VEBM620100

SHOP MANUAL

WA320-6
WA320PZ-6

KOMATSU®

MACHINE MODEL	SERIAL NUMBER
WA320-6	70001 and up
WA320PZ-6	70092 and up H00051 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.

- WA320-6 and WA320PZ-6 mounts the SAA6D107E-1 engine.

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Composition of shop manual

The contents of this shop manual are shown together with Form No. in a list.

Note 1: Always keep the latest version of this manual in accordance with this list and utilize accordingly.
The marks shown to the right of Form No. denote the following:
○: New issue (to be filed additionally) ●: Revision (to be replaced for each Form No.)

Note 2: This shop manual can be supplied for each Form No.

Note 3: To file this shop manual in the special binder for management, handle it as follows:
- Place a divider on the top of each section in the file after matching the Tub No. with No. indicated next to each Section Name shown in the table below:
- File overview and other materials in sections in the order shown below and utilize them accordingly.

Section Title	Form Number
Shop Manual	VEBM620100
00 Index and foreword	SEN04163-00
100 Index	SEN04171-00
200 Foreword and general information	SEN04172-00
01 Specification	SEN04164-00
100 Specification and technical data	SEN04173-00
10 Structure, function and maintenance standard	SEN04165-00
100 Engine and cooling system	SEN04174-00
200 Power train	SEN04175-00
300 Steering system	SEN04176-00
400 Brake system	SEN04177-00
500 Undercarriage and frame	SEN04178-00
600 Hydraulic system	SEN04179-00
700 Work equipment	SEN04180-00
800 Cab and its attachments	SEN04181-00
910 Electrical system, Part 1	SEN04182-00
920 Electrical system, Part 2	SEN04183-00
20 Standard value table	SEN04166-00
100 Standard service value table	SEN04184-00
30 Testing and adjusting	SEN04167-00
110 Testing and adjusting, Part 1	SEN04185-00
120 Testing and adjusting, Part 2	SEN04186-00
130 Testing and adjusting, Part 3	SEN04187-00
40 Troubleshooting	SEN04168-00
100 Failure code table and fuse locations	SEN04188-00
200 General information on troubleshooting	SEN04189-00
310 Troubleshooting by failure code (Display of code), Part 1	SEN04190-00
320 Troubleshooting by failure code (Display of code), Part 2	SEN04191-00
330 Troubleshooting by failure code (Display of code), Part 3	SEN04192-00
340 Troubleshooting by failure code (Display of code), Part 4	SEN04193-00

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350 Troubleshooting by failure code (Display of code), Part 5 ..... SEN04194-00
360 Troubleshooting by failure code (Display of code), Part 6 ..... SEN04195-00
370 Troubleshooting by failure code (Display of code), Part 7 ..... SEN04196-00
400 Troubleshooting of electrical system (E-mode) SEN04197-00
500 Troubleshooting of hydraulic and mechanical system (H-mode) SEN04198-00
600 Troubleshooting of engine (S-mode) SEN04199-00

50 Disassembly and assembly SEN04169-00
100 General information on disassembly and assembly SEN04200-00
200 Engine and cooling system SEN04201-00
310 Power train, Part 1 ..... SEN04202-00
320 Power train, Part 2 ..... SEN04203-00
400 Undercarriage and frame SEN04204-00
500 Hydraulic system SEN04205-00
600 Work equipment SEN04206-00
700 Cab and its attachments SEN04207-00
800 Electrical system SEN04208-00

90 Diagrams and drawings SEN04170-00
100 Hydraulic diagrams and drawings SEN04209-00
200 Electrical diagrams and drawings SEN04210-00

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Table of contents

00 Index and foreword
100 Index SEN04171-00
Composition of shop manual ... 2
Table of contents ... 4
200 Foreword and general information SEN04172-00
Safety notice ... 2
How to read the shop manual ... 7
Explanation of terms for maintenance standard ... 9
Handling of electric equipment and hydraulic component ... 11
Handling of connectors newly used for engines ... 20
How to read electric wire code ... 23
Precautions when carrying out operation ... 26
Method of disassembling and connecting push-pull type coupler ... 29
Standard tightening torque table ... 32
Conversion table ... 36

01 Specification
100 Specification and technical data SEN04173-00
Specification dimension drawing ... 3
Specifications ... 4
Weight table ... 9
Table of fuel, coolant and lubricants ... 11

10 Structure, function and maintenance standard
100 Engine and cooling system SEN04174-00
Engine mount and transfer mount ... 2
Damper ... 3
Cooling system ... 4
Cooling system hydraulic piping diagram ... 5
Cooling fan motor ... 7
200 Power train SEN04175-00
Power train ... 3
Power train system diagram ... 4
Drive shaft ... 6
HST hydraulic piping diagram ... 7
HST pump ... 8
HST motor ... 16
Transfer ... 22
Clutch solenoid valve ... 33
Axle ... 34
Differential ... 36
Torque proportioning differential ... 41
Limited slip differential ... 44
Final drive ... 48
300 Steering system SEN04176-00
Steering piping diagram ... 3
Steering column ... 4
Priority valve ... 5
Orbit-roll valve ... 8
Cushion valve ... 16
Steering cylinder ... 17
Emergency steering piping diagram ... 19
Emergency steering valve ... 20
Steering relief valve ... 23

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Functions of major components

Evaporator

- Evaporator fin is cooled by the low-pressure, low-temperature refrigerant gas being sent from the expansion valve. Air from the blower motor is cooled and dehumidified when passing through the fin.

Heater core

- Fin of the heater core is heated by the hot water (cooling water) being sent from the engine. Air from the blower motor is heated as it passes through the fin.

Expansion valve

- This valve converts high-pressure, high-temperature liquid refrigerant from the receiver to low-pressure, low-temperature misty refrigerant through the throttling function.
  It controls flow rate of refrigerant by changing level of throttling depending on the thermal load in the operator's cab.

Blower controller

- It controls the blower motor speed receiving signal current from the air conditioner panel.

Blower motor relay

- Signal current from the air conditioner panel controls the relay coil. As the relay coil is energized and the switch is turned "ON", power is supplied to the blower motor.

Compressor clutch relay

- Signal current from the air conditioner panel dual pressure switch is used for controlling the relay coil. As the relay coil is energized and the switch is turned "ON", the magnet clutch of the compressor is connected.

Air mix damper actuator

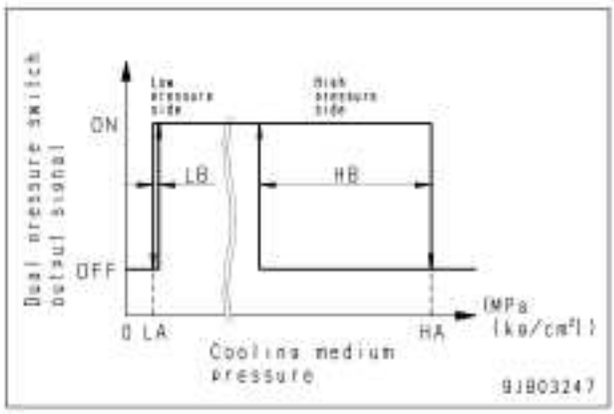
- It starts the built-in motor receiving signal current from the air conditioner panel in order to open or close the air mix damper through the link mechanism.
- The motor rotating direction is determined as the air conditioner panel reads the position of the potentiometer being built in the actuator. This reading is done as the target temperature is set from the temperature adjustment switch on the air conditioner panel.
- Rotation of the motor is stopped as the contact, which is to move interlocked with the motor, moves away or signal current from the air conditioner panel is turned "OFF".

Evaporator temperature sensor

- In order to prevent freezing of the evaporator, it senses the evaporator temperature and sends necessary signals to the air conditioner panel. The signal sent to the air conditioner panel is used to control the compressor. As the result, temperature of the air blown out of the grill is adjusted depending on the volume of refrigerant circulated in the evaporator.

Dual pressure switch

- If abnormally low or high pressure was generated in the refrigerant circulation circuit, this switch releases the magnet clutch of the compressor to protect a series of cooler-related equipment.



LA: 0.20 MPa {2 kg/cm²}
LB: 0.02 MPa {0.2 kg/cm²}
HA: 3.14 MPa {32 kg/cm²}
HB: 0.59 MPa {6 kg/cm²}

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Related circuit diagram

This is the excerpted circuit diagram related to trouble

- Connector No.: Indicates (Model – No. of pins) (Color)
- "Connector No. and pin No." from each branching/ merging point: Shows the ends of branch or source of merging within the parts of the same wiring harness.
- Arrow (⟷): Roughly shows the location on the machine.

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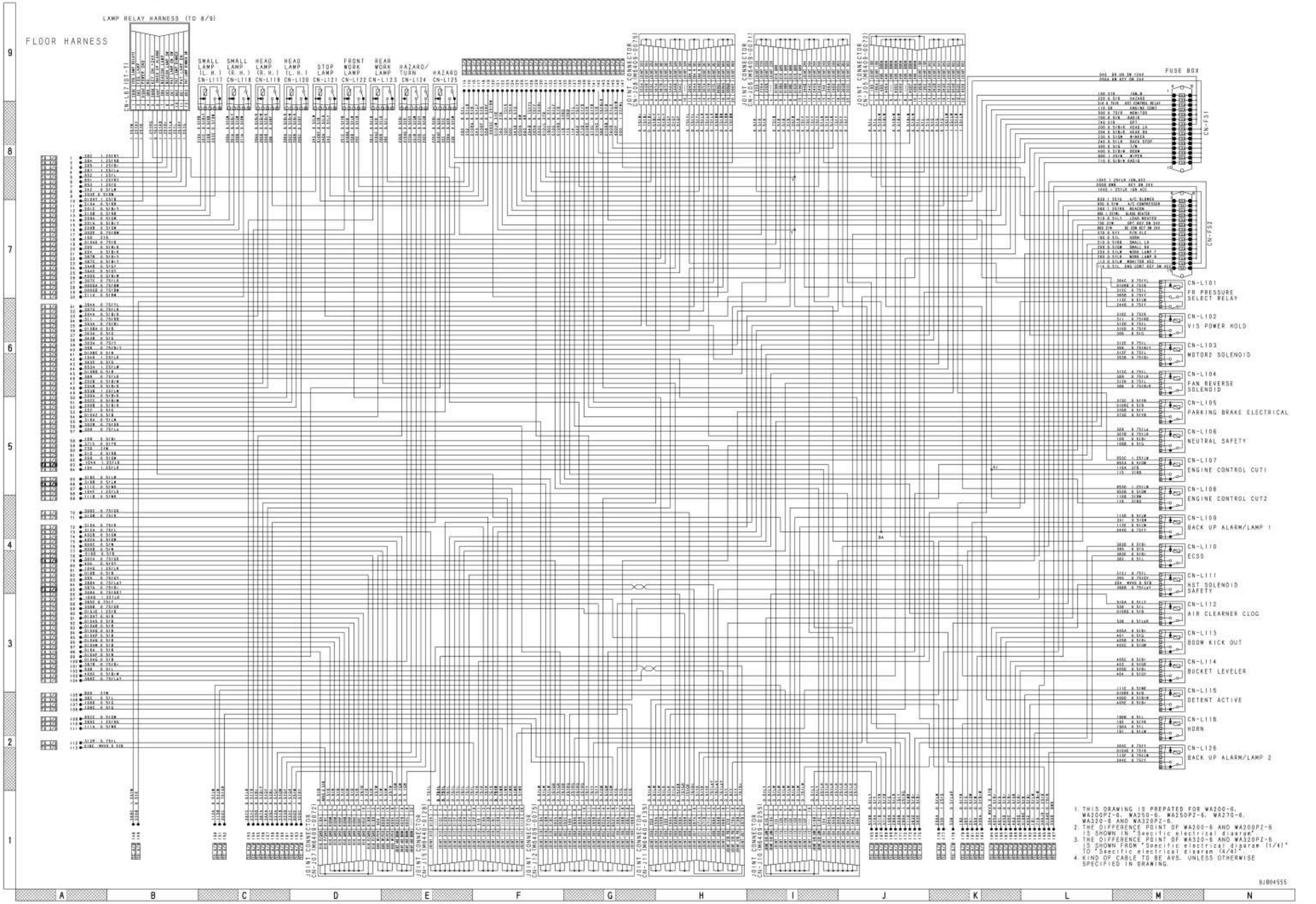
Failure code [CA322] Injector #1 open/short error

Action code	Failure code	Trouble	Injector #1 open/short error (Engine controller system)
E03	CA322		
Contents of trouble	• There is disconnection or short circuit in drive circuit of injector No. 1.		
Action of controller	• Turns the centralized warning lamp and alarm buzzer ON.		
Problem that appears on machine	• There is irregular combustion or hunting. • Engine output drops.		
Related information	• Method of reproducing failure code: Start engine		

		Causes	Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	1	Defective injector No. 1	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			INJ CYL 1	Resistance	
			Between (1) and (2)	Max. 2 Ω	
			Between (1) and ground	Min. 100 kΩ	
	2	Disconnection in wiring harness (Disconnection or defective contact in connector)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between EC1 (female) (45) – INJ CYL 1 (1)	Resistance	Max. 2 Ω
			Wiring harness between EC1 (female) (53) – INJ CYL 1 (2)	Resistance	Max. 2 Ω
	3	Ground fault in wiring harness (Contact with ground circuit)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness between EC1 (female) (45) – INJ CYL 1 (1) and ground	Resistance	Max. 2 Ω
	4	Short circuit in wiring harness (with another wiring harness)	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			Wiring harness among all pins between EC1 (female) (45) – EC1 (female) (With all connectors of wiring harness disconnected)	Resistance	Min. 100 kΩ
			Wiring harness among all pins between EC1 (female) (53) – EC1 (female) (With all connectors of wiring harness disconnected)	Resistance	Min. 100 kΩ
	5	Defective wiring harness connector	Connecting parts among injector No. 1, engine wiring harness, and engine controller are suspected. Inspect them directly. • Loose connector, broken lock, broken seal • Corrosive, bent, broken, forced-in, or extended pin • Humidity in connector, entry of dirt or dust, poor insulation		
	6	Defective other cylinder injector or harness	If other failure codes are indicated simultaneously, carry out troubleshooting for them.		
	7	Defective engine controller	★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			EC1 (female)	Resistance	
			Between (45) and (53)	Max. 2 Ω	
			Between (45) and ground	Min. 100 kΩ	

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★ This figure covers the equipment and devices that are unavailable as optional items in some areas.



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