CX210C
Crawler Excavator

SERVICE MANUAL

Part number 47780398
English
October 2014
Copyright © 2014 CNH Industrial India S.p.A. All Rights Reserved.

CASE CONSTRUCTION

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 47780398 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

[10.101] Cylinder heads 10.3

[10.105] Connecting rods and pistons 10.4

[10.103] Crankshaft and flywheel 10.5

[10.216] Fuel tanks 10.6

[10.206] Fuel filters 10.7

[10.218] Fuel injection system 10.8

[10.250] Turbocharger and lines 10.9

[10.254] Intake and exhaust manifolds and muffler 10.10

[10.501] Exhaust Gas Recirculation (EGR) - Diesel Particulate Filter (DPF) exhaust treatment 10.11

[10.400] Engine cooling system 10.12

[10.414] Fan and drive 10.13

[10.310] Aftercooler 10.14

[10.304] Engine lubrication system 10.15

[10.408] Oil cooler and lines 10.16

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

[35.304] Combination pump units 35.5

[35.359] Main control valve 35.6

[35.357] Pilot system 35.7

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >

[35.525] Auxiliary hydraulic valves and lines 35.8
[35.355] Hydraulic hand control 35.9
[35.356] Hydraulic foot control 35.10
[35.352] Hydraulic swing system 35.11
[35.353] Hydraulic travel system 35.12
[35.354] Hydraulic central joint 35.13
[35.736] Boom hydraulic system 35.14
[35.737] Dipper hydraulic system 35.15
[35.738] Excavator and backhoe bucket hydraulic system 35.16
[35.734] Tool quick coupler hydraulic system 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
[55.015] Engine control system 55.3
[55.201] Engine starting system 55.4
[55.301] Alternator 55.5
[55.302] Battery 55.6
[55.202] Cold start aid 55.7

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >

[55.010] Fuel injection system 55.8
[55.014] Engine intake and exhaust system 55.9
[55.989] Exhaust Gas Recirculation (EGR) electrical system 55.10
[55.012] Engine cooling system 55.11
[55.013] Engine oil system 55.12
[55.640] Electronic modules 55.13
[55.512] Cab controls 55.14
[55.036] Hydraulic system control 55.15
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls 55.16
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system 55.17
[55.524] Cab controls (Lift arm, Boom, Dipper, Bucket) 55.18
[55.416] Swing control system 55.19
[55.417] Travel control system 55.20
[55.950] Hammer electric system 55.21
[55.530] Camera 55.22
[55.518] Wiper and washer system 55.23
[55.404] External lighting 55.24
[55.514] Cab lighting 55.25
[55.408] Warning indicators, alarms, and instruments 55.26
[55.992] Anti-theft system 55.27
[55.DTC] FAULT CODES 55.28

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

[90.150] Cab 90.1
[90.156] Cab glazing 90.2
[90.120] Mechanically-adjusted operator seat 90.3

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >

CONNECTOR CN.D206 (Male)

Pin	From	Wire	Description	Color-Size	Frame
1	CN.D207-P-PIN1 M8	799	GROUND	B - 60.0	**Wiring harnesses - Electrical schematic sheet 01 - Starting circuit (55.100)**

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >

P0237-Turbocharger boost sensor circuit low

Control Module : ECM

Solution:

1. Check and diagnose the below fault code before you proceed with the diagnostics of code 0237.

   Diagnostic trouble code 1655

2. Turn "OFF" the starter switch.

   Disconnect the harness connector **CN.E6** from the boost sensor.

   Turn "ON" the starter switch.

   Measure the voltage between the **5 V** power supply circuit of the boost sensor harness connector **CN.E6** and a normal GND.

   If the voltage is less than or equal to **4.5 V**, inspect to see if there is an open circuit or high resistance with the **5 V** power supply circuit between the ECM and the boost sensor.

   The boost sensor shares the **5 V** power supply circuit with other sensors.

   The diagnostic trouble code set on a sensor which shares this circuit may be detected.

   A. If a problem is found, repair the Connect the test cable with fuse between the **5 V** power supply circuit and the signal circuit of the boost sensor harness connector **CN.E6** power supply circuit.

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

3. Connect the test cable with fuse between the **5 V** power supply circuit and the signal circuit of the boost sensor harness connector **CN.E6**.

   Check the boost pressure sensor display with the trouble diagnosis scan tool.

   If the voltage is more than or equal to **4.5 V**, inspect to see if there is a poor connection with the boost sensor harness connector **CN.E6**.

   A. If a problem is found, repair the harness connector **CN.E6**.

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

4. If the harness connector **CN.E6** is normal, replace the boost sensor.(**Boost pressure sensor - Remove (55.014)** and **Boost pressure sensor - Install (55.014)**).

   Inspect the signal circuit between the ECM and the boost sensor.

   Make sure that there should be no open circuit or high resistance.

   Make sure that there should be no short to GND.

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

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

5. Inspect the ECM harness connector **CN.D7** for a poor connection.

   A. If a problem is found, repair the harness connector **CN.D7**.

   B. If the harness connector **CN.D7** is normal, replace the ECM.

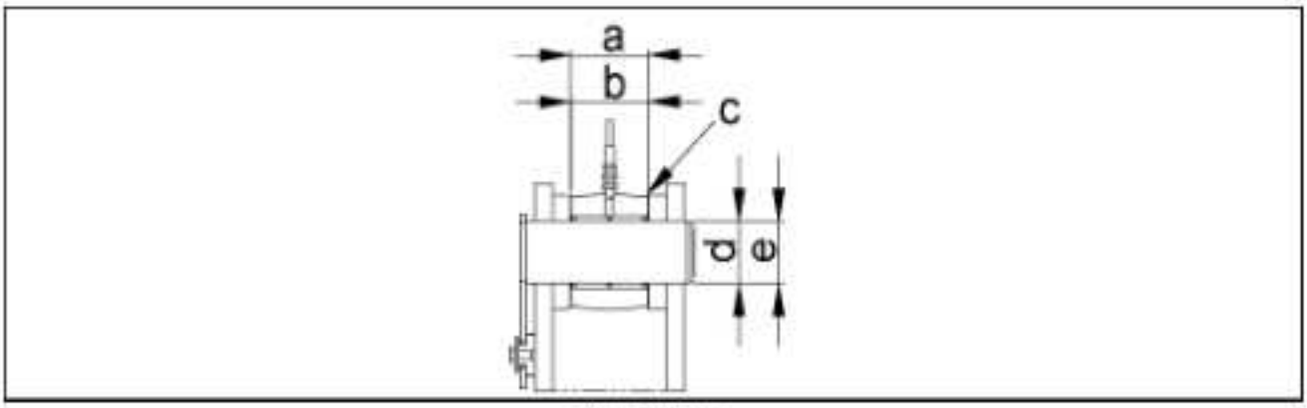
6. Set the injector ID code on the ECM.

   Perform the unit difference learning of the fuel supply pump to the ECM.

Wiring harnesses - Electrical schematic sheet 09 (55.100)

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >

4. Boom and arm cylinder installation section



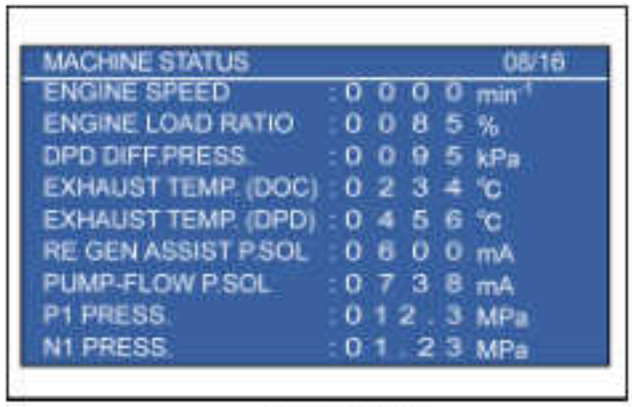
SWL14CEX0001EA 5

Part name	Code	Standard value	Usage limits	Judgment	Solution
Boom	a	**121 mm (4.764 in)**	**127 mm (5.000 in)**	Acceptable/ Unacceptable	Replacement
Arm cylinder (foot section)	b	**120 mm (4.724 in)**	**118 mm (4.646 in)**	Acceptable/ Unacceptable	Replacement
Clearance	c	**0.5 - 1.8 mm (0.020 - 0.071 in)**	Shim adjustment	Acceptable/ Unacceptable	Adjustment with shims
Pin	d	**Ø80 mm (3.150 in)**	**Ø79 mm (3.110 in)**	Acceptable/ Unacceptable	Replacement
Bushing (arm cylinder)	e	**Ø80 mm (3.150 in)**	**Ø81.5 mm (3.209 in)**	Acceptable/ Unacceptable	Replacement

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >

8. Engine

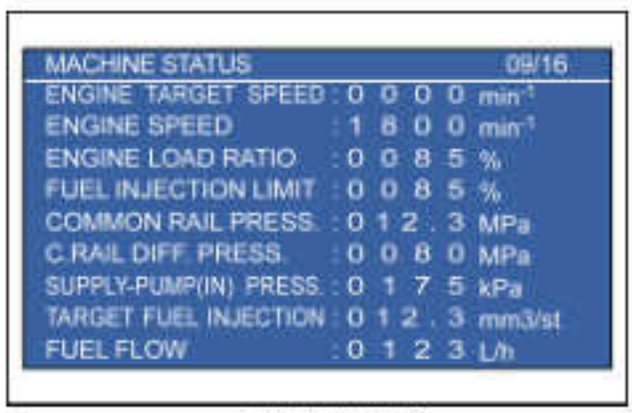
ENGINE SPEED	min^{-1} (rpm)	Engine speed
ENGINE LOAD RATIO	%	Engine load ratio
DPD DIFF. PRESS.	kPa (psi)	DPD exhaust gas differential pressure
EXHAUST TEMP. (DOC)	°C (°F)	Exhaust gas temperature (DOC)
EXHAUST TEMP. (DPD)	°C (°F)	Exhaust gas temperature (DPD filter front)
RE GEN ASSIST P.SOL.	mA	Actual milli-amp for regeneration assisting proportional valve
PUMP-FLOW P.SOL.	mA	Actual milli-amp for flow proportional valve
P1 PRESS.	MPa (psi)	P1 pressure
N1 PRESS.	MPa (psi)	N1 pressure



SMEL14CEX047AA 9

9. Engine

ENGINE TARGET SPEED	min^{-1} (rpm)	Engine target speed
ENGINE SPEED	min^{-1} (rpm)	Engine speed
ENGINE LOAD RATIO	%	Engine load ratio
FUEL INJECTION LIMIT	%	Fuel injection quantity limit level
COMMON RAIL PRESS.	MPa (psi)	Common rail pressure
C. RAIL DIFF. PRESS.	MPa (psi)	Common rail differential pressure
SUPPLY-PUMP (IN) PRESS.	kPa (psi)	Supply pump inlet pressure
TARGET FUEL INJECTION	mm^3 /st	Target fuel injection quantity
FUEL FLOW	L/h	Fuel flow



SMEL14CEX048AA 10

10. Work radius and height

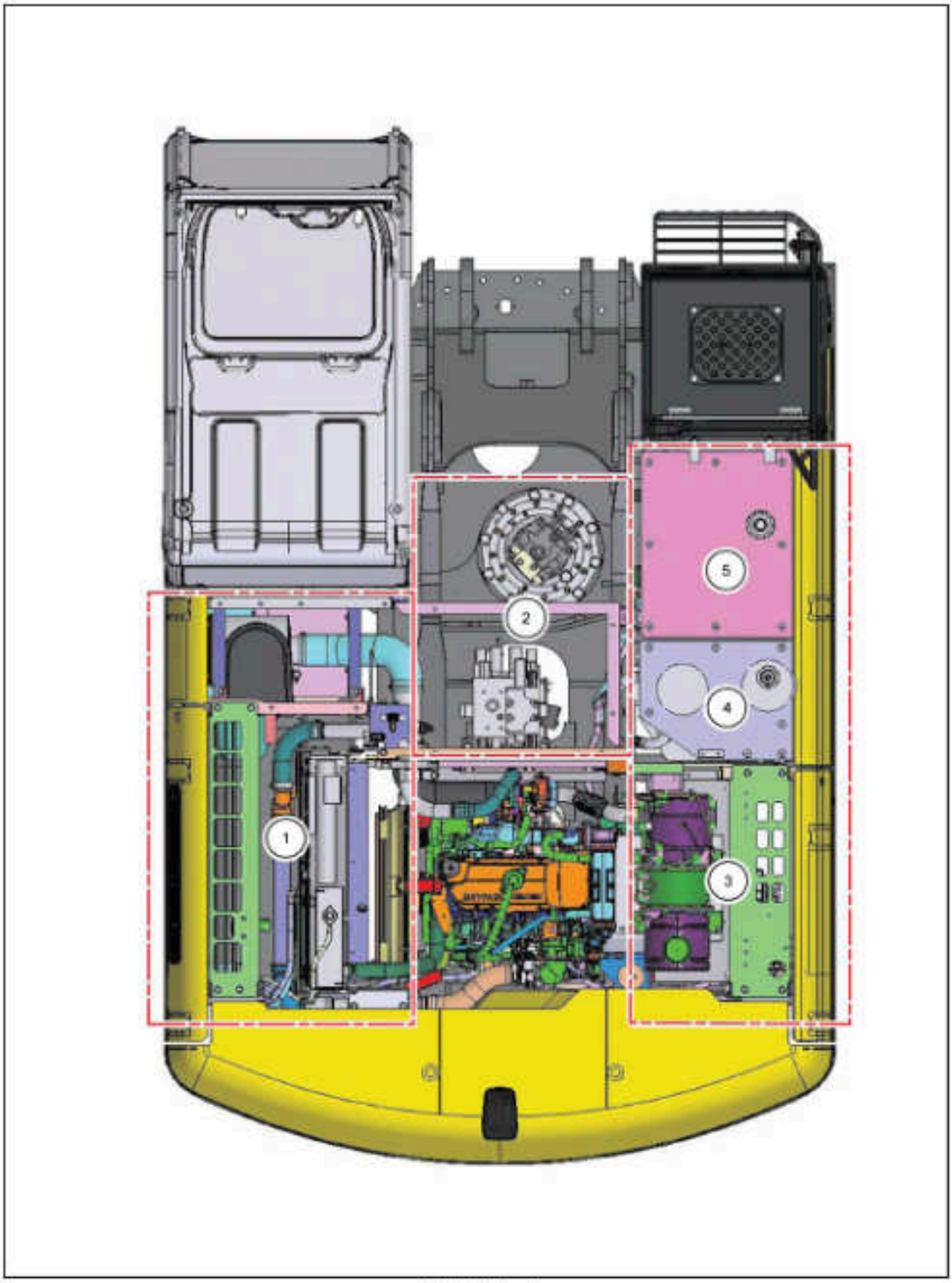
BOOM ANGLE	deg	Boom angle
OFFSET ANGLE	deg	Offset angle
ARM ANGLE	deg	Arm angle
WORKING RADIUS	m (ft.)	Work radius
LIFTING HEIGHT	m (ft.)	Hanging work height
HEIGHT LIMIT	m (ft.)	Hanging height limit
LIFTING LOAD	kg (lb)	Actual load
RATED LOAD	kg (lb)	Rated load
WARNING BUZZER OUT	on/off	Warning buzzer output



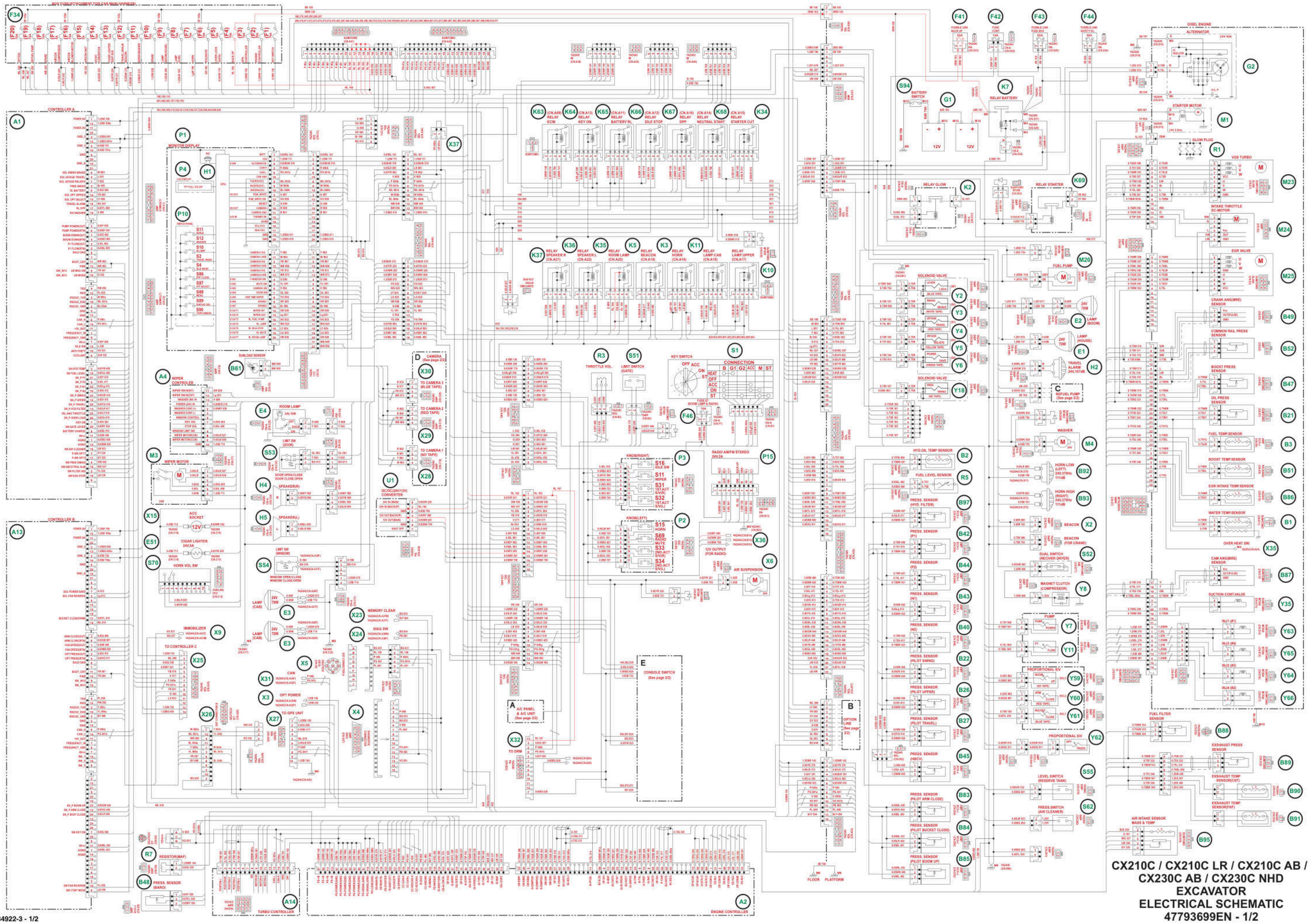
SMEL14CEX049AA 11

MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >

Hydraulic systems - Overview



MidWestTech | Case CX210C Crawler Excavator Service Manual | Publication 477803... Order the manual at mid-west-tech.com >



58784922-3 - 1/2

CX210C / CX210C LR / CX210C AB / CX230C AB / CX230C NHD EXCAVATOR ELECTRICAL SCHEMATIC 47793699EN - 1/2

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