

Procedural / Electrical

FNHA-3-E-005.00

WIRE IDENTIFICATION**1. SCOPE**

This standard covers wire identification practices.

2. DESIGNATION**2.1 Codes and Numbers**

A color identification identifies the basic electrical functions on N. H. Equipment. If a function is not identified below, the designer will place the circuit under the miscellaneous / other group. Use three digit numbers to identify specific wires. The three digit numbers do not identify any wire intelligence. Wire intelligence such as wire gauge, length, and size should be put on the drawings, schematics, and drafts. On production harnesses the numbers must be hot stamped onto the wire. The harness location and a three digit number will be the only identification allowed hot stamped onto the physical wires. The three digit numbers allowed for use are 001 - 999. Place circuits in a function group according to the function receiving the highest priority. The colors assigned to the function groups are listed below:

Functions	Colors	Abbreviations
Power Ground	Black	BK
Signal Ground	Brown	BR
Hydraulics	Gray	GY
Unswitched Positive Voltage	Red	R
Misc./ other	Tan	T
Switched Voltage	Orange	O
Machine sensor	Yellow	Y
Ref. Voltage	Pink	PK
Machine Control	Violet	V
Lighting	Dark Blue	DB
Accessories	Dark Green	DG
Starting	White	W
Transmission	Light Green	LG
Engine	Light Blue	LB

2.2 Example of Priority function:

A circuit connected to a hydraulic valve within the transmission. In this case, the transmission will be the priority function because the transmission is the main component.

2.3 Example of a schematic, drawing, and draft wire identification:

CM059-DG-12 DG - Designates Dark Green
 CM- Designates Cab Main
 059 - Designates Wire Number
 12 - Designates Wire Gauge (AWG)

Hot stamped identification: CM059

3. REFERENCE STANDARDS

SAE J560 - Seven Conductor Electrical Connector
 for Truck Trailer Jumper Cables
 SAE J1128 - Low Tension Primary Cable

4. DEFINITIONS**4.1 FUNCTION GROUPS:**

Power Ground Group - Any group of wires that provide a ground directly from the negative post of the battery or power supply.

Signal Ground Group - Any ground wires isolated from the power ground.

Hydraulics Group - Any group of circuits that make up the controls for hydraulic components.

Unswitched Positive Voltage Group - Any group of circuits that make up the unswitched power source of 12 volts or basic system voltage.

Miscellaneous /other - Any group of circuits that is unidentifiable in any other circuit group.

					NAME	STD WIRE IDENT				
					 NEW HOLLAND			ENGINEERING SPECIFICATION		
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Switched Voltage Group - Any group of circuits that has passed through a switch or relay that redistributes power to system groups. These circuits must formerly be from the "Unswitched Positive Voltage Group."

Machine Sensor Group - Any group of circuits that connects to sensors for the monitoring of the machine.

Reference Voltage Group - Any group of circuits that use a voltage as a reference that is different from the main power source. Typically, but not limited to, reference voltages in a 12 volt system is 5 or 8 volts

Machine Control Group - Any group of circuits that control the machine, for instance; motors, solenoids, and actuators.

Lighting Group - Any group of circuits providing illumination.

Accessories Group - Any group of circuits that does not effect the primary operation of the machine. These consist of components such as horns, window wipers, heaters and air conditioners, communication, entertainment, etc.

Starting Group - Any group of circuits that control starting the engine.

Transmission - Any group of circuits that affect the movement of the vehicle over the ground including braking.

Engine Group - Any group of circuits that affect engine control. Examples of an engine control function are an oil pressure sensor and fuel solenoid.

Notes: Once a circuit is designated to a group function, it should remain with that color identification throughout the circuit. An electrical circuit includes all the components and connecting cables. It starts from the electrical power source to the functional components.

4.2 When a standard organization such as SAE has an established practice in place for identification of circuits for example SAE J560, Seven-Conductor Electrical Connector for truck-trailer jumper cables. Then that standard shall supersede the New Holland standard. Base unit wiring identification may be made to conform by using a color band via tape over the wire end at the connector for assembly identification.

The previous wire identification system is not to be used in drawing applications after this issue date.

5. COMPONENT REQUIREMENTS

Insulated Cable - Must conform to SAE J1128 for wire size 8 through 20.

5.1 SXL

Type SXL insulation (special duty thermosetting cross-linked polyethylene insulation)

Wire Size	Wall Thickness - Metric		
	Nom	Min	OD Max
mm ²	mm	mm	mm
.5	.74	.52	2.80
.8	.76	.53	3.00
1	.81	.57	3.40
2	.89	.62	3.90
3	.94	.66	4.60
5	1.04	.73	5.30
8	1.09	.76	6.20
13	1.09	.76	8.47

Wire Size	Wall Thickness - Inch		
	Nom	Min	Max OD
NO.	in.	in.	in.
20	.029	.020	.110
18	.030	.021	.120
16	.032	.022	.135
14	.035	.025	.155
12	.037	.026	.180
10	.041	.029	.210
8	.043	.030	.245
6	.055	.033	.335

	NAME			PART NUMBER	
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