SEN06503-05

Shop Manual

WHEEL LOADER **WA200-7**

SERIAL NUMBERS 80001 and up

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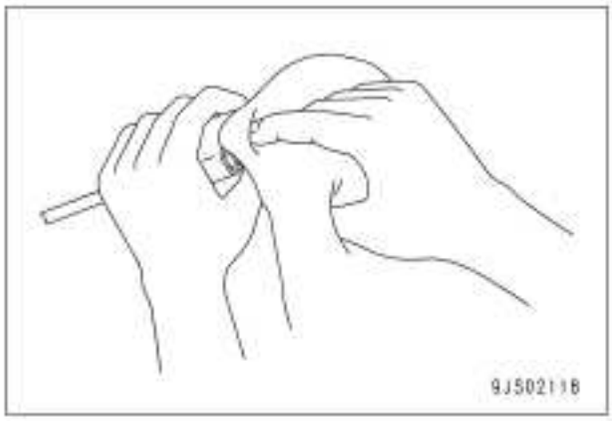
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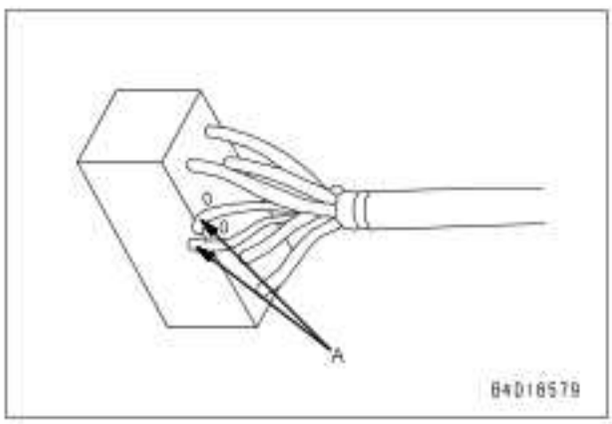
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c12. Check of wiring harness for open or short circuit

- Check the connection (crimped part) between the connector pins and wiring harness.
- If a wire is broken as shown at (A), repair or replace the wiring harness or connector.



- Visually check the wiring harnesses for peeling of harness covers and whether the pins are touching adjacent pins due to defective crimping.

c13. Check of slow-blow fuse for blowing out and corrosion

★ When replacing a fuse, be sure to turn off the power (turn the starting switch to OFF position) and turn the battery disconnect switch to OFF position.

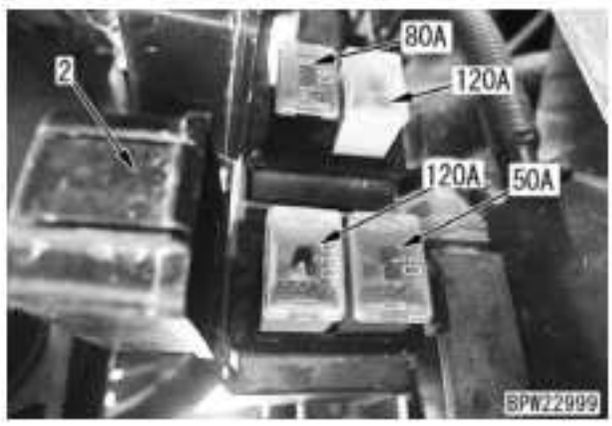
- A fusible link is a large-capacity fuse.
- If a fuse is corroded and coated with white powder, or if the fuse has any play to the fuse holder, replace the fuse.
- Replace each fuse with a one of the same capacity.

Open the left engine side cover, and open cover (1) on the fuse holder.

- Remove slow-blow fuse cover (2), and you can see slow-blow fuses.

★ Photo taken when the engine hood is removed
Slow-blow fuses 50 A, 80 A, and 120 A are located.





Remove the cover at the rear of operator's cab, and you can see fuse boxes FS1 (1) and FS2 (2).



c14. Check of alternator voltage (with engine running at medium or higher speeds)

1. Open the left engine side cover.
2. Connect the positive (+) lead of the multimeter to alternator terminal (B) and connect the negative (-) lead to the chassis ground.
3. Start the engine, warm it up, and measure the voltage while running the engine at a medium or higher speed.

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Failure code [CA3419] Mass Air Flow Sensor Sup Volt High Error

Action level	Failure code	Failure	Mass Air Flow Sensor Supply Voltage High Error (Engine controller system)
L03	**CA3419**		
Failure contents	• A high voltage error occurs in the mass air flow sensor power supply (12 V) circuit.		
Action of controller	★ If signal voltage of mass air flow sensor is abnormal, the controller takes the following actions similar to failure code [**CA356**] or [**CA357**]. • Sets the inlet flow to the fixed value (10 kg/min) and operates the engine. • Closes EGR valve. • Limits engine output and runs engine.		
Problem appearing on the machine	• Engine power drops.		
Related information	• Method of reproducing failure code: Turn starting switch to ON position.		

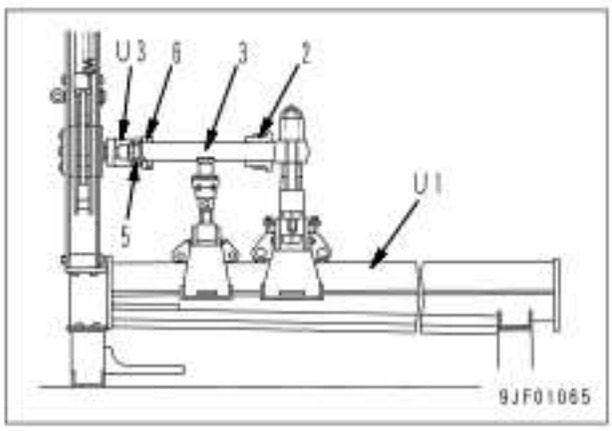
No.	Cause	Procedure, measuring location, criteria, and remarks		
1	Defective wiring harness connector	1. See descriptions of wiring harness and connectors in "c: Electrical equipment" in "Checks before troubleshooting" of "Related information on troubleshooting", and check it. 2. Turn the starting switch to ON position.		
		If this failure code is not displayed, wiring harness connector is defective. ★ If this failure code is displayed, perform following checks.		
2	Defective mass air flow sensor (Internal defect)	1. Turn the starting switch to OFF position. 2. Disconnect connector R93. 3. Turn starting switch to ON position.		
		If this failure code is not displayed, the mass air flow sensor is defective. ★ Other (multiple) failure codes are displayed simultaneously. This is because disconnection of connector, so ignore failure codes other than this failure code.		
3	Defective wiring harness	1. Turn the starting switch to OFF position. 2. Disconnect connector ECM J1. 3. Turn starting switch to ON position.		
		If this failure code is not displayed, the wiring harness is defective. ★ Other (multiple) failure codes are displayed simultaneously. This is because disconnection of connector, so ignore failure codes other than this failure code.		
4	Defective engine controller	1. Turn the starting switch to OFF position. 2. Disconnect connector ECM J1 and connect T-adapter to male side. 3. Turn starting switch to ON position.		
		Voltage	Between ECM J1 (male) (21) and (22)	Approx. 12 V
		If no failure is found by above checks, engine controller is defective. (Since this is an internal defect, troubleshooting cannot be performed.)		

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3. Assembly of cylinder head and piston rod assembly

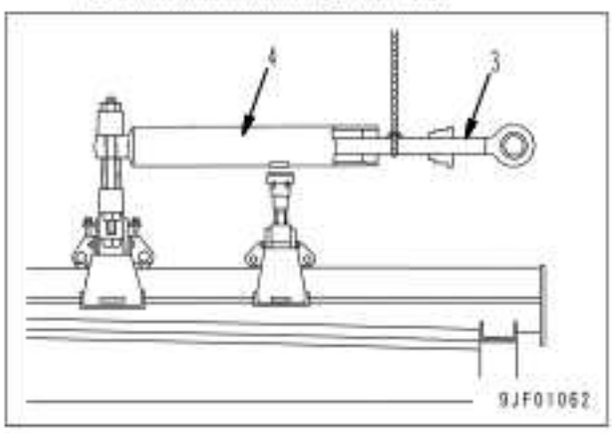
1) Set piston rod (3) to tool U1.
2) Install cylinder head assembly (2) and piston assembly (6) to the piston rod.
3) Install nut (5), and tighten it to the specified torque by using tool U3.
   - Width across flats of nut (steering): 46 mm
     (boom): 70 mm
     (bucket): 75 mm

   Threaded portion of piston rod:
   Adhesive (Loctite No. 262 or equivalent)
   Nut (steering):
   785 ± 78.5 Nm {80 ± 8.0 kgm}
   Nut (boom):
   2,600 ± 260 Nm {265 ± 26.5 kgm}
   Nut (bucket):
   3,140 ± 314 Nm {320 ± 32.0 kgm}

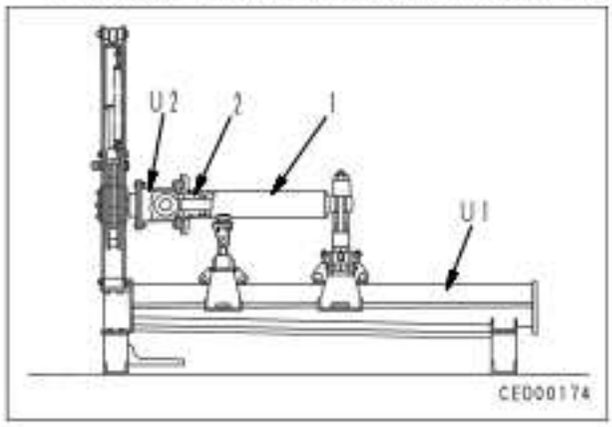


4. Cylinder head

1) Set cylinder (4) to tool U1.
2) Sling cylinder head and piston rod assembly (3), and install it to cylinder (4).

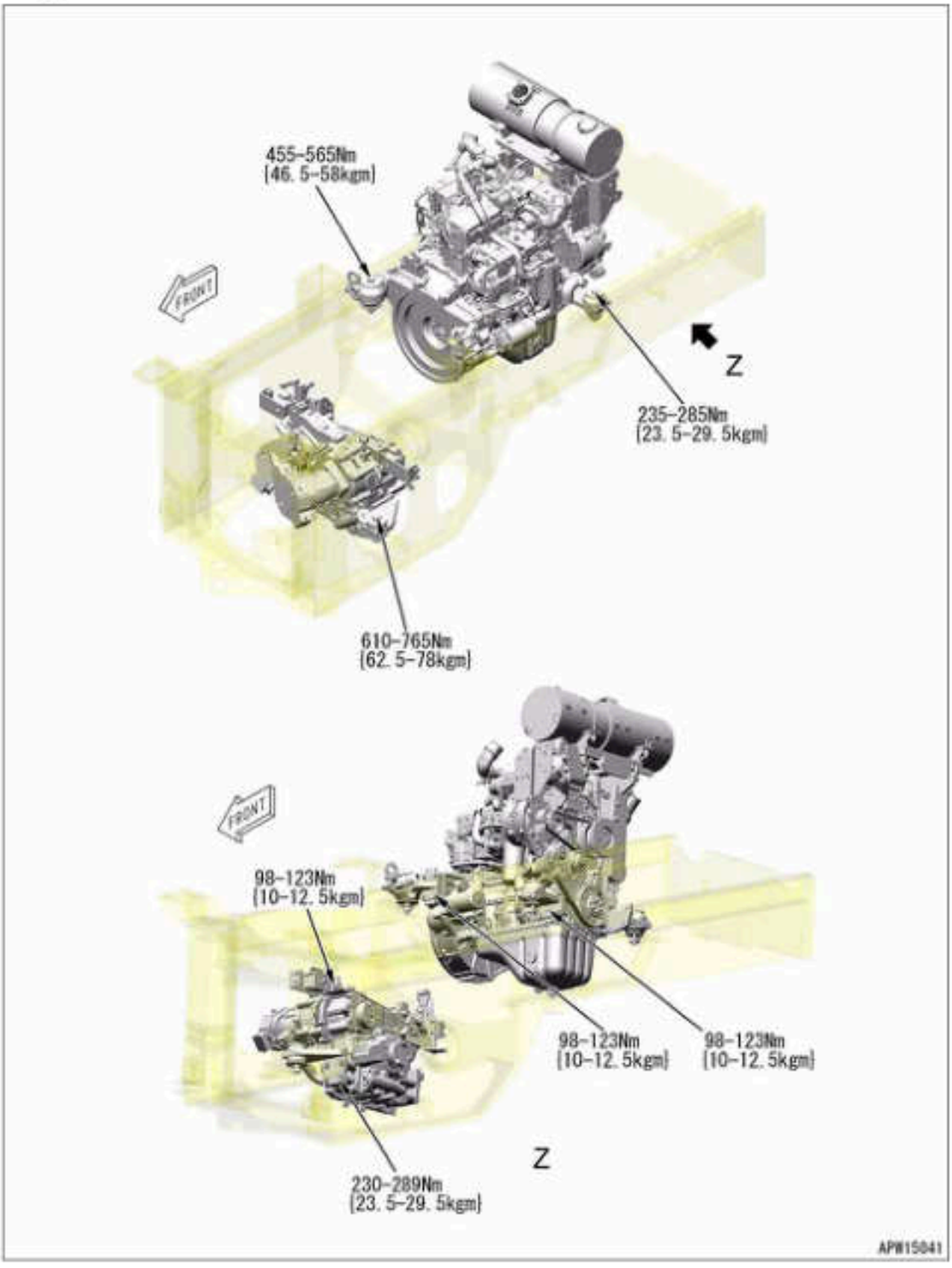


3) Install cylinder head assembly (2) to the cylinder by using tool U2.
   Cylinder head (steering):
   539 ± 54.0 Nm {55 ± 5.5 kgm}
   Cylinder head (boom):
   981 ± 98.1 Nm {100 ± 10 kgm}
   Cylinder head (bucket):
   1,030 ± 103 Nm {105 ± 10.5 kgm}
4) Remove cylinder assembly (1) from tool U1.



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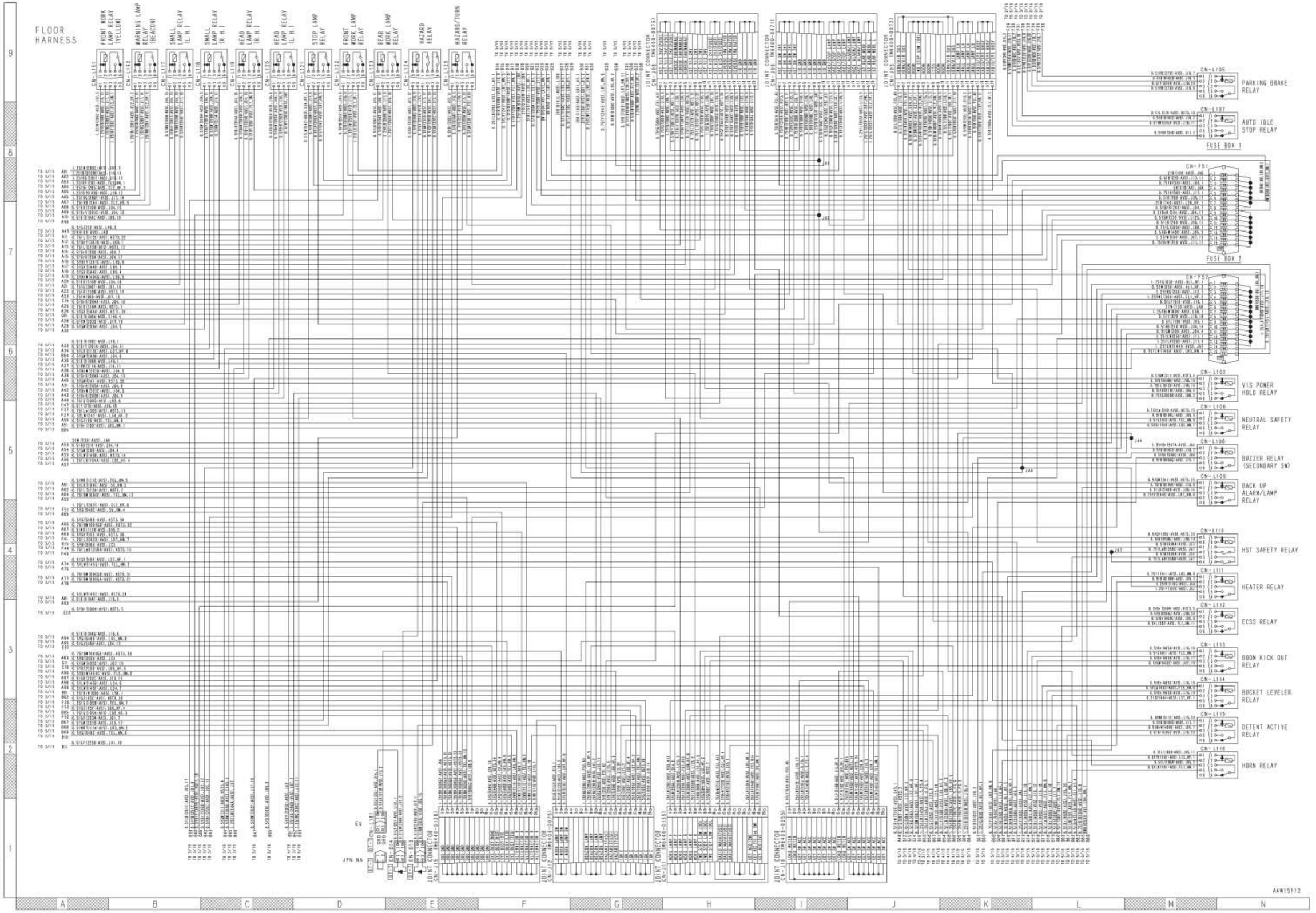
Engine and cooling system
Engine mount and transfer mount



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Electrical circuit diagram (1/15)
WA200-7

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



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