NEW HOLLAND

CX720, CX740, CX760, CX780, CX820, CX840, CX860, CX880 Combines

REPAIR MANUAL

NEW HOLLAND AGRICULTURE

SERVICE

86630597

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CX SERIES REPAIR MANUAL
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The following pages are the collation of the contents pages from each section and chapter of the CX Series Repair manual. Complete Repair part # 86630597.

The sections used through out all New Holland product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Repair manual and which sections are in each book.

The sections listed above are the sections utilized for the CX Series Combines.

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BOOK 1 - 86978874

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SECTION 10 - ENGINE

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Chapter 1 - 7.5L New Holland Engine

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FAULT CODE - E0153-05 Engine Oil Temperature Line Disconnected

NOTE: *This troubleshooting chart is for CX860 and CX880 combines with Iveco engines only. The troubleshooting chart for this fault code on CX720, CX740, CX760, CX780, CX820 and CX840 combines with New Holland 7.5L engines is listed before this chart.*

NOTE: *This troubleshooting chart is for CX combines Series 1206, 1212 & 1226 only. The troubleshooting chart for CX combines Series 1238 and above follows this chart.*

Cause:
The ***engine oil temperature sensor (B-03)[Iveco]*** circuit is open.

Possible failure modes:

1. Sensor supply or ground wiring is open.
2. Controller internal failure (internal regulator failure).

Solution:

1. Enter the Infoview monitor - "Diagnose info" screen.

   Select "Engine" sub menu.

   Select "Engine Oil Temperature" and check voltage range.

   The proper voltage range is 0.5 to 4.9 volts.

   A. If the voltage reading is high out of range (4.9 to 5.2 volts), continue with Step 2.

   B. If the voltage reading is within the proper limits, continue the troubleshooting at step 7.

NOTE: *Visually inspect the wiring harness and connectors. Verify that the connector was fully installed. Inspect the terminals and wires at the connector for pushed back or corroded terminals or damaged wires. Flex the harnesses involved to reveal intermittent breaks or shorts in the wiring concerned.*

2. The voltage reading on the Infoview monitor is high (4.9 to 5.2 volts). Disconnect the engine oil temperature sensor **connector X311.** Use a jumper wire to short **connector X311 pin B** to chassis ground.

   A. If voltage drops to less than 0.5 volts, the open circuit is not in the supply side of the circuit. Continue with step 4.

   B. If the voltage remains high, continue with Step 3.

3. The voltage reading on the Infoview monitor is high (4.9 to 5.2 volts). Disconnect the engine harness from the main frame harness at **connector X010**. Use a jumper wire to short **connector X010 pin 10** to chassis ground.

   A. If voltage drops to less than 0.5 volts, the open is in the engine (EN) harness between **connector X010 pin 10** and engine oil temperature switch **connector X209 pin A** wire 429 yellow. Locate the open and repair.

   B. If voltage remains high, the open is in the main frame (MF) harness between **connector X010 pin 10** and **connector X016 pin J2-27** wire 429 yellow. Locate the open and repair.

4. Disconnect the engine oil temperature sensor **connector X311**. Use a multimeter to check for continuity between the harness end of **connector X311 pin A** and chassis ground.

   A. If there is continuity, the ground path for the sensor is complete, and the fault is in the sensor itself. Replace the sensor.

   B. If there is no continuity to ground, the ground path for the sensor is open. Continue with step 5.

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FAULT CODE – E0696-07 HSW Header Down Fast Mechanical Out of Range

Cause:

The Right Hand Module (RHM) has detected that the Handle Switch (HSW) Header Down Fast circuit voltage is **<4.0 volts** since startup.

Possible failure modes:

1. The HSW Header Down Fast circuit is shorted to **<4.0 volts** – this can happen if the switch is stuck closed.
2. RHM internal failure.
3. Multi Function Handle (MFH) failure.

Solution:

1. Verify the fault is present. Enter the Infoview monitor – "Diagnose info" screen, "MFH" sub-menu. Select "HSW Header Down Fast" and observe the voltage.

   The normal operating range for the HSW Header Down Fast circuit is **0.25 - 5.5 volts**.

   A. If the voltage reading is **<4.0 volts**, continue with Step **2**.

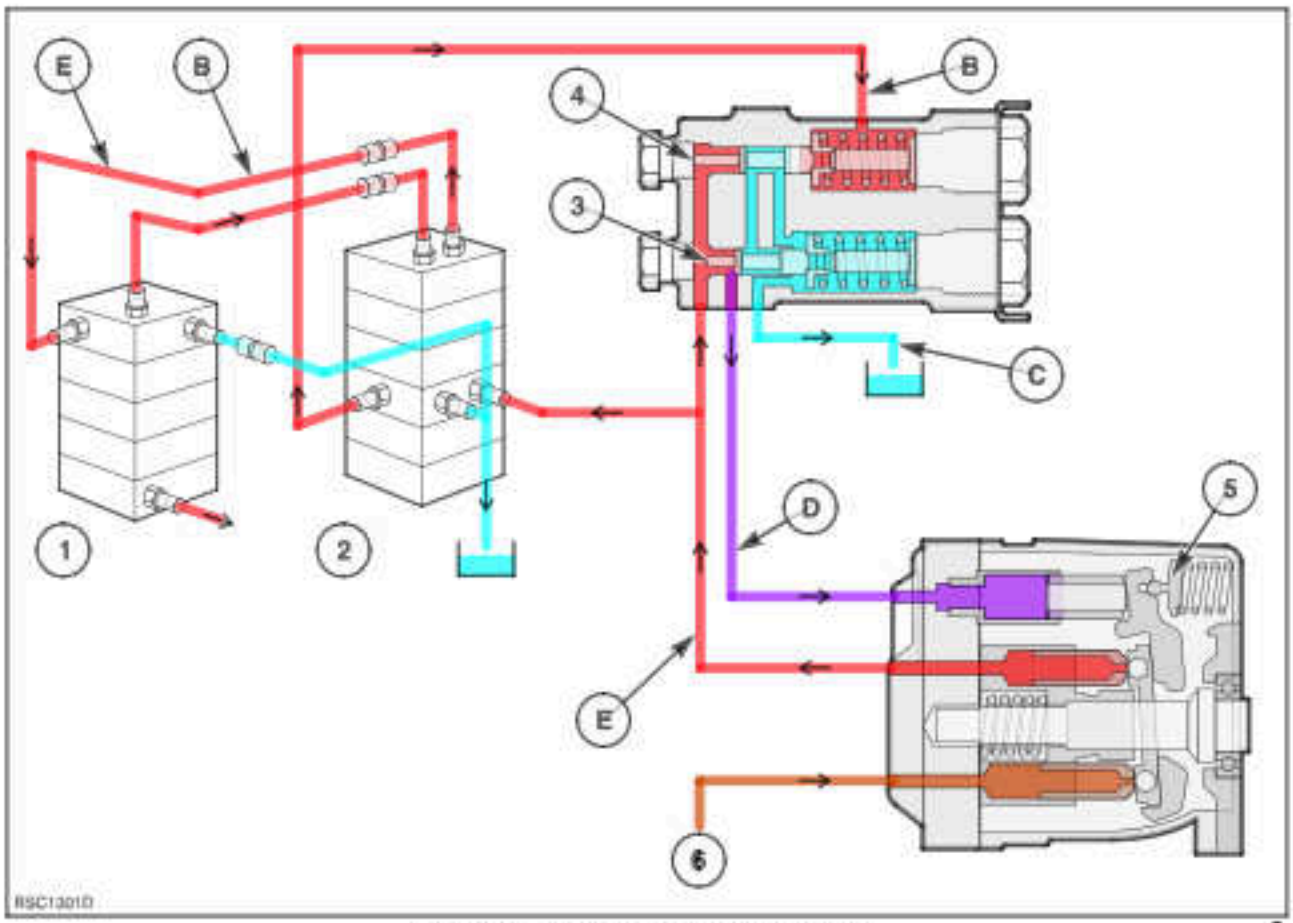
   B. If the voltage reading is **>4.0 volts**, the fault may be intermittent. Continue troubleshooting at Step **3**.

2. Verify the MFH is good. Turn off the ignition switch. Disconnect the Right Console Harness **connector X028**. Using an ohmmeter, measure the continuity between the positive (+) and negative (–) pins of the Right Console Harness **connector X028** according to the table below. Operate the respective switch while observing the ohmmeter. When a switch is activated the meter should read between **1.5M - 1.7M ohms**, and open when idle. Check for shorted wiring to other pins as you test each circuit. Refer to the schematic as needed.

MFH Switch	+ Pin	- Pin
Unload Tube Out	5	1
Unload Tube Out Lock	11	1
Unload Auger Engage	4	1
Unload Tube In	10	1
Unload Tube In Lock	9	1
Handle Unlock	2	1
Reel Fore	5	7
Reel Down	11	7
Reel Up	4	7
Reel Speed Decr.	10	7
Reel Back	9	7
Reel Speed Incr.	2	7
Emergency Stop	8	7
Lateral Tilt CCW	5	6
Header Down Fast	11	6
Header Up Slow	4	6
Header Up Fast	10	6
HHC Resume	9	6
Lateral Tilt CW	2	6
Header Down Slow	8	6

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Controling Maximum System Pressure



Controlling Maximum System Pressure 9

Standby Pressure @ 190bar (2755 psi)

Return to Reservoir

Control Pressure

Charge Pressure

1. Straw elevator stack valve
2. Main frame stack valve
3. Pressure Compensating Valve
4. Flow Compensating Valve
5. Swash Plate
6. Return oil from hydrostatic motors

To limit the maximum output pressure of the piston pump and prevent consequential damage that may occur due to excessive pressures, a pressure compensating valve, located adjacent to the flow compensator valve, is incorporated in the swash plate control circuit. This valve limits the pressure to 197 bar (2857 psi) and operates as follows:-

As the pressure in gallery, **E**, increases to 197 bar (2857 psi) the pressure compensator valve spool, 2, moves against the valve return spring and opens gallery, **E**, to gallery, **D**. The pressure in gallery, **D**, is now applied to the servo piston which changes the swash plate angle to reduce pump output to minimum flow. This operating mode is referred to as high pressure standby.

Functions requiring sensitive control, like the header height, lateral flotation and hydraulic reel drive have an additional pressure compensation valve in their circuit to ensure that the operational speed is constant what ever the pump pressure is (see high pressure circuit diagram).

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