SEN02876-09

Shop Manual

WHEEL LOADER **WA500-6R**

SERIAL NUMBERS 60001 and up

KOMATSU®

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	Item	Condition	Unit	Standard value for new machine	Service limit value	Measurement result	Good	Bad
Hydraulic drive fan	Max. fan speed	• Engine speed: High idle • Engine coolant temperature: Min. 95°C • Hydraulic oil temperature: Min. 95°C • Torque converter oil temperature: Min. 105°C	rpm	1,055 ± 50	1,055 ± 100			
	Min. fan speed	• Engine speed: Low idle (*1) • Engine coolant temperature: Max. 75°C • Hydraulic oil temperature: Max. 75°C • Torque converter oil temperature: Max. 85°C • Air conditioner OFF		170 ± 30	170 ± 50			
	Fan drive pressure	• Engine speed: High idle • Engine coolant temperature: Min. 95°C • Hydraulic oil temperature: Min. 95°C • Torque converter oil temperature: Min. 105°C	MPa (kg/cm²)	17.7 ± 2.5 (180 ± 25)	17.7 ± 2.5 (180 ± 25)			
	Fan reverse solenoid output pressure	• Engine speed: High idle • Engine coolant temperature: Min. 95°C • Hydraulic oil temperature: Min. 95°C • Torque converter oil temperature: Min. 105°C		19.6 ± 2.5 (200 ± 25)	19.6 ± 2.5 (200 ± 25)			
Axle	Visual check of differential drain plug	Front axle	—	There must not be excessive metal powder.				
		Rear axle						

*1: Denotes the low idle speed when the engine speed was decreased to the minimum speed with the RPM idle-up/down selector switch.

Memo

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Failure code [CA2185] (Throttle sensor supply voltage high error)

Action code	Failure code	Trouble	Throttle sensor supply voltage high error (Engine controller system)
E03	CA2185		
Contents of trouble	• Voltage of throttle sensor power supply (5V) circuit is high.		
Action of controller	• Turns the centralized warning lamp and alarm buzzer ON.		
Problem that appears on machine	• Engine continues normal operation but may not run at full throttle.		
Related information	• 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 accelerator pedal (Internal defect)	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			Disconnect device suggested on the right. At this time, if failure code is not indicated, the device is defective.	Accelerator pedal	L15 connector	
	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 E18 (female) (22) – L15 (female) (1)		Resistance	Max. 1 Ω
			Wiring harness between E18 (female) (23) – L15 (female) (3)		Resistance	Max. 1 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 E18 (female) (22) – L15 (female) (1) and chassis ground		Resistance	Min. 1 MΩ
			Wiring harness between E18 (female) (23) – L15 (female) (3) and chassis ground		Resistance	Min. 1 MΩ
	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 between E18 (female) (22) – L15 (female) (1) and between E18 (female) (23) – L15 (female) (3)		Resistance	Min. 1 MΩ
	5	Defective engine controller	★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting.			
			E18	Voltage		
			Between (22) and (23)	4.75 – 5.25 V		

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b) Engine turns but no exhaust smoke comes out

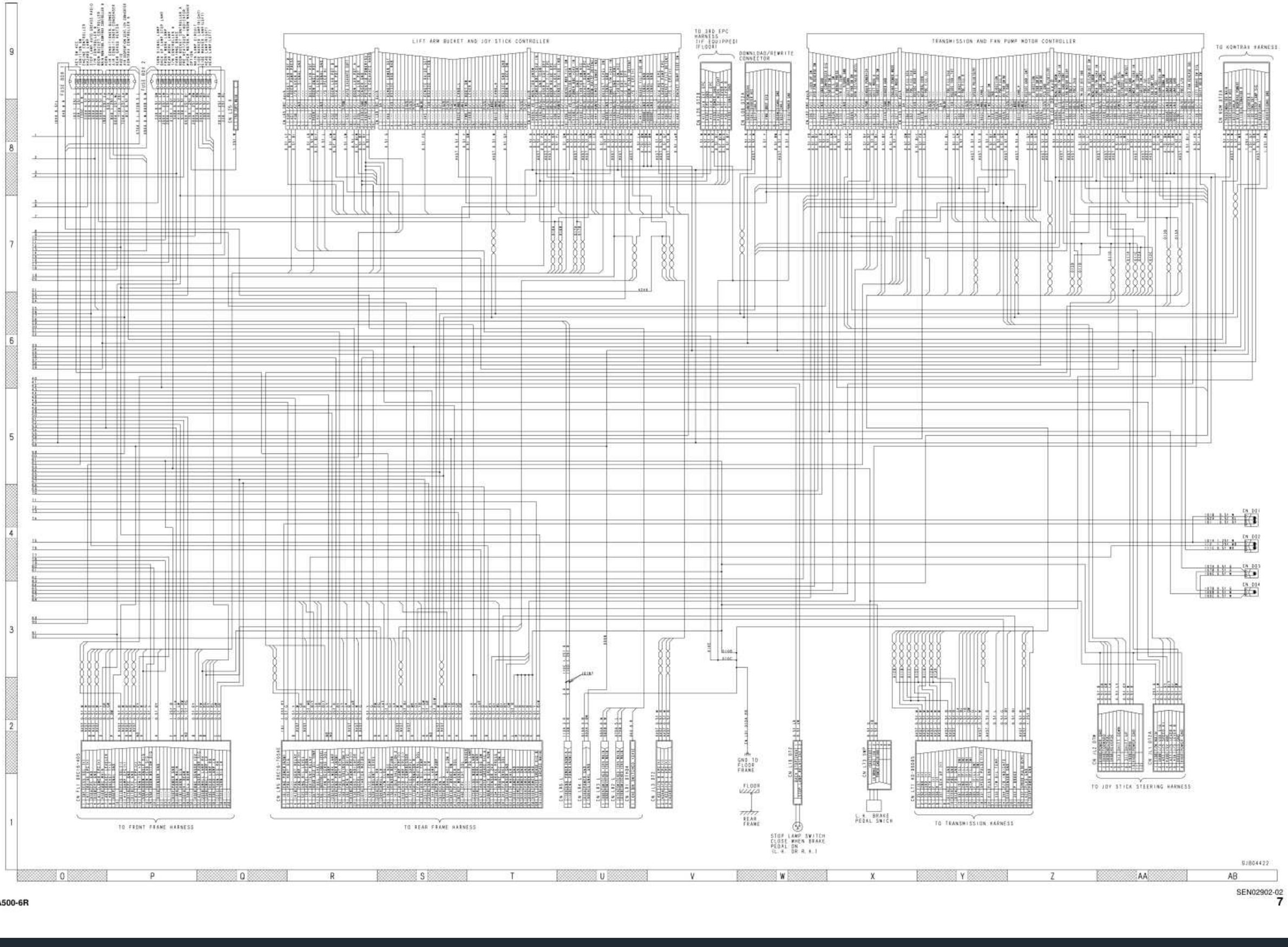
General causes why engine turns but no exhaust smoke comes out

- Fuel is not being supplied
- Supply of fuel extremely small
- Improper selection of fuel (particularly in winter)

			Cause														
			Improper fuel used	Insufficient fuel in tank	Clogged air breather hole in fuel tank cap	Leakage, clogging, air in fuel piping	Clogged fuel filter element	Clogged feed pump gauze filter	Seizure or abnormal wear of feed pump	Broken supply pump shaft, key	Stuck or seized supply pump plunger	Defective supply pump PCV	Wrong connection of supply pump PCV	Defective operation of overflow valve (not closing)	Defective operation of flow damper	Defective fuel injector
Questions / Check items	Check recent repair history																
	Degree of machine operation	Machine operated for long period				△	△	△									
	Exhaust smoke suddenly stops coming out (when starting again)								○	○	○	○	○		△	△	
	Replacement of filters has not been carried out according to Operation & Maintenance Manual						○	○			△					○	
	Fuel tank is found to be empty			○													
	Clogged air breather hole in fuel tank cap			○	○												
	Rust and water are detected when fuel tank is drained						○	○	○		○	○					
	When fuel filter is removed, no fuel is inside the fuel filter		○			○											
	Leakage from fuel piping					○											
	No response or heavy resistance felt when operating priming pump					○	○	○									
	When engine is cranked with starting motor,	and the air breathing plug is removed from the fuel filter, fuel fails to discharge		○		○			○	○							
		Spill flow drops, when spill hose is separated from injector				□				○	○	○	○				○
Troubleshooting	Air is discharged when the air is bled from the fuel system					●											
	Inspect the fuel filter directly						●										
	Inspect fuel feed pump gauze filter directly							●									
	Inspect feed pump directly								●								
	Carry out troubleshoot by "Rail Press Very Low Error (*1)"									●	●		●				●
	Carry out troubleshoot by "PCV1 Error (*2) or PCV2 Error (*3)"											●					
	Inspect overflow valve directly													●			
		Remedy	Replace	Add	Correct	Correct	Replace	Clean	Replace	Replace	Replace	Replace	Correct	Replace	Replace	Replace	Replace

*1: Troubleshooting by failure code (Display of code), Code [**CA559**], and Code [**CA2249**]
*2: Troubleshooting by failure code (Display of code), Code [**CA271**], and Code [**CA272**]
*3: Troubleshooting by failure code (Display of code), Code [**CA273**], and Code [**CA274**]

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