CEBM013003

Shop Manual

KOMATSU®

GALEO

WA200-5L
WA200PT-5L

WHEEL LOADER

SERIAL NUMBERS

WA200-5L **A82001** and UP

WA200PT-5L **A89001**

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October 2007
Printed in USA

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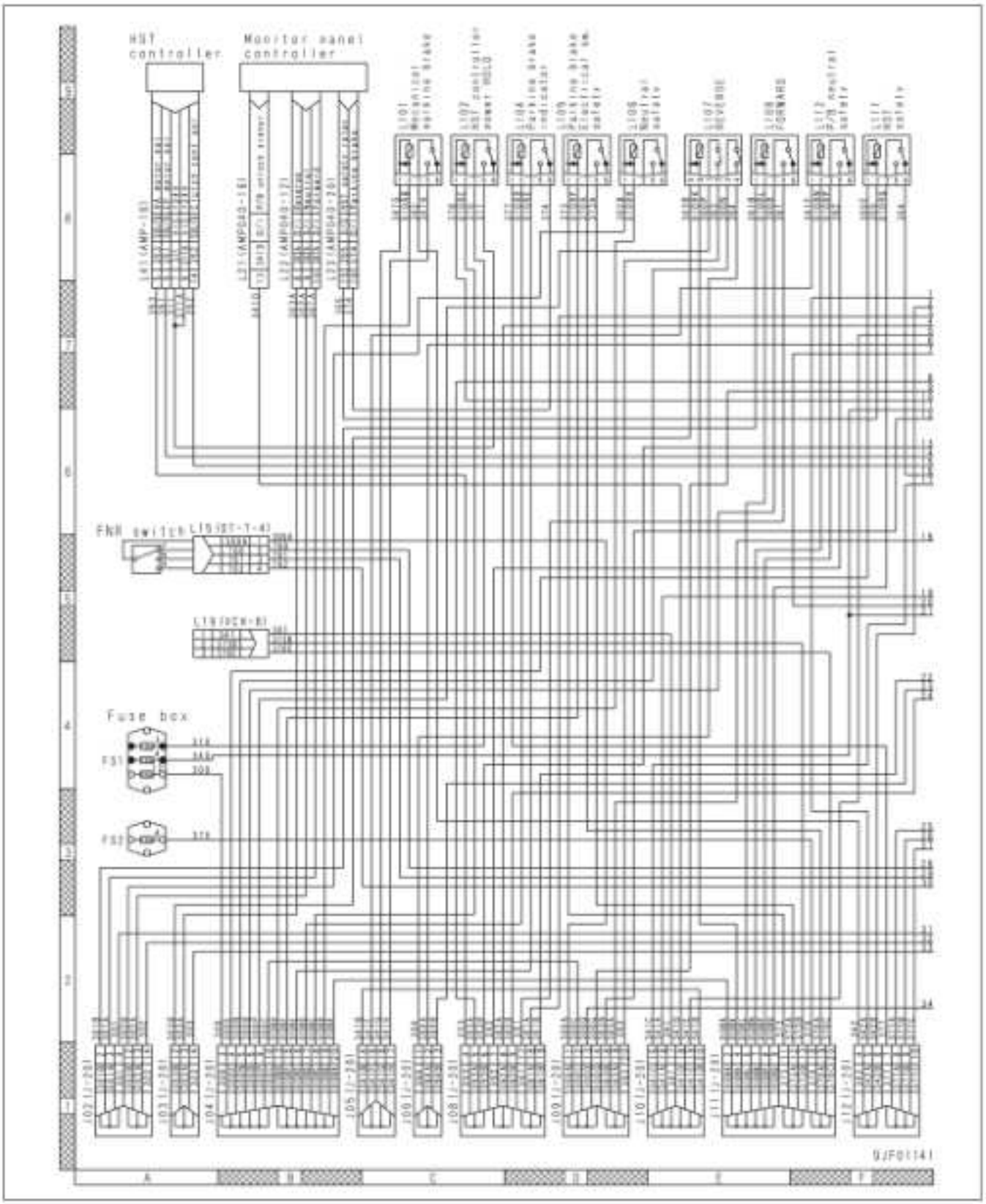
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Unit: mm

No.	Check item		Criteria					Remedy
		Name of cylinder	Standard size	Tolerance		Standard clearance	Clearance limit	
				Shaft	Hole			
1	Clearance between piston rod and bushing	Lift	ø 65	-0.030 -0.104	+0.262 +0.067	0.097 – 0.366	0.666	Replace bushing
		Bucket	ø 80	-0.030 -0.076	+0.258 +0.048	0.078 – 0.334	0.634	
		Coupler plunger	ø 20	-0.020 -0.072	+0.081 -0.009	0.011 – 0.153	0.453	
2	Tightening torque of cylinder head	Lift	981 ± 98.1 N·m {100 ± 10.0 kgm}					Retighten
	Tightening torque of cylinder head bolt	Bucket	250 ± 24.5 N·m {25.5 ± 2.5 kgm}					
	Tightening torque of cylinder head	Coupler plunger	294 ± 29.4 N·m {30 ± 3.0 kgm}					
3	Tightening torque of cylinder piston nut	Lift	2,600 ± 260 N·m {265 ± 26.5 kgm} (Width across flats: 70 mm)					
	Tightening torque of cylinder piston	Bucket	294 ± 29.4 N·m {30 ± 3.0 kgm}					
	Tightening torque of cylinder piston nut	Coupler plunger	78 ± 7.8 N·m {8 ± 0.8 kgm} (Width across flats: 22 mm)					
4	Tightening torque of cylinder piston screw	Bucket	58.9 – 73.6 N·m {6 – 7.5 kgm}					

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- **Example of troubleshooting when exhaust gas is black**

  Let us assume that [Clogged air cleaner] is taken to be the cause of black exhaust gas. Three symptoms have causal relationship with this problem: [Exhaust gas slowly became black], [Power slowly became weaker], and [Dust indicator is red].

  If we look from these three symptoms to find the causes, we find that there is a relationship with five causes. Let us explain here the method of using this causal relationship to pinpoint the most probable cause.

S-7 Exhaust gas is black (incomplete combustion)

General causes why exhaust gas is black

- Insufficient intake of air
- Improper condition of fuel injection
- Excessive injection fuel

Legend

○: Possible causes (judging from Questions and check items)

※: Most probable causes (judging from Questions and Check items)

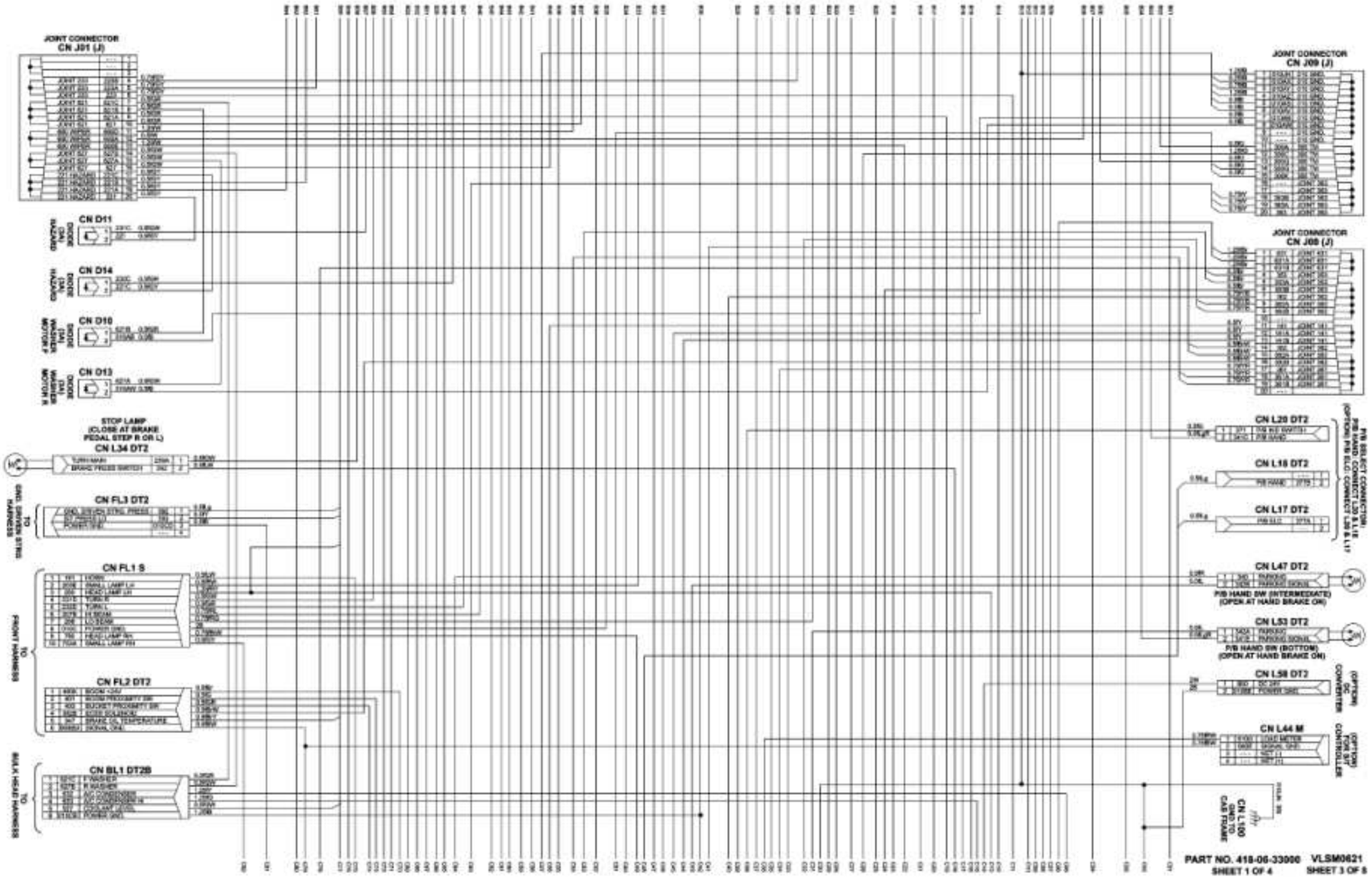
■: Possible causes due to length of use (used for a long period)

●: Items to confirm the causes

		Causes	Seized turbocharger, rundown	Clogged air cleaner element	Worn piston ring, cylinder	Clogged injection nozzle, defective spray	Defective injection timing	Improper injection pump (excessive injection)	Clogged, clogged muffler	Leakage of air between turbocharger and head	Defective contact of valve and valve seat	Defective injection pump (seal, plunger worn)
Questions	Confirm recent repair history											
	Degree of use	Operated for long period		Δ	Δ	Δ					Δ	
	Color of exhaust gas	Suddenly became black	※			○				○		○
		Gradually became black		※		○				○		
		Black under light load			※							
	Engine oil must be added more frequently				※							
	Power was lost	Suddenly	※			○			○			○
		Gradually		○	○					○	○	
	Non-specified fuel is being used					○						○
	Noise of interference is heard from around turbo-		※									
	Dust indicator lamp is red			※								
	Blow-by gas excessive				※							
	Engine pickup is poor and combustion is irregu-		○			※			○	○	○	○
	When exhaust manifold is touched immediately					※						○
Check items	Match marks on fuel injection pump are out of						※					
	Seal on injection pump has come off							※				
	Clanging sound is heard from around cylinder								※			
	Exhaust noise is abnormal		○			○				※		
	Muffler is crushed									※		
	Leakage of air between turbocharger and head										※	
Troubleshooting	When turbocharger is rotated by hand, it is		●									
	When air cleaner element is inspected directly, it is			●								
	When compression pressure is measured, it is				●							●
	Speed does not change when operation of certain cylinders is stopped					●						
	When check is made using delivery method, injection timing is found to be incorrect						●					
	Injection pump test shows that injection amount							●				
	When valve clearance is checked directly, it is found to be outside standard value								●			
	When muffler is removed, exhaust color returns									●		
	When control rack is pushed, it is found to be heavy, or does not return											●
	Rem-edy		Replace	Clean	Replace	Replace	Adjust	Adjust	Adjust	Replace	Correct	Replace	Replace

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TO FRONT AND BULK HEAD HARNESS



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