CX245D SR
Crawler Excavator

SERVICE MANUAL

CASE
CONSTRUCTION

Part number 51429490
English
December 2017
© 2017 CNH Industrial Italia S.p.A. All Rights Reserved.

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 51429490 Order the manual at mid-west-tech.com >

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

[35.106] Variable displacement pump 35.3

[35.102] Pump control valves 35.4

[35.359] Main control valve 35.5

[35.357] Pilot system 35.6

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 514... Order the manual at mid-west-tech.com >

[35.355] Hydraulic hand control 35.7
[35.356] Hydraulic foot control 35.8
[35.352] Hydraulic swing system 35.9
[35.353] Hydraulic travel system 35.10
[35.354] Hydraulic central joint 35.11
[35.736] Boom hydraulic system 35.12
[35.737] Dipper hydraulic system 35.13
[35.738] Excavator and backhoe bucket hydraulic system 35.14
[35.360] Hammer and rotating bucket hydraulic system 35.15
[35.730] Positioning arm hydraulic system 35.16
[35.741] Dozer blade cylinders 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

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 514... Order the manual at mid-west-tech.com >

[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
[55.524] Cab controls (Lift arm, Boom, Dipper, Bucket) 55.21
[55.416] Swing control system 55.22
[55.417] Travel control system 55.23
[55.530] Camera 55.24
[55.518] Wiper and washer system 55.25
[55.404] External lighting 55.26
[55.514] Cab lighting 55.27
[55.408] Warning indicators, alarms, and instruments 55.28
[55.992] Anti-theft system 55.29
[55.DTC] FAULT CODES 55.30

Booms, dippers, and buckets 84

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

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 514... Order the manual at mid-west-tech.com >

Item			Standard value
Engine speed measurement	Engine speed (at no load)	SP mode	**1790 – 1810 RPM**
		H mode	**1590 – 1610 RPM**
		A mode	**1540 – 1560 RPM**
		Low idle	**890 – 910 RPM**
	Engine speed (at 2 relief)	SP mode	**1790 – 1810 RPM**
		H mode	**1590 – 1610 RPM**
		A mode	**1540 – 1560 RPM**
		Low idle	**890 – 910 RPM**
		Travel (SP mode)	**1790 – 1810 RPM**
Pump command displacement	Displacement (at no load)	SP mode	**-10 – 10%**
		H mode	**-10 – 10%**
		A mode	**-10 – 10%**
	Displacement on P2 side (at 1 relief) Bucket open at normal pressure	SP mode	**52 – 72%**
		H mode	**42 – 62%**
		A mode	**36 – 56%**
	Displacement (at 2 relief) Boom up at normal pressure	SP mode	**23 – 43%**
		H mode	**23 – 43%**
		A mode	**19 – 39%**
Attachment free-fall amount measurement	At no load Displacement for **10 min** Each cylinder displacement is a reference value.	Boom cylinder	**5 mm (0.197 in)**
		Arm cylinder	**12 mm (0.472 in)**
		Bucket cylinder	**13 mm (0.512 in)**
		Tip (fall amount)	**250 mm (9.843 in)**
Attachment speed measurement	Boom	Up [stroke: **838 mm (32.992 in)**]	**2.7 – 3.9 s**
		Down [stroke: **838 mm (32.992 in)**]	**2.0 – 3.2 s**
	Arm	Open	**1.7 – 2.9 s**
		Close	**2.1 – 3.3 s**
	Bucket	Open	**1.4 – 2.6 s**
		Close	**2.5 – 3.7 s**
Swing speed measurement	Right/Left swing (every revolution)	SP mode	**4.6 – 5.8 s**
			10.3 – 12.7 RPM
Swing brake performance	Swing brake angle **180°** swing	Minimum operating radius at no load	**80°** or less
Travel speed measurement	Forward/Backward	High speed (every **6 m (19.69 ft)**)	**3.8 – 4.8 s**
			4.5 – 5.5 km/h (2.8 – 3.4 mph)
		Low speed (every **6 m (19.69 ft)**)	**5.8 – 7.8 s**
			2.7 – 3.7 km/h (1.7 – 2.3 mph)
Travel deviation measurement	Deviation amount while traveling **20.00 m (65.62 ft)** Forward/Backward	High speed	**1000 mm (39.4 in)** or less
		Low speed	**1000 mm (39.4 in)** or less
Shoe tension condition	Measured with one side frame raised (both right and left)	Iron	**300 – 330 mm (11.8 – 13.0 in)**
Sprocket rotation	Forward/Backward (10 rotations) SP mode	High speed	**12.4 – 16.4 s**
		Low speed	**20.7 – 24.7 s**
Drain amount (MAX)	Travel Motor Very slow during a stall		**15 L/min (3.963 US gpm)** or less
	Swing motor Very slow during a stall		**10 L/min (2.642 US gpm)** or less
Ball race movement amount	Up/Down		**1.1 mm (0.043 in)** or less
	Right/Left		**3.8 mm (0.150 in)** or less
Bucket tip movement amount	Right/Left		**61 mm (2.402 in)** or less

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 514... Order the manual at mid-west-tech.com >

Wiring harnesses - Electrical schematic sheet 34 - Radio and travel alarm

Type	Component	Connector/Link	Description
Radio	P15		Radio am/fm stereo **24 V . 2 A**
Resistor	R3		Throttle voltage resistor
Switch	S13		Over load switch
Switch	S28		Travel alarm switch
Switch	S51		Limit switch (gate)
Connector	CN.B2	**CN.B2**	Throttle voltage resistor
Connector	CN.B3	**CN.B3**	Limit switch (gate)
Connector	CN.B4	**CN.B4**	Radio am/fm stereo **24 V . 2 A**
Connector	CN.B24	**CN.B24**	Radio am/fm stereo **24 V . 2 A**
Connector	CN.B14	**CN.B14**	Over load switch
Connector	CN.B16	**CN.B16**	Travel alarm switch

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 51429490

Order the manual at mid-west-tech.com >

P1404 - Exhaust gas recirculation 1 closed position performance

Control Module: ECM

Solution:

1. Check and diagnose the below fault codes before you proceed with the diagnostics code P1404.

   Diagnostic trouble code P0404
   Diagnostic trouble code P0409

2. Remove the EGR valve assembly from the engine. (Refer to " **Exhaust Gas Recirculation (EGR) valve - Remove (10.501)**")

   Inspect the EGR valve.

   There should be nothing to limit flow inside the EGR valve.

   • Make sure that there is no excessive accumulates inside the EGR valve.

   • Make sure that there is no bending with the valve shaft or valve itself inside the EGR valve.

   A. If a problem is found,repair or replace the EGR valve. (Refer to " **Exhaust Gas Recirculation (EGR) valve - Remove (10.501)** and **Exhaust Gas Recirculation (EGR) valve - Install (10.501)**")

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

3. Turn OFF the ignition switch.

   Disconnect the harness connector **CN.E12** from the EGR valve.

   Inspect the EGR valve harness connector **CN.E12** for a poor connection.

   A. If a problem is found, repair the harness connector **CN.E12**.

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

4. Disconnect the harness connector **CN.D4** from the ECM.

   Inspect the ECM harness connector **CN.D4** for a poor connection.

   A. If a problem is found, the harness connector **CN.D4**.

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

5. Inspect the EGR valve circuit between the ECM and the EGR valve for an open circuit and high resistance.

   A. If a problem is found, repair the EGR valve circuit.

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

6. Inspect the motor circuit between the ECM and EGR valve.

   • Make sure that there is no short to GND.

   • Make sure that there is no short to the battery or ignition power supply.

   • Make sure that there is no short to other circuits.

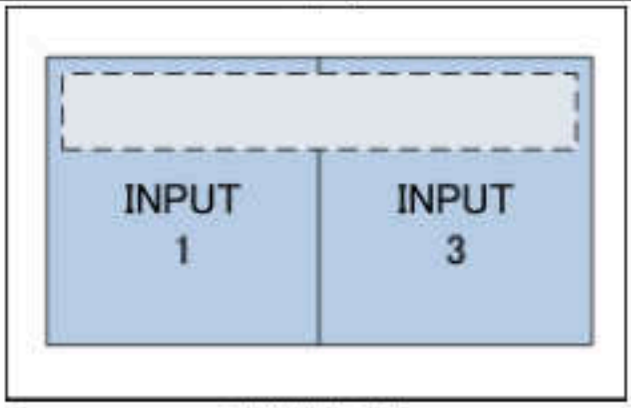
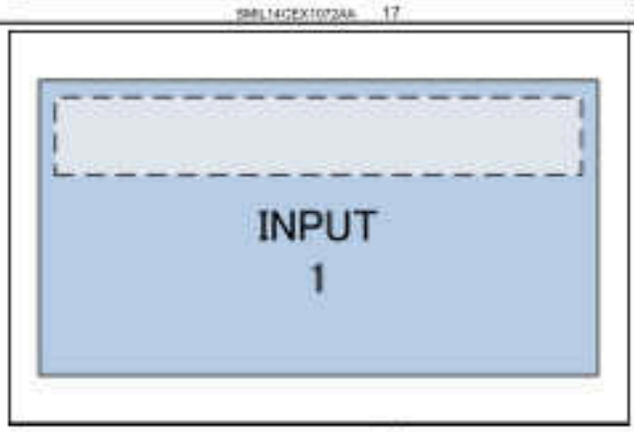
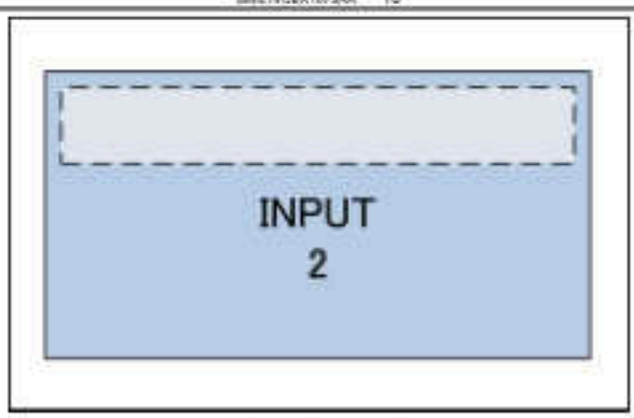
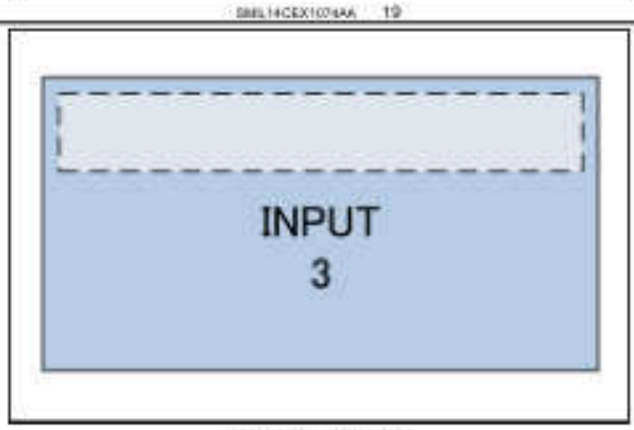
   • Make sure that there is no short to EGR position sensor circuit.

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

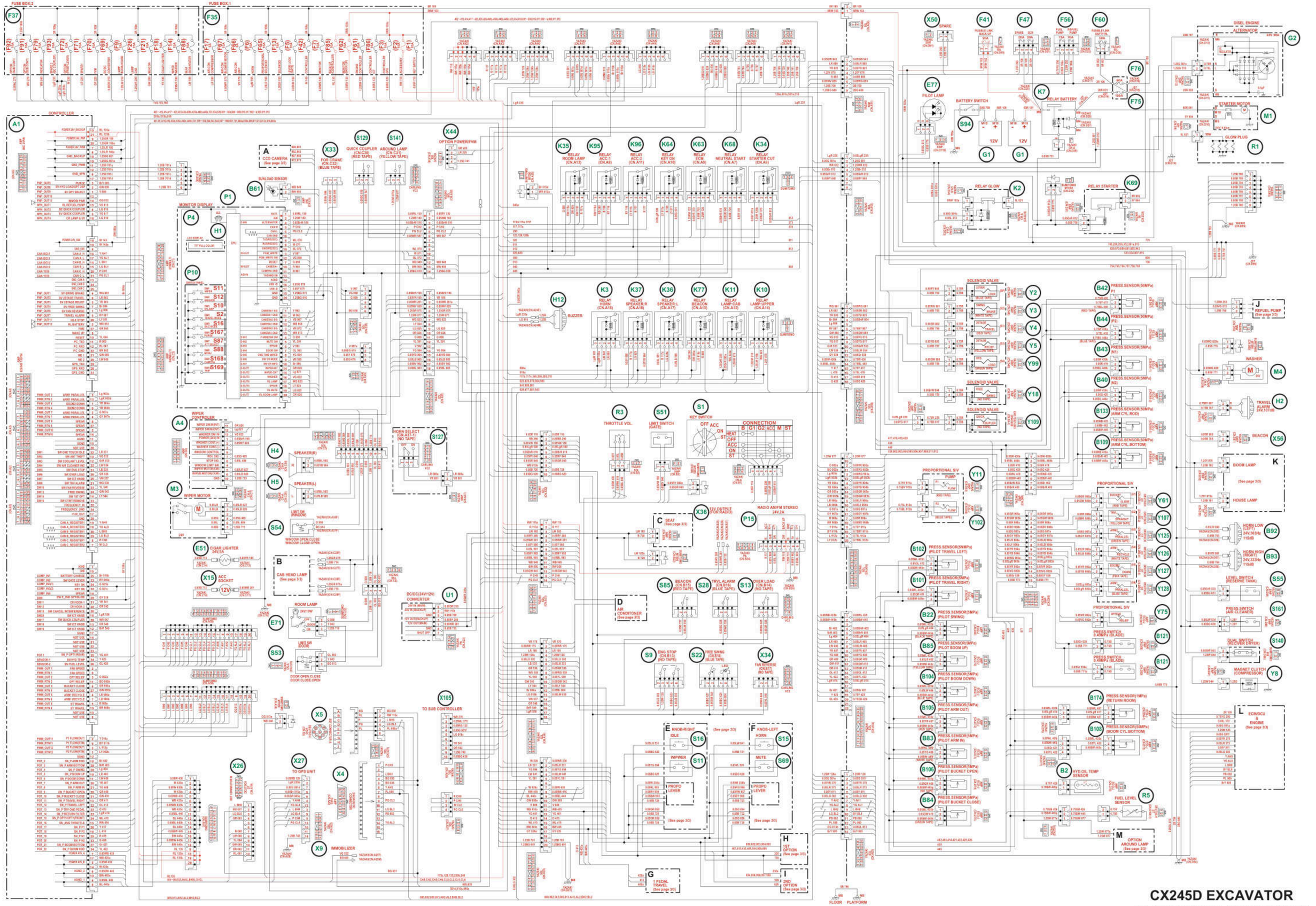
   B. If the circuit is normal, replace the EGR valve. (Refer to " **Exhaust Gas Recirculation (EGR) valve - Remove (10.501)** and **Exhaust Gas Recirculation (EGR) valve - Install (10.501)**")

7. Confirm resolution:

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 514... Order the manual at mid-west-tech.com >

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

MidWestTech | Case CX245D SR Crawler Excavator Service Manual | Publication 514... Order the manual at mid-west-tech.com >



CX245D EXCAVATOR ELECTRICAL SCHEMATIC

48149010EN - 1/3

49054095-0

Order the manual at mid-west-tech.com >