CEBM030802

Shop Manual

KOMATSU®

WA500-8

WHEEL LOADER

SERIAL NUMBERS **WA500-8 A96001 and up**

ENGINE **6D140E-7**

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June 2017

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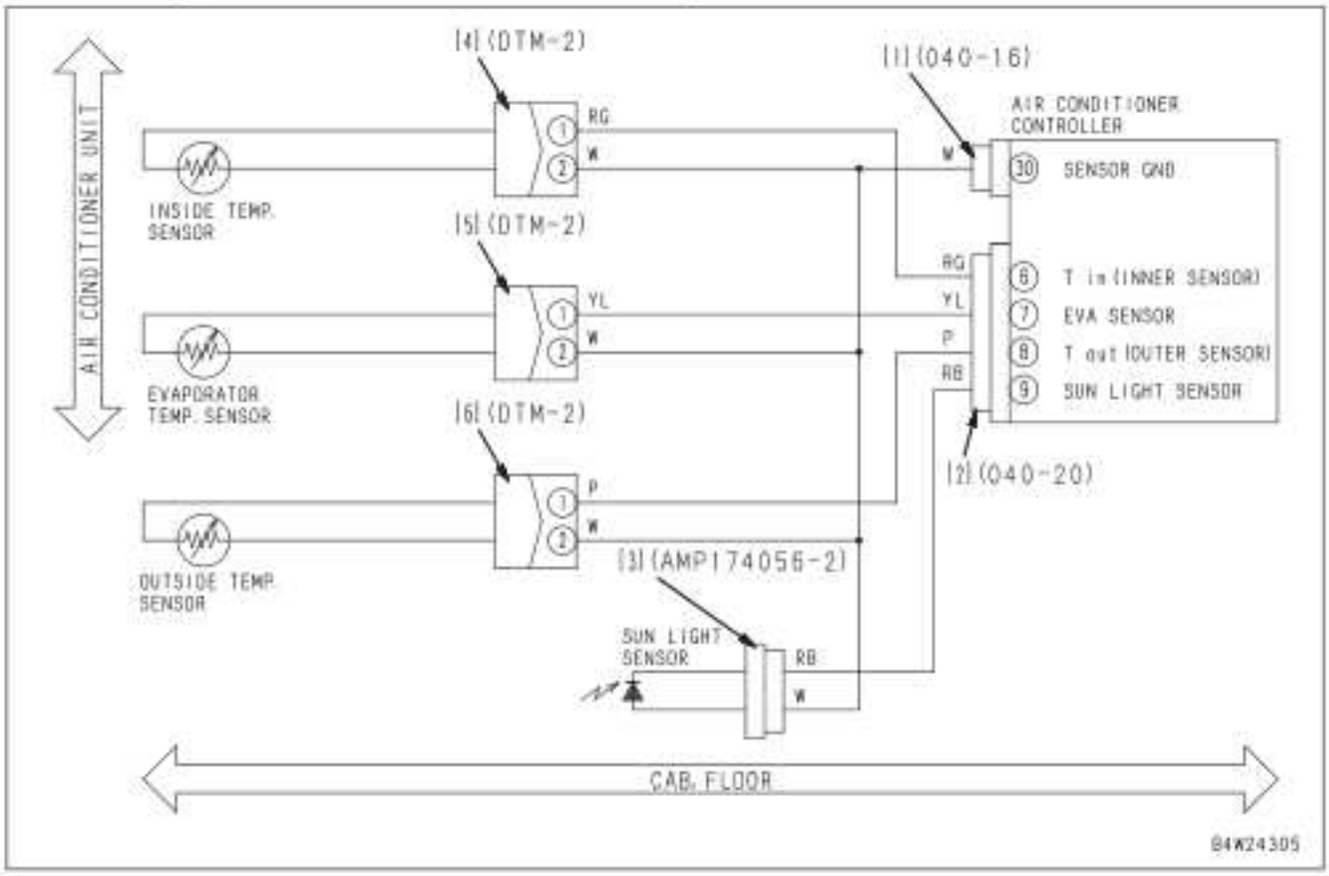
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Circuit diagram related to outside air temperature sensor electrical circuit



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FAILURE CODE [CA3596]

Action level	Failure code	Failure	AdBlue/DEF Pump Pressure Unstable Error
L01	CA3596		(Engine controller system)
Detail of failure	AdBlue/DEF pump pressure sensor is defective, or each AdBlue/DEF hose is clogged, or AdBlue/DEF pump is defective.		
Action of controller	• Increases the pressure of AdBlue/DEF pump again. • Activates Inducement strategy.		
Phenomenon on machine	• Engine output is reduced based on Inducement strategy. • NOx emission increases because AdBlue/DEF injection is disabled.		
Related information	• If failure code [CA3558] or [CA3559] or [CA3571] or [CA3572] or [CA4169] or [CA4171] or [CA4249] or [CA4251] is displayed, or if it is logged in the abnormality record, AdBlue/DEF pump system may be defective. Perform troubleshooting for these first. • If failure code [CA3713] or [CA5115] is displayed ,or if it is logged in the abnormality record, wiring harness of AdBlue/DEF line heater 1 is defective. Perform troubleshooting for it first. • If failure code [CA1669] or [CA3868] or [CA4732] or [CA4739] or [CA4769] is displayed, AdBlue/DEF level sensor system is defective. Perform troubleshooting for these first. • If failure code [CA1673] or [CA3497] or [CA3498] or [CA3547] is displayed, AdBlue/DEF quantity is insufficient. Perform troubleshooting for these first. • Connectors of electrical parts around engine may be defective due to heat and vibration. See descriptions of wiring harness and connectors in "Electrical equipment" in "CHECKS BEFORE TROUBLESHOOTING" of "RELATED INFORMATION ON TROUBLESHOOTING", and check it. • Engine controller does not display this failure code while AdBlue/DEF supply system is under thawing control. (It cannot judge because AdBlue/DEF injection is disabled.) • Start the engine, wait for 3 minutes, and then check that the number showing 4 conditions below is other than 1 (Thawing). (You cannot repair this failure until thawing is completed.) • The state of each heater is 1: Thawing, 2: Warming, 3 or 0: OFF. (On the monitoring code screen, input the number directly to check the value.) 19305 AdBlue/DEF Tank Heating State 19306 AdBlue/DEF Line Heater 1 State 19307 AdBlue/DEF Line Heater 2 State 19309 AdBlue/DEF Pump Heater State • If "AdBlue/DEF pump pressure" rises to around 900 kPa on "Pre-defined Monitoring" screen of the AdBlue/DEF pump, this failure code is not displayed. • On "Pre-defined Monitoring" screen, items AdBlue/DEF pump related are used. (The numbers below denote monitoring codes). • AdBlue/DEF pump related 19120 AdBlue/DEF Injection Quantity 19108 AdBlue/DEF Pump Pressure 19109 AdBlue/DEF Pump PressSensor Volt 19304 AdBlue/DEF Pump State 19136 AdBlue/DEF Pump Temperature 19114 AdBlue/DEF Pump Reverting Valve Cmd **NOTICE** **This failure code requires "machine operation for clearing the failure code". After investigating the cause of the problem and completing the repair, perform "machine operation for clearing the failure code" to make sure the failure code is cleared. (This failure code is not cleared by simply turning the starting switch to ON position.)**		

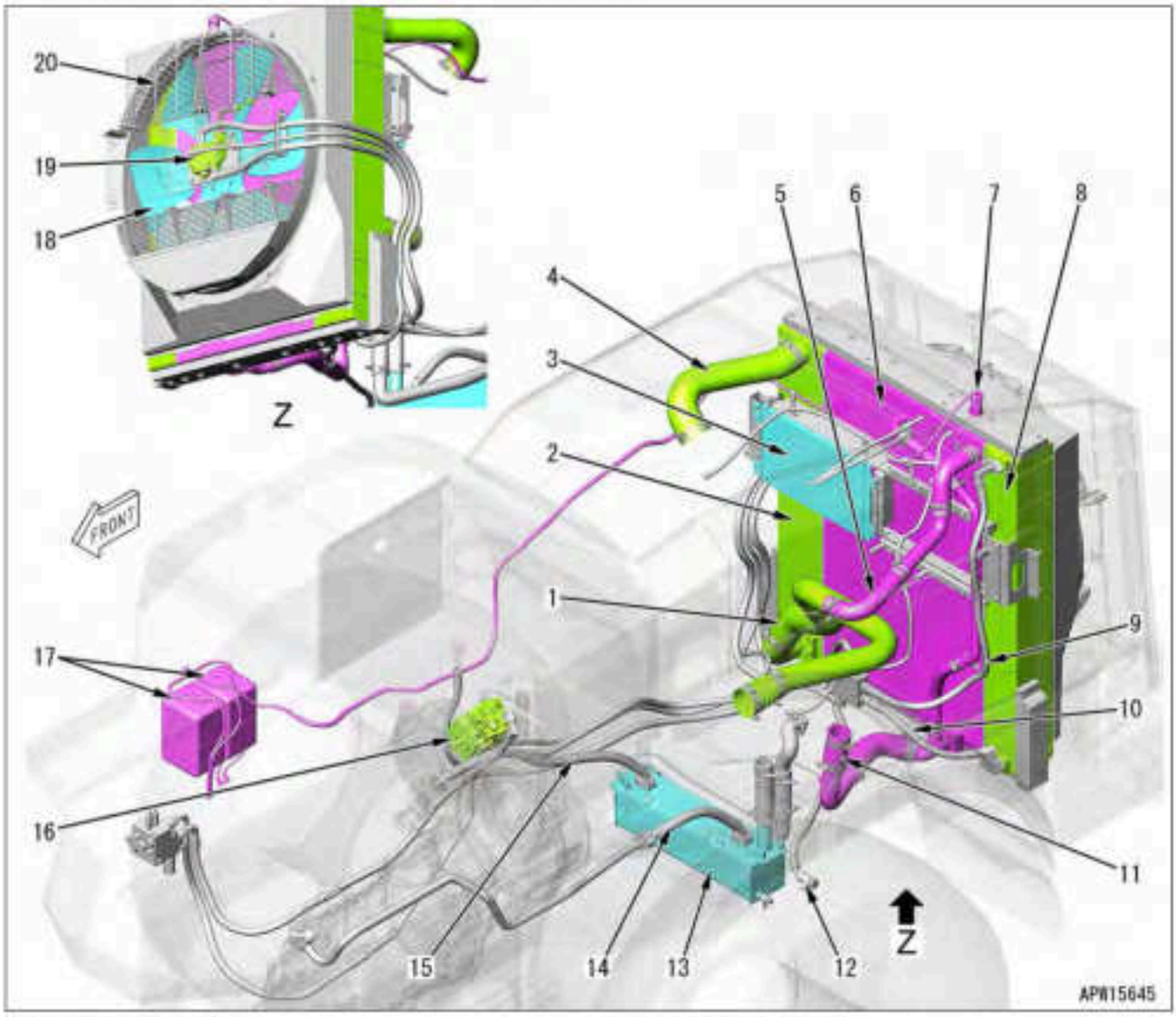
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No.	Cause	Procedure, measuring location, criteria and remarks			
7	Defective torque converter	Measure it referring to TESTING AND ADJUSTING.			
		Stall speed	Power mode: E mode		1770 ± 200 rpm
			Power mode: P mode		1800 ± 200 rpm
8	Defective gear speed clutch ECMV	Measure it referring to TESTING AND ADJUSTING.			
		F clutch ECMV output pressure	Gear speed	F4	3.38 ± 0.20 MPa {34.5 ± 2 kg/cm^2}
		R clutch ECMV output pressure	Gear speed	R4	3.34 ± 0.20 MPa {34 ± 2 kg/cm^2}
		1st clutch ECMV output pressure	Gear speed	F1	3.24 ± 0.20 MPa {33 ± 2 kg/cm^2}
		2nd clutch ECMV output pressure	Gear speed	F2	3.28 ± 0.20 MPa {33.5 ± 2 kg/cm^2}
		3rd clutch ECMV output pressure	Gear speed	F3	3.28 ± 0.20 MPa {33.5 ± 2 kg/cm^2}
		4th clutch ECMV output pressure	Gear speed	F4	3.19 ± 0.20 MPa {32.5 ± 2 kg/cm^2}
		Combination of 2 gear speed clutches determines gear speed. Check combination of 2 clutches by referring to table 1.			
9	Defective gear speed clutch	• If measured oil pressure is low in check on defective gear speed clutch ECMV, oil may leak from seal ring of clutch. Disassemble the transmission and check it. • If measured oil pressure is normal in check on defective gear speed clutch ECMV, clutch may be slipping. Disassemble the transmission and check it.			
10	Defective parking brake	If gear speed clutch is normal in check on defective gear speed clutch ECMV, check if there is defective piston seal of parking brake or worn disc or deformed spring by disassembling parking brake.			
11	Malfunction of lockup clutch ECMV	Measure it referring to TESTING AND ADJUSTING.			
		Lockup clutch ECMV outlet pressure	Lockup clutch engaged		1.91 ± 0.20 MPa {19.5 ± 2.0 kg/cm^2}
			Lockup clutch disengaged (from starting engine to stopping engine)		0 MPa {0 kg/cm^2}

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COOLING SYSTEM

LAYOUT DRAWING OF COOLING SYSTEM



1: Aftercooler inlet hose
2: Aftercooler
3: Condenser
4: Aftercooler outlet hose
5: Radiator inlet hose
6: Radiator
7: Radiator cap
8: Hydraulic oil cooler
9: Hydraulic oil cooler inlet hose
10: Hydraulic oil cooler outlet hose
11: Radiator outlet hose
12: Coolant drain valve
13: Power train oil cooler
14: Power train oil cooler inlet hose
15: Power train oil cooler outlet hose
16: Brake and cooling fan pump
17: Reservoir tank (with built-in coolant level sensor)
18: Cooling fan
19: Cooling fan motor
20: Fan guard

SPECIFICATIONS OF COOLING SYSTEM

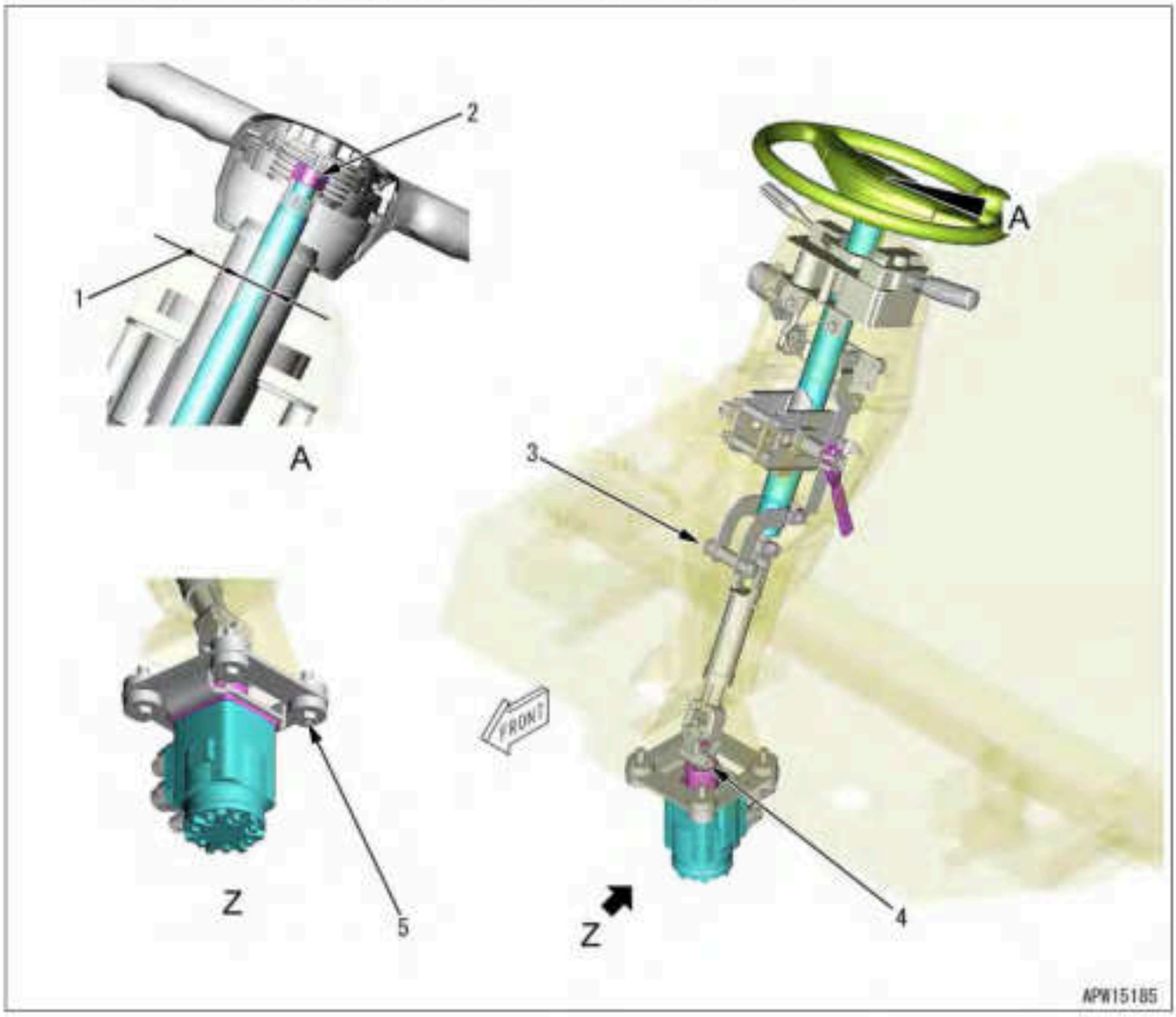
Radiator

Core type: AL WAVE

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STEERING SYSTEM

MAINTENANCE STANDARD OF STEERING COLUMN



Unit: mm

No.	Item	Judgment criteria					Remedy
		Standard dimension	Tolerance		Standard clearance	Allowable clearance	
			Shaft	Hole			
1	Clearance between steering shaft and column bushing	19	0 -0.08	+0.15 +0.05	0.05 to 0.23	0.4	Replace
2	Tightening torque of nut	29.4±2.94 Nm {3.0±0.3 kgm}					Retighten
3	Tightening torque of bolt	11.8 to 24.5 Nm {1.2 to 2.5 kgm}					
4	Tightening torque of bolt	48.1 to 62.8 Nm {4.9 to 6.4 kgm}					
5	Tightening torque of bolt	98 to 123 Nm {10 to 12.5 kgm}					

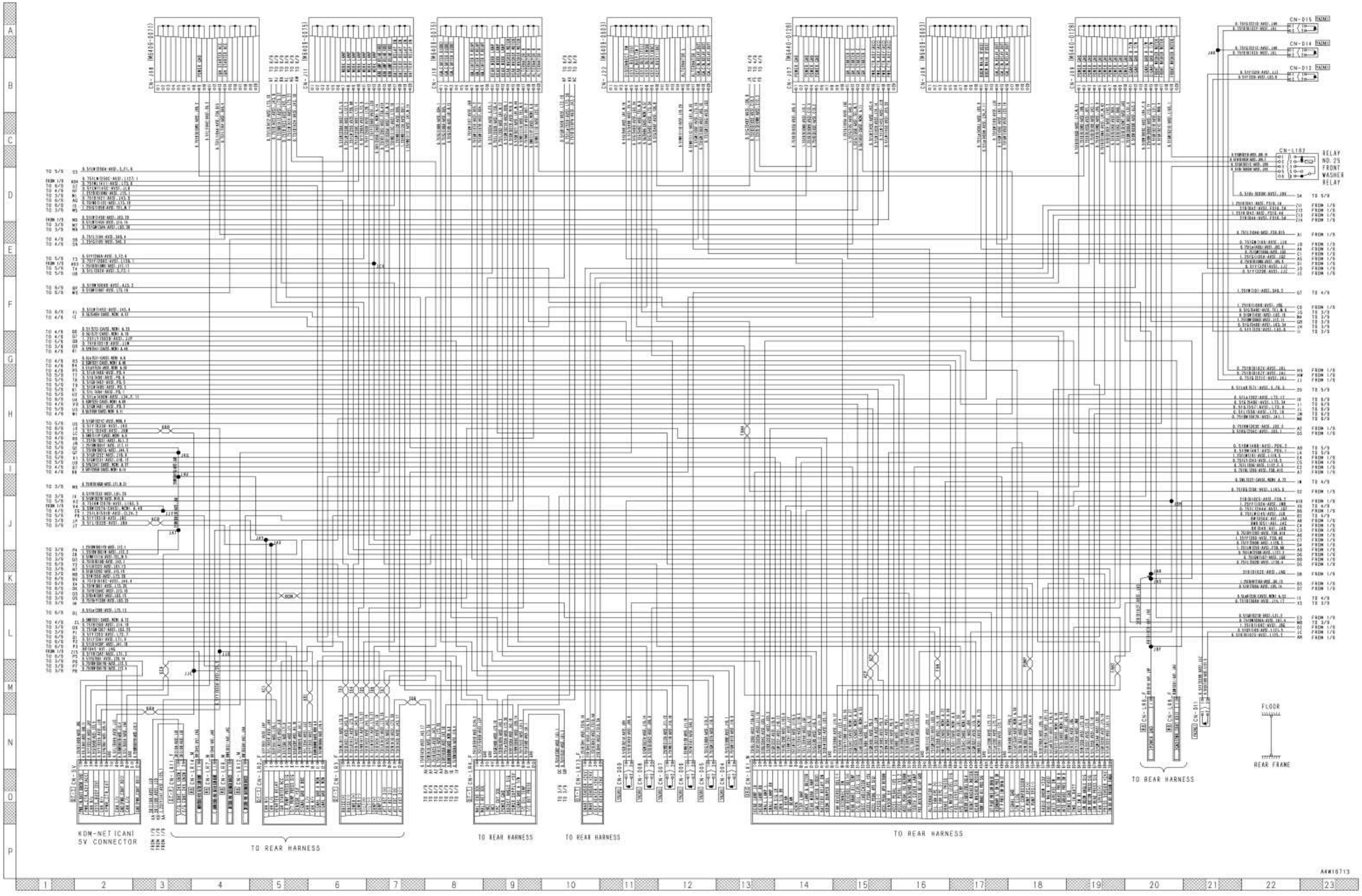
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ELECTRICAL CIRCUIT DIAGRAM OF FLOOR (FOR AJSS SPEC) (2/8)

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REMARK

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



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