586H
588H
Tier 4

Rough Terrain Forklift

from PIN NCC570000

SERVICE MANUAL

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CASE CONSTRUCTION

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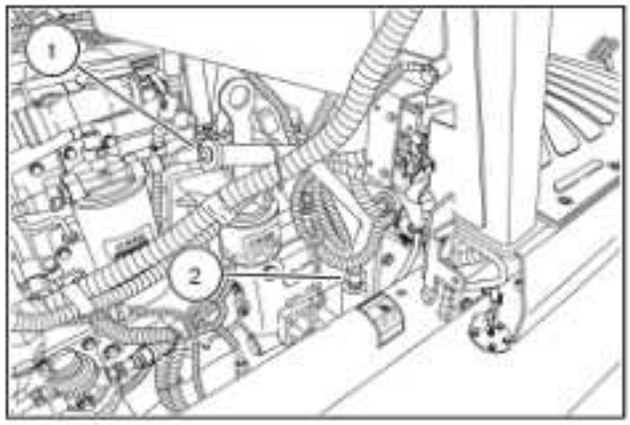
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28. Secure the transmission fill tube **(2)** to the transmission.
29. Add **CASE AKCELA HY-TRAN® ULTRA™ HYDRAULIC TRANSMISSION OIL** through the transmission fill tube **(1)** to specification.



20

Specification 2WD

Total System	**18.5 l 19.5 US qt**
Refill Capacity With or Without Filter Change	**11.9 l (12.6 US qt)**

Specification 4WD

Total System	**20.8 l (22.0 US qt)**
Refill Capacity With or Without Filter Change	**14.4 l (15.2 US qt)**

30. Remove the shop stands from under the machine and lower the machine to the ground.
31. Return the machine to use. Refer to **Basic instructions — Prepare machine for service/Return machine to use ()**.
32. With the machine parked on level ground and the engine running at low idle, check the transmission oil level. The oil level must be between the ADD and the FULL marks on the dipstick. If the oil level is at the ADD mark, add oil as required until the oil level is at the FULL mark.

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1055-Timeout of CAN message inlet/exhaust, 5 seconds without message

Context:
CAN Data Link communications between the Instrument Cluster and the ECU have been lost. The Instrument Cluster did not receive the Inlet/ Exhaust message from the ECU. This fault code may be displayed with other CAN Data Link fault messages. The Instrument Cluster will illuminate the Stop Lamp and will continually sound the audible alarm while this fault is active.

Cause:
The Instrument Cluster is no longer receiving CAN messages from the ECU. CAN Data Link communications between the Instrument Cluster and the ECU have been lost.

Possible failure modes:

1. CAN data link wiring open circuit.
2. CAN data link wiring short circuit.
3. Faulty instrument cluster.
4. Faulty ECU.

Solution:

1. Verify that the fault code is still active.

   (1) Use the Electronic Service Tool to clear all fault codes. Prior to clearing fault codes write down all fault codes, number of occurrences, and engine hours at last occurrence.

   (2) To check for fault code: Start and operate machine.
   If three or more fault codes are active, 1051 through 1060 and/or 3157, this is an indication of a problem in the CAN Data Link circuit, continue with **1051-Timeout of CAN message EEC1, 5 seconds without message (55.640)** Step 2. If one or two CAN Data Link fault codes are active, this may be an indication of an intermittent connection in the CAN circuit. Check all wires and connectors to verify they are secure and free of damage, corrosion, abrasion, or incorrect attachment.

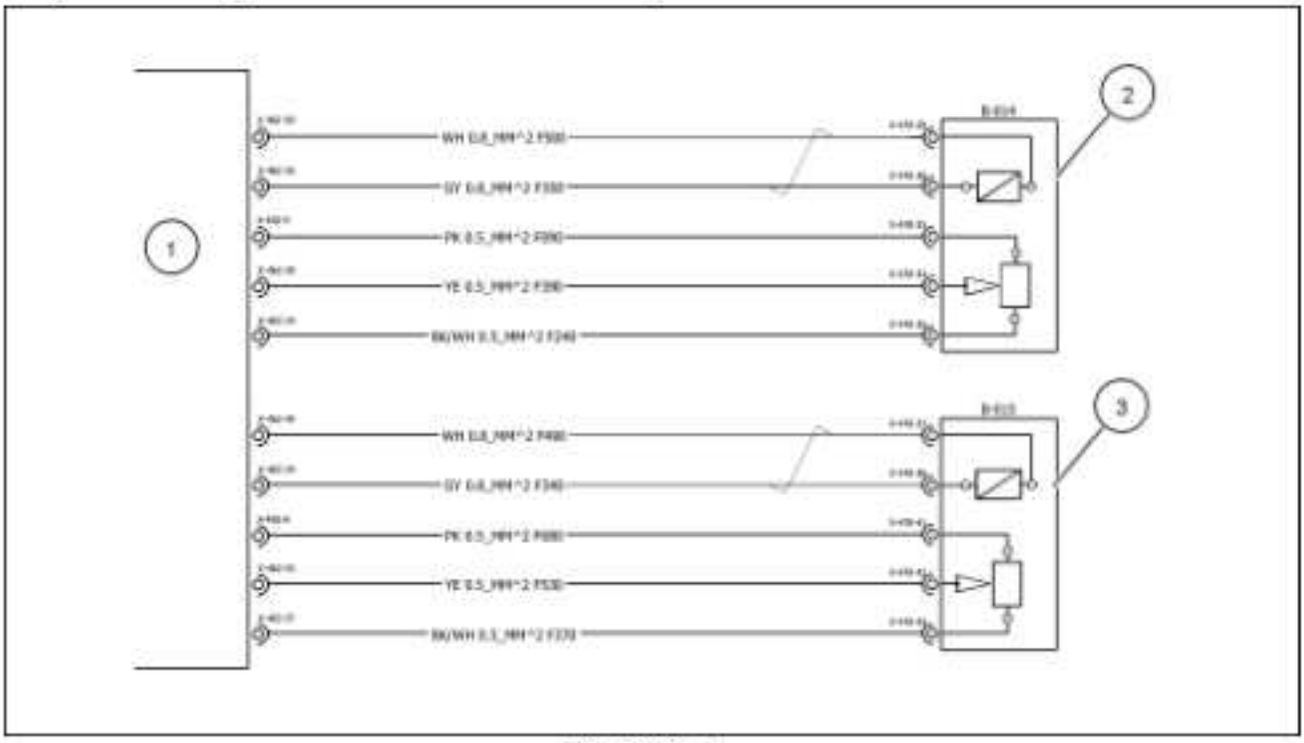
   A. Fault code 1055 is not recorded again. OK to return the machine to service.

   B. Fault code 1055 is recorded along with other CAN data link faults such as 1051-1054, 1056-1060, and/or 3157. Go to **1051-Timeout of CAN message EEC1, 5 seconds without message (55.640)** Step 2.

   C. Fault code 1055 is recorded again. No other CAN data link fault codes are active. Check the CAN data link wiring and connections. Verify the ECU and instrument cluster connections are clean and secure. OK to return the machine to service.

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2. Verify that the wiring and connectors are free of damage.



(1)	**ECU** connector **X-462**
(2)	**EGR** Valve connector **X-470**
(3)	**TVA** Valve **X-470**

ECU Wiring connections	Circuit Name	Wire ID	Wiring connections X-470
X-462 pin 50	EGR actuator motor plus	WH F500	**X-470** pin 29
X-462 pin 35	EGR actuator motor minus	GY F350	**X-470** pin 30
X-462 pin 9	EGR Position Sensor Supply	PK F090	**X-470** pin 33
X-462 pin 39	EGR Position Sensor Signal	YE F390	**X-470** pin 34
X-472 pin 424	EGR Position Sensor Ground	BK/WH F240	**X-470** pin 35

(1) Inspect the **ECU** and the EGR valve. All connections should be secure, tight, free of corrosion, abrasion and damage.

(2) Inspect the harness from the **ECU** to the EGR valve. Verify that the harness is free of damage, corrosion, abrasion and incorrect attachment.

A. The connectors are secure and the harness is free of damage. Go to Step **3**.

B. The connectors or the harness has damage. Repair or replace the harness or connectors as required. Return to Step **1** to confirm elimination of fault.

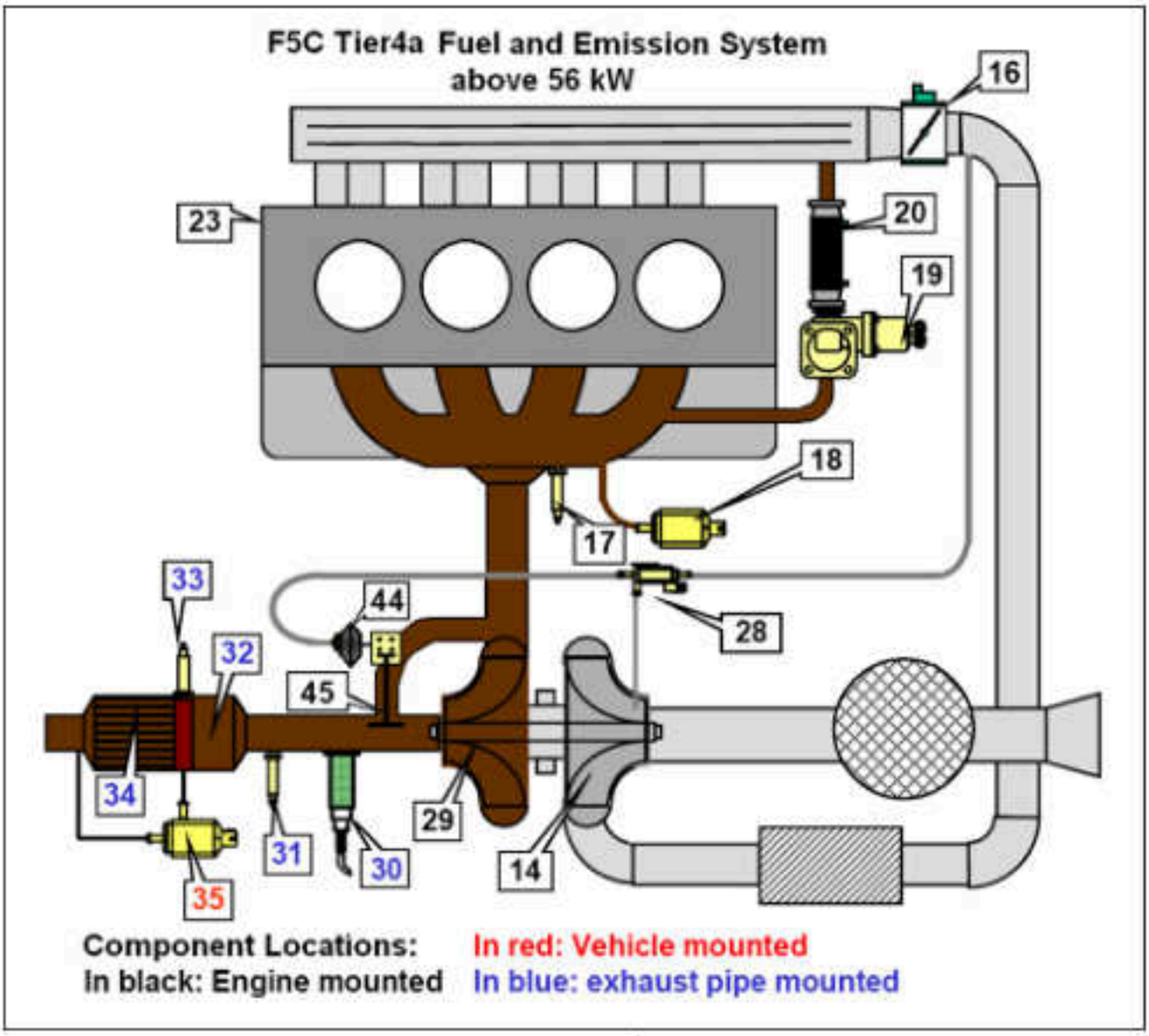
3. Measure the resistance through the wiring harness

(1) Turn the key switch OFF.

(2) Disconnect the EGR Valve connector. Disconnect the ECU connector.

(3) Measure the resistance between **ECU** connector **X-462** pin 50 and EGR valve motor plus pin. The resistance should be less than **10 Ω**. Wiggle the harness during measurement to reveal an intermittent condition.

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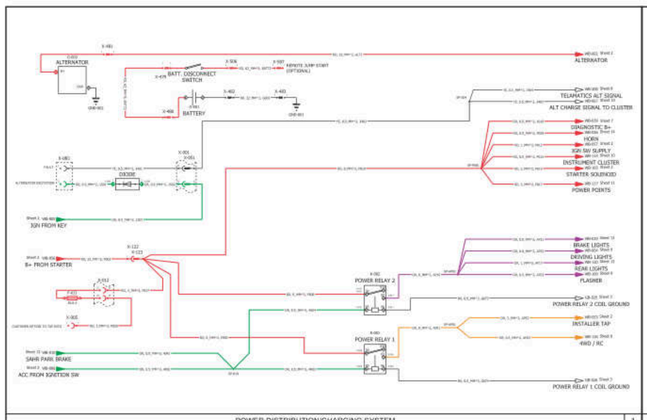
F5C/F5H Tier 4a Fuel and Emission System – above 56kW

Component Locations:

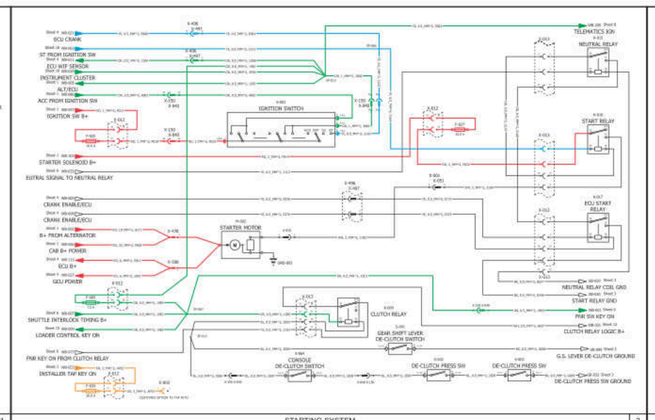
- Black = Engine mounted
- Red = Vehicle mounted
- Blue = Exhaust pipe mounted

F5C/F5H Tier 4a Diesel Particulate Filter (DPF) System Components	
14. Turbocharger Compressor	30. Heated Exhaust Gas Oxygen Sensor (HEGO)
16. Intake Throttle Valve (TVA)	31. DOC Inlet Temperature Sensor
17. Exhaust Manifold Temperature Sensor (T3)	32. Diesel Oxidation Catalyst (DOC)
18. Exhaust Manifold Pressure Sensor (P3)	33. DPF Inlet Temperature Sensor
19. EGR Valve with Position Feedback	34. Diesel Particulate Filter (DPF)
20. Exhaust Gas Recirculation (EGR) Cooler	35. DPF Differential Pressure Sensor
23. Engine	44. Turbocharger Waste Gate Diaphragm
28. Waste Gate Turbo Pressure Modulator	45. Turbocharger Waste Gate Valve
29. Fixed Geometry Turbocharger Turbine	

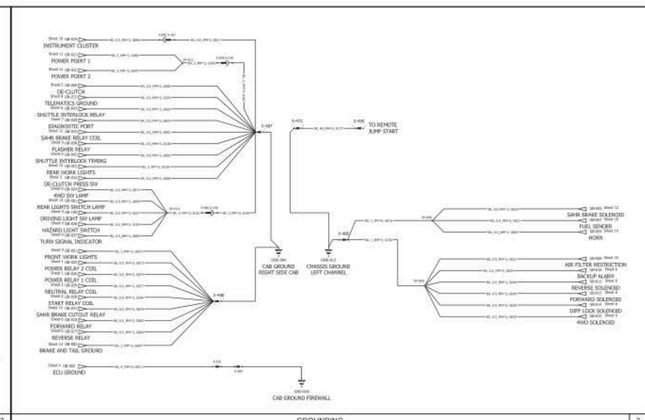
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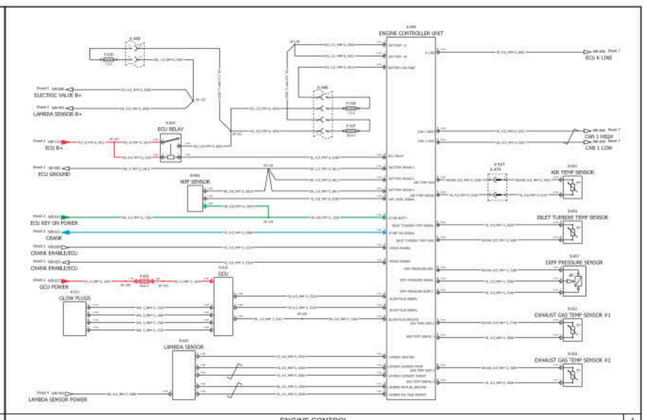
POWER DISTRIBUTION/CHARGING SYSTEM 1



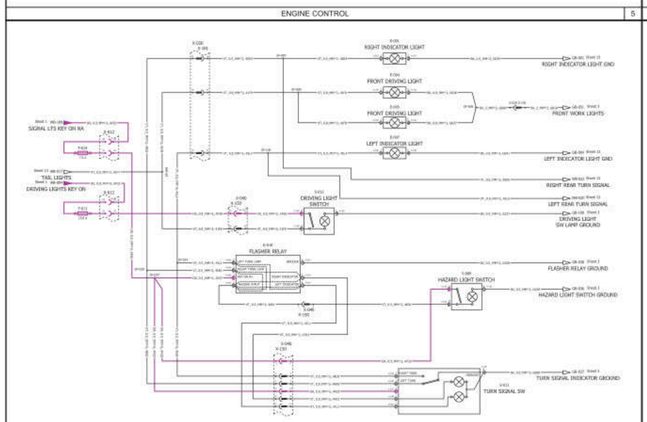
STARTING SYSTEM 2



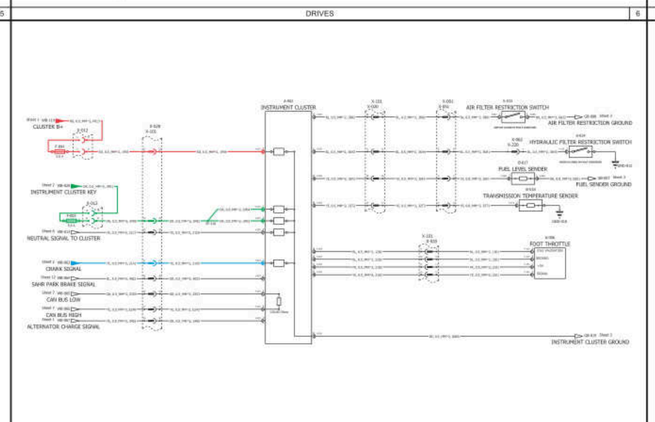
GROUNDING 3



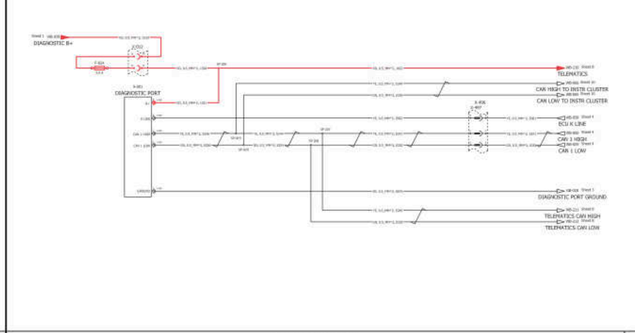
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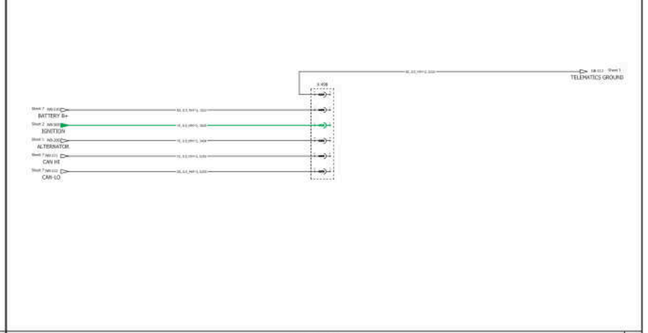
ENGINE CONTROL 5



DRIVES 6



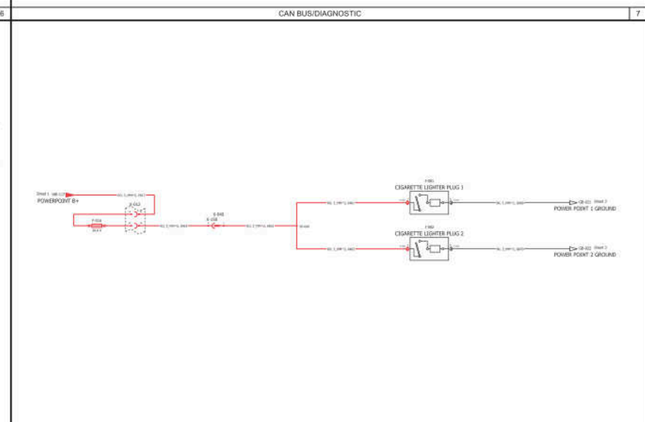
CAN BUS/DIAGNOSTIC 7



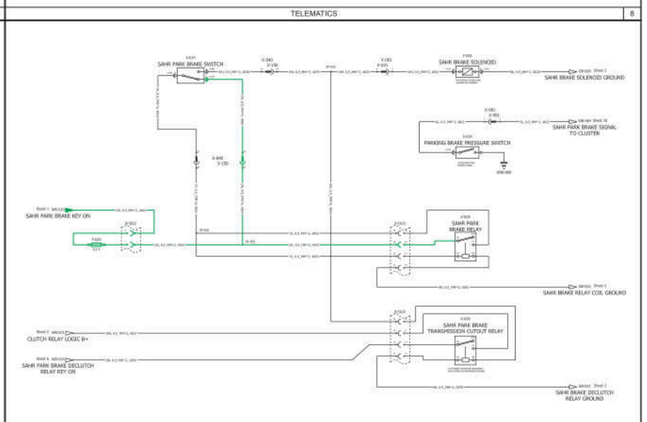
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ELECTRICAL SCHEMATIC 47388793
586H and 588H ROUGH TERRAIN FORKLIFT
(from PIN NCC570000)

LEGEND

INDICATES CONSTANT POWER

INDICATES POWER WHEN KEY SWITCH IS ON

INDICATES POWER WHEN KEY SWITCH IS IN START POSITION

INDICATES SWITCHED POWER FROM CONTROL RELAY #1

INDICATES SWITCHED POWER FROM CONTROL RELAY #2-#4

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