WHEEL LOADER

SERVICE MANUAL

HL980A

HYUNDAI

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Fault code J1939 SPN J1939 FMI	Reason	Effect (only when fault code is active)
3714 1569 31	Engine protection torque derate - Condition exists. Critical fault codes related to engine operation are active.	Possible reduced engine performance.
3715 188 16	Engine speed at idle - Data valid but below normal operating range - Moderately severe level. The engine speed at idle has exceeded the governed idle speed.	Possible reduced engine performance.
3716 188 18	Engine speed at idle - Data valid but below normal operational range - Moderately severe level. Engine is not maintaining the governed idle speed.	None on performance.
3717 3226 13	Aftertreatment outlet NOx sensor - Out of calibration. A calibration mismatch between the aftertreatment outlet NOx sensor and the ECM has been detected.	None on performance.
3718 3216 13	Aftertreatment intake NOx - Out of calibration. A calibration mismatch between the aftertreatment intake NOx sensor and the ECM has been detected.	None on performance.
3724 168 17	Battery 1 voltage - Data valid but below normal operating range - Least severe level. Low voltage to the EGR valve device driver has been detected.	Possible reduced engine performance.
3725 3216 10	Aftertreatment Intake NOx sensor - Abnormal rate of change. The aftertreatment intake NOx sensor reading is not valid.	None on performance.
3727 5571 7	High pressure common rail fuel pressure relief valve - Mechanical system not responding or out of adjustment. The fuel rail high-pressure relief valve has opened at a lower than expected pressure.	Possible reduced engine performance.
3737 1675 31	Engine starter mode overcrank protection - Condition exists. The starter motor has been temporarily disabled in order to prevent starter damage.	Starter operation is prohibited until the starter motor has adequately cooled.
3741 5571 0	High pressure common rail fuel pressure relief valve - Data valid but above normal operational range - Most severe level. The fuel rail pressure relief valve has opened due to high fuel rail pressure.	Engine may run rough, may stop running, may not start, or may be difficult to start.
3749 3226 20	Aftertreatment outlet NOx sensor - Data not rational - Drifted high. An offset in the outlet NOx sensor reading has been detected.	None on performance.
3838 2978 9	Estimated engine parasitic losses - Percent torque - Abnormal update rate. A loss of communication has been detected.	None on performance.
3843 5603 9	Cruise control disable command - Abnormal update rate. No communication or an invalid data transfer rate has been detected on the J1939 data link between the ECM and the cruise control.	None on performance.

※ Some fault codes are not applied to this machine.

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(3) Turn out the plug gauge and determine Dimension II (also see figure 378).

Dimension II e.g ..... 30.10 mm



Figure 379

Example "A_1" :

Dimension II	30.10 mm
Dimension X ($0.5^{-0.3}$ mm)	- 0.60 mm
Results in installation dimension A	= 29.50 mm

Example "A_2" :

Dimension I	30.00 mm
Installation dimension A	- 29.50 mm
Results in shim ring (s)	s = 0.50 mm

(4) Install the adequate shim ring (s) and wet the thread (arrow) with Loctite (type No. 574).



Figure 380

(5) Install the inductive transmitter n-Engine (9), see arrow.

· Torque limit : 3.06 kgf · m (22.1 lbf · ft)

Set and install the inductive transmitter n-Turbine (14) and n-internal speed input (5) analogously.

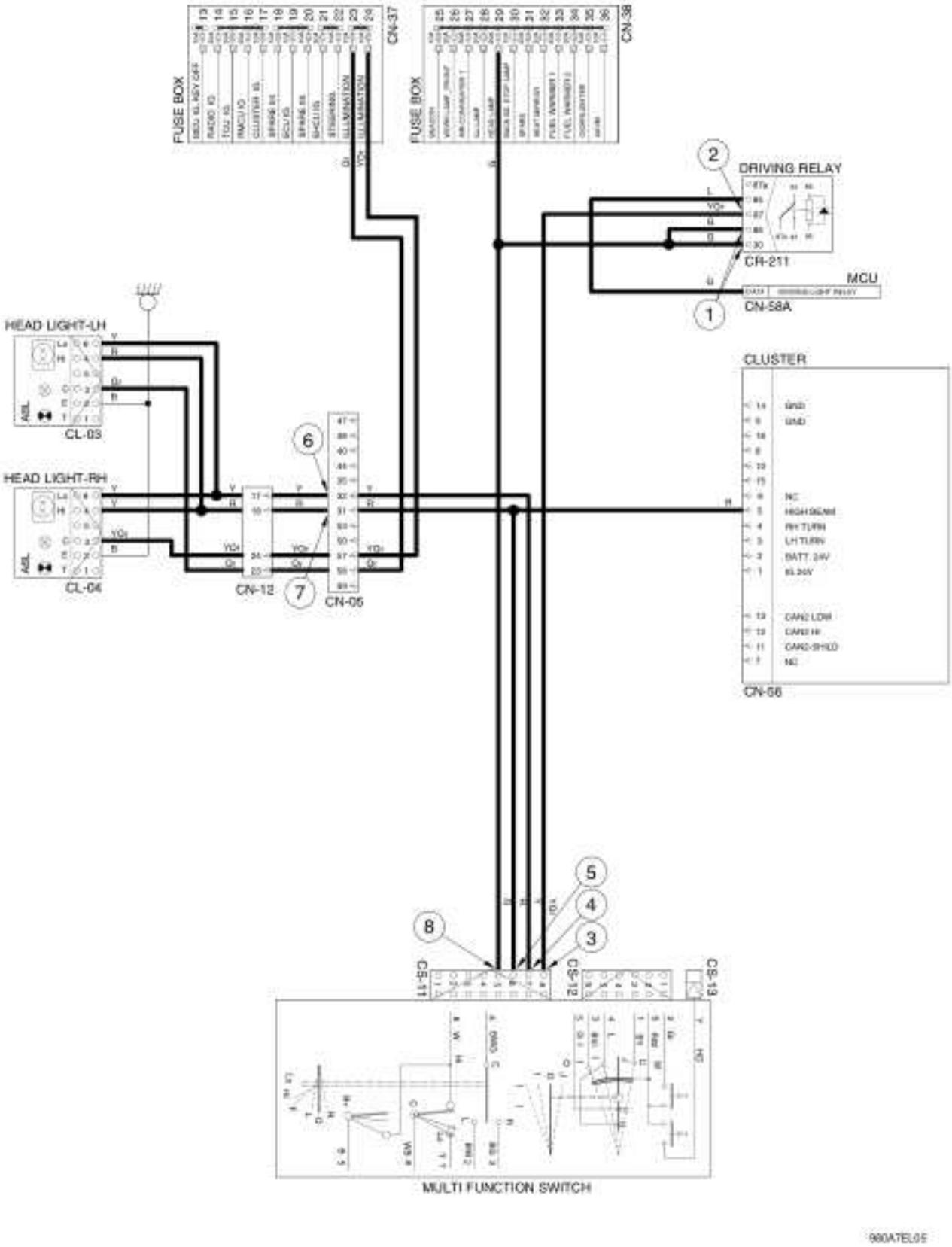
※ Observe the different setting dimensions. Installation position of the single inductive transmitters, also see figure 373.



Figure 381

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HEAD LIGHT CIRCUIT



※ The circuit diagram may differ from the equipment, so please check before a repair.

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5) DISASSEMBLY AND ASSEMBLY

(1) Spool

① Loosen the bolt (2EA).

·Tool : Wrench 5 mm

·Tightening torque : 0.85 kgf·m
(6.1 lbf·ft)



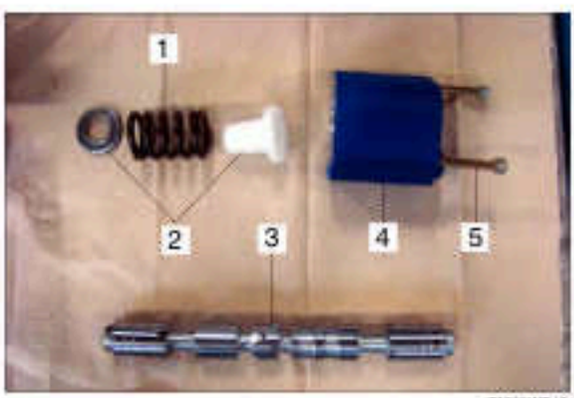
T6096WE40

② Remove the cover, spring retainer, spring and spool.



T6096WE41

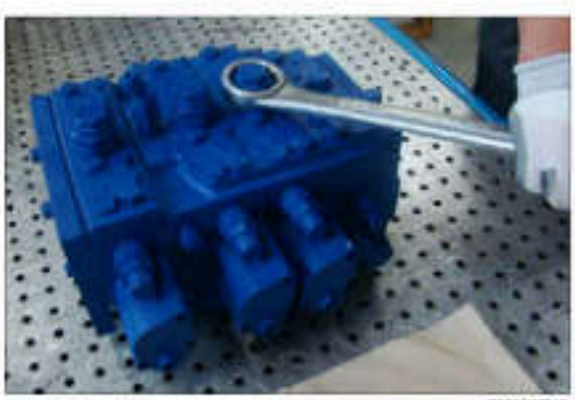
1 Spring
2 Spring ratainer
3 Spool
4 Cover
5 Bolt



T6096WE42

(2) Compensator valve

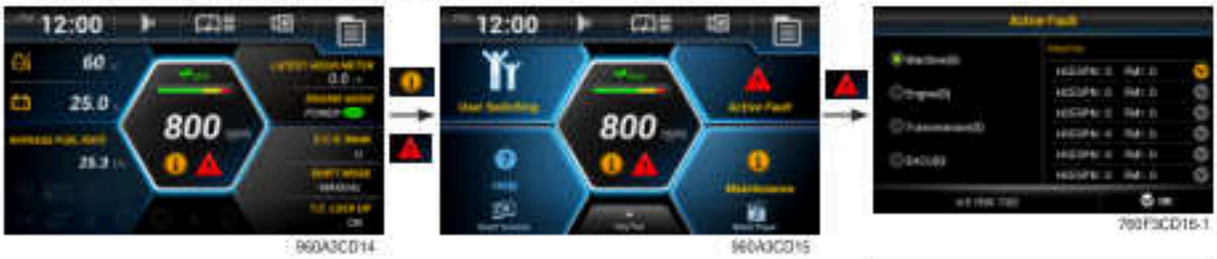
·Tool : Spanner 42 mm



T6096WE43

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(3) Fault and maintenance warning



960A3CD14 960A3CD15 760F3CD15-1

① If you touch the warning sign (red icon), move to the quick menu.

② You can check the fault message and move the maintenance screen by touching relevant area.



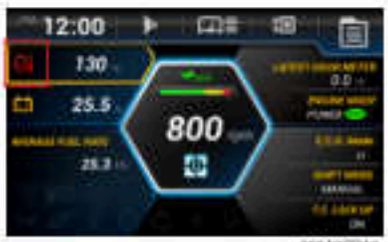
960A3CD08J

(4) Machine monitoring warning

① Warning sign (red icon) will be shown when the temperature of hydraulic oil, cooling water, transmission oil or battery voltage is not normal state.

② Case of warning sign

Icon	Description
	Above 106˚C of hydraulic oil temperature
	Above 105˚C of cooling water temperature
	Above 107˚C of transmission oil temperature
	Below 24.5 voltage of battery (for 3 minutes)
	Above 100˚C of axle oil temperature (option)



960A3CD18

(5) Communication error

① MCU could not communicate with monitor over 10 seconds, error message will be show on the screen.



760F3CD19-1

(6) Eco gauge

① This gauge indicates the fuel consumption rate and machine load status. So that operators can be careful with fuel economy.

② The fuel consumption rate or machine load is high, the segment is increased.

③ The color of Eco gauge indicates operation status.

- White : Idle operation
- Green : Economy operation
- Yellow : Non-economy operation at a medium level.
- Red : Non-economy operation at a high level.

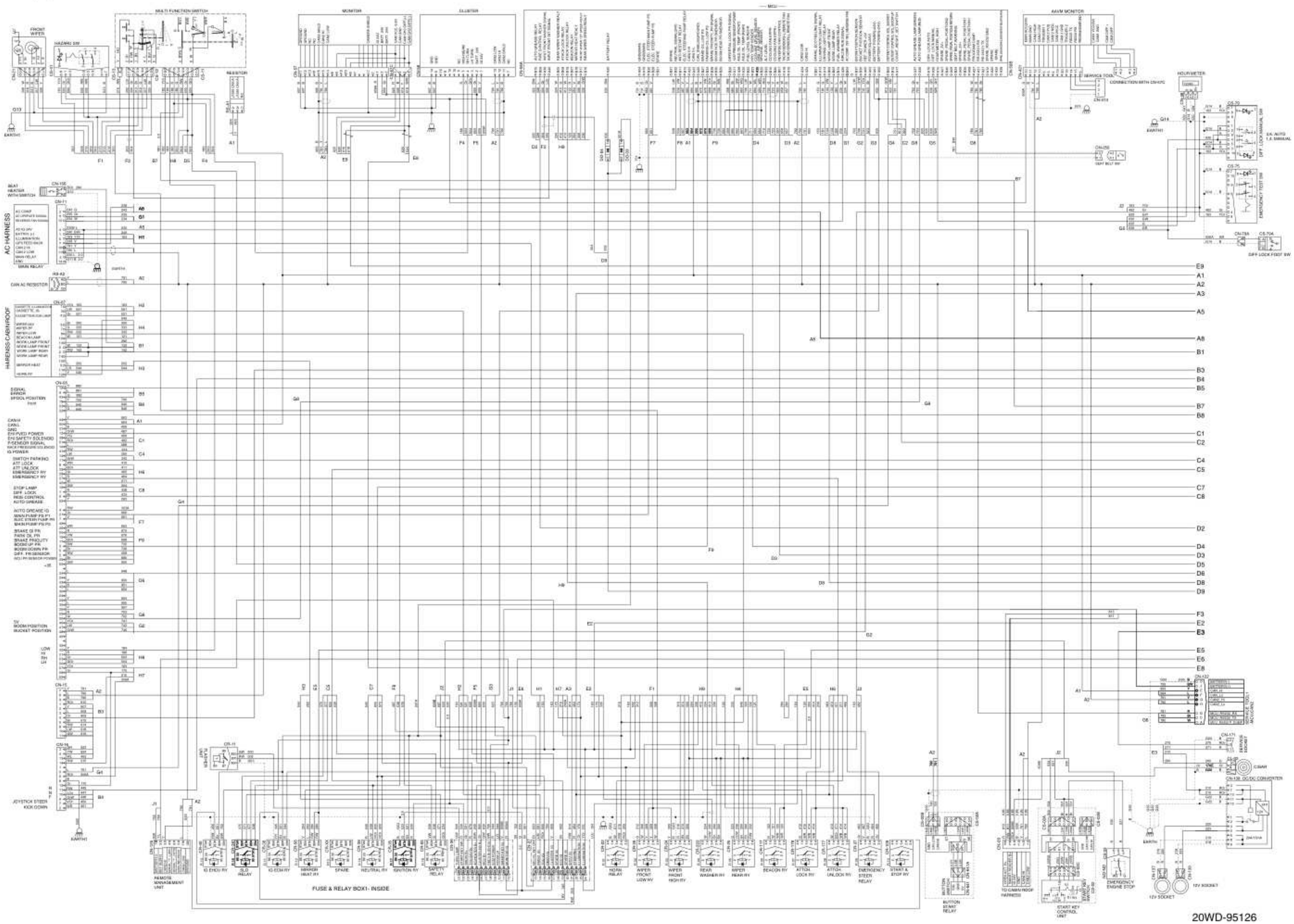
ECO gauge



760F3CD11G-1

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· ELECTRICAL CIRCUIT (1/3, machine serial No.: ~#0213)



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