SERVICE MANUAL

Speedrower® 130

Self-Propelled Windrower

Part number 47698328

1st edition English

April 2014

MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual | Publication 47698328

Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1

[10.216] Fuel tanks 10.2

[10.218] Fuel injection system 10.3

[10.202] Air cleaners and lines 10.4

[10.254] Intake and exhaust manifolds and muffler 10.5

[10.400] Engine cooling system 10.6

Front axle system 25

[25.310] Final drives 25.1

Rear axle system 27

[27.550] Non-powered rear axle 27.1

Hydrostatic drive 29

[29.100] Transmission and steering hydrostatic control 29.1

[29.218] Pump and motor components 29.2

[29.202] Hydrostatic transmission 29.3

Power Take-Off (PTO) 31

[31.226] Hydraulic pump drive 31.1

Brakes and controls 33

[33.110] Parking brake or parking lock 33.1

Hydraulic systems 35

[35.000] Hydraulic systems 35.1

[35.100] Main lift system 35.2

[35.102] Pump control valves 35.3

[35.104] Fixed displacement pump 35.4

[35.105] Charge pump 35.5

MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >

[35.300] Reservoir, cooler, and filters 35.6
[35.565] Cutter control circuit 35.7
[35.910] Head and header hydraulic drive 35.8
Steering 41
[41.101] Steering control 41.1
Cab climate control 50
[50.100] Heating 50.1
[50.104] Ventilation 50.2
[50.200] Air conditioning 50.3
Electrical systems 55
[55.000] Electrical system 55.1
[55.019] Hydrostatic drive control system 55.2
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system 55.3
[55.100] Harnesses and connectors 55.4
[55.408] Warning indicators, alarms, and instruments 55.5
[55.512] Cab controls 55.6
[55.DTC] FAULT CODES 55.7
Attachments/Headers 58
[58.110] Attachment/Header cutting mechanism 58.1
Platform, cab, bodywork, and decals 90
[90.124] Pneumatically-adjusted operator seat 90.1
[90.150] Cab 90.2
[90.151] Cab interior 90.3
[90.154] Cab doors and hatches 90.4

MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Foreword - Important notice regarding equipment servicing 3
Foreword - Note to the dealer 4
Safety rules (*) 5
Safety rules (*) 6
Safety rules - Ecology and the environment 14
Personal safety - Safety signs 15
Personal safety - Do not operate tag 34
Torque - Minimum tightening torques for normal assembly (*) 35
Torque - Standard torque data for hydraulics 39
Basic instructions - Shop and assembly 41
Hydraulic contamination 43
Capacities 44
Product identification - Product Identification Number (PIN) (*) 45
Part identification - Engine serial number (*) 46

(*) See content for specific models

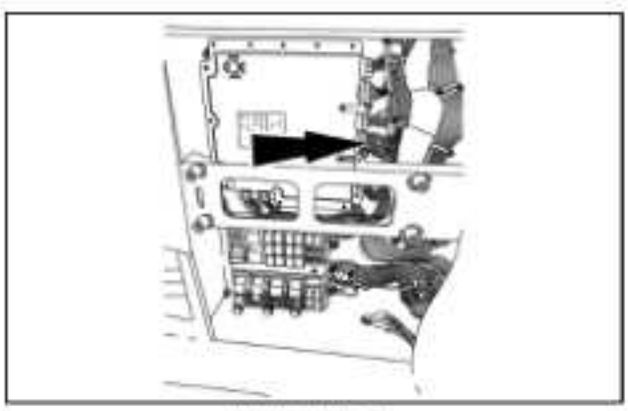
MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >

CONNECTOR X-005 - A-001 MODULE, UCM

CONNECTOR X-005 - A-001 MODULE, UCM			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	-	-	**Wire harnesses - Electrical schematic sheet 39 - Merger (55.100)**
2	CM-856A (OR)	Battery power from UCM rail 12VU2 fuse **F-028**	**Wire harnesses - Electrical schematic sheet 29 - UCM (55.100)**
3	CM-856B (OR)	Battery power from UCM rail 12VU2 fuse **F-028**	
4	CM-1101 (WH)	Input signal for Power Take-Off (PTO) tandem pump rightside forward solenoid **Y-072** (draper only)	**Wire harnesses - Electrical schematic sheet 42 - Power Take-Off (PTO) (55.100)**
5	CM-416 (WH)	Input signal for left header flotation pressure relief valve **Y-002** (not on 4 cyl standard)	**Wire harnesses - Electrical schematic sheet 27 - Header (55.100)**
6	CM-811 (WH)	Auto guidance proportional steer right solenoid **Y-063**	**Wire harnesses - Electrical schematic sheet 49 - Autoguidance (55.100)**
7	CM-854A (OR)	Battery power from UCM rail 12VT1 fuse **F-029**	**Wire harnesses - Electrical schematic sheet 29 - UCM (55.100)**
8	CM-076 (GY)	Input signal for left header lower valve solenoid **Y-007** (not on 4 cyl standard) and right header lower valve solenoid **Y-008** (all models)	**Wire harnesses - Electrical schematic sheet 27 - Header (55.100)**
9	CM 233B (GY)	Draper speed switch signal to draper header conveyor decrease relay **K-024**	**Wire harnesses - Electrical schematic sheet 46 - Header (55.100)**
10	CM-823 (YE)	Swash plate angle, left (front) sensor **B-059** signal	**Wire harnesses - Electrical schematic sheet 45 - Power distribution (55.100)**
11–12	-	-	-
13	CM-854B (OR)	Battery power from UCM rail 12VT1 fuse **F-029**	**Wire harnesses - Electrical schematic sheet 29 - UCM (55.100)**
14	CM-470 (WH)	High side driver for the fore draper reel position solenoid **Y-021** (draper only)	**Wire harnesses - Electrical schematic sheet 44 - Header knife/Draper header (55.100)**
15	CM-005 (YE)	Header tilt switch **S-101** signal	**Wire harnesses - Electrical schematic sheet 48 - Header tilt (55.100)**
16	CM-1050 (YE)	Header tilt switch **S-101** signal	
17	CM 233B (WH)	Draper speed switch signal to draper header conveyor increase relay **K-021**	**Wire harnesses - Electrical schematic sheet 46 - Header (55.100)**
18	-	-	-
19	CD-391 (WH)	Input signal for sickle reel speed solenoid **Y-029** (all models) or draper canvas speed (HB reel speed) **Y-032**/ **Y-012** (draper only)	**Wire harnesses - Electrical schematic sheet 46 - Header (55.100)**
20	CM-026B (BK)	UCM ground **GND-002** - Located by left battery	**Wire harnesses - Electrical schematic sheet 29 - UCM (55.100)**
21	CM-853 (OR)	Battery power from fuse **F-016**	
22	CM-810 (WH)	Auto guidance proportional steer left solenoid **Y-062**	**Wire harnesses - Electrical schematic sheet 49 - Autoguidance (55.100)**
23	CM-523 (YE)	Left header trim switch **S-018** signal	**Wire harnesses - Electrical schematic sheet 27 - Header (55.100)**
24	-	-	-

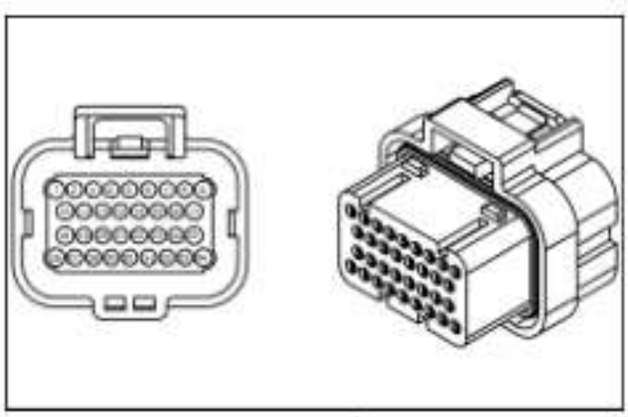
MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >

CONNECTOR X-004 - A-001 MODULE, UCM			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
25	CM-1100 (GY)	Signal ground for Power Take-Off (PTO) tandem pump leftside reverse solenoid **Y-071** (draper only) and Power Take-Off (PTO) tandem pump leftside forward solenoid **Y-070** (draper only)	**Wire harnesses - Electrical schematic sheet 42 - Power Take-Off (PTO) (55.100)**
26	CM-026D (BK)	UCM ground **GND-002** - Located by left battery	**Wire harnesses - Electrical schematic sheet 29 - UCM (55.100)**
27	CM-1105 (YE)	Turn indicator / horn switch **S-024** signal	**Wire harnesses - Electrical schematic sheet 32 - Turn indicator/Hazard/Horn (55.100)**
28	-	-	-
29	CM-375A (YE)	Multi Function Handle (MFH) position switch **B-054** signal	**Wire harnesses - Electrical schematic sheet 22 - Propulsion (55.100)**
30	CM-1108 (YE)	Swash plate angle (pump 1) sensor **B-064** sensor signal	**Wire harnesses - Electrical schematic sheet 43 - Draper header (55.100)**
31	CM-831 (YE)	Swash plate angle (pump 2) sensor **B-065** sensor signal	
32	CM-396 (YE)	Windrow shield position sensor **B-057** signal	**Wire harnesses - Electrical schematic sheet 40 - Windrow shields (55.100)**
33	-	-	-
34	CM-026C (BK)	UCM ground **GND-002** - Located by left battery	**Wire harnesses - Electrical schematic sheet 29 - UCM (55.100)**



NHEL136R0E739AA 7

Connector X-004 is located behind instructor's seat.



82026495 8

Connector X-004.

MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >

E0297-03-Park brake latching relay - Shorted to high source

Speedrower® 130	Draper ready - Factory-fitted to accept draper

Control Module : UCM

Context:
The Universal Control Module (UCM) **A-001** supplies the voltage source to the park brake latch relay **K-020**. The UCM monitors the signal line for various faults. Fault Mode Indicator (FMI) 03 is active if the signal wire is shorted to a high source, when the **K-020** circuit is active.

Cause:
The UCM has detected the output signal to **K-020** is shorted to a high source.

Possible failure modes:

1. Faulty relay **K-020**.
2. Faulty electrical wiring, shorted to a high source.
3. Faulty controller.

Solution:

1. Verify this fault is still present and in an active state.

   A. If the fault is still present and active, continue to Step **2**.

   B. If the fault is no longer present or inactive, check for an intermittent fault. If no fault is found, return machine to proper operation.

2. Check the circuit functionality.

   Remove relay **K-020**.

   Place the key switch ON.

   Monitor the diagnostic screen for fault code **E0297-11 - Park brake latching relay - Unidentified failure code**.

   A. If fault code **E0297-11 - Park brake latching relay - Unidentified failure code** is not present, leave the relay removed. Continue with Step **3**.

   B. If fault code **E0297-11 - Park brake latching relay - Unidentified failure code** is present, the circuit is functioning properly. The relay has failed, replace the relay.

3. Check the ground circuit.

   Place the key switch OFF.

   Use a multimeter to check for continuity.

From	To	Result
Relay connector **X-366 pin R3_86**	Chassis ground	There should be continuity.

   A. If the reading is correct, continue with step **4**.

   B. If the reading is incorrect, locate and repair the faulty wiring.

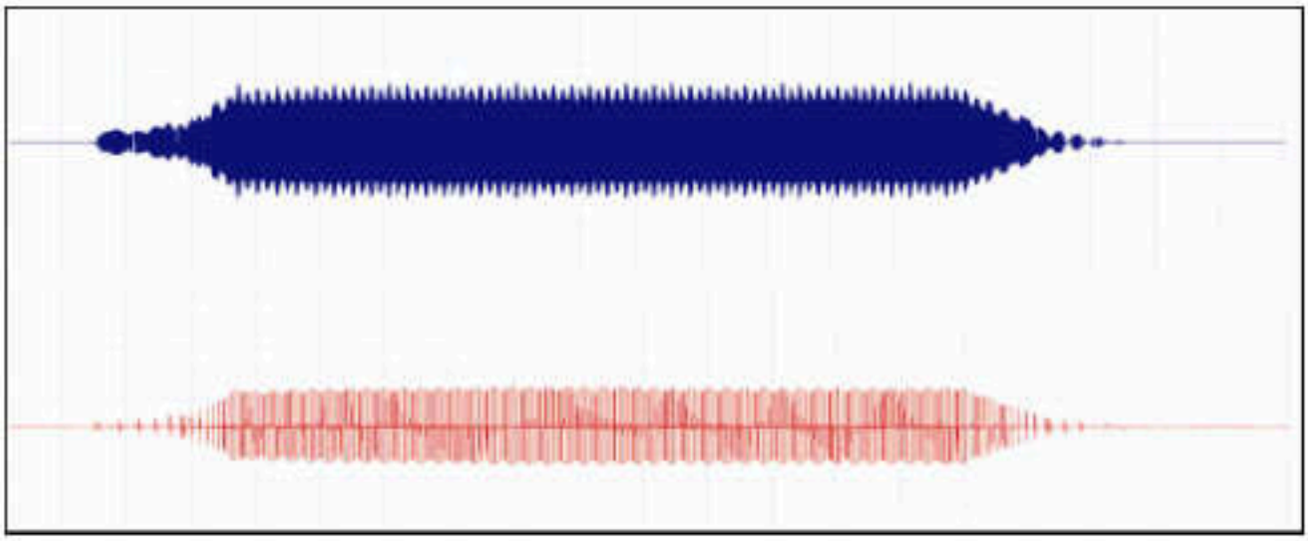
4. Check the signal line for a short to high source.

   Place the key switch ON.

   Use a multimeter to check for voltage.

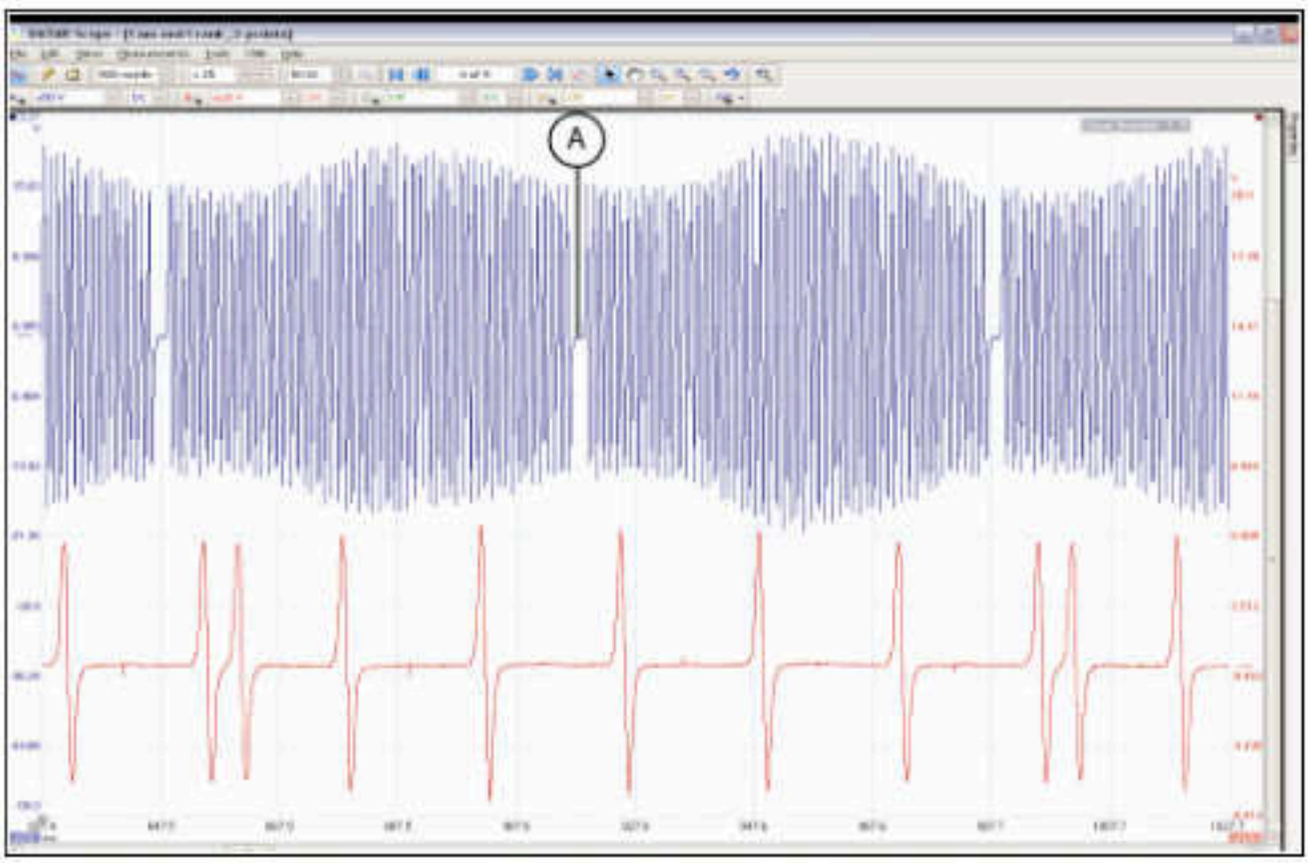
From	To	Value
Relay connector **X-366 pin R3_86**	Chassis ground	There should be approximately **4.0 V**.

MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >



6

5. Figure **6** shows the ideal full signal of the crank and cam position from the point of when the engine is turned on , and until it is turned off.

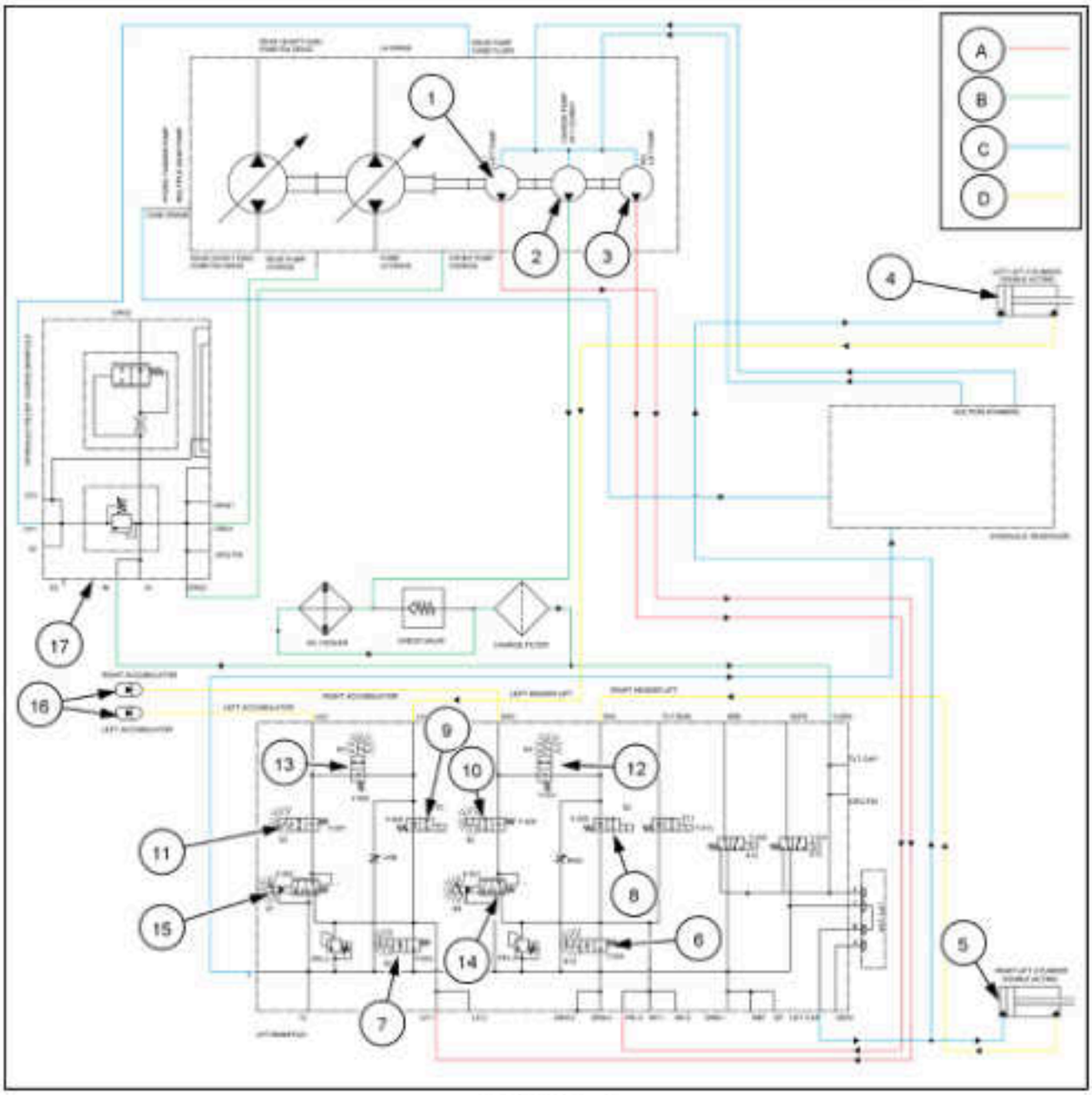


7

(A) = Sync Trigger

6. Figure **7** shows the expected clean signal captured by the **DATAR** scope, each sync trigger in Channel A (Blue) is one crank rotation and each double fluctuation in the channel B (red), is one cam rotation . With two full crank rotations there is one full cam rotation.
The amplitude will increase with the engine speed. This means the voltage can increase from ± **20 - 30 V**

MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >



NHL13WR00799GB 7

Header Lower (Return to Float) (Approximately 2 seconds after initiation)

Flotation/Accumulators

The flotation weight of the header is adjusted by depressing the "Increase Float" or "Decrease Float" rocker switches located in the console. These switches adjust the current control for the pressure reducing valves Y-001 and Y-002. Increasing the amount of current applied to the valve increases the pressure set-point. Increasing the pressure set-point will reduce the amount of weight the header applies to the ground (makes the header feel lighter). Similarly, decreasing the pressure set-point will increase the amount of weight the header applies to the ground (makes the header feel heavier). The flotation set-point pressures are displayed on the control screen.

The left-hand and right-hand accumulator pressure set-points may be adjusted independently. This independent adjustment is required for headers that are not balanced. A higher set-point will be required for the heavy side of a particular header. The increased pressure will allow the header to lift and lower level. Also independent adjustment can be made to allow for cutting on uneven ground (i.e. irrigation borders). Increasing the flotation pressure on the side of the header running on the border will prevent the header from running too heavy and causing poor cut quality.

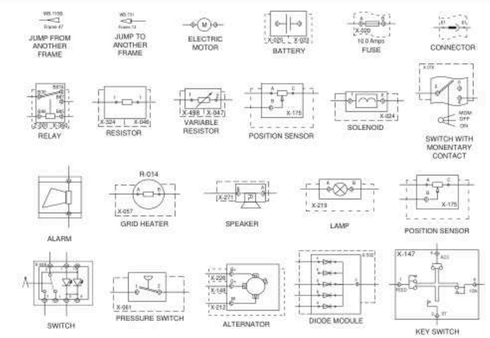
MidWestTech | New Holland Speedrower 130 Self Propelled Windrower Service Manual... Order the manual at mid-west-tech.com >

SPEEDROWER 130® DRAPER EQUIPPED SELF-PROPELLED WINDROWERS
47705557
ELECTRICAL SCHEMATIC, NORTH AMERICA
MODEL YEAR 2014 PRODUCTION

Page 5 of 8

SCHEMATIC FRAME INDEX

Component	Page/Frame	Component	Page/Frame
POWER DISTRIBUTION	Page 1, Frame 1	TURN INDICATOR/HAZARD/HORN	Page 4, Frame 32
POWER DISTRIBUTION	Page 1, Frame 2	FLASHING LIGHTS	Page 4, Frame 33
POWER DISTRIBUTION	Page 1, Frame 3	FLASHING LIGHTS	Page 4, Frame 34
POWER DISTRIBUTION	Page 1, Frame 4	WORK LIGHTS	Page 4, Frame 35
POWER DISTRIBUTION	Page 1, Frame 5	WORK LIGHTS/BEACON	Page 4, Frame 36
POWER DISTRIBUTION	Page 1, Frame 6	WINDSHIELD WIPER/MIRROR	Page 4, Frame 37
POWER DISTRIBUTION	Page 1, Frame 7	POWER JACKS/SEAT	Page 5, Frame 38
STARTING/CHARGING	Page 1, Frame 8	WINDROW SHIELDS	Page 5, Frame 40
STARTING	Page 2, Frame 9	DRAPER HEADER	Page 5, Frame 41
GROUNDS	Page 2, Frame 10	PTO	Page 5, Frame 42
GROUNDS	Page 2, Frame 11	DRAPER HEADER	Page 5, Frame 43
GROUNDS	Page 2, Frame 12	DRAPER HEADER	Page 5, Frame 44
GROUNDS	Page 2, Frame 13	PROPULSION	Page 5, Frame 45
GROUNDS	Page 2, Frame 14	HEADER	Page 5, Frame 46
GROUNDS	Page 2, Frame 15	HEADER	Page 6, Frame 47
ENGINE MONITORING	Page 2, Frame 19	HEADER TILT	Page 6, Frame 48
PREHEAT/GRID HEATER	Page 2, Frame 20	AUTOGUIDANCE	Page 6, Frame 49
PROPULSION	Page 3, Frame 21	ATC	Page 6, Frame 50
PROPULSION	Page 3, Frame 22	HVAC	Page 6, Frame 51
HYDRAULIC	Page 3, Frame 23	HVAC	Page 6, Frame 52
BOOT UP	Page 3, Frame 24	HVAC	Page 6, Frame 53
MULTI-FUNCTION HANDLE	Page 3, Frame 25	RADIO	Page 6, Frame 54
SEAT/POWER TAKE-OFF	Page 3, Frame 26	SCREEN CLEANER	Page 6, Frame 55
HEADER	Page 3, Frame 28	CAN NETWORK	Page 7, Frame 56
PROPULSION	Page 3, Frame 29	FRED DISPLAY	Page 7, Frame 57
UCM	Page 4, Frame 29	4-LINE DISPLAY	Page 7, Frame 58
HEADER	Page 4, Frame 30	DRAPER HEADER	Page 7, Frame 64
CAB DOOR	Page 4, Frame 31		

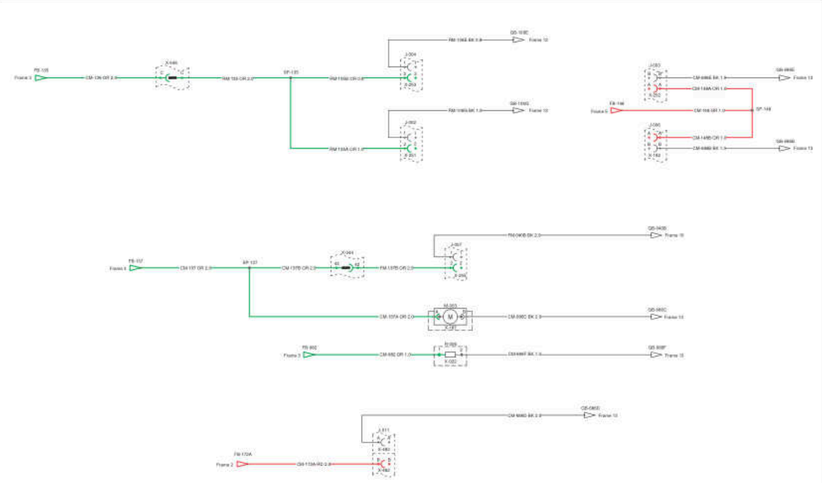


WIRING REFERENCES

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

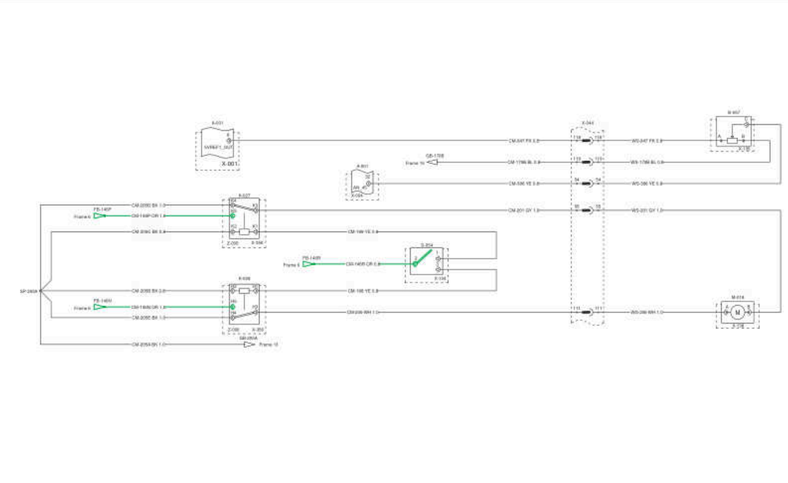
COMPONENT LEGEND

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



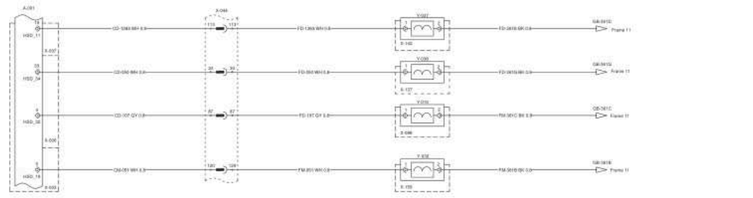
J-002 JACK, DIN SLOT B POWER
J-003 JACK, CONSOLE POWER
J-004 JACK, DIN SLOT C POWER
J-006 JACK, SEAT BASE POWER
J-007 JACK, SERVICE LIGHT, LEFT
J-011 JACK, CIGAR LIGHTER POWER
M-003 MOTOR, SEAT SUSPENSION PUMP
R-006 RESISTOR, SEAT HEAT

FRAME 38 - POWER JACKS/SEAT



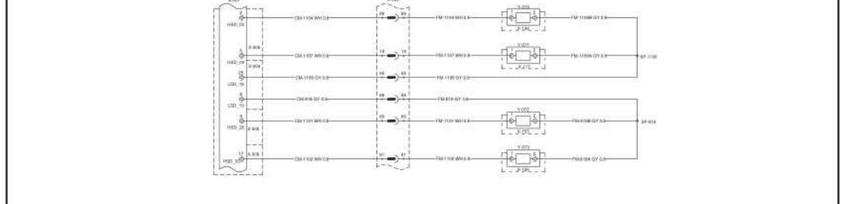
A-001 MODULE, UCM
B-057 SENSOR, WINDROW SHIELD POSITION
K-027 RELAY, WINDROW SHIELDS ACTUATOR EXTEND
K-029 RELAY, WINDROW SHIELDS ACTUATOR RETRACT
M-018 MOTOR, WINDROW SHIELDS
S-054 SWITCH, WINDROW SHIELDS

FRAME 40 - WINDROW SHIELDS



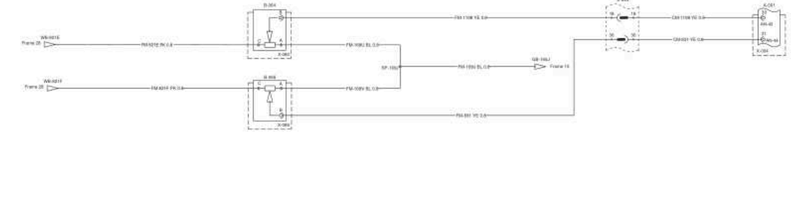
A-001 MODULE, UCM
Y-019 SOLENOID, SELECTOR FOR REEL HEIGHT AND LEFT CUT HEIGHT
Y-036 SOLENOID, CUT HEIGHT POSITION, LEFT
Y-037 SOLENOID, CUT HEIGHT POSITION, RIGHT
Y-038 SOLENOID, CUT HEIGHT, RIGHT SELECTOR

FRAME 41 - DRAPER HEADER



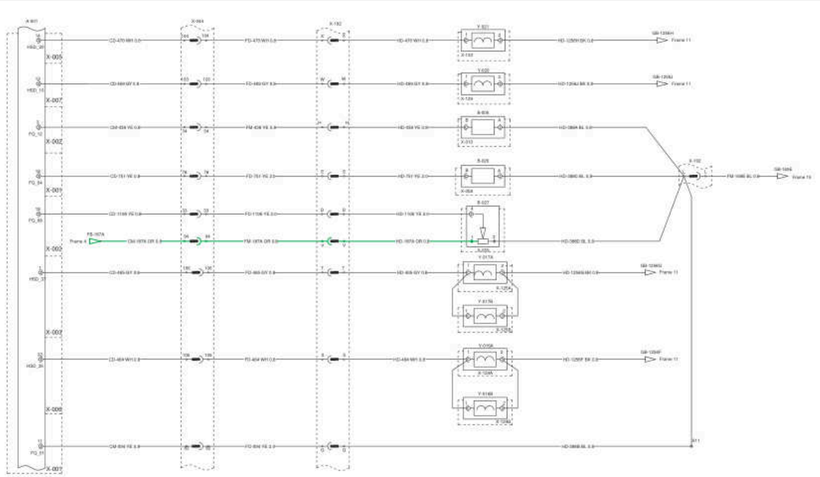
A-001 MODULE, UCM
Y-070 SOLENOID, PTO TANDEM PUMP LEFT SIDE FWD
Y-071 SOLENOID, PTO TANDEM PUMP LEFT SIDE REV
Y-072 SOLENOID, PTO TANDEM PUMP RIGHT SIDE FWD
Y-073 SOLENOID, PTO TANDEM PUMP RIGHT SIDE REV

FRAME 42 - PTO



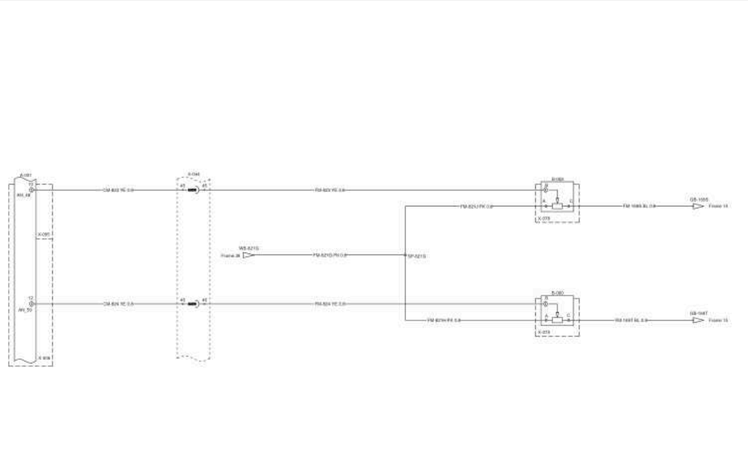
A-001 MODULE, UCM
B-064 SENSOR, SWASH PLATE ANGLE, PUMP 1
B-065 SENSOR, SWASH PLATE ANGLE, PUMP 2

FRAME 43 - DRAPER HEADER



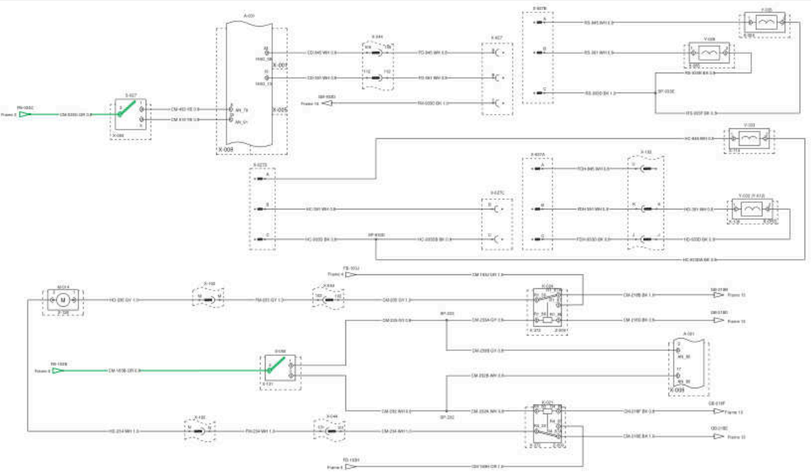
A-001 MODULE, UCM
B-005 SENSOR, HEADER KNIFE SPEED
B-026 SENSOR, HEADER REEL SPEED
B-027 SENSOR, DRAPER CANVAS SPEED
Y-016A SOLENOID, DECK SHIFT LEFT A
Y-016B SOLENOID, DECK SHIFT LEFT B
Y-017A SOLENOID, DECK SHIFT RIGHT A
Y-017B SOLENOID, DECK SHIFT RIGHT B
Y-020 SOLENOID, DRAPER REEL POSITION, AFT
Y-021 SOLENOID, DRAPER REEL POSITION, FORE

FRAME 44 - DRAPER HEADER



A-001 MODULE, UCM
B-059 SENSOR, SWASH PLATE ANGLE, LEFT (FRONT)
B-060 SENSOR, SWASH PLATE ANGLE, RIGHT (REAR)

FRAME 45 - PROPULSION



A-001 MODULE, UCM
K-021 RELAY, DRAPER HEADER CONVEYOR INCREASE
K-024 RELAY, DRAPER HEADER CONVEYOR DECREASE
M-014 MOTOR, DRAPER HEADER CONVEYOR SPEED
S-022 SWITCH, CANVAS SPEED INC/DEC
S-027 SWITCH, REEL MODE
S-050 SWITCH, DRAPER SPEED
Y-012 SOLENOID, HB REEL SPEED
Y-029 SOLENOID, SICKLE REEL SPEED
Y-032 SOLENOID, DRAPER CANVAS SPEED
Y-033 SOLENOID, DRAPER REEL HEIGHT
Y-035 SOLENOID, SICKLE REEL UNLOAD

FRAME 46 - HEADER

Order the manual at mid-west-tech.com >