CASE

REPAIR MANUAL

Crawler Excavator

CX130

7-28143

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CX130 Crawler Excavators
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* *Consult the Engine Service Manual*

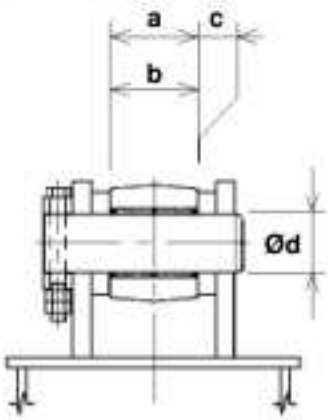
[redacted] *Sections to be distributed at a later date*

NOTE: CNH Company reserves the right to make changes in the specification and design of the machine without prior notice and without incurring any obligation to modify units previously sold.

The description of the models shown in this manual has been made in accordance with the technical specifications known as of the date of design of this document.

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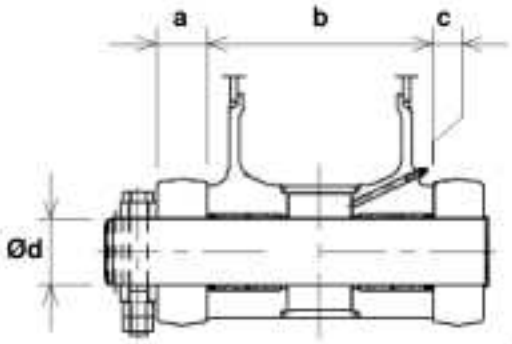
4. Dipper cylinder foot/Boom



CS01B525

Marking		Dimension (mm)	
		CX130LC CX130LR	CX160 CX180
a	Standard	99	111
	Limit	105	117
b	Standard	98	110
	Limit	96	108
c (a - b)	Standard	0.5 to 2	0.5 to 2
	Limit	Shims	Shims
Ø d (pin)	Standard	70	80
	Limit	69	79
Ø d (ring)	Standard	70	80
	Limit	71.5	81.5

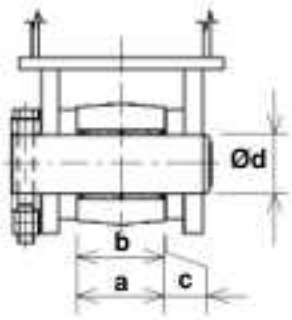
5. Boom/Dipper



CS01B526

Marking		Dimension (mm)	
		CX130LC CX130LR	CX160 CX180
a	Standard	259	275
	Limit	262	278
b	Standard	258.5	274.5
	Limit	256.5	272.5
c (play)	Standard	0.5 to 1.1	0.5 to 1.1
	Limit	Shims	Shims
Ø d (pin)	Standard	75	80
	Limit	74	79
Ø d (dipper)	Standard	75	80
	Limit	76.5	81.5
Ø d (boom)	Standard	75	80
	Limit	76.5	81.5

6. Dipper cylinder head/Dipper



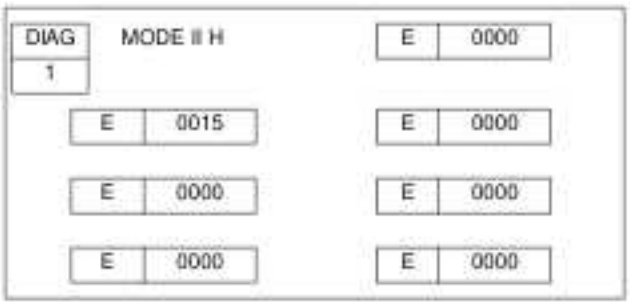
CS01B527

Marking		Dimension (mm)	
		CX130LC CX130LR	CX160 CX180
a	Standard	96.5	111
	Limit	102.5	117
b	Standard	95.5	110
	Limit	92.5	108
c (a - b)	Standard	0.5 to 3	0.5 to 3
	Limit	Shims	Shims
Ø d (pin)	Standard	70	80
	Limit	69	79
Ø d (ring)	Standard	70	80
	Limit	71.5	81.5

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Diagnostic code

1. Detection of engine failures DIAG1



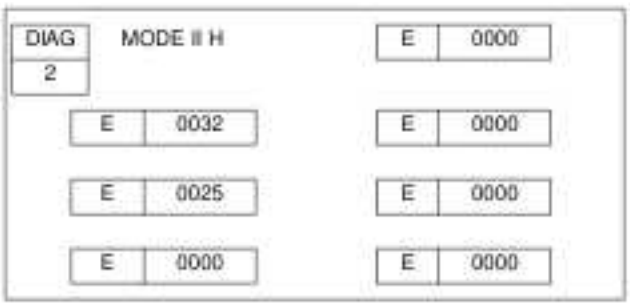
E: Failure code

Failure code

E0000: No defect
E0015: Coolant temperature sensor
E0025: Fuel flow adjustment resistor
E0031: Linear motor control circuit in electronic regulator
E0032: Electronic regulator rack position detector
E0041: Electronic regulator engine rpm receiver
E0042: Engine rpm sensor

Example: In the screen above, there is a defect in the coolant temperature sensor.

2. Previous failures in the engine DIAG2



E: Failure code

Example: The screen above shows that there is a defect in the electronic regulator rack position detector (0032) and in the fuel flow adjustment resistor (0025).

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Disassembly

NOTE: *The numbers in brackets in the following steps refer to the schematic on page 3.*

Always handle high precision parts with the greatest care to prevent them being damaged by being knocked or dropped. The components of the control lever may rust due to contamination and humidity if they are left without protection after disassembly. If work has to be stopped, the components must be protected against contamination or corrosion.

STEP 1



CD00G087

Install the control lever in a soft-jawed vice. Remove the protective boot.

STEP 2



CD00G088

Remove the lock-nut from the control lever.

STEP 3



CD00G089

Remove the disc from the control lever.

STEP 4

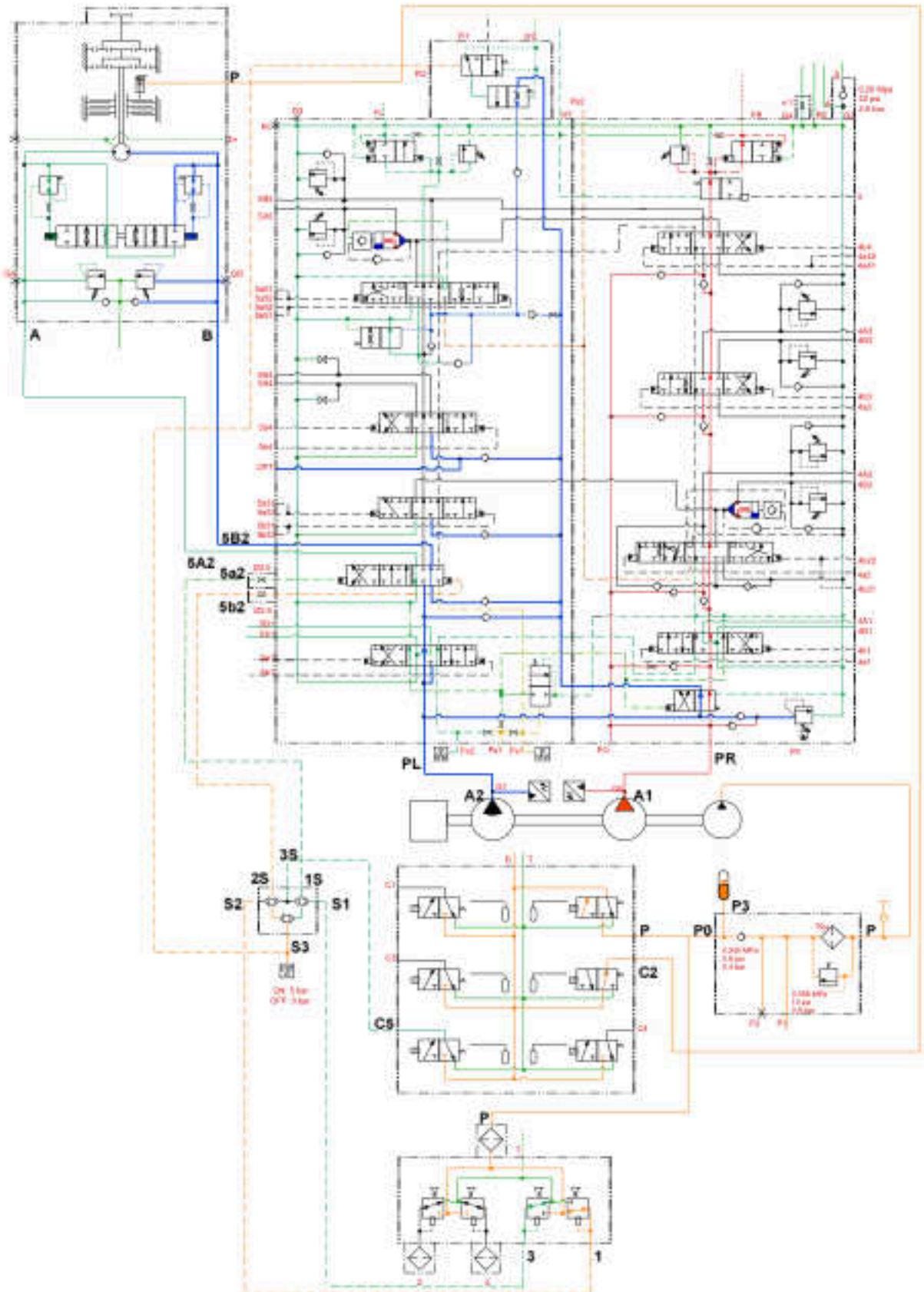


JD00767A

Install two nuts on the universal joint and tighten them fully. While holding the upper nut, turn the lower nut anti-clockwise to unscrew the universal joint. Remove the universal joint from the control lever.

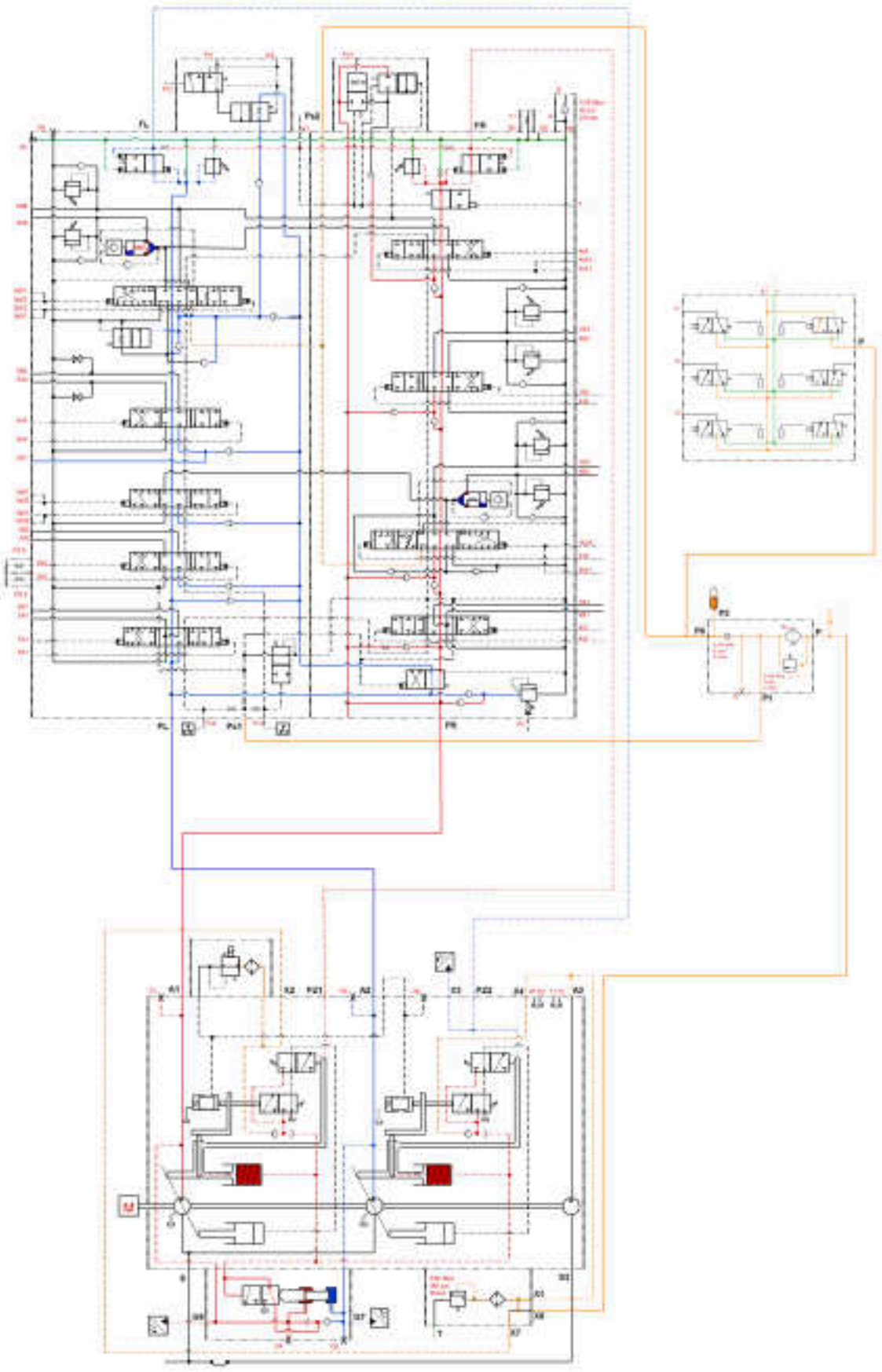
NOTE: *Carefully remove the universal joint to prevent the plate and the push-rods, which are under pressure from the springs, from flying out too quickly.*

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CM020M005

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CM09K031

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ITEM	DESCRIPTION
A1.	COMPUTER
A2.	ENGINE CONTROLLER
A3.	ELECTRONIC ACCELERATOR
A4.	WIPER CONTROLLER
B1.	COOLANT TEMPERATURE SENSOR
B2.	HYDRAULIC OIL TEMPERATURE SENSOR
B21.	ENGINE OIL PRESSURE SWITCH
B22.	SWING PILOT PRESSURE SWITCH
B23.	BREAKER / CRUSHER PILOT PRESSURE SWITCH
B24.	SECOND OPTION PILOT CIRCUIT 2 PRESSURE SWITCH
B25.	BREAKER PILOT PRESSURE SWITCH
B26.	UPPER PILOT PRESSURE SWITCH (YELLOW BAND)
B27.	TRAVEL PILOT PRESSURE SWITCH
B28.	SECOND OPTION PILOT CIRCUIT 1 PRESSURE SWITCH
B41.	ENGINE RPM SENSOR
B42.	PUMP PRESSURE SENSOR (P1)
B43.	PRESSURE SENSOR (NEGA-CONT)
B44.	PUMP PRESSURE SENSOR (P2) (YELLOW BAND)
B45.	OVERLOAD INDICATOR PRESSURE SWITCH
B61.	SUNLOAD SENSOR
B81.	HORN
E1.	WORKING LIGHT (UPPERSTRUCTURE)
E2.	WORKING LIGHT (ATTACHMENT)
E3.	WORKING LIGHT (CAB)
E4.	CAB LIGHT
E51.	CIGARETTE LIGHTER
E52.	AIR CONDITIONER
F1.	FUSE 20A: ENGINE CONTROLLER
F10.	FUSE 10A: OPTION LINE AND LUBRICATOR CONNECTOR
F11.	FUSE 10A: BACK-UP
F12.	FUSE 15A: KEY SWITCH
F13.	FUSE 20A: HEATER / AIR CONDITIONER
F14.	FUSE 5A: AIR CONDITIONER COMPRESSOR
F15.	FUSE 15A: WORKING LIGHT
F16.	FUSE 15A: WORKING LIGHT (NOT USED)
F17.	FUSE 10A: DC-DC (24V-12V) CONVERTER
F18.	FUSE 15A: WIPER AND WASHER
F19.	FUSE 10A: HORN
F2.	FUSE 20A: COMPUTER CONTROL INSTRUMENT PANEL AND DIAGNOSTIC TEST SOCKET
F20.	FUSE 10A: CIGARETTE LIGHTER AND CAB SEAT COMPRESSOR ADJUSTMENT
F21.	FUSE BOX
F22.	FUSE 20A: MAIN FUSE FOR F11 AND F12 CIRCUITS
F23.	FUSE 40A: MAIN FUSE FOR F3 TO F10 AND F13 TO F20 CIRCUITS
F24.	FUSE 20A: MAIN FUSE FOR F2 CIRCUIT
F25.	FUSE 20A: MAIN FUSE FOR F1 CIRCUITS
F3.	FUSE 20A: COMPUTER POWER
F4.	FUSE 10A: HYDRAULIC FUNCTION CANCELLATION LEVER SWITCH
F5.	FUSE 15A: LUBRICATOR (NOT USED)
F6.	FUSE 10A: ROTARY LIGHT
F7.	FUSE 20A: FUEL FILLER PUMP
F8.	FUSE 10A: ENGINE STOP MOTOR
F9.	FUSE 30A: GLOW PLUG
G1.	BATTERY
G2.	ALTERNATOR
H1.	AUDIBLE WARNING DEVICE
K1.	RELAY-ENGINE EMERGENCY STOP
K2.	RELAY-GLOW PLUG
K3.	RELAY-HORN
K4.	RELAY-WORKING LIGHT
K5.	RELAY-ROTARY LIGHT
K7.	RELAY BATTERY
M1.	STARTER MOTOR
M2.	ENGINE EMERGENCY STOP MOTOR
M3.	WIPER MOTOR
M4.	WASHER MOTOR
M5.	MOTOR (AIR CHANGING)
M6.	AIR VENT DIRECTION CONTROL MOTOR
M7.	MOTOR ACT (AIR-MIX)
M8.	BLOWER MOTOR
P1.	INSTRUMENT PANEL
P2.	SWITCH PANEL (LEFT-HAND)
P3.	SWITCH PANEL (RIGHT-HAND)
P4.	MONITOR DISPLAY
P5.	HOURMETER
P6.	AIR CONDITIONER CONTROL PANEL
R1.	GLOW PLUG
R2.	FUEL FLOW ADJUSTMENT RESISTOR
R3.	THROTTLE VOLUME
R4.	THERMISTOR
R6.	FUEL SENSOR
S1.	KEY SWITCH
S10.	WORKING LIGHT SWITCH
S11.	WIPER SWITCH
S12.	WASHER SWITCH
S13.	OVERLOAD SWITCH
S14.	BREAKER / CRUSHER SWITCH
S15.	HORN SWITCH
S16.	ONE TOUCH IDLE
S2.	TRAVEL MODE SWITCH
S3.	WORK MODE SWITCH
S4.	AUTO MODE SWITCH
S5.	CUSHION CONTROL SWITCH
S51.	HYDRAULIC FUNCTION CANCELLATION LEVER SWITCH
S52.	AIR CONDITIONING COMPRESSOR CLUTCH SWITCH
S53.	DOOR LIMIT SWITCH
S54.	FRONT WINDOW LIMIT SWITCH
S55.	RESERVE TANK LSW
S6.	ROTARY LIGHT SWITCH
S7.	AUDIBLE ALARM CUT OUT SWITCH
S8.	SWING BRAKE SWITCH
S9.	ENGINE EMERGENCY STOP SWITCH
U1.	DC-DC (24V-12V) CONVERTER
W1.	ANTENNA
X1.	FUEL FILLER PUMP CONNECTOR
X2.	ROTARY LIGHT CONNECTOR
X3.	OPTINAL POWER CONNECTOR
X4.	ENGINE TEST POINT CONNECTOR
X5.	CONTROLLER TEST POINT CONNECTOR
X6.	CAB SEATCOMPRESSOR MOTOR CONNECTOR
X8.	RADIO CONNETOR
X9.	ANTI-THEFT SYSTEM CONNETOR
Y1.	SWING PILOT SHUT-OFF SOLENOID VALVE (GREEN BAND)
Y2.	PILOT PRESSURE SOLENOID VALVE (BLUE BAND)
Y3.	SWING BRAKE SOLENOID VALVE (PINK BAND)
Y4.	2 STAGE TRAVEL SOLENOID VALVE (RED BAND)
Y5.	POWER-UP SOLENOID VALVE (YELLOW BAND)
Y6.	CUSHION CONTROL SOLENOID VALVE (LIGHT GREEN BAND)
Y7.	MAIN PUMP PROPORTIONAL SOLENOID
Y8.	AIR CONDITIONER MAGNET CLUTCH
Y9.	CRUSHER/BREAKER OPTION TWO FLOW SOLENOID VALVE

LEGEND

- CONNECTED
- NOT CONNECTED
- BOOT GROUND
- CABLE GROUND
- SINGLE WIRE CONNECTOR
- HARNESS
- CONNECTOR (MALE)
- CONNECTOR (FEMALE)
- INSULATION AGAINST MAGNETISM
- INDICATES CONSTANT POWER
- INDICATES POWER WHEN KEY SWITCH IS ON

CONNECTOR NUMBER (IN CAB) — CN32 (R) — COLOR OF CONNECTOR (IF NOT INDICATED COLOR IS WHITE)

CONNECTOR LETTER LOCATED (OUTSIDE CAB) — 60 B 203 — AREA / COLOR — CIRCUIT NUMBER

TABLE OF COLOR SYMBOLS

SYMBOL	COLOR
B	BLACK
W	WHITE
Br	BROWN
P	PINK
V	VIOLET
G	GREEN
O	ORANGE
R	RED
Y	YELLOW
Lg	LIGHT GREEN
Sb	SKY BLUE
L	BLUE
Gr	GRAY

NOTE :
1. "BR" INDICATES BLACK CABLE WITH RED STRIPE.
2. WATERPROOF CONNECTORS USED OUTSIDE OF CAB.

CX 130 - CX 160 - CX 180 EXCAVATOR ELECTRICAL SCHEMATIC

Part Number 9-88430

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