SERVICE MANUAL

FR450 / FR500 / FR600 / FR700 / FR850

Forage Harvester

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MidWestTech | New Holland FR450, FR500, FR600, FR700, FR850 Forage Harvester Service Manual | Publication 47812470

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B-072

Topic	Reference
Name	Level indicator tank
Frame	**Wiring harnesses - Electrical schematic sheet 12 - Power distribution (55.100)**
Connector	**X-386**
Technical	
Functional	
Diagnostic	
Service	

B-073

Topic	Reference
Name	Sensor silage flow
Frame	**Wiring harnesses - Electrical schematic sheet 12 - Power distribution (55.100)**
Connector	**X-398**
Technical	
Functional	
Diagnostic	
Service	

B-079

Topic	Reference
Name	Humidity & temperature sensor
Frame	**Wiring harnesses - Electrical schematic sheet 44 - Cursor engine (55.100)**
Connector	**X-702**
Technical	
Functional	
Diagnostic	
Service	

B-080

Topic	Reference
Name	Sensor water in fuel
Frame	**Wiring harnesses - Electrical schematic sheet 40 - V8 engine (55.100) Wiring harnesses - Electrical schematic sheet 44 - Cursor engine (55.100)**
Connector	**X-243-V8 X-243-CUR**
Technical	
Functional	
Diagnostic	
Service	

B-082

Topic	Reference
Name	Sensor back feed rolls opening (Yield sensor)
Frame	**Wiring harnesses - Electrical schematic sheet 07 - Power distribution (55.100)**
Connector	**X-380**
Technical	
Functional	
Diagnostic	**E0018-03- Back feedrolls opening - Shorted to high source (55.640)** **E0018-05- Back feedrolls opening - Line disconnected (55.640)**
Service	

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E1366-04-RHM digin38 , Voltage below normal, or shorted to low source

Control Module : RHM

NOTE: *The forage harvester monitor diagnostic capability can be used to assist in troubleshooting the electrical system, for further information refer to* ***Instrument cluster - Detailed view (55.408)****.*

NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

Cause:
The controller has detected a short circuit to a low source at connector **X-325 pin 6**, wire RHC-1423 (YE).

Possible failure modes:

1. Faulty connector
2. Faulty harness
3. Faulty Intellifill™ settings switch (if fitted)
4. Faulty controller

Solution:

1. Before proceeding, clear the error code with the approved diagnostic equipment. Run the machine under normal conditions and retest.
   A. If the error code is not indicated, check that the system is operating correctly.
   B. If the error code is indicated, continue to Step **2**.
2. Check the Intellifill™ settings switch (if fitted) connector **X-742 pin 1**, wire RHC-1423 (YE) and the controller connector **X-325 pin 6**, wire RHC-1423 (YE).
   A. Make sure that the connectors are connected, not damaged, the pins are in the correct position and that the fit is tight. Repair or replace as required.
   B. If the connectors are okay, continue to Step **3**.
3. Check for a short to ground.
   A. Disconnect connector **X-325**. Check between connector **X-325 pin 6**, wire RHC-1423 (YE) and ground. If a short to ground is indicated, continue to Step **4**.
   B. If the harness is okay, download the correct level of software. If the fault recurs, remove and replace the controller.
4. Check for a short to ground.
   A. Disconnect connector **X-742** (if equipped). Check between connector **X-325 pin 6**, wire RHC-1423 (YE) and ground. If a short to ground is indicated, repair or replace the harness as required.
   B. If the harness is okay, remove and replace the Intellifill™ settings switch (if fitted). If the fault is still present, download the correct level of software. If the fault recurs, remove and replace the controller.

Wiring harnesses - Electrical schematic sheet 45 - IntelliFill™ (55.100.DP-C.20.E.45)

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E1738-12 (DTC 131)-Coolant temperature sensor - Data Incorrect

FR450	NA
FR500	NA
FR600	NA

Control Module : ECU

NOTE: *For further information refer to* ***Engine coolant temperature sensor - Overview (55.012)****.*

Context:
The Engine Control Unit (ECU) supplies the coolant (water) temperature sensor with a **5.0 V** reference and a ground reference signal. As the temperature of the coolant changes the resistance on the signal wire changes accordingly. The sensor resistance is high when coolant temperature is low and the resistance will drop when coolant temperature increases.

Cause:
The ECU is sensing the coolant temperature signal has drifted out of a plausible signal range.

Possible failure modes:

1. The coolant temperature sensor has failed.
2. The wiring harness has failed.
3. The ECU has an internal fault.

Solution:

1. Verify the fault is active.

   A. If the fault code is present, continue with Step **2**.

   B. If the fault is not present, the fault may be intermittent and not currently active. Continue with Step **6**.
2. Verify that the wiring harness and connectors are free of damage.

   Inspect the wiring harness from the ECU to the coolant temperature sensor connector.

   Verify that the wiring harness is free of damage, corrosion, abrasion and incorrect attachment.

   A. The connectors are secure and the wiring harness is free of damage. Continue with Step **3**.

   B. The connectors or the wiring harness has damage. Repair or replace the wiring harness or connectors as required.
3. Check the coolant temperature sensor.

   Disconnect the wiring harness from the sensor connector **WTF**.

   Use a multimeter to measure the resistance of the temperature sensor connector **WTF** from pin 1 to pin 2.

Coolant Temperature	Resistance Value
-20 °C (-4 °F)	**10.5 kOhm**
0 °C (32 °F)	**7500 ohms**
20 °C (68 °F)	**4200 ohms**
40 °C (104 °F)	**980 ohms**
60 °C (140 °F)	**780 ohms**
80 °C (176 °F)	**500 ohms**
100 °C (212 °F)	**280 ohms**
120 °C (248 °F)	**97 ohms**

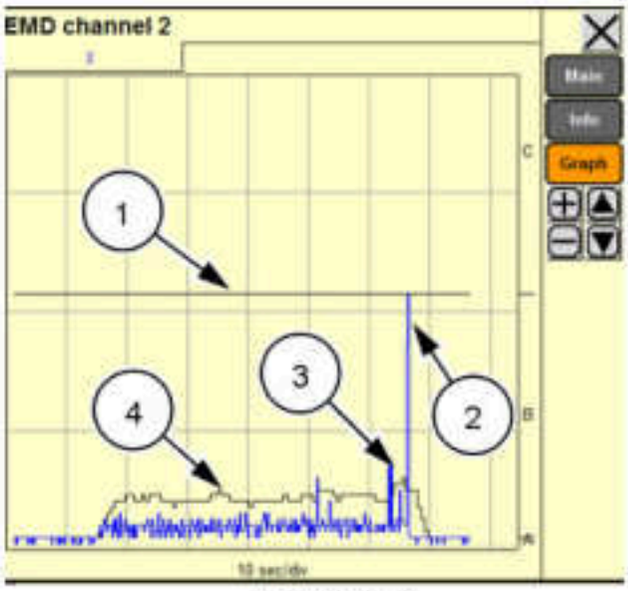
   A. If the resistance is correct, continue with Step **4**.

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Using the 'Group: metal detector' for reference.

- The EMD channels 1, 2, 3 will be monitored.
- The graph may display something as shown.
  - **(1)** Threshold level
  - **(2)** Metal detection
  - **(3)** Mean noise level of all three channels
  - **(4)** Threshold level

  NOTE: *Threshold changes with sensitivity.*

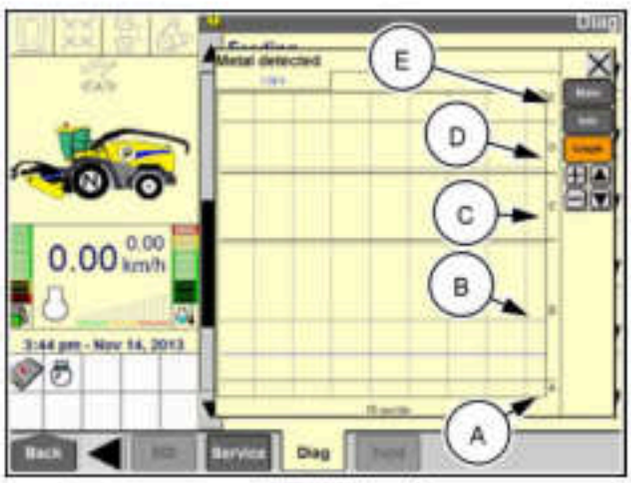


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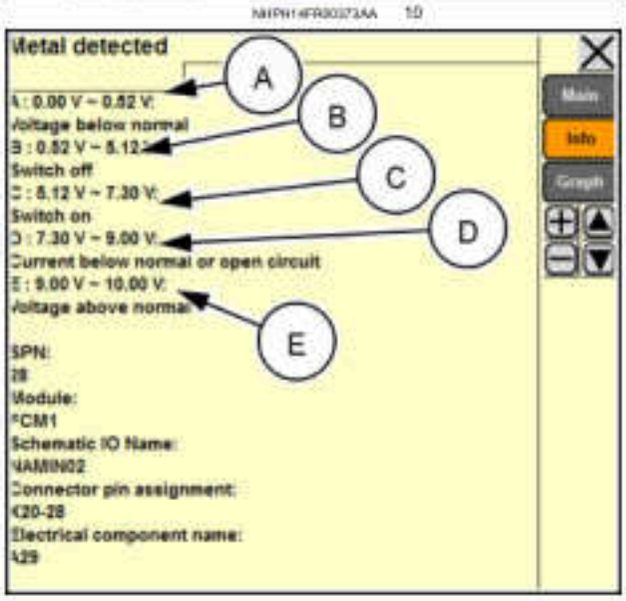
Metal detected

Select the 'Metal detected' diagnostic function.

- Select 'Diagnose'.
  - The 'Graph' tab will display voltage.
  - Voltage increases from **1.38 V** to **6.8 V** if metal is detected through the signal wire. Metal detection is also sent over the Controller Area Network (CAN).
- 'Info' tab.
  - **(A)** Voltage below normal: indicates a fault
  - **(B)** Switch off: no detection
  - **(C)** Switch on: metal detection
  - **(D)** Current below normal or open circuit: indicates a fault
  - **(E)** Voltage above normal: indicates a fault

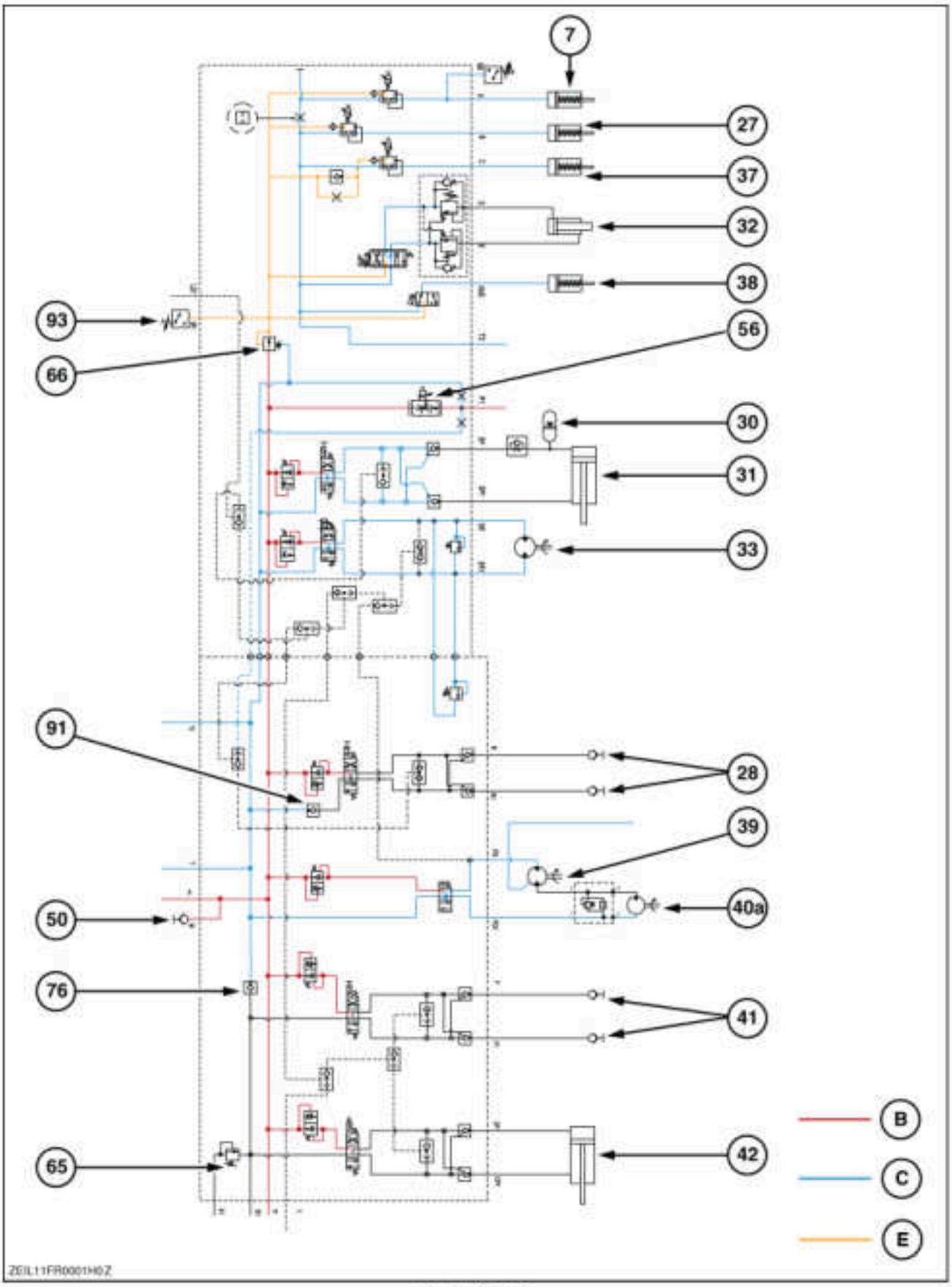


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FR SERIES FORAGE HARVESTER
47840664
ELECTRICAL SCHEMATIC
MY15 - SERIES 5888 AND ABOVE

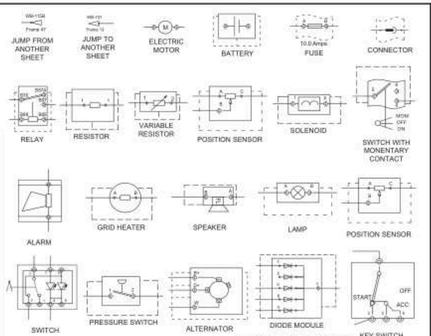
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V+ BEFORE CONTACT	Page 1, Sheet 3	HID & HALOGEN	Page 4, Sheet 26
V+ BEFORE CONTACT & KEY SUPPLY	Page 1, Sheet 4	WASHERS & WIPERS	Page 4, Sheet 27
POWER FCM 1, 2, & 3	Page 1, Sheet 5	ACCESSORIES - MISC	Page 4, Sheet 28
FCM 1 POWER CONTROL	Page 1, Sheet 6	HVAC POWER & CONTROL	Page 4, Sheet 29
FCM 1 SIGNALS	Page 1, Sheet 7	HEADERS GROUNDS & AUDIO	Page 4, Sheet 30
FCM 1 & 2 POWER CONTROL	Page 1, Sheet 8	MIRROR ADJUSTMENT	Page 4, Sheet 31
FCM 2 SIGNALS	Page 1, Sheet 9	SPLICE BLOCKS	Page 4, Sheet 32
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- 12V UNSWITCHED POWER - AFTER 12V BATTERY DISCONNECT
- 24V UNSWITCHED POWER
- 24V UNSWITCHED POWER - AFTER 24V BATTERY DISCONNECT
- IGNITION KEY ON
- IGNITION KEY ON - AFTER IGNITION POWER RELAY
- CRANKING



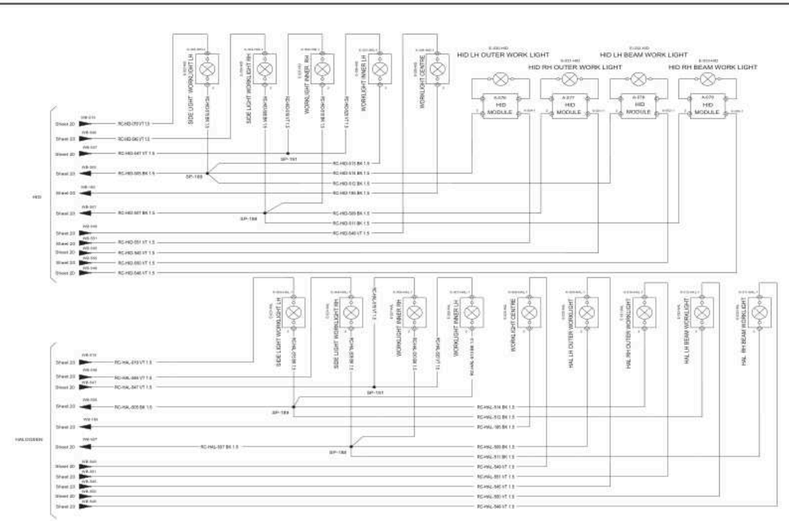
CIRCUIT REFERENCES

Color	Color Code	Function
Black	BK	Ground, Chassis
Blue	BL	Printed Circuit Ground
White	WH	Increasing Actuation
Gray	GY	Decreasing Actuation
Orange	OR	Power After Ignition
Yellow	YE	Signal Wires
Red	RD	Battery Voltage
Violet	VT	Lighting
Pink	PK	Reference Voltage

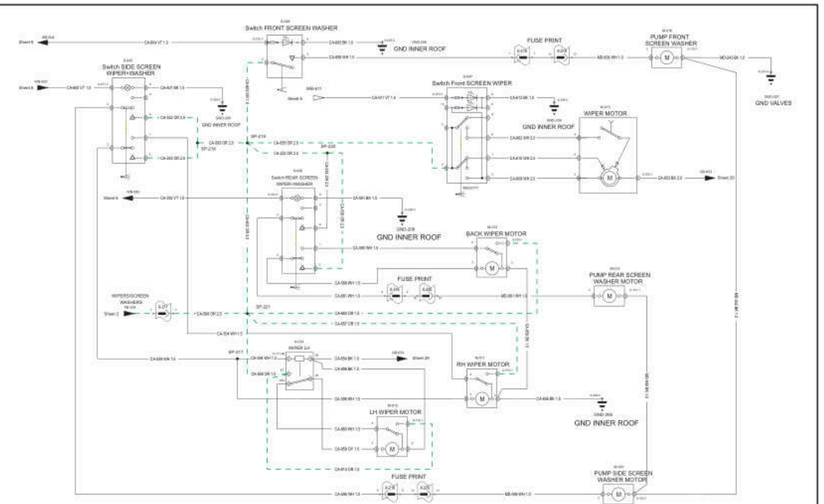
CM-053A OR 1.0
- WIRE GAUGE (SQUARE MM)
- WIRE COLOR
- CIRCUIT NUMBER
- HARNESS CODE

COMPONENT IDENTIFIER LEGEND

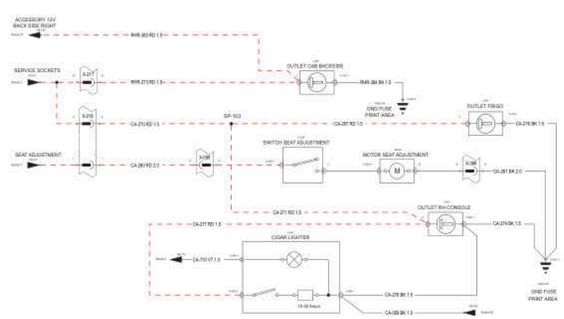
Label Prefix	Component Type
A	Electronics
B	Sensors
D	Diodes
E	Lights
F	Fuses
G	Generators
H	Audio
J	Outlets
K	Relays
M	Motors
Q	Circuit Breakers
R	Resistive
S	Switches
W	Splice Blocks
Y	Solenoids



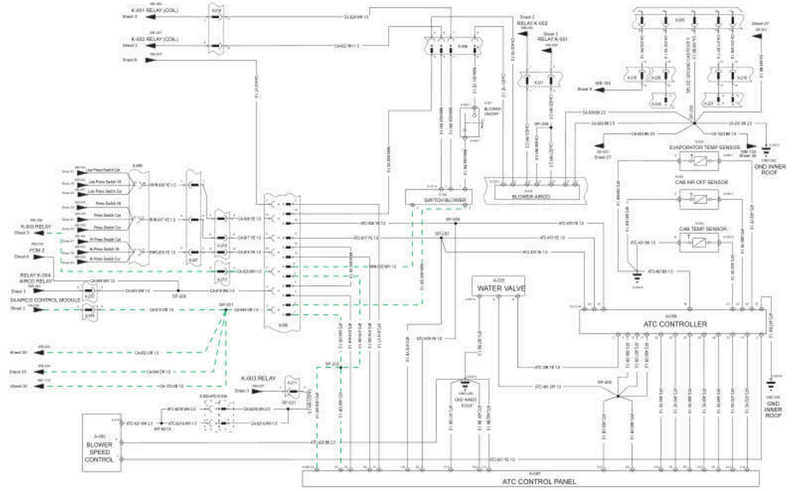
SHEET 26 - HID AND HALOGEN



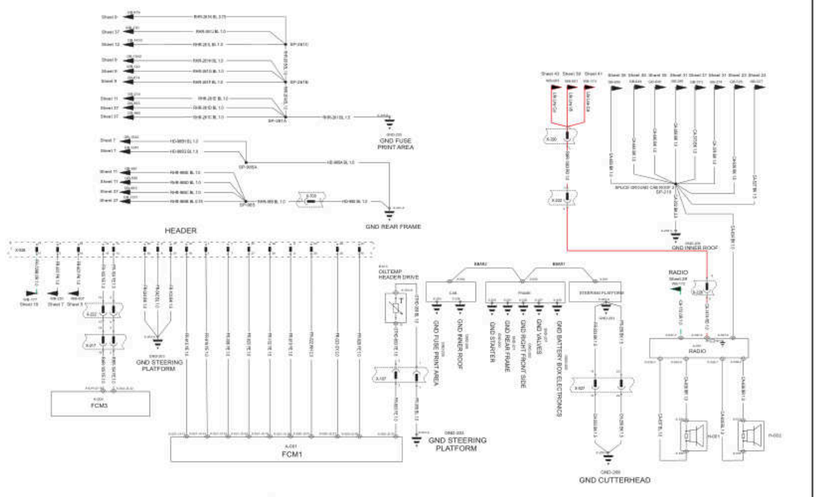
SHEET 27 - WASHERS AND WIPERS



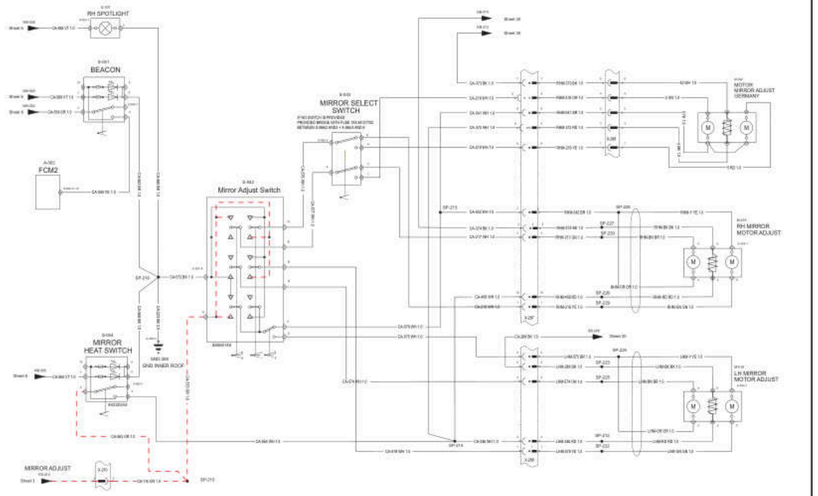
SHEET 28 - ACCESSORIES - MISC



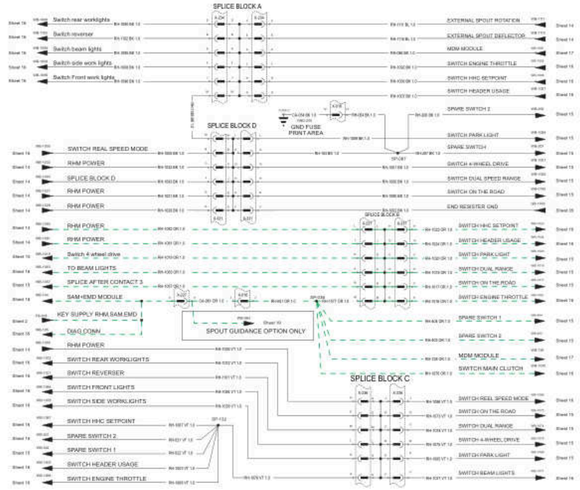
SHEET 29 - HVAC POWER AND CONTROL



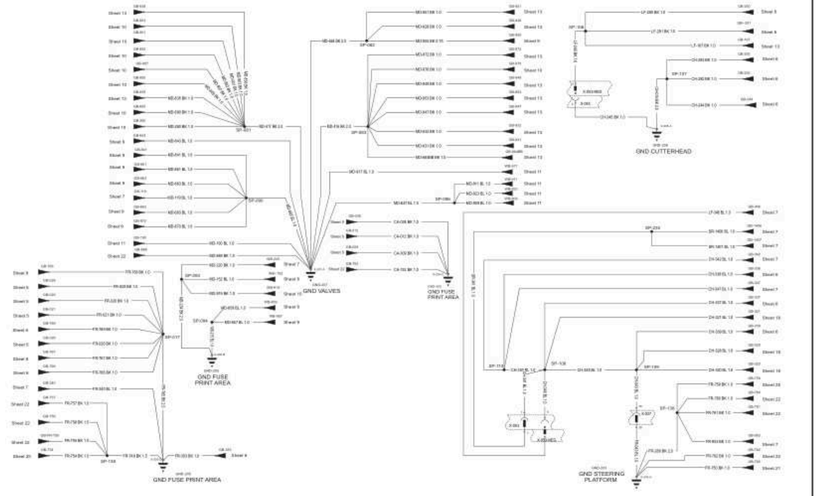
SHEET 30 - HEADERS, GROUNDS AND AUDIO



SHEET 31 - MIRROR ADJUSTMENT



SHEET 32 - SPLICE BLOCKS



SHEET 33 - EARTHING GROUNDS

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