CASE CONSTRUCTION

SERVICE MANUAL

CRAWLER EXCAVATOR

CX130B TIER 3

84139197B NA

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CRAWLER EXCAVATOR CX130B
SERVICE MANUAL

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* *Consult the Engine Service Manual*

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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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Diagnostic aid

If an intermittent problem is suspected, the cause may be one of the following.

- Harness connector connection problem
- Harness routing problem
- Breakage in harness covering due to friction
- Wire disconnection within harness covering

In order to detect these causes, the following inspection is necessary.

- Harness connector and ECM connector connection problem
  - Terminal has come out from connector
  - Connection between non-matching terminals
  - Damage to connector lock
  - Terminal and wire connection problem
- Harness damage
  - Inspect the external appearance to check for any harness damage.
  - While moving the connector or harness related to a sensor, confirm the display of the related item in the scan tool data display. The display change shows the trouble location.

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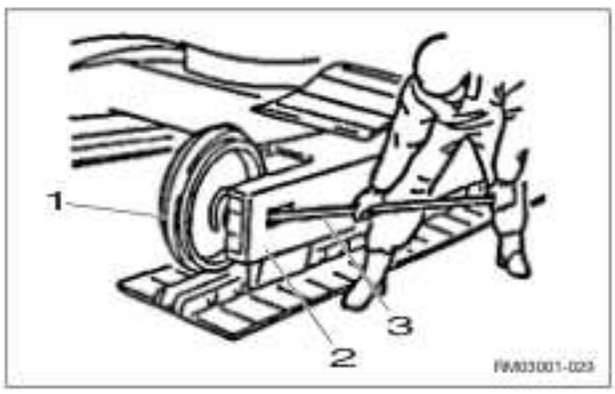
REMOVAL AND INSTALLATION OF TAKE-UP ROLLER

Caution:	When loosening the grease cylinder check valve, loosen it a little at a time. The pressure inside the cylinder is very high, so there is a danger of grease being expelled and the plug flying off. The check valve adjustment procedure should nor be done in front of the check valve. Do not get under the machine when the unit is jacked up. Make sure to place the main unit on wood planks or the like to prevent falling. Align the shoe assembly feed location and stop the engine except when working.

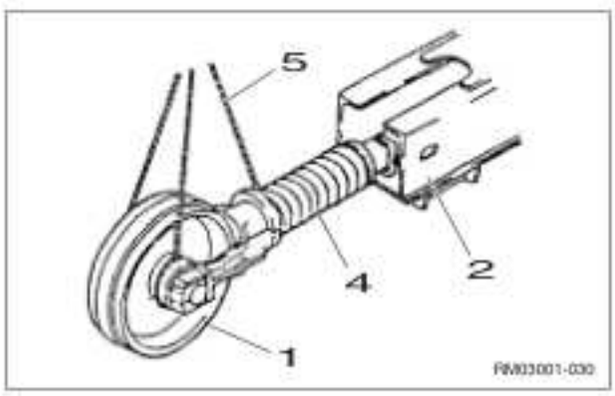
1 Removal of take-up roller

[1] Remove the shoe assembly.
See the "Removal and Installation of Shoe Assembly" procedure.

[2] Use a screwdriver to remove the pin (2) rings (1), and then remove the bucket side and boom side pins.



[3] Install the lifting equipment (5) on the take-up roller (1) and recoil spring assembly (4) and hang them from the side frame (2) with the crane.



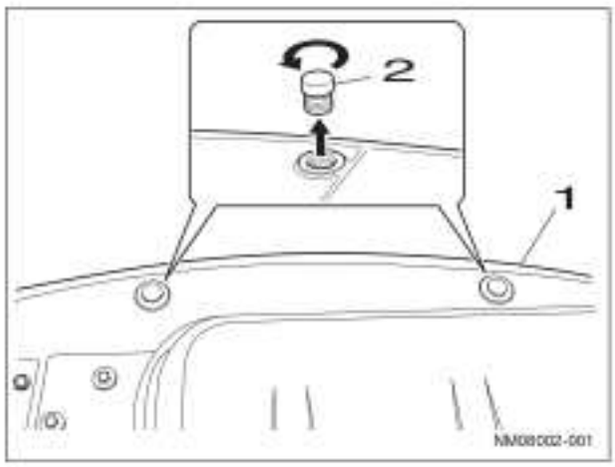
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REMOVAL AND INSTALLATION OF COUNTERWEIGHT

Caution:	Be sure to stop the engine before beginning work. Be sure to inspect the wire rope and other lifting equipment before beginning work. Do not stand or pass under the suspended load. Thoroughly secure the removed counterweight with the wire ropes and crane so that it does not fall over.

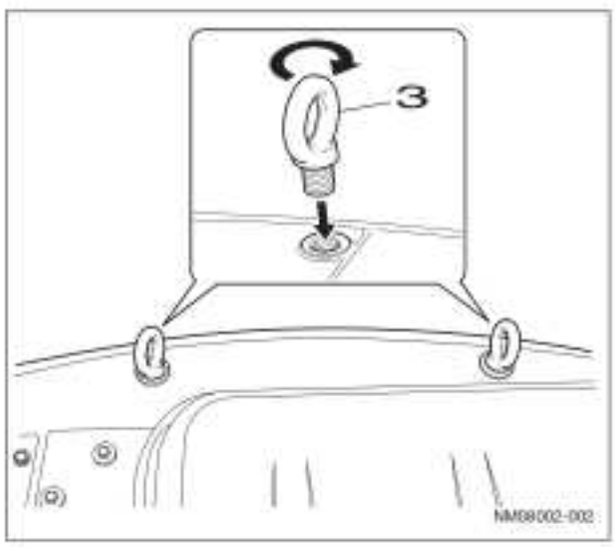
1 Removal of counterweight

[1] Remove the 2 rubber plugs (2) from the top of the counterweight (1).



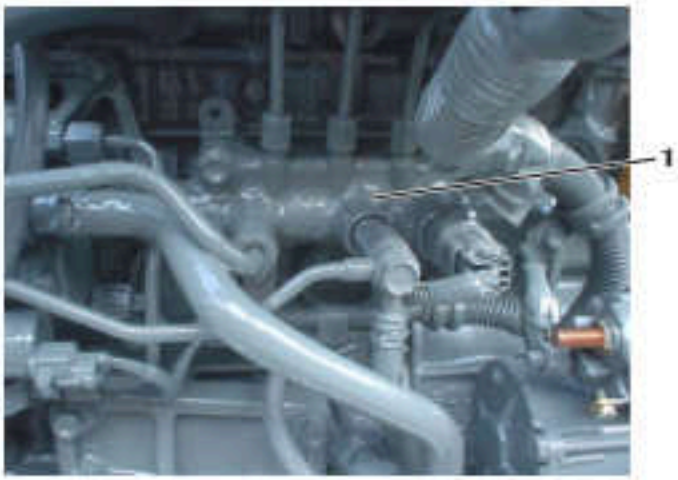
[2] Install the 2 eyebolts (M36) (3) in place of the removed caps.

- Apply lubricating oil to the eyebolts.
- Fully tighten the eyebolts, and then loosen them by a half turn.



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3) Common Rail

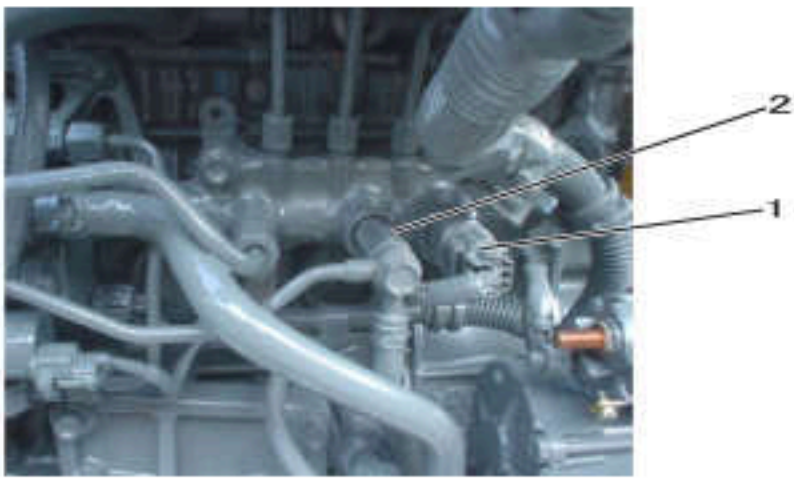


1. Common rail

Common rail

The common rail receives the fuel from the supply pump, holds the common rail (fuel) pressure, and distributes the fuel to each cylinder. The common rail pressure sensor, flow damper, and pressure limiter are installed on the common rail.

4) Common Rail pressure sensor and pressure limiter



1. Common rail pressure sensor
2. Pressure limiter

Common rail pressure sensor

This sensor sends the pressure inside the common rail to the ECM as a voltage signal. From the signal sent, the ECM calculates the actual common rail pressure (fuel pressure) and uses this for fuel injection control.

Pressure limiter

If the pressure in the common rail becomes abnormally high pressure, the pressure limiter relieves the pressure by returning excess fuel to the tank.

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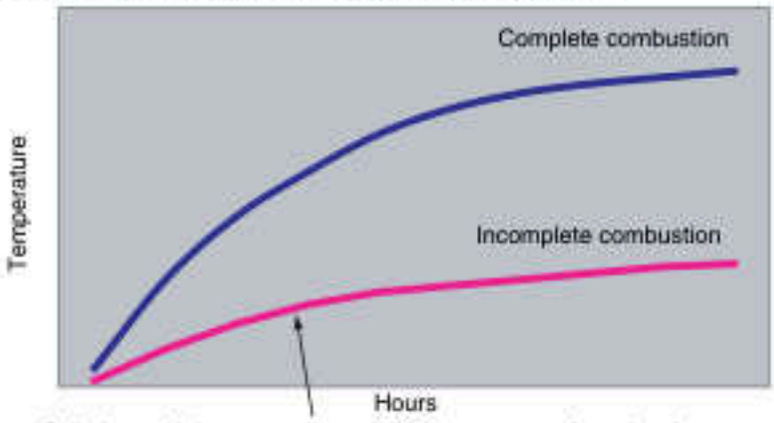
Injector Inspection Methods Using A Thermogun

Common rail-type fuel injection device injectors are located inside the head cover, and inspection (removal and installation of couplers, outside injection from cylinder) cannot be performed.An inspection method for mechanical problems (spray deficiencies, clogging, seizing) for which a diagnostic trouble code does not appear is necessary.

Judgment through temperature measurement

For engines in which combustion conditions are normal, the temperature of each cylinder will ordinarily increase.
However, for cylinders in which there is trouble and combustion conditions are poor, it is difficult for the temperature to increase.
Use these characteristics and observe the temperature change in each cylinder to judge whether there are cylinder problems.

«Difference in temperature change by state of combustion»



Cylinders with low temperature have poor status of combustion.

Therefore, you can judge that there has been some kind of trouble.

TSSA0001

The cause of the problem is often a defect (spray deficiencies, clogging, seizing) with the injector itself.
Also investigate other causes and thoroughly perform trouble diagnosis before deciding what the problem is.

Thermogun

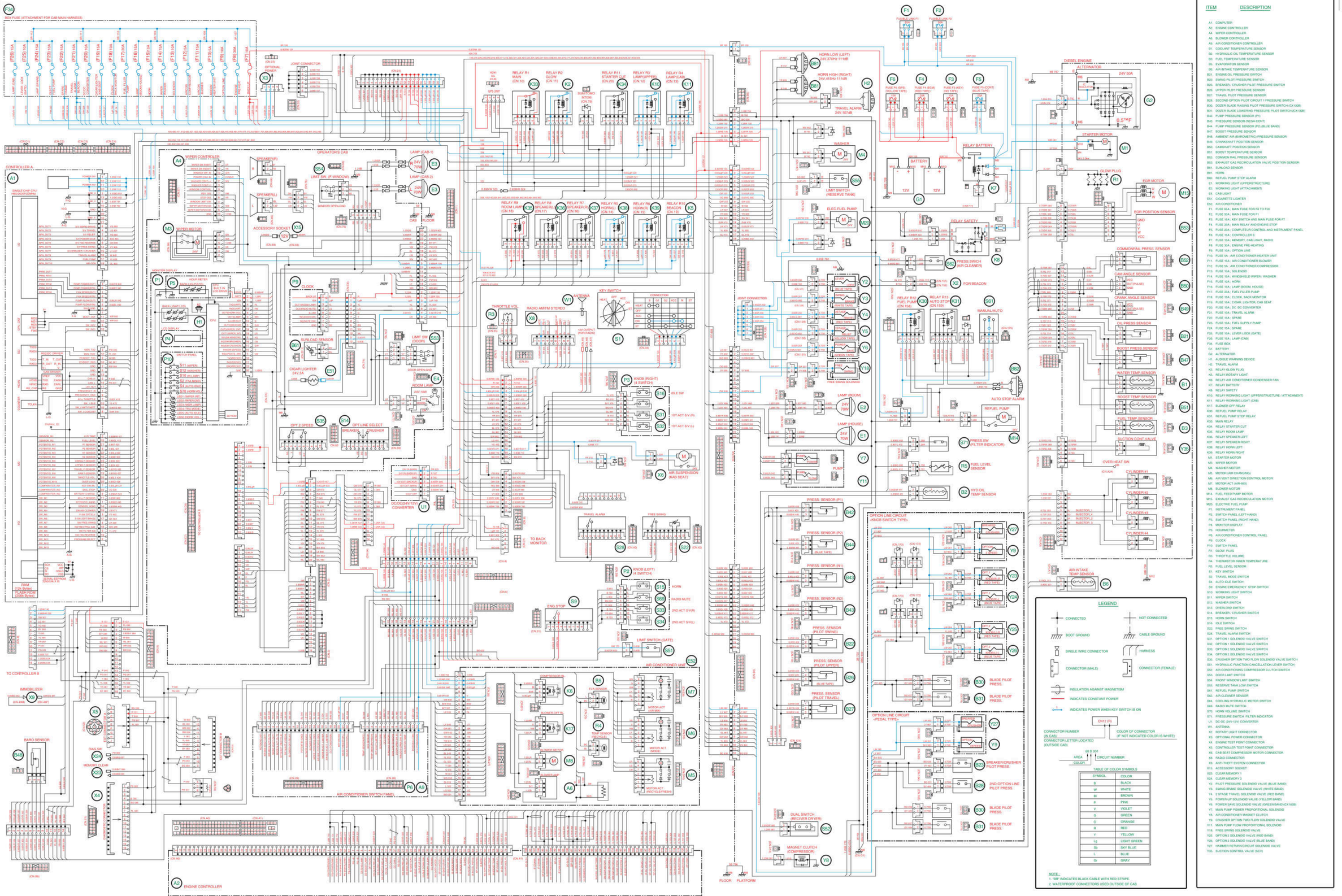
A thermogun is a infrared thermometer capable of noncontact temperature measurement.
As a maintenance tool, this is sold as a thermogun and infrared thermometer.

- Ideal for measuring temperatures from 0 °C to 500 °C.
- Includes laser pointer
- Includes spot measurement function (convergence ratio of about 10:1)



TSSA0004

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ITEM	DESCRIPTION
A1	COMPUTER
A2	ENGINE CONTROLLER
A4	WIPER CONTROLLER
A5	AIR CONDITIONER CONTROLLER
A6	BLOWER CONTROLLER
B1	COOLANT TEMPERATURE SENSOR
B2	HYDRAULIC OIL TEMPERATURE SENSOR
B5	FUEL TEMPERATURE SENSOR
B6	EVAPORATOR SENSOR
B8	AIR INTAKE TEMPERATURE SENSOR
B21	ENGINE OIL PRESSURE SWITCH
B22	SWING PILOT PRESSURE SWITCH
B23	BREAKER / CRUSHER PILOT PRESSURE SWITCH
B26	UPPER PILOT PRESSURE SENSOR
B27	TRAVEL PILOT PRESSURE SENSOR
B28	SECOND OPTION PILOT CIRCUIT 1 PRESSURE SWITCH
B30	DOZER BLADE RAISING PILOT PRESSURE SWITCH (CX130B)
B31	DOZER BLADE LOWERING PRESSURE PILOT SWITCH (CX130B)
B42	PUMP PRESSURE SENSOR (P1)
B43	PRESSURE SENSOR (NEGA-CONT)
B44	PUMP PRESSURE SENSOR (P2) (BLUE BAND)
B47	BOOST PRESSURE SENSOR
B48	AMBIENT AIR (BAROMETRIC) PRESSURE SENSOR
B49	CRANKSHAFT POSITION SENSOR
B50	CAMSHAFT POSITION SENSOR
B51	BOOST TEMPERATURE SENSOR
B52	COMMON RAIL PRESSURE SENSOR
B53	EXHAUST GAS RECIRCULATION VALVE POSITION SENSOR
B61	SUN LOAD SENSOR
B61	HORN
E	REFUEL PUMP STOP ALARM
E1	WORKING LIGHT (UPPER/STRUCTURE)
E2	WORKING LIGHT (ATTACHMENT)
E4	CAB LIGHT
E51	CIGARETTE LIGHTER
E52	AIR CONDITIONER
F1	FUSE 60A : MAIN FUSE FOR F5 TO F24
F2	FUSE 50A : MAIN FUSE FOR F1
F3	FUSE 10A : KEY SWITCH AND MAIN FUSE FOR F7
F4	FUSE 20A : MAIN RELAY AND ENGINE STOP
F5	FUSE 20A : COMPUTER CONTROL AND INSTRUMENT PANEL
F6	FUSE 15A : CONTROLLER S
F7	FUSE 10A : MEMORY, CAB LIGHT, RADIO
F8	FUSE 30A : ENGINE PRE-HEATING
F9	FUSE 10A : OPTION LINE
F10	FUSE 5A : AIR CONDITIONER HEATER UNIT
F11	FUSE 10A : AIR CONDITIONER BLOWER
F12	FUSE 5A : AIR CONDITIONER COMPRESSOR
F13	FUSE 10A : SOLENOID
F14	FUSE 10A : WINDSHIELD WIPER / WASHER
F15	FUSE 10A : HORN
F16	FUSE 15A : LAMP (BOOM, HOUSE)
F17	FUSE 20A : FUEL FILLER PUMP
F18	FUSE 10A : CLOCK, BACK MONITOR
F19	FUSE 15A : CIGAR, LIGHTER, CAB SEAT
F20	FUSE 10A : DC DC CONVERTER
F21	FUSE 10A : TRAVEL ALARM
F22	FUSE 10A : SPARE
F23	FUSE 10A : FUEL SUPPLY PUMP
F24	FUSE 10A : SPARE
F26	FUSE 10A : LEVER LOCK (GATE)
F35	FUSE 10A : LAMP (CAB)
F34	FUSE BOX
G1	BATTERY
G2	ALTERNATOR
H1	AUDIBLE WARNING DEVICE
H2	TRAVEL ALARM
K2	RELAY-GLOW PLUG
K5	RELAY-ROTARY LIGHT
K6	RELAY-AIR CONDITIONER CONDENSER FAN
K7	RELAY BATTERY
K8	RELAY SAFETY
K10	RELAY-WORKING LIGHT (UPPER/STRUCTURE / ATTACHMENT)
K11	RELAY-WORKING LIGHT (CAB)
K17	BLOWER OFF RELAY
K30	REFUEL PUMP RELAY
K31	REFUEL PUMP STOP RELAY
K33	MAIN RELAY
K34	RELAY STARTER CUT
K35	RELAY ROOM LAMP
K36	RELAY SPEAKER LEFT
K37	RELAY SPEAKER RIGHT
K38	RELAY HORN LEFT
K39	RELAY HORN RIGHT
M1	STARTER 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
M14	FUEL FEED PUMP MOTOR
M15	EXHAUST GAS RECIRCULATION MOTOR
M25	ELECTRIC FUEL PUMP
P1	INSTRUMENT PANEL
P2	SWITCH PANEL (LEFT-HAND)
P3	SWITCH PANEL (RIGHT-HAND)
P4	MONITOR DISPLAY
P5	HOURMETER
P6	AIR CONDITIONER CONTROL PANEL
P9	CLOCK
P10	SWITCH PANEL
R1	GLOW PLUG
R3	THROTTLE VOLUME
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S10	WORKING LIGHT SWITCH
S11	WIPER SWITCH
S12	WASHER SWITCH
S13	OVERLOAD SWITCH
S14	BREAKER / CRUSHER SWITCH
S15	HORN SWITCH
S16	IDLE SWITCH
S22	FREE SWING SWITCH
S26	TRAVEL ALARM SWITCH
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S32	OPTION 1 SOLENOID VALVE SWITCH
S33	OPTION 2 SOLENOID VALVE SWITCH
S34	OPTION 2 SOLENOID VALVE SWITCH
S35	CRUSHER OPTION TWO FLOW SOLENOID VALVE 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 LOW SWITCH
S61	REFUEL PUMP SWITCH
S62	AIR CLEANER SENSOR
S64	COOLING HYDRAULIC MOTOR SWITCH
S69	RADIO MUTE SWITCH
S70	HORN VOLUME SWITCH
S71	PRESSURE SWITCH FILTER INDICATOR
U1	DC-DC (24V-12V) CONVERTER
W1	ANTENNA
X2	ROTARY LIGHT CONNECTOR
X3	OPTIONAL POWER CONNECTOR
X4	ENGINE TEST POINT CONNECTOR
X5	CONTROLLER TEST POINT CONNECTOR
X6	CAB SEAT COMPRESSOR MOTOR CONNECTOR
X8	RADIO CONNECTOR
X9	ANTI-THEFT SYSTEM CONNECTOR
X15	ACCESSORY SOCKET
X23	CLEAR MEMORY 1
X24	CLEAR MEMORY 2
Y2	PILOT PRESSURE SOLENOID VALVE (BLUE BAND)
Y3	SWING BRAKE SOLENOID VALVE (WHITE BAND)
Y4	2 STAGE TRAVEL SOLENOID VALVE (RED BAND)
Y5	POWER-UP SOLENOID VALVE (YELLOW BAND)
Y6	POWER SAVE SOLENOID VALVE (GREEN BAND)(CX160B)
Y7	MAIN PUMP POWER PROPORTIONAL SOLENOID
Y8	AIR CONDITIONER MAGNET CLUTCH
Y9	CRUSHER OPTION TWO FLOW SOLENOID VALVE
Y11	MAIN PUMP FLOW PROPORTIONAL SOLENOID
Y16	FREE SWING SOLENOID VALVE
Y25	OPTION 2 SOLENOID VALVE (RED BAND)
Y26	OPTION 2 SOLENOID VALVE (BLUE BAND)
Y27	HAMMER RETURN CIRCUIT SOLENOID VALVE
Y35	SUCTION CONTROL VALVE (SCV)

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ELECTRICAL SCHEMATIC - 87594014B

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