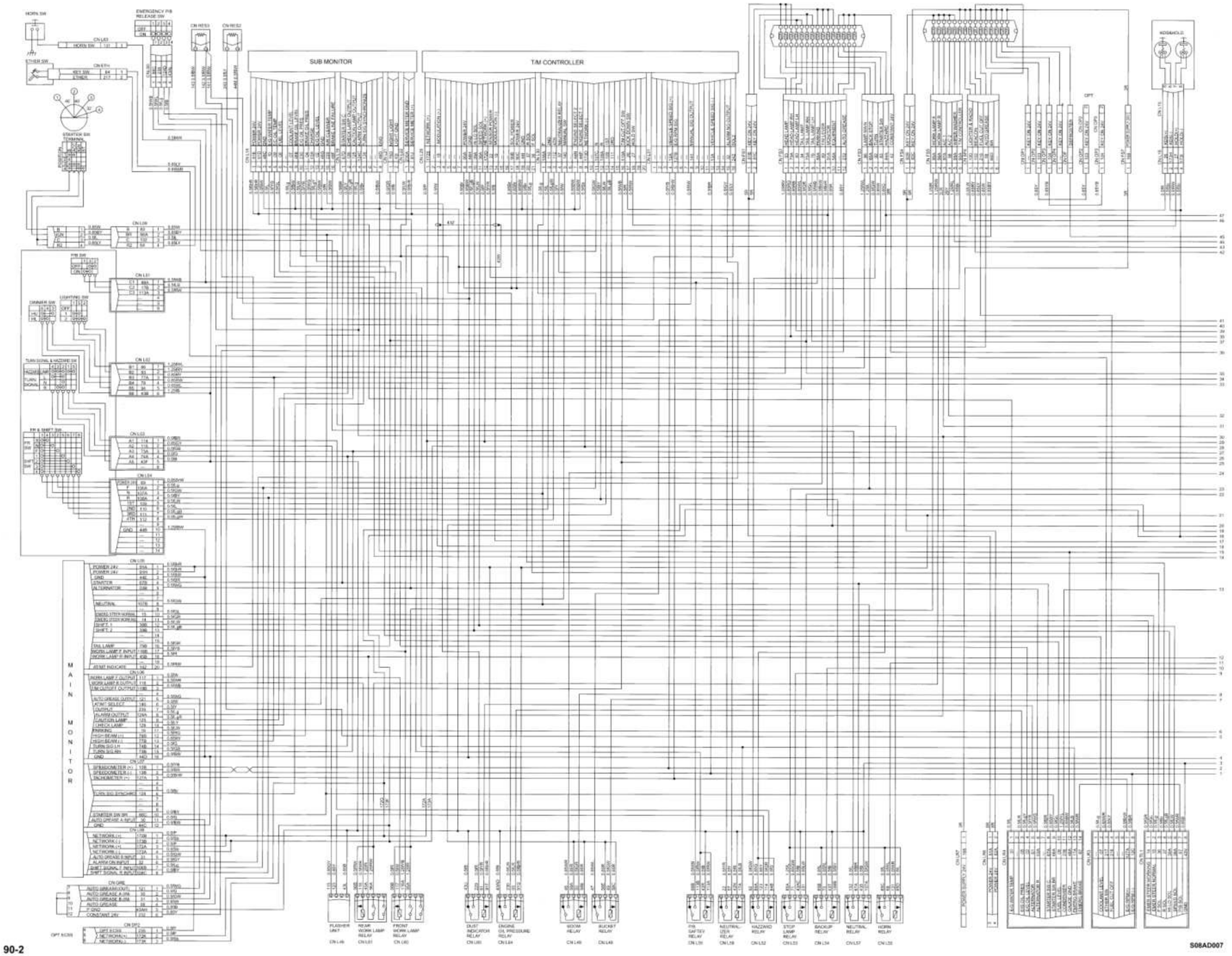
2
Is voltage between CNL06 (female)(7) and chassis ground normal?

1) 20-30V
2) Disconnect CNL06.

NO

Cause	Remedy
Defective controller	Replace
Defective main monitor	See main monitor troubleshooting
Disconnection in wiring harness between CNAL2 (female) (15) - CNDP2(1) CNL06 (female) (7)	Inspect, then repair or replace

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