SERVICE MANUAL

FR480 Forage Cruiser / FR550 Forage Cruiser / FR650 Forage Cruiser / FR780 Forage Cruiser
Tier 4B (final)
Forage Harvester

FR480 Forage Cruiser - From PIN 715912001 to 715923100
FR550 Forage Cruiser - From PIN 725912001 to 725923100
FR650 Forage Cruiser - From PIN 735912001 to 735923100
FR780 Forage Cruiser - From PIN 745912001 to 745923100

FR850 Forage Cruiser
Tier 2
Forage Harvester

FR850 Forage Cruiser - From PIN 555912001 to 555923100

Part number 48142788
English
April 2017

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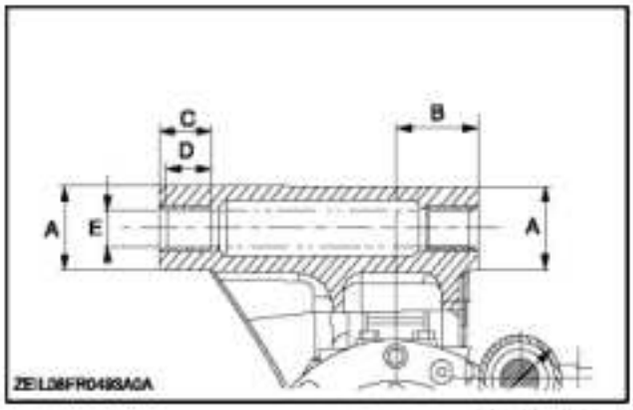
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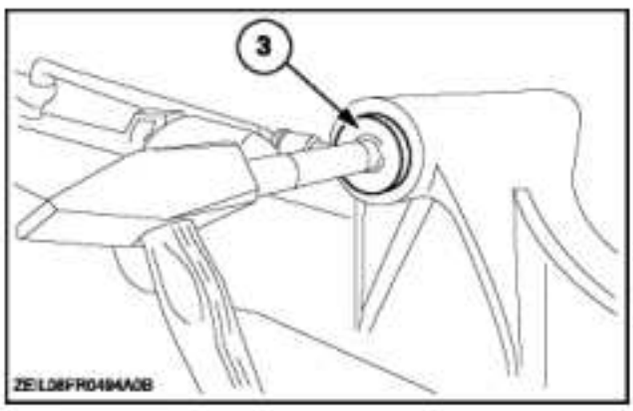
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3. The various dimensions in are listed below:
   - Diameter (A) = **90 mm** (**3.5 in**).
   - Length (B) = **90 mm** (**3.5 in**).
   - Length (C) = **57 mm** (**2.2 in**).
   - Length (D) = **50 mm** (**2.0 in**).
   - Diameter (E) = 40 H.8 **40.000 – 40.039 mm** (**1.575 – 1.576 in**).



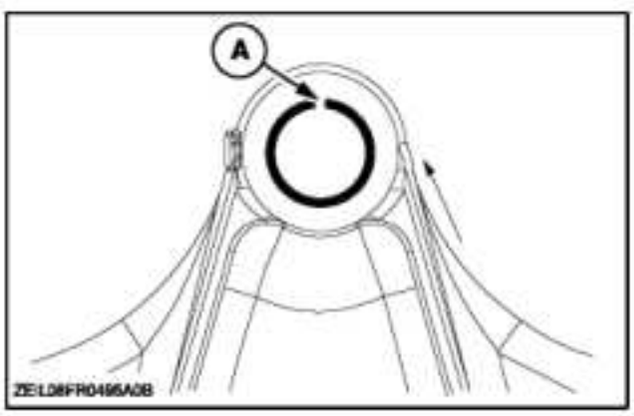
4

4. Install the bushing **(3)** and tighten it. If necessary, use a plastic hammer for keying the bushing.



5

The bushing notch "A" should be up as shown.



6

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Wiring harnesses - Electrical schematic sheet 55 SH55 - WASHER/WIPER, FRONT SCREEN

Type	Component	Connector / Link	Description
Motor	**M-601**	**X-601**	FRONT WIPER MOTOR
Motor	**M-604**	**X-604**	PUMP FRONT SCREEN WASHER
Switch	**S-802**	**X-802**	FRONT SCREEN WIPER
Switch	**S-803**	**X-803**	FRONT SCREEN WASHER
Connector	X-1005	**X-1005**	MAIN FUSE PRINT
Connector	X-1007	**X-1007**	MAIN FUSE PRINT
Connector	X-566A	**X-566A**	GROUND CAB ROOF
Connector	X-601	**X-601**	FRONT WIPER MOTOR
Connector	X-604	**X-604**	PUMP FRONT SCREEN WASHER MOTOR
Connector	X-802	**X-802**	SWITCH FRONT SCREEN WIPER
Connector	X-803	**X-803**	SWITCH FRONT SCREEN WASHER

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E1335-04 - Header CW (clockwise) slow, Voltage below normal or shorted to low source

FR480 Forage Cruiser	NA
FR550 Forage Cruiser	NA
FR650 Forage Cruiser	NA
FR780 Forage Cruiser	NA
FR850 Forage Cruiser	NA

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.*

Possible failure modes:

1. Faulty connector
2. Faulty wiring harness
3. Faulty command grip **A-009**
4. Faulty controller **A-004**

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. Using the command grip **A-009**, operate the following controls and check for the corresponding error codes:
   feedrolls forward, (error code E1332-4)
   header tilt cw slow, (error code E1335-4)
   shift, (error code E1342-4)
   header tilt cw fast, (error code E1345-4)

   A. If all four error codes are displayed, continue to Step **4**.

   B. If only error code E1335-4 is displayed, continue to Step **3**.

3. Using the command grip **A-009**, operate the following controls and check for the corresponding error codes:
   header tilt ccw slow, (error code E1334-4)
   header down fast, (error code E1326-4)
   header up slow, (error code E1325-4)
   header up fast, (error code E1324-4)
   lower resume, (error code E1323-4)
   header tilt cw slow, (error code E1335-4)
   header down slow, (error code E1327-4)

   A. If all seven error codes are displayed, continue to Step **5**.

   B. If only error code E1335-4 is displayed, remove and replace the command grip **A-009**.

4. Check for a short to ground.
   Disconnect the command grip **A-009** connectors. Check between the command grip **A-009** connector, wire WIR6 (PK) and ground.

   A. If a short to ground is indicated, repair or replace the wiring harness as required.

   B. If the wiring harness is okay, remove and replace the command grip **A-009**. If the fault is still present, download the correct level of software. If the fault recurs, remove and replace the controller **A-004**.

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Harvest material flow control system - Overview - Yield and moisture sensor (if equipped)

Item	Description
1.	Moisture sensor (see **B-185**). For the detailed view, see **Harvest material flow control system - Detailed view (55.426)**.
2.	Yield sensor (see **B-166**). For the exploded view, see **Harvest material flow control system - Exploded view (55.426)**.



2EPH17FR063GUA 1

For the calibration and configuration, see the operator's manual **Yield and Moisture - Setup and calibration (55.785)**

For the electrical schematics:

- For the moisture sensor, see **Wiring harnesses - Electrical schematic sheet 70 (55.100)**.
- For the yield sensor, see **Wiring harnesses - Electrical schematic sheet 19 (55.100)**.

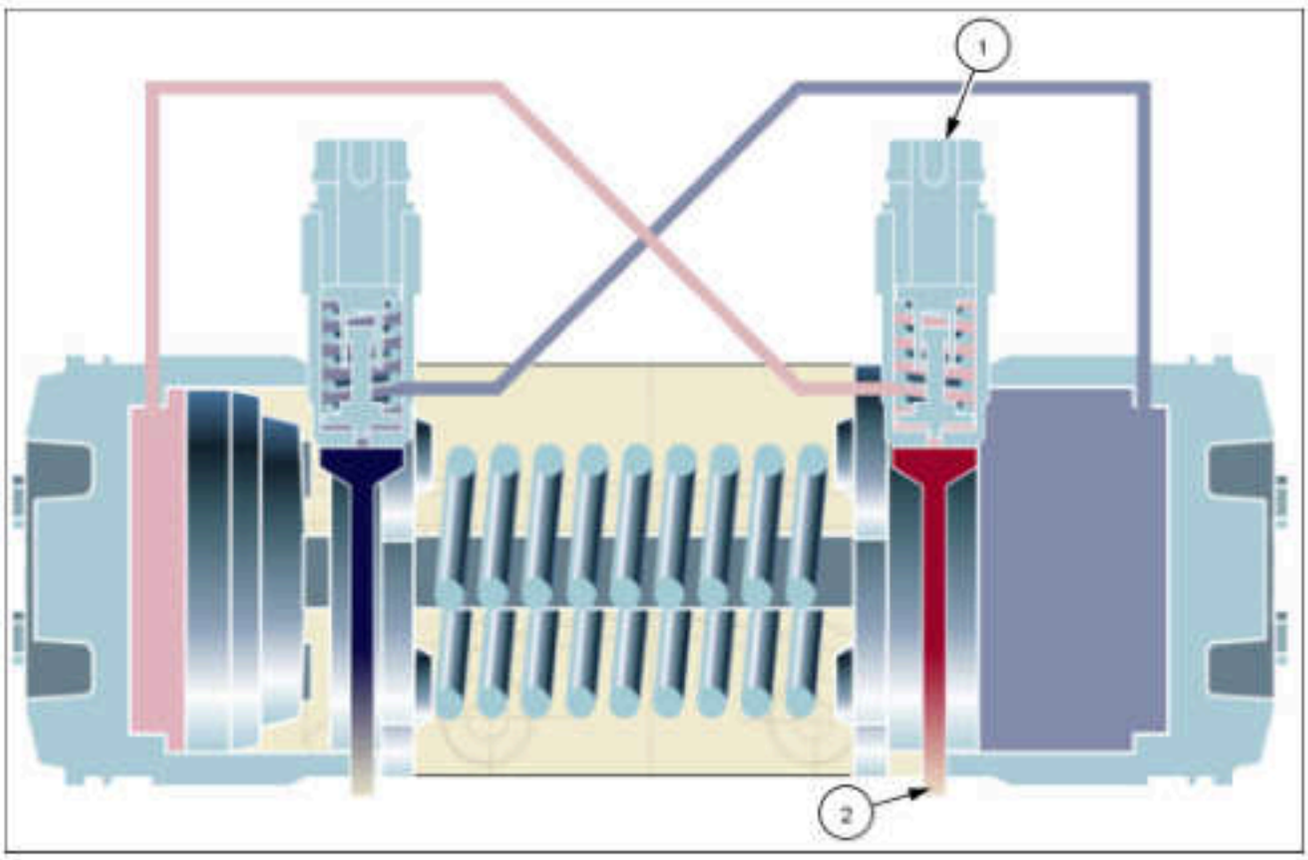
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Pump - Dynamic description - Pressure limiter valve

FR480 Forage Cruiser	NA
FR550 Forage Cruiser	NA
FR650 Forage Cruiser	NA
FR780 Forage Cruiser	NA
FR850 Forage Cruiser	NA

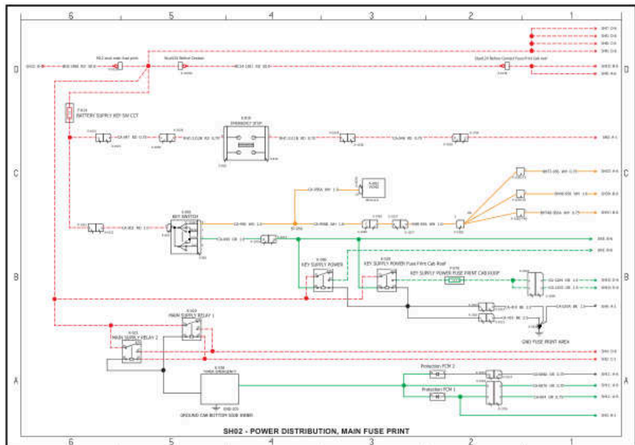
Normal operation

The machine is moving, but the pressure in the high pressure system **(2)** is lower than the pressure limiter valve **(1)** setting.

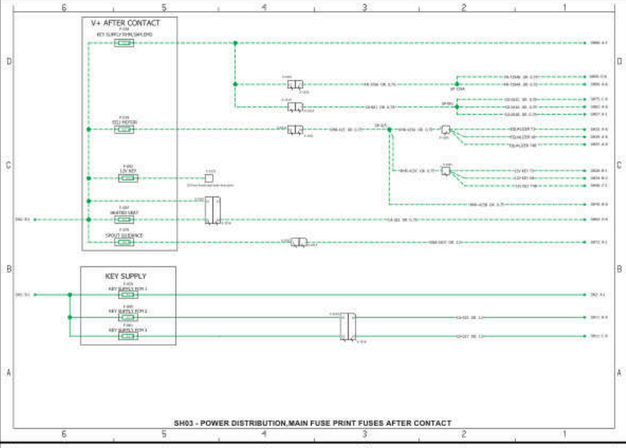


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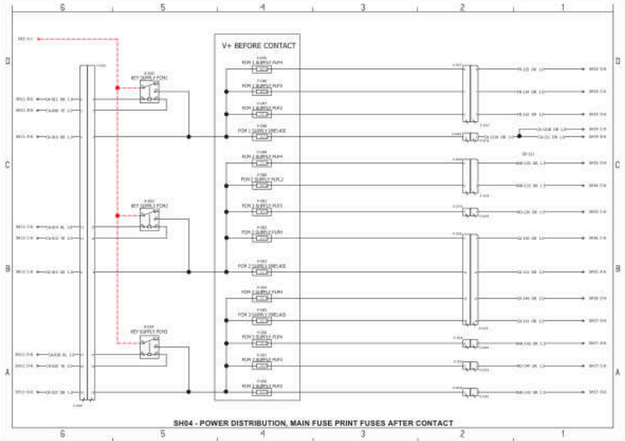
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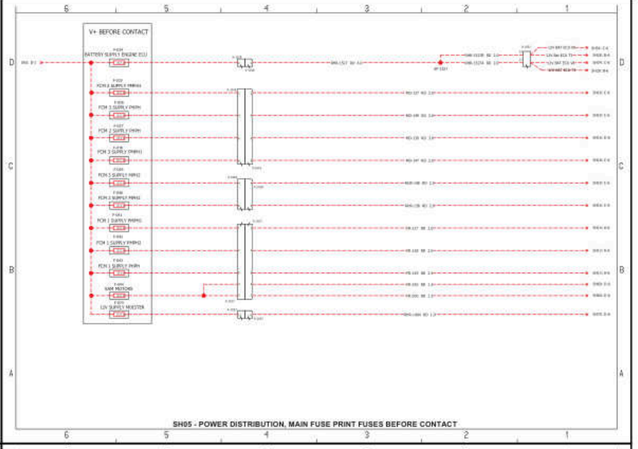
SH02 - POWER DISTRIBUTION, MAIN FUSE PRINT



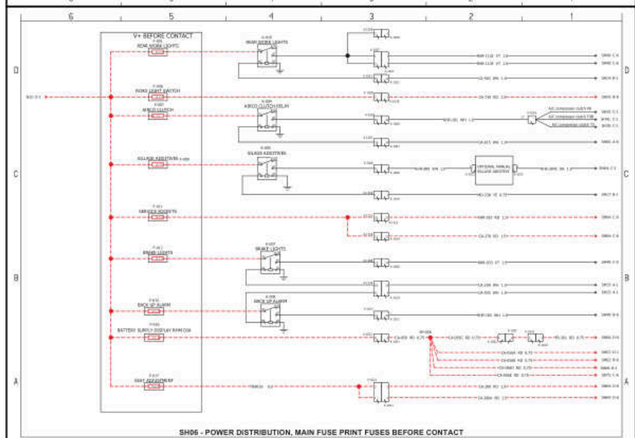
SH03 - POWER DISTRIBUTION,MAIN FUSE PRINT FUSES AFTER CONTACT



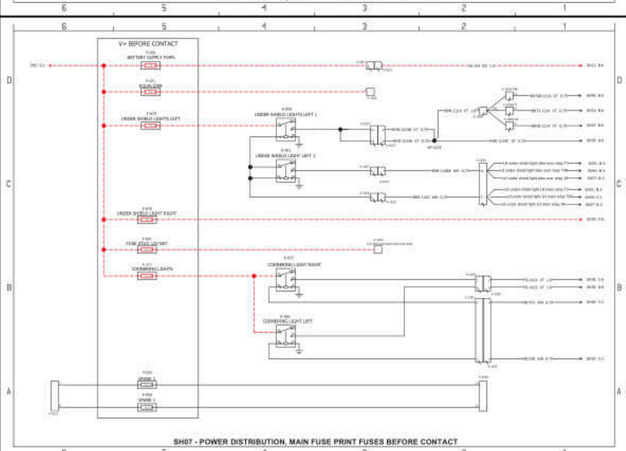
SH04 - POWER DISTRIBUTION, MAIN FUSE PRINT FUSES AFTER CONTACT



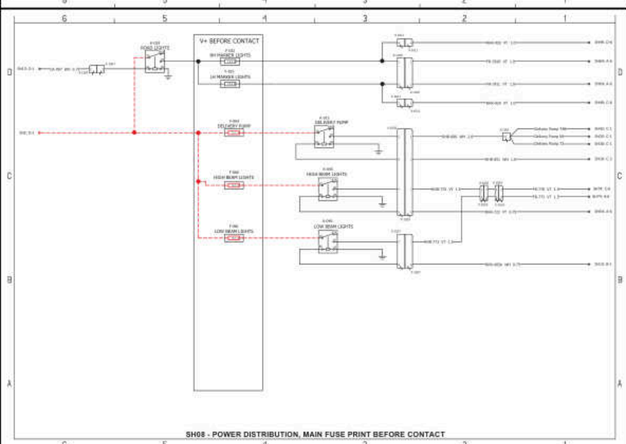
SH05 - POWER DISTRIBUTION, MAIN FUSE PRINT FUSES BEFORE CONTACT



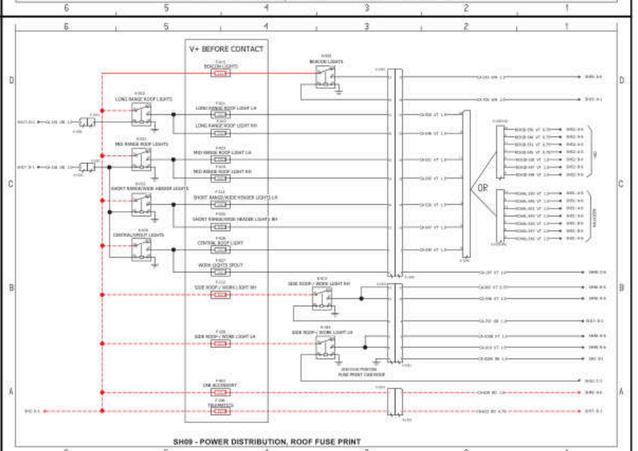
SH06 - POWER DISTRIBUTION, MAIN FUSE PRINT FUSES BEFORE CONTACT



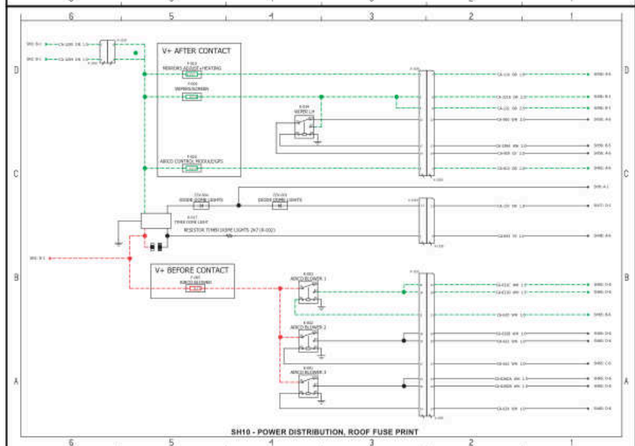
SH07 - POWER DISTRIBUTION, MAIN FUSE PRINT FUSES BEFORE CONTACT



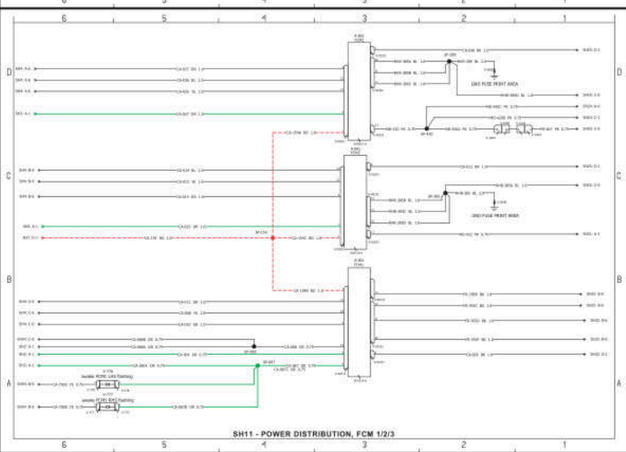
SH08 - POWER DISTRIBUTION, MAIN FUSE PRINT BEFORE CONTACT



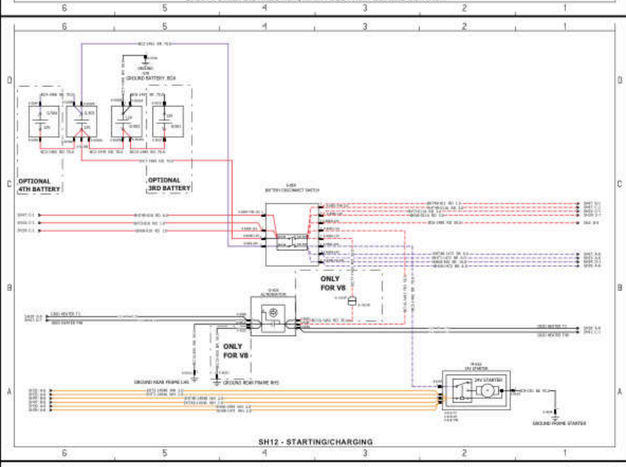
SH09 - POWER DISTRIBUTION, ROOF FUSE PRINT



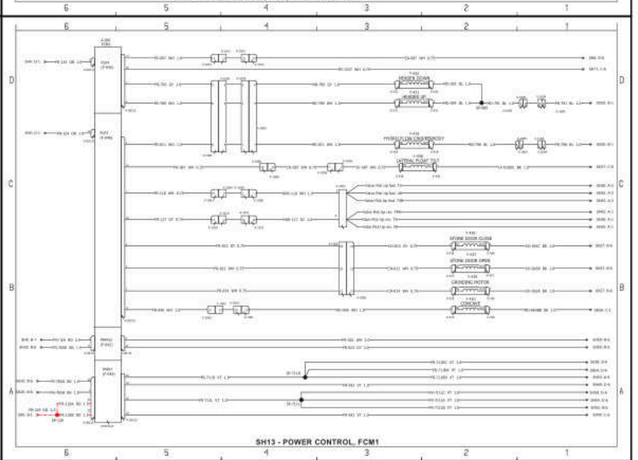
SH10 - POWER DISTRIBUTION, ROOF FUSE PRINT



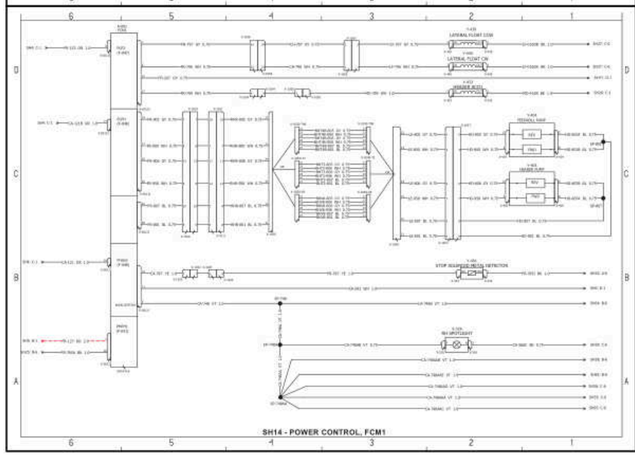
SH11 - POWER DISTRIBUTION, FCM 1/2/3



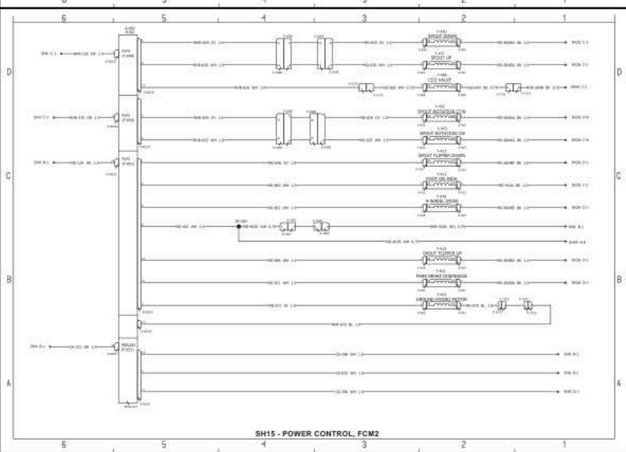
SH12 - STARTING/CHARGING



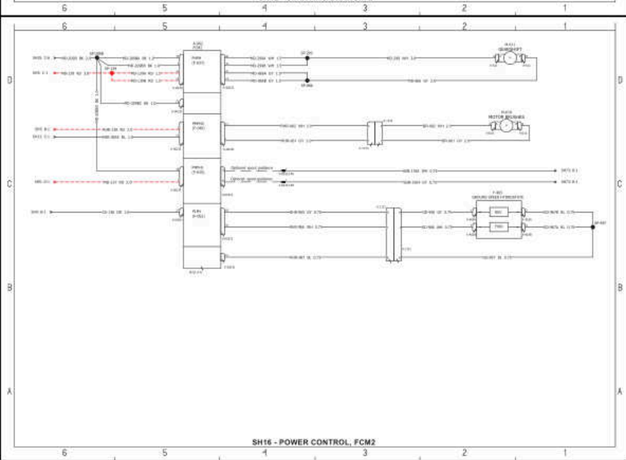
SH13 - POWER CONTROL, FCM1



SH14 - POWER CONTROL, FCM1



SH15 - POWER CONTROL, FCM2



SH16 - POWER CONTROL, FCM2

MY17 Self-Propelled Forage Cruisers
FR480, FR550, FR650, FR780 and FR850
48090723
ELECTRICAL SCHEMATIC, NORTH AMERICA

SCHEMATIC SHEET INDEX

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COMPONENT CODES

CODE	DESCRIPTION
A	CONTROL MODULE
B	BRAKE / PRESSURE CONTROLLER SWITCH
C	CLEARANCE LIGHT
D	DIODE
E	POWER SOURCE (i.e. ALTERNATOR, BATTERY)
GND	GROUND LOCATION
H	HUB BULB SHIELD
J	POWER DISTRIBUTION SOCKET
K	RELAY
L	METER/INDICATOR
M	MOTOR
P	PRESSURE CONTROLLED SWITCH
SP	SPLICE
T	DIODE
X	CONNECTOR
Y	SOLENOID

HARNESS PREFIX — WIRE NUMBER — WIRE SIZE (mm²) — WIRE COLOR

LOCATION — SHEET NUMBER

SCHEMATIC SYMBOLS

FUSE, LAMP, MOTOR, RESISTOR, DIODE, COIL, 3-PIN SENSOR, 2-PIN SENSOR, GROUND

WIRE COLORS

ABBREVIATION	DESCRIPTION
BK	BLACK
BL	BLUE
BR	BROWN
GN	GREEN
GY	GRAY
LB	LIGHT BLUE
LG	LIGHT GREEN
OR	ORANGE
PK	PINK
RD	RED
VI	VIOLET
WH	WHITE
YL	YELLOW

CIRCUIT COLOR INDEX

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IGNITION KEY ON
IGNITION KEY ON - AFTER CAB FUSIBLE RELAY
CRANKING
CRANKING - AFTER START RELAY
24V UNSWITCHED POWER
24V UNSWITCHED POWER - AFTER 12V BATTERY DISCONNECT

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