CX490D
CX500D
Tier 4B (final)
Crawler Excavator

SERVICE MANUAL

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English
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CASE CONSTRUCTION

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Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1
[10.102] Pan and covers 10.2
[10.106] Valve drive and gears 10.3
[10.101] Cylinder heads 10.4
[10.105] Connecting rods and pistons 10.5
[10.103] Crankshaft and flywheel 10.6
[10.216] Fuel tanks 10.7
[10.206] Fuel filters 10.8
[10.218] Fuel injection system 10.9
[10.202] Air cleaners and lines 10.10
[10.250] Turbocharger and lines 10.11
[10.254] Intake and exhaust manifolds and muffler 10.12
[10.500] Selective Catalytic Reduction (SCR) exhaust treatment 10.13
[10.501] Exhaust Gas Recirculation (EGR) exhaust treatment 10.14
[10.400] Engine cooling system 10.15
[10.414] Fan and drive 10.16
[10.310] Aftercooler 10.17
[10.304] Engine lubrication system 10.18

Hydraulic systems 35

[35.000] Hydraulic systems 35.1
[35.300] Reservoir, cooler, and filters 35.2
[35.104] Fixed displacement pump 35.3
[35.106] Variable displacement pump 35.4
[35.102] Pump control valves 35.5
[35.359] Main control valve 35.6

MidWestTech | Case CX490D, CX500D Tier 4B Crawler Excavator Service Manual | P... Order the manual at mid-west-tech.com >

[35.357] Pilot system 35.7
[35.355] Hydraulic hand control 35.8
[35.356] Hydraulic foot control 35.9
[35.352] Hydraulic swing system 35.10
[35.353] Hydraulic travel system 35.11
[35.354] Hydraulic central joint 35.12
[35.736] Boom hydraulic system 35.13
[35.737] Dipper hydraulic system 35.14
[35.738] Excavator and backhoe bucket hydraulic system 35.15
[35.360] Hammer and rotating bucket hydraulic system 35.16
[35.820] Hydraulic driven cooling fans 35.17

Frames and ballasting 39

[39.140] Ballasts and supports 39.1

Tracks and track suspension 48

[48.130] Track frame and driving wheels 48.1
[48.100] Tracks 48.2
[48.134] Track tension units 48.3
[48.138] Track rollers 48.4

Cab climate control 50

[50.100] Heating 50.1
[50.200] Air conditioning 50.2

Electrical systems 55

[55.000] Electrical system 55.1
[55.100] Harnesses and connectors 55.2
[55.525] Cab engine controls 55.3
[55.015] Engine control system 55.4
[55.201] Engine starting system 55.5
[55.301] Alternator 55.6

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[55.302] Battery 55.7
[55.202] Cold start aid 55.8
[55.011] Fuel tank system 55.9
[55.010] Fuel injection system 55.10
[55.014] Engine intake and exhaust system 55.11
[55.988] Selective Catalytic Reduction (SCR) electrical system 55.12
[55.989] Exhaust Gas Recirculation (EGR) electrical system 55.13
[55.012] Engine cooling system 55.14
[55.013] Engine oil system 55.15
[55.640] Electronic modules 55.16
[55.512] Cab controls 55.17
[55.036] Hydraulic system control 55.18
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls 55.19
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system 55.20
[55.416] Swing control system 55.21
[55.417] Travel control system 55.22
[55.530] Camera 55.23
[55.518] Wiper and washer system 55.24
[55.404] External lighting 55.25
[55.514] Cab lighting 55.26
[55.408] Warning indicators, alarms, and instruments 55.27
[55.992] Anti-theft system 55.28
[55.DTC] FAULT CODES 55.29

Booms, dippers, and buckets 84

[84.910] Boom 84.1
[84.912] Dipper arm 84.2
[84.100] Bucket 84.3

Platform, cab, bodywork, and decals 90

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Wiring harnesses - Electrical schematic sheet 40 - LAMP, PUMP, WASHER, HORN, UREA PUMP

Type	Components	Connectors / link	Description
Horn	B92		Horn low (Left)
Horn	B93		Horn high (Right)
Lamp	E1		House lamp
Lamp	E2		Boom lamp
Lamp	E2-A		Boom lamp
Motor	M4		Washer
Connector	CN.G2	**CN.G2**	Boom lamp
Connector	CN.G2-A	**CN.G2-A**	Boom lamp
Connector	CN.D32	**CN.D32**	Urea pump
Connector	CN.D33	**CN.D33**	Lubricator
Connector	CN.D35	**CN.D35**	Boom lamp
Connector	CN.D36	**CN.D36**	House lamp
Connector	CN.D37	**CN.D37**	Washer
Connector	CN.D38	**CN.D38**	Washer
Connector	CN.D39	**CN.D39**	Horn low (Left)
Connector	CN.D40	**CN.D40**	Horn low (Left)
Connector	CN.D41	**CN.D41**	Horn high (Right)
Connector	CN.D42	**CN.D42**	Horn high (Right)

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- The counterweight removal/installation mode is established.
- The lifting magnet is attracting something.
- Inducement (Final) has occurred.
- The ECM has generated a diagnostic trouble code. (Except some SCR-related DTCs)
- Lever operation. (Either one of the following pressure sensors is ON; upper, swing, travel, option 1, option 2)
- Throttle volume operation.
- The one-touch idle switch is pressed.
- Oil temperature sensor trouble (DTC: 7041) has occurred.
- Oil temperature ≧ **90 °C** (**194 °F**).
- SCR RE-GEN is started.
- Auto calibration is started.

Operation (urea thawing, heat insulating and warm-up)

In order to maintain the target coolant temperature, thawing, heat insulating and warm-up operation is carried out. The target coolant temperature is maintained by applying the hydraulic pressure load with the engine speed maintained.
In case of low coolant temperature, it will take a long time for the coolant temperature to become stable after the load is applied.

Controls (urea thawing, heat insulating and warm-up)

When all the following conditions are fulfilled, the machine starts urea thawing, heat insulating and warm-up operation and displays the icon on the monitor.
While the engine is running

- Lever operation is not performed. (All the following pressure sensors are OFF; upper, swing, travel, option 1, option 2)
- The throttle volume is not operated.
- The one-touch idle switch is not pressed.

In these situations, **2 min** or more have passed. (If the auto warm-up has been carried out for **2 min** or more, the urea thawing, heat insulating and warm-up starts immediately.)

- Outside air temperature ≦ **-10 °C** (**14 °F**).
- The actual coolant temperature is less than or equal to the target coolant temperature for urea thawing, heat insulating and warm-up.
- The fan is not reversing.
- The counterweight removal/installation mode is not established.
- The lifting magnet is attracting nothing.
- Not during inducement (Final).
- The ECM has not generated a diagnostic trouble code. (Except some SCR-related DTCs)
- Oil temperature sensor trouble (DTC: 7041) has not occurred.
- Oil temperature ≦ **70 °C** (**158 °F**).
- Not during SCR RE-GEN.
- Not during auto calibration.

When one of the following conditions is fulfilled, the machine ends urea thawing, heat insulating and warm-up operation and hides the icon on the monitor.

- Outside air temperature ≧ **-8 °C** (**18 °F**). (For initial judgment, outside temperature > **-10 °C** (**14 °F**))
- Engine OFF.
- The fan is reversing.

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P0428-Catalyst temperature sensor circuit high sensor 1

Control Module : ECM

Solution:

1. Check and diagnose the below fault codes before you proceed with the diagnostics code 0428.

   Diagnostic trouble code 06A8

2. Turn OFF the ignition switch.

   Disconnect the harness connector **CN.D17-8** from the exhaust gas temperature sensor 1.

   Turn ON the ignition switch.

   Measure the voltage between the exhaust gas temperature sensor 1 signal circuit and normal GND.

   If the reading is more than or equal to the **5.5 V**, inspect to see if there is a short circuit to the battery or ignition power supply with the signal circuit between the ECM and the exhaust gas temperature sensor 1.

   A. If a problem is found, repair the signal circuit.

   B. If there are no problems, proceed to Step **3**.

3. Connect the test cable with fuse between the exhaust gas temperature sensor 1 signal circuit and GND circuit.

   Check the exhaust temperature sensor (before the filter) display with the trouble diagnosis scan tool.

   A. If the reading is less than or equal to the **0.1 V**, inspect to see if there is a short circuit to the **5 V** power supply circuit with the signal circuit between the ECM and the exhaust gas temperature sensor 1.

   B. If a problem is found, repair the signal circuit.

   C. If there are no problems, proceed to Step **4**.

4. Inspect to see if there is a poor connection with the exhaust gas temperature sensor 1 harness connector.

   A. If a problem is found, repair the signal circuit.

   B. If the harness connector **CN.D17-8** is normal, replace the exhaust gas temperature sensor 1. (Refer to " **Exhaust Gas Recirculation (EGR) temperature sensors - Remove - Temperature sensor 1 (55.989)**" and " **Exhaust Gas Recirculation (EGR) temperature sensors - Install - Temperature sensor 1 (55.989)**")

   C. If there are no problems, proceed to Step **5**.

5. Connect the test cable with fuse between the exhaust gas temperature sensor 1 signal circuit and normal GND.

   Check the exhaust temperature sensor (before the filter) display with the trouble diagnosis scan tool.

   If the reading is more than or equal to the **0.1 V**, inspect to see if there is an open circuit or high resistance with the signal circuit between the ECM and the exhaust gas temperature sensor 1.

   A. If a problem is found, repair the signal circuit.

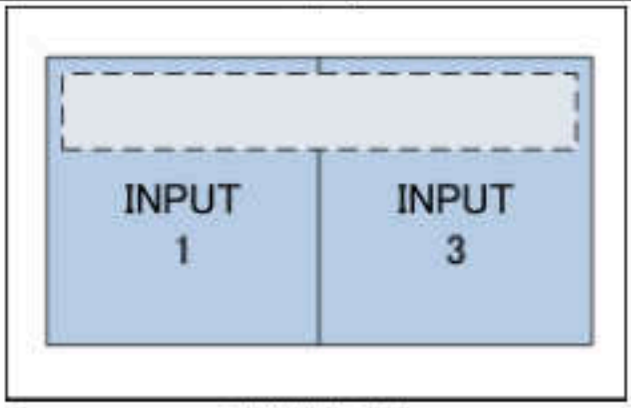
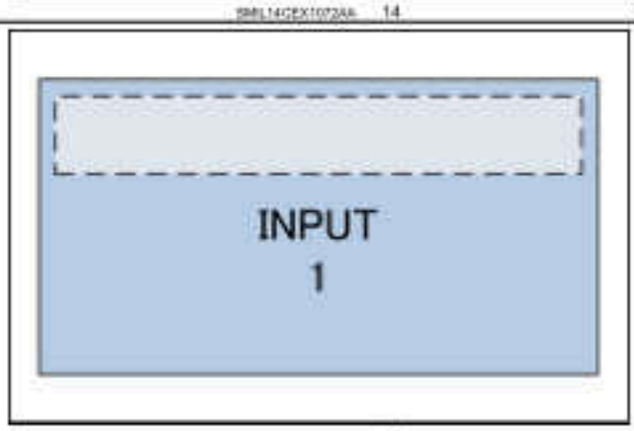
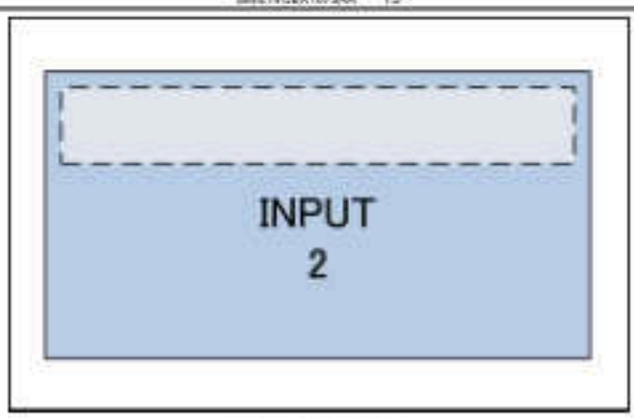
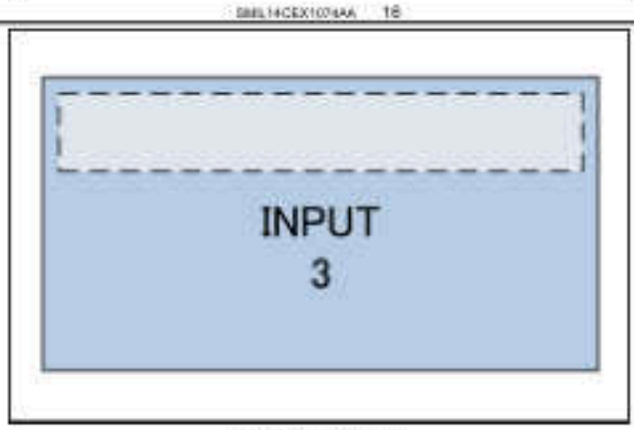
   B. If there are no problems, proceed to Step **6**.

6. Inspect to see if there is an open circuit or high resistance in the GND circuit between the ECM and the exhaust gas temperature sensor 1.

   NOTE:
   • The exhaust gas temperature sensor 1 shares the GND circuit with other sensors.
   • The diagnostic trouble code may be detected on a sensor which shares this circuit.

   A. If a problem is found, repair the GND circuit.

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Type	Meter position	Camera input	Display
G	TOP	INPUT 1+3	
H	TOP	INPUT 1	
I	TOP	INPUT 2	
J	TOP	INPUT 3	

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2.. Model select switch

Connect the rocker switch [Items to prepare **(3)**] to the connector CN.V2F (tape color: white) of the wire harness for setting Field View Monitor (FVM) [Items to prepare **(1)**].

3. Specification select switch

Connect the rocker switch [Items to prepare **(3)**] to the connector CN.V3F (tape color: blue) of the wire harness for setting Field View Monitor (FVM) [Items to prepare **(1)**].

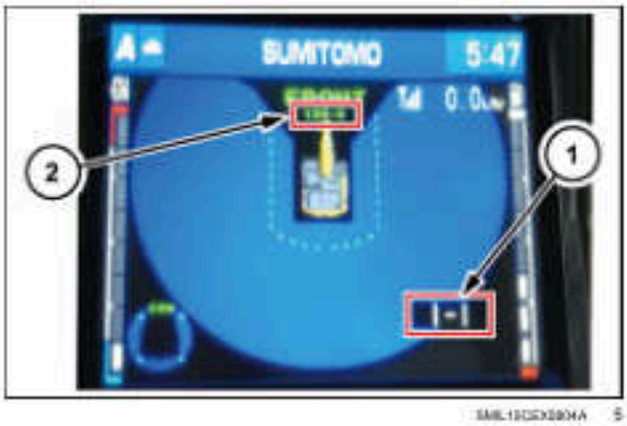
3. Setting of model/specification

Selection of setting mode

1. Select input 3 for the rear view monitor to display the Field View Monitor (FVM).
2. Turn OFF the key switch to turn off the power.
3. Turn ON the setting mode switch.
4. While keeping the setting mode switch ON, turn ON the key switch.
5. In **0.5 - 1.5 s** after the key switch is ON, turn OFF the setting mode switch.

How to set model/specification

1. About displays
(1): selection of model/specification setting
(2): model name indication (the indication changes with selection of 1)

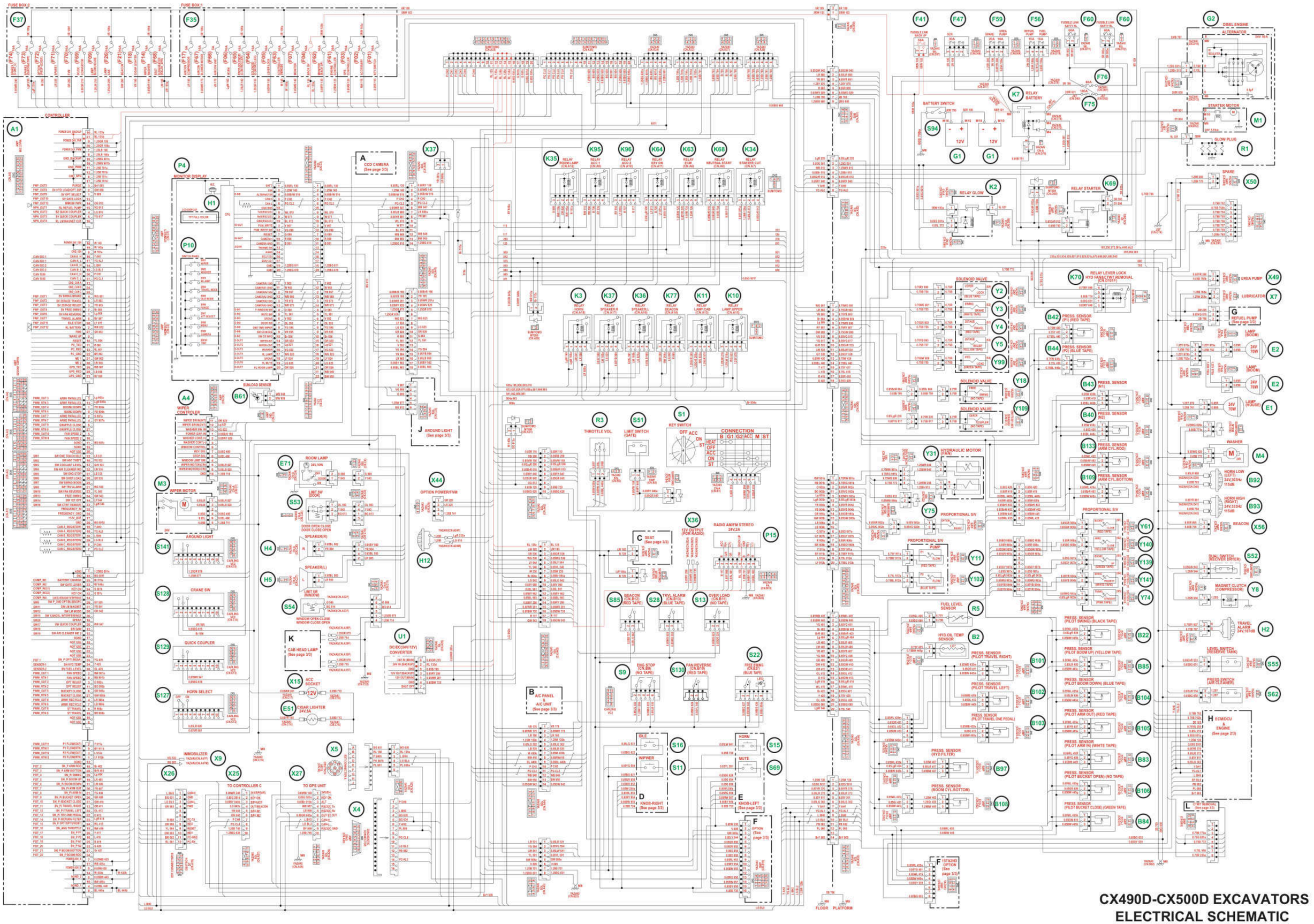


2. Operate the model select switch to set a left value of the indication **(1)** .

Model	Display **(1)**	Display **(2)**
130X4	1-1	130X4
160X4	2-1	160X4
210X4	3-1	210X4
250X4	4-1	250X4
300X4	5-1	300X4
350X4	6-1	350X4
470X4	7-1	470X4

3. Operate the specification select switch to set a right value of the indication (1).
4. The setting is saved by pressing the setting mode switch for 3 seconds.

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