SEBM027616

SHOP MANUAL

KOMATSU®

HD465-7
HD605-7

MACHINE MODEL	SERIAL NUMBER
HD465-7	**7001 and up**
HD605-7	**7001 and up**

- This shop manual may contain attachiments 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.

- HD465-7, HD605-7 mount the SAA6D170E-3 engine.
  For details of the engine, see the 170-3 Series Engine Shop Manual.

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Related electrical circuit diagram

Part of electric circuit diagram related to trouble
- Connector No.: Indicates (Model – Number of pins) and (Color).
- Arrows (⇔): Indicate rough location of connector in machine.

PHENOMENON CODE TABLE

★ Regarding phenomenon code provided with instruction "Refer to table", check it against table below.

Phenomenon code	Contents	Phenomenon code	Contents
KA	Disconnection in wiring	L0	Fill signals at two or more channels which are not set as combination are turned ON at the same time.
KB	Short circuit	L1	Fill signal is ON when command current to ECMV is OFF.
KK	Source voltage reduction/ input	L2	Fuel pressure is above maxim specified value.
KQ	Type select signal inconsistency	L3	Object part is uncontrollable.
KR	Defective communication	L4	ON and OFF signals at two systems are inconsistent.
KT	Abnormality in controller	L6	Engine rotation signal, terminal C signal, oil pressure switch signal, coolant temperature sensor signal, etc. are inconsistent with operation state or stop state.
KX	Outside input signal range	L8	Analog signals in two systems are inconsistent.
KY	Short circuit with power source (Hot short)	LC	rpm signals in two systems are inconsistent.
KZ	Disconnection or short circuit	LD	Switch is pressed for usually unthinkable long time.
MA	Malfunction	LH	Fill signal is OFF when command current to ECMV is ON.
MB	Performance reduction		
MW	Sliding		
NS	Overheat		
ZG	Oil pressure reduction		
ZK	Coolant level reduction		

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Component	Item	Measurement conditions		Unit	Standard value	Permissible value
Brakes	Service brake	Apply the brake and set the gear shift lever in D and raise the engine speed gradually. Measure the engine speed when the truck starts moving		rpm	Must not move at 1,870 rpm	
	Retarder brake				Must not move at 1,400 rpm	
	Parking brake				Must not move at 1,670 rpm	
	Emergency brake				Must not move until torque converter stall speed	
	Front brake (Pad thickness)	Left side		mm	19.5	3.0
		Right side			19.5	3.0
	Rear brake (Disc wear gauge)	Left side		—	Must be in wear gauge range	
		Right side			Must be in wear gauge range	
Dump lever	Operating force	• Engine: stopped • Center of control lever knob	HOLD → RAISE	N {kg}	Max. 29.4 {Max. 3.0}	Max. 35.3 {Max. 3.6}
			RAISE → HOLD		Must return smoothly when engine is running at high idle	
			HOLD → FLOAT		Max. 29.4 {Max. 3.0}	Max. 35.3 {Max. 3.6}
			FLOAT → HOLD		Max. 29.4 {Max. 3.0}	Max. 35.3 {Max. 3.6}
			FLOAT → LOWER		Max. 29.4 {Max. 3.0}	Max. 35.3 {Max. 3.6}
			LOWER → FLOAT		Must return smoothly when engine is running at 2,000 rpm	
	Travel	• Engine: stopped • Center of control lever knob	RAISE → HOLD	mm	44.8 ± 1.9	44.8 ± 1.9
			HOLD → LOWER		44.8 ± 1.9	44.8 ± 1.9
Dump valve	Relief pressure	• Oil temperature: 45 – 55°C	At high idle (2,270 rpm)	MPa {kg/cm²}	20.1 – 21.1 {205 – 215}	19.6 – 22.6 {200 – 230}
			At low idle (750 rpm) (Reference value)		18.6 – 19.6 {190 – 200}	18.6 – 19.6 {190 – 200}
Dump EPC valve	Relief pressure (root pressure)		At high idle (2,270 rpm)		3.4 ± 0.49 {35 ± 5}	3.4 ± 0.49 {35 ± 5}
			At low idle (750 rpm) (Reference value)		2.6 ± 0.49 {27 ± 5}	2.6 ± 0.49 {27 ± 5}
Body	Lifting speed	• Oil temperature: 45 – 55°C • Engine speed: 2,000 rpm • Use FLOAT when lowering		sec.	11.5 ± 1.5	11.5 ± 1.5
	Lowering speed				10.5 ± 1.5	$10.5^{+2.0}_{-1.0}$
	Hydraulic drift	• Oil temperature: 45 – 55°C • Set with No. 2 cylinder extended 200 mm • Hydraulic drift after 5 minutes		mm	Max. 85	170

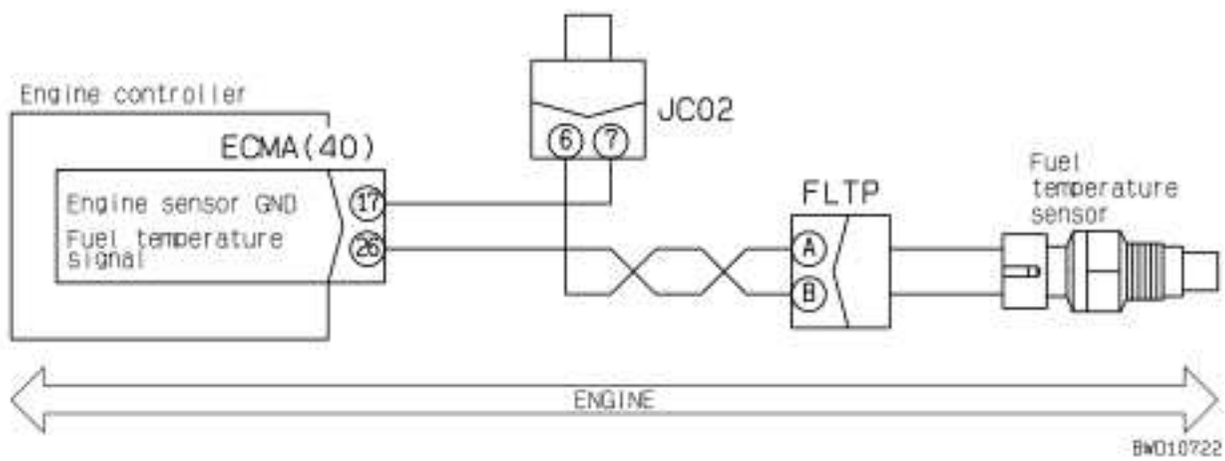
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[C263KX] ABNORMALLY HIGH LEVEL IN FUEL TEMPERATURE SENSOR SYSTEM

Action code	Failure code	Controller code	Trouble	Abnormally high level in fuel temperature sensor system (Engine controller system)
E01	C263KX	ENG		
Contents of trouble	• Signal voltage of fuel temperature sensor circuit is above 4.95 V.			
Action of controller	• Flashes warning lamp and turns on alarm buzzer.			
Problem that appears on machine				
Related information	• Special cable (795-799-5530) is necessary for troubleshooting for fuel temperature sensor. • Method of reproducing failure code: Turn starting switch ON.			

	Cause		Standard value in normal state/Remarks on troubleshooting		
Possible causes and standard value in normal state	1	Defective fuel temperature sensor (Internal trouble)	★Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			FLTP (female)	Resistance	
			Between (A) – (B)	600 – 36 kΩ	
	2	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 ECMA (female) (26) – FLTP (female) (A)	Resistance	Max. 10 Ω
			Wiring harness between ECMA (female) (17) – FLTP (female) (B)	Resistance	Max. 10 Ω
	3	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 between ECMA (female) (26) – FLTP (female) (A) with wiring harness around it	Resistance	Min. 1 MΩ
			Wiring harness between ECMA (female) (17) – FLTP (female) (B) with wiring harness around it	Resistance	Min. 1 MΩ
	4	Defective engine controller	★Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON.		
			ECMA (female)	Resistance	
			Between (26) – (17)	600 – 36 kΩ	

Circuit diagram related to fuel temperature sensor



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METHOD OF USING TROUBLESHOOTING CHARTS

This troubleshooting chart is divided into three sections: **questions, check items, and troubleshooting**. The questions and check items are used to pinpoint high probability causes that can be located from the failure symptoms or simple inspeciton without using troubleshooting tools.
Next, troubleshooting tools or direct inspection are used to check the high probability causes to make final confirmation.

[Questions]

Sections (A) + (B) in the chart on the right corresponds to the items where answers can be obtained from the user. The items in (B) are items that can be obtained from the user, depending on the user's level.

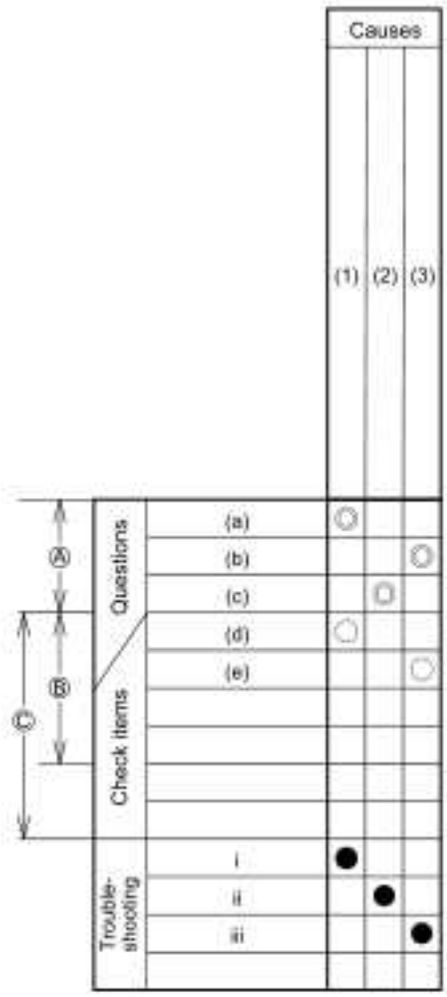
[Check items]

The serviceman carries out simple inspection to narrow down the causes. The items under (C) in the chart on the right correspond to this.
The serviceman narrows down the causes from information (A) that he has obtained from the user and the results of (C) that he has obtained from his own inspection.

[Troubleshooting]

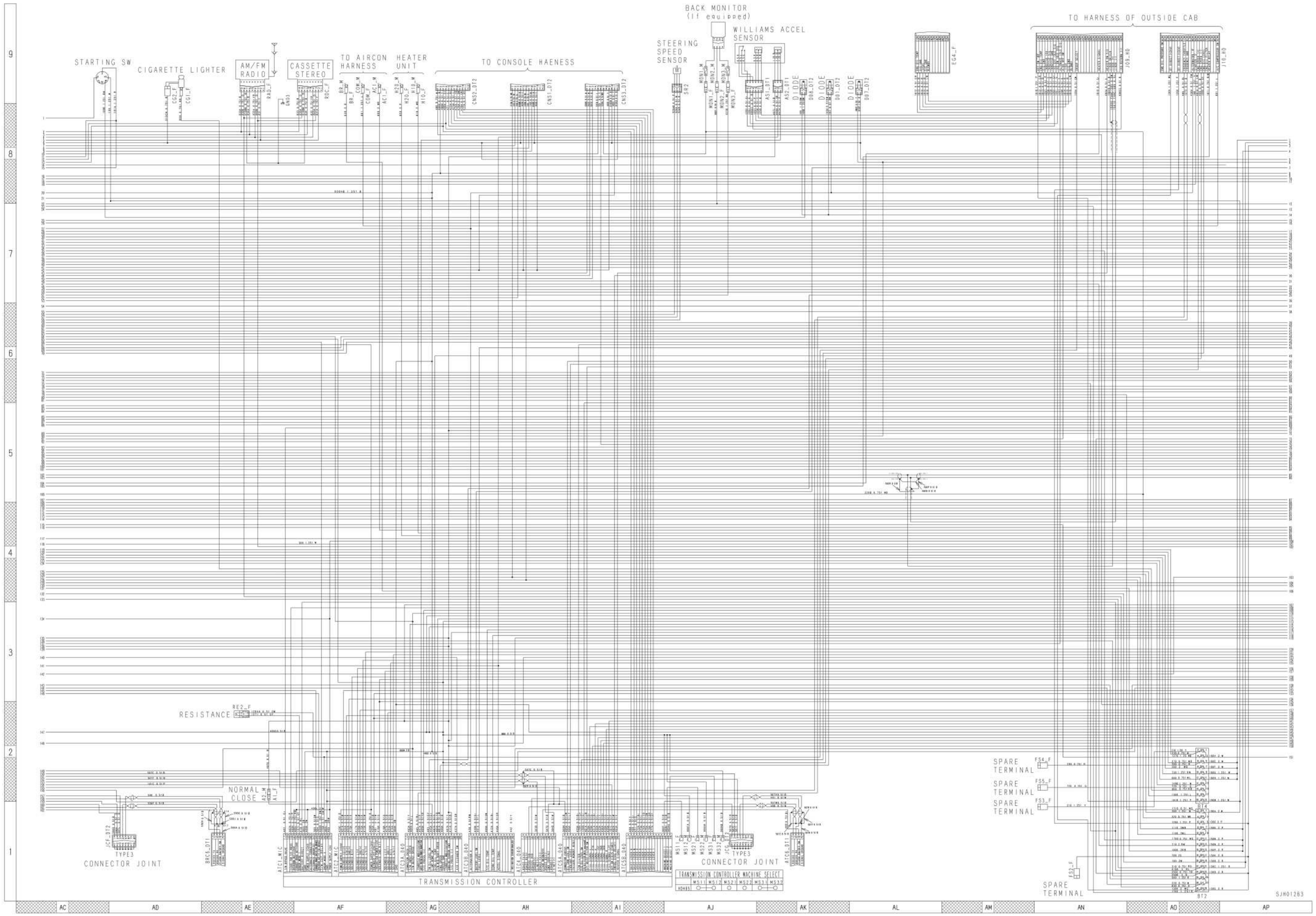
Troubleshooting is carried out in the order of probability, starting with the causes that have been marked as having the highest probability from information gained from **[Questions]** and **[Check items]**.

The basic method of using the troubleshooting chart is as follows.
Items listed for **[Questions]** and **[Check items]** that have a relationship with the Cause items are marked with ○, and of these, causes that have a high probability are marked with ◎.
Check each of the **[Questions]** and **[Check items]** in turn, and marked the ○ or ◎ in the chart for items where the problem appeared. The vertical column (Causes) that has the highest number of points is the most probable cause, so start troubleshooting for that item to make final confirmation of the cause.
As a rule, do not use it when calculating the points for locating the cause, but it can be included if necessary to determine the order for troubleshooting.
Use the △ in the Cause column as reference for **[Degree of use (Operated for long period)]** in the **[Questions]** section as reference.



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ELECTRICAL CIRCUIT DIAGRAM (3/6)



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