CX470B
Tier 3
Crawler Excavator

SERVICE MANUAL

Part number 84149316C
English
June 2010
Replaces part number 84149316ANA

CASE CONSTRUCTION

MidWestTech | Case CX470B Tier 3 Crawler Excavator Service Manual | Publication 84149316C
Order the manual at mid-west-tech.com >

TABLE OF CONTENTS

WARNING: *This symbol is used in this manual to indicate important safety messages. Whenever you see this symbol, carefully read the message which follows. Your safety depends on it.* M171C

TYPE, SERIAL NUMBER
AND YEAR OF MANUFACTURE OF THE MACHINE 4
- Machine 4
- Engine 4
- Serial numbers of the components 4

FLUIDS AND LUBRICANTS 5
- Hydraulic fluid 5
- Transmission component oil 5
- Grease 5
- Engine Oil 6
- Engine fuel, maintenance of fuel filters and fuel storage 7
- Anti-freeze/Anti-corrosion 9
- Environment 9
- Plastic and resin parts 9

SPECIFICATIONS 10
- Main data 10
- Performance 10
- Main body dimensions 10
- Engine 11
- Cooling system 11
- Capacity of coolant and lubricants 11
- Air conditioning 11
- Hydraulic oil filter 11
- Fuel filter 11
- Operating devices 12
- Hydraulic system 13
- Swing unit 16
- Travel lower body 16
- Work Unit 17
- New Machine Performance 18

COMPONENT WEIGHT 20
- Major component weight 20
- Other component weight 21

DIMENSIONS AND WEAR LIMIT OF THE TRACK ASSEMBLY 22
- Sprocket 22
- Idler wheel 23
- Upper roller 24
- Lower roller 25
- Track 26

DIMENSIONS AND WEAR LIMITS OF ATTACHEMENT MOBILE JOINTS 27
- 1. Boom foot/Frame 27
- 2. Boom cylinder foot/Frame 28
- 3. Boom cylinder head/Boom 28

MidWestTech | Case CX470B Tier 3 Crawler Excavator Service Manual | Publication 8... Order the manual at mid-west-tech.com >

4. Arm cylinder foot/Boom 29
5. Boom/Arm 29
6. Arm cylinder head/Arm 29
7. Bucket cylinder foot/Arm 30
8. Connecting rod/Arm 30
9. Compensator/Bucket 30
10. Connecting rod/Compensator/Bucket cylinder head 31
11. Arm/Bucket 31

SPECIAL TORQUE SETTINGS 32

MACHINE OVERALL DIMENSIONS 35
Standard attachment (6.98 m boom) with fixed side frame 35
Standard attachment (6.98 m boom) with retractable side frame 36
Short attachment (6.55 m boom) with fixed side frame 37
Short attachment (6.55 m boom) with retractable side frame 38

MidWestTech | Case CX470B Tier 3 Crawler Excavator Service Manual | Publication 8... Order the manual at mid-west-tech.com >

TYPE, SERIAL NUMBER AND YEAR OF MANUFACTURE OF THE MACHINE

For all part orders, request for information or assistance, always specify the type and the serial number of the machine to your Case dealer.

Fill in the following lines with the required information: type, serial number, year of manufacture of the machine and the serial numbers of the hydraulic and mechanical components.

Machine



CRL 05J002E00

Type.....

Serial number.....

Year of manufacture .....

Engine

Make and type.....

Serial number.....

Serial numbers of the components

Hydraulic pump .....

Swing reduction gear.....

Travel reduction gears .....

Control valve.....

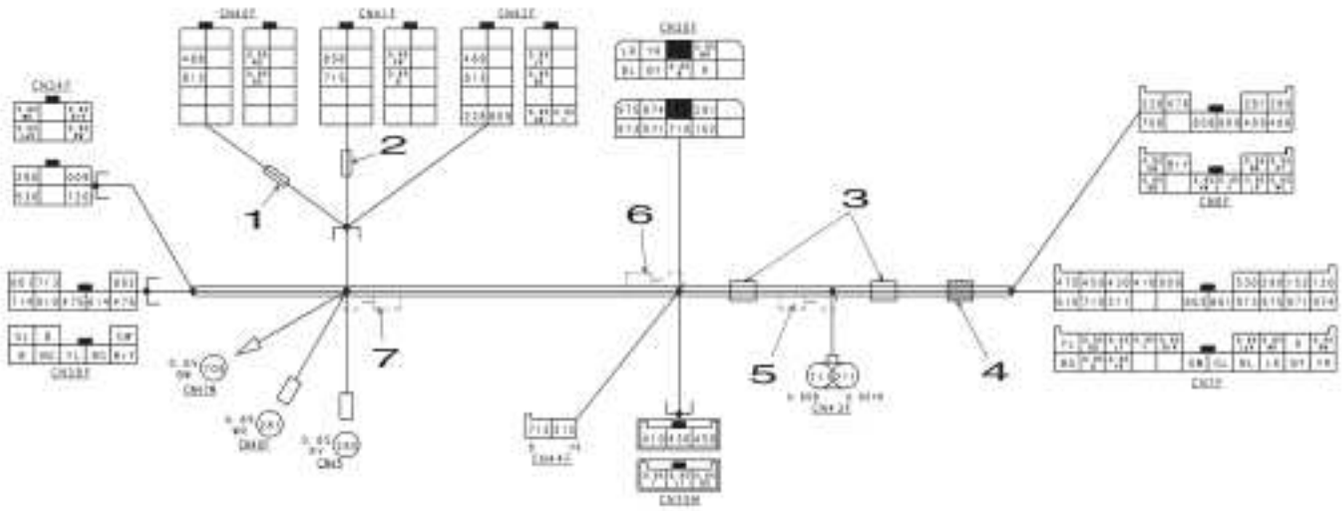
MidWestTech | Case CX470B Tier 3 Crawler Excavator Service Manual | Publication 8... Order the manual at mid-west-tech.com >

Console

1) Console Right Harness

1	Blue tape
2	Red tape
3	White tape
4	Position of label
5	Fix connector (CN. 43F) with red tape.
6	Fix connector (CN. 44F) with red tape.
7	Fix pin terminal of circuit no. 280,281 Ai 706 with red tape.

CN. 7F	Cab main harness: A
CN. 8F	Cab main harness: B
CN. 34F	Starter switch
CN. 35M	Throttle volume
CN. 36F	Radio
CN. 38F	Knob (right) switch
CN. 40F	Over load/alarm switch
CN. 41F	Beacon switch
CN. 42F	Free swing switch
CN. 43F	KAB seat
CN. 44F	Diode
CN. 45	12 V +B
CN. 46F	12 V IGN



KHR16111-C01

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

High Fuel Consumption

Preliminary inspection

Before using this section, implement a "Service support monitor check" and check all of the following items.

- Check the estimated fuel consumption of the main unit manufacturer (A) as fuel consumption will vary widely depending on handling of the main unit. Estimated fuel consumption (L/hr.)
- Check the actual fuel consumption (B). Actual fuel consumption (L/hr.)
- If B is larger than A, see the Service Text and check main unit settings.
- Check whether there is an excessive load on the main unit.
- See the service list table in the Operator's Manual and perform inspection according to the main unit usage time.
- For main units in which the usage time is over 3000 hr., see the Service Text and perform inspection.
- The ECM and shovel controller are operating correctly.
- Check diagnostic trouble codes.
- Check the condition of the main unit and find applicable symptoms in the problem symptom list. Implement the procedure indicated in the symptom chart.
- Confirm with the customer that the stipulated engine oil and fuel are being used.
- Check whether engine oil replacement and periodic maintenance for the air cleaner filter and fuel filter have been implemented.

Visual inspection

Some symptoms detection procedures require careful visual inspection. This allows for problems to be repaired without performing further inspection, which saves valuable time. The following items are included in this inspection.

- Check for correct wiring connections, tightness, and disconnections
- Check whether the ECM ground is dirty and check that it is securely installed in the correct location.
- Check that pipes and hoses for fuel, air, and oil are not broken or twisted and that they are correctly connected. Thoroughly check for any leaking or clogging.
- Check for fuel leaks and damage and denting on pipes in the fuel system.
- Intake air system parts abnormality
- Exhaust system parts abnormality

Diagnostic aid

- Fuel system abnormality (fuel cut-off, fuel freezing, air entering fuel line, filter abnormality (main, gauze clogging), line abnormality, fuel quality, fuel tank (debris, fuel suction abnormality)
- Intake air system abnormality (EGR valve abnormality)
- Injector abnormality (excessive fuel injection)
- Engine main unit abnormality (seizing, compression pressure deficiency, other mechanical trouble)
- Trouble related to main unit-side device (hydraulic pump)
- ECM trouble (main unit, power supply, GND)
- Perform inspection to check whether there are any connector connection problems, abnormalities involving friction or breaking in harnesses, and whether any wires inside harnesses are touching another circuit and causing a short. Also, perform function diagnosis inspection, check operations and control in each area, and repair any abnormalities.

Step	Action	Value	Yes	No
1	1. Compare the main unit estimated fuel consumption and the actual fuel consumption. A: Estimated fuel consumption (L/hr.) B: Actual fuel consumption (L/hr.) 2. If B is larger than A, see the Service Text and check main unit settings or check whether there is an excessive load on the main unit. 3. Perform repair or replacement for any locations where problems are found. Is the action complete?	-	Check repair.	Go to step 2.
2	Check for fuel leaking. Perform repair or replacement for any locations where problems are found. Is the action complete?	-	Check repair.	Go to step 3.
3	Check whether engine oil replacement and periodic maintenance for the air cleaner filter and fuel filter have been implemented. Is the action complete?	-	Implement main unit maintenance.	Go to step 4.

MidWestTech | Case CX470B Tier 3 Crawler Excavator Service Manual | Publication 8... Order the manual at mid-west-tech.com >

4) Cold blast prevention control

The air flow is restricted according to the value of the coolant temperature and other parameters sent from the vehicle side. The air flow restriction has two levels - air flow 0 and air flow Lo. Whether or not to use the restriction is determined from the judgment results.

a) Conditions under which cold blast prevention control is used

1. Auto air flow

2. When set temperature - inside air sensor temperature > 11°C

3. When the coolant temperature signal from vehicle is the less than 35°C signal or the 35°C or higher but less than 45°C signal

Under the condition above, the inside air sensor temperature is the value immediately after the ignition key power is switched ON and AUTO and Test are according to the current switch states. Therefore, when the AUTO switch is pressed after the air flow has been set manually, if the coolant temperature is within the cold blast prevention range, the air flow is restricted. In the same way, even if the set temperature is changed, if the conditions are met, the air flow is restricted.

While cold blast prevention control is being executed, the display corresponds to the restricted air flow.

b) Air flow 0 control

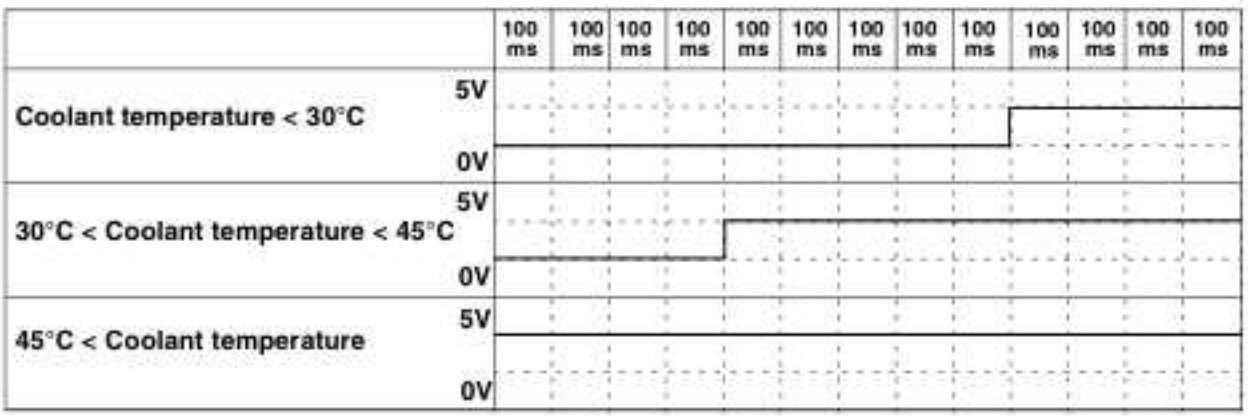
When the coolant temperature signal from vehicle is the less than 35°C signal, the air flow is set to 0. This continues until a coolant temperature signal of 30°C or higher is received. Once a coolant temperature signal of 30°C or higher is received and these conditions are no longer met, air flow 0 is ended.

c) Air flow Lo control

When the coolant temperature signal from vehicle is the 35°C or higher but less than 45°C signal, the air flow is set to Lo. This continues until a coolant temperature signal of 45°C or higher is received. Also, the same as for (**b**), this shift is irreversible. Once a coolant temperature signal of 45°C or higher is received, control is normal.

Coolant temperature signal sent from the vehicle (one cycle)

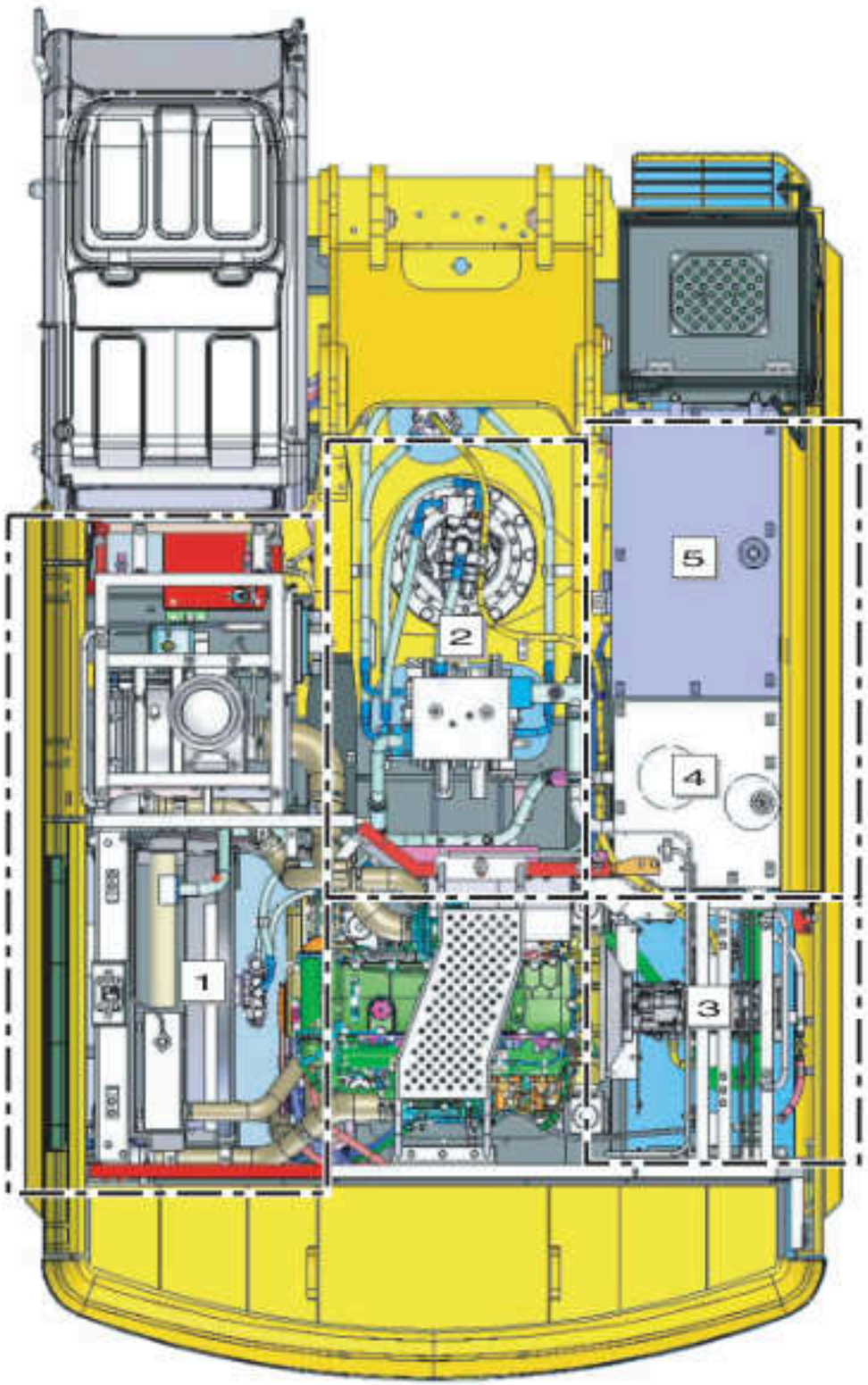
* Finalized by the same waveform for three cycles. However, for the first combustion after the ignition switch is switched ON, judged with the latest one cycle.
* The default state for the coolant temperature signal when the ignition is switched ON is 45°C or higher.



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

HYDRAULIC EQUIPMENT LAYOUT

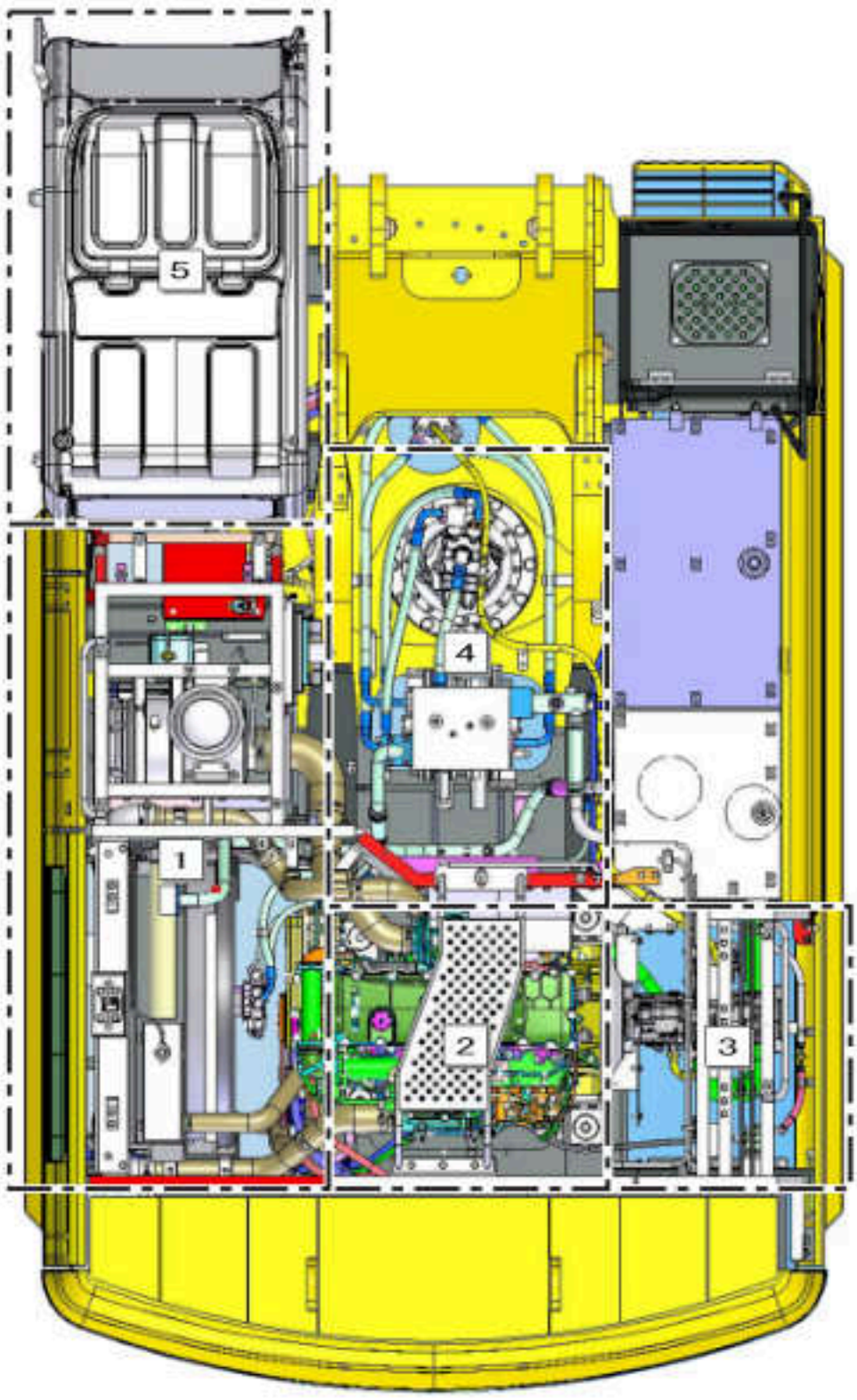
Overall view



1	Left side housing
2	Swing body center section
3	Pump compartment
4	Hydraulic oil tank
5	Fuel tank

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

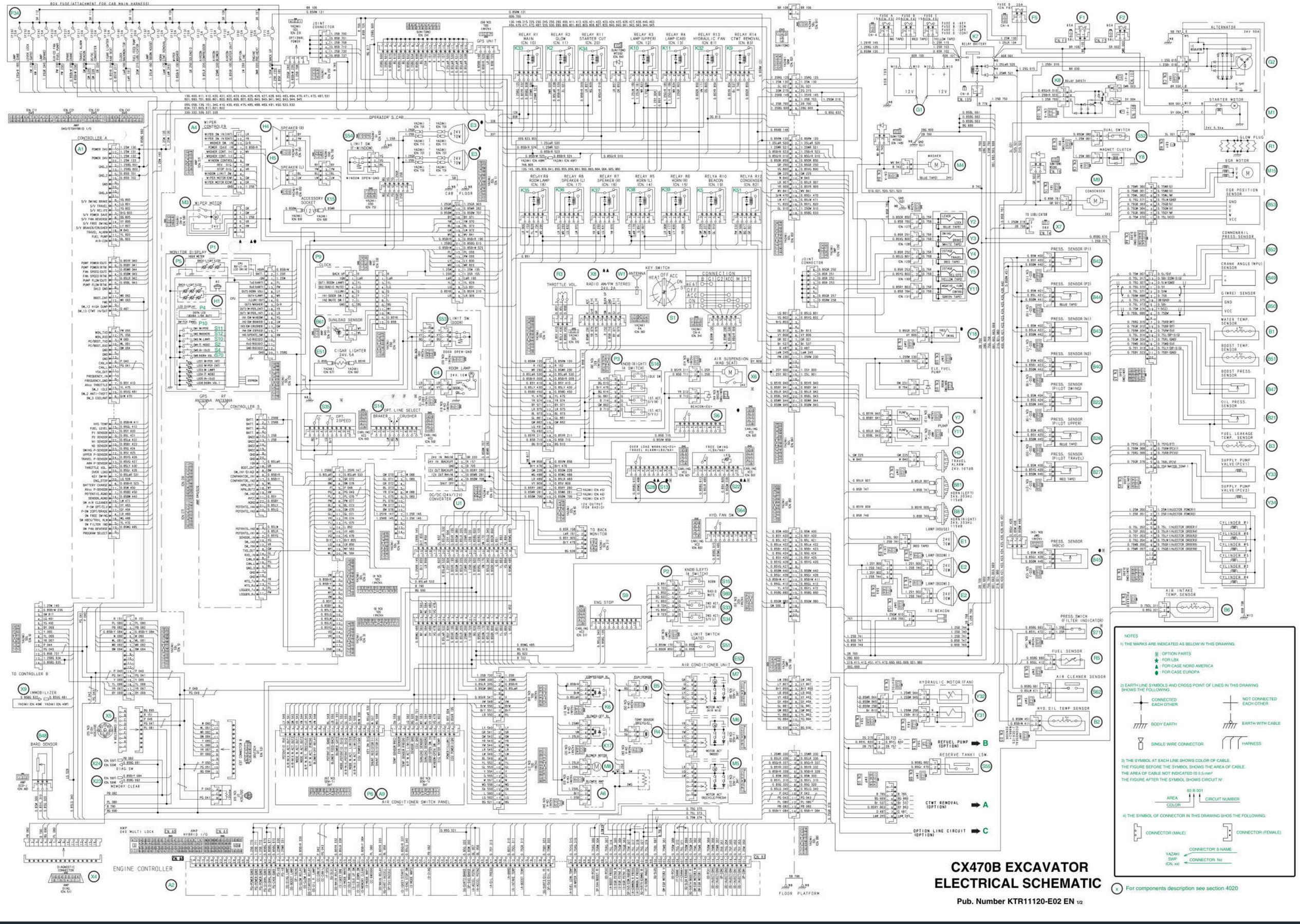
Overall view



TE01011-081

1	Main unit left side (radiator compartment)
2	Engine
3	Main unit right side (pump compartment)
4	Main unit center section
5	In cab

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



MidWestTech | Case CX470B Tier 3 Crawler Excavator Service Manual | Publication 84149316C
Order the manual at mid-west-tech.com >