# MAGNUM 235
# MAGNUM 260
# MAGNUM 290
# MAGNUM 315
# MAGNUM 340

Tractor

# SERVICE MANUAL

**Part number 84533022**

English

July 2011

*Replaces part number 84474531*

CASE IH AGRICULTURE

MidWestTech | Case Magnum 235, 260, 290, 315, 340 Tractor Service Manual | Publication 84533022

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

| Fuse no. | Circuit | Fuse amp |
|---|---|---|
| 24 | Power mirror/radio | 10 |
| 25 | Tractor control unit (TCU) B+ | 20 |
| 26 | Suspended axle B+ | 5 |
| 27 | Front roof HID lights/roof side work lights | 20 |
| 28 | Tractor control unit (TCU) B+ | 20 |
| 29 | Seat heater | 10 |
| 30 | Side wiper | 10 |
| 31 | ISO 11783 | 10 |
| 32 | Tractor control unit (TCU) B+ | 5 |
| 33 | Right hand armrest control system (2) | 10 |
| 34 | True ground speed/radar | 5 |
| 35 | Autoguidance | 5 |
| 36 | Tractor control unit (TCU) B+ | 20 |
| 37 | Instrumentation cluster (2) | 5 |
| 38 | Tractor control unit (TCU) B+ | 15 |
| 39 | PTO control system | 15 |
| 40 | ECU control module | 10 |
| 41 | Trailer tail lamps | 20 |
| 42 | Data bus diagnostic connector | 10 |
| 43 | Brakes | 15 |
| 44 | Transmission control system | 20 |
| 45 | Display B+ | 10 |
| 46 | Right hand front post/right hand fender 3-pin connectors (2) | 30 |
| 47 | HVAC control module | 30 |
| 48 | Headliner shelf 3-pin connectors (2) | 20 |
| 49 | HVAC blower | 30 |
| 50 | Armrest control unit | 10 |
| 51* | Front wiper/washer | 15 |
| 52 | Rear/side wiper/washer | 20 |
| 53 | Egress lighting | 30 |
| 54 | FNR switched B+ | 15 |
| 55 | Tractor control unit (TCU) switched B+ | 20 |
| 56 | Tractor control unit (TCU) B+ | 20 |

(1) - Unswitched power (continuous)

(2) - Power available when key switch is in the on position.

* = Circuit breaker



MidWestTech | Case Magnum 235, 260, 290, 315, 340 Tractor Service Manual | Publi... Order the manual at mid-west-tech.com >

## Wiring harness - Electrical schematic frame 55 - ISO 11783 outside harness

| | |
|---|---|
| Connector **X-282** | Tractor ECU |
| Connector **X-289** | Implement bus breakaway |
| Connector **X-292** | Implement low power relay #32 |
| Connector **X-293** | Implement high power relay #31 |
| Connector **X-386A** | To GPS receiver |



MidWestTech | Case Magnum 235, 260, 290, 315, 340 Tractor Service Manual | Publication 84533022
Order the manual at mid-west-tech.com >

# 4312-Rear remote no. 6 - internal position sensor faulty

***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 spool position potentiometer
2. Faulty EHR valve section

**Solution:**

1. Check for other active EHR error code(s).

   Make a note of the error code(s), clear the error code(s) and test the system for normal operation.

   A. Fault code does not re-display. Return unit to field operation and monitor.

   B. Fault codes re-displays. Continue to step **2**.
2. Download the correct level of software and configure the EHR valve.

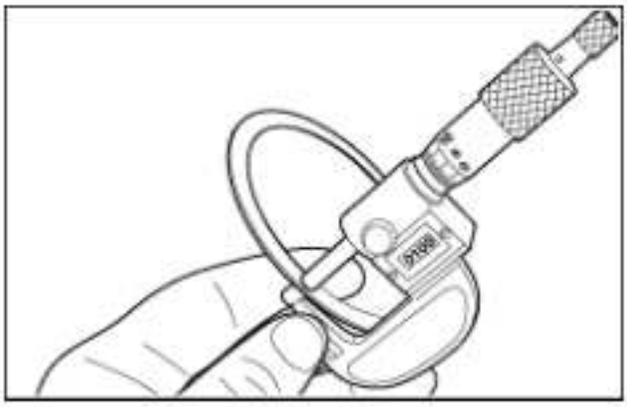
   A. System operates normally: no fault codes display. Return unit to field operation.

   B. Fault codes re-displays. Install and configure a new EHR valve section.



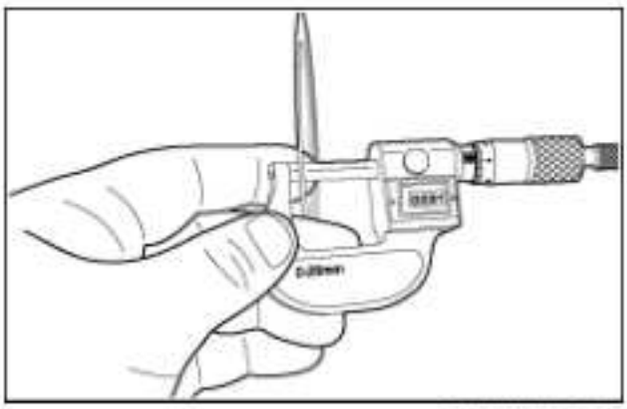
MidWestTech | Case Magnum 235, 260, 290, 315, 340 Tractor Service Manual | Publi... Order the manual at mid-west-tech.com >

10. Measure the thickness of the belleville washer spacer.



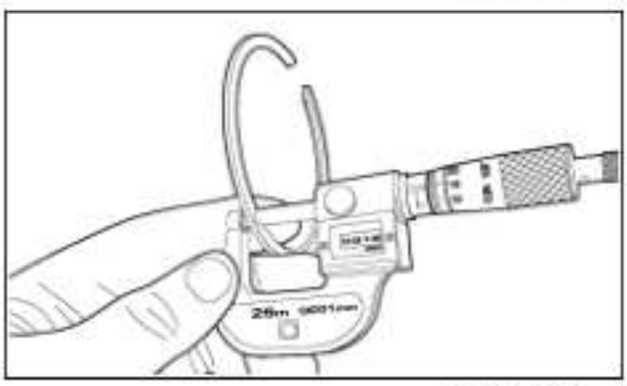
9

11. Measure the thickness of the snap ring retainer.



10

12. Measure the thickness of the snap ring.



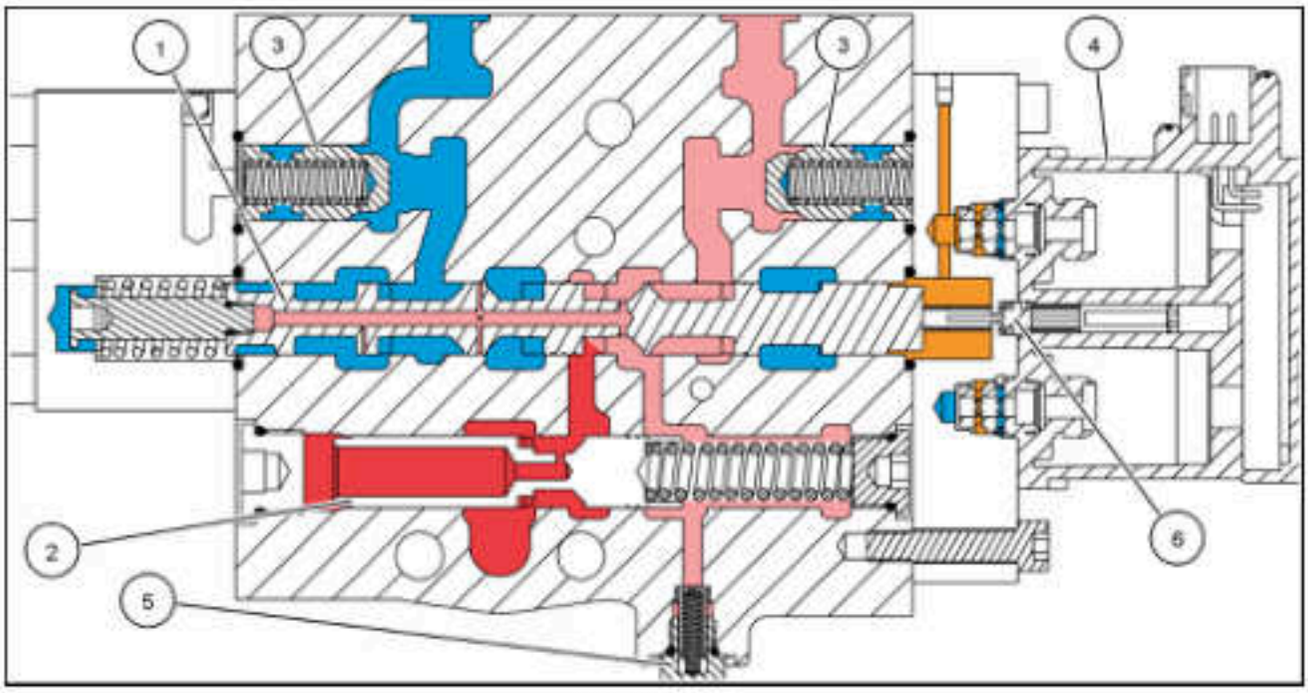
11

13. Add the thicknesses together for all components; and subtract this total from the piston face to retainer ring measurement. Example:

| | |
|---|---|
| Required Gap Range: **0 - 0.60 mm** (**0 - 0.024 in**) (See Step **1**.) | |
| Add the thicknesses together: | |
| Belleville washer **3.72 mm** (**0.146 in**) x 4 = | **14.88 mm** (**0.585 in**) |
| Spacer | **1.03 mm** (**0.041 in**) |
| Snap ring retainer | **2.47 mm** (**0.097 in**) |
| Snap ring | **3.15 mm** (**0.124 in**) |
| Total | **21.53 mm** (**0.848 in**) |
| Subtract the thickness measured from the distance measured: | |
| Measured distance [piston face to the top of the retainer ring] **23.5 mm** (**0.925 in**) - measured thickness **21.53 mm** (**0.847 in**) = **1.97 mm** (**0.0776 in**) | |
| Use a shim pack thickness which maintains the required gap of **0 - 0.60 mm** (**0 - 0.024 in**). In this example, shim pack thickness should be **1.5 mm** (**0.059 in**). This provides a gap of **0.47 mm** (**0.019 in**). | |



MidWestTech | Case Magnum 235, 260, 290, 315, 340 Tractor Service Manual | Publi... Order the manual at mid-west-tech.com >




RCIL08CCH015GAE 5

| | |
|---|---|
| PFC pump pressure | Return to tank pressure |
| Remote valve operating pressure | Trapped oil |
| Pilot pressure | |
| 1. Main valve spool | 4. Extend/retract solenoid valve assembly with micro processor |
| 2. Flow control spool | 5. Signal check |
| 3. Lock check | 6. Spool position sensor |

## Retract position

When the remote control lever is moved to the retract position, the main valve spool shifts to the right a fixed distance by supply pressure from the retract solenoid valve. The main spool position is based on input from armrest controller, spool position sensor and the extend/retract valve solenoid assembly with micro processor. The position of the main valve spool determines the flow rate to the retract port.

At the same time, work pressure is communicated to the signal check through the center drilled passage in the main valve spool. The signal check is forced off the seat and signal pressure is directed to the pump compensator to increase pump flow.

Also as the main spool begins to shift, any pressure trapped on the spring end of both lock checks is drained to tank. The flow exiting the retract port is now in a free flow condition shifting the lock check and out the retract port: Return oil from the extend coupler is directed into the extend port, shifting lock check to right, continuing past the spool and returning to tank.



MidWestTech | Case Magnum 235, 260, 290, 315, 340 Tractor Service Manual | Publi... Order the manual at mid-west-tech.com >

# Wiring harness - Electrical schematic frame 93 - Color legends and abbreviations

**Color legend**

| | |
|---|---|
| | INDICATES CONSTANT POWER |
| | INDICATES POWER WHEN THE KEY SWITCH IS ON |
| | INDICATES POWER WHEN THE KEY SWITCH IS IN THE START POSITION |
| | INDICATES 24V CIRCUIT |

**Color abbreviations**

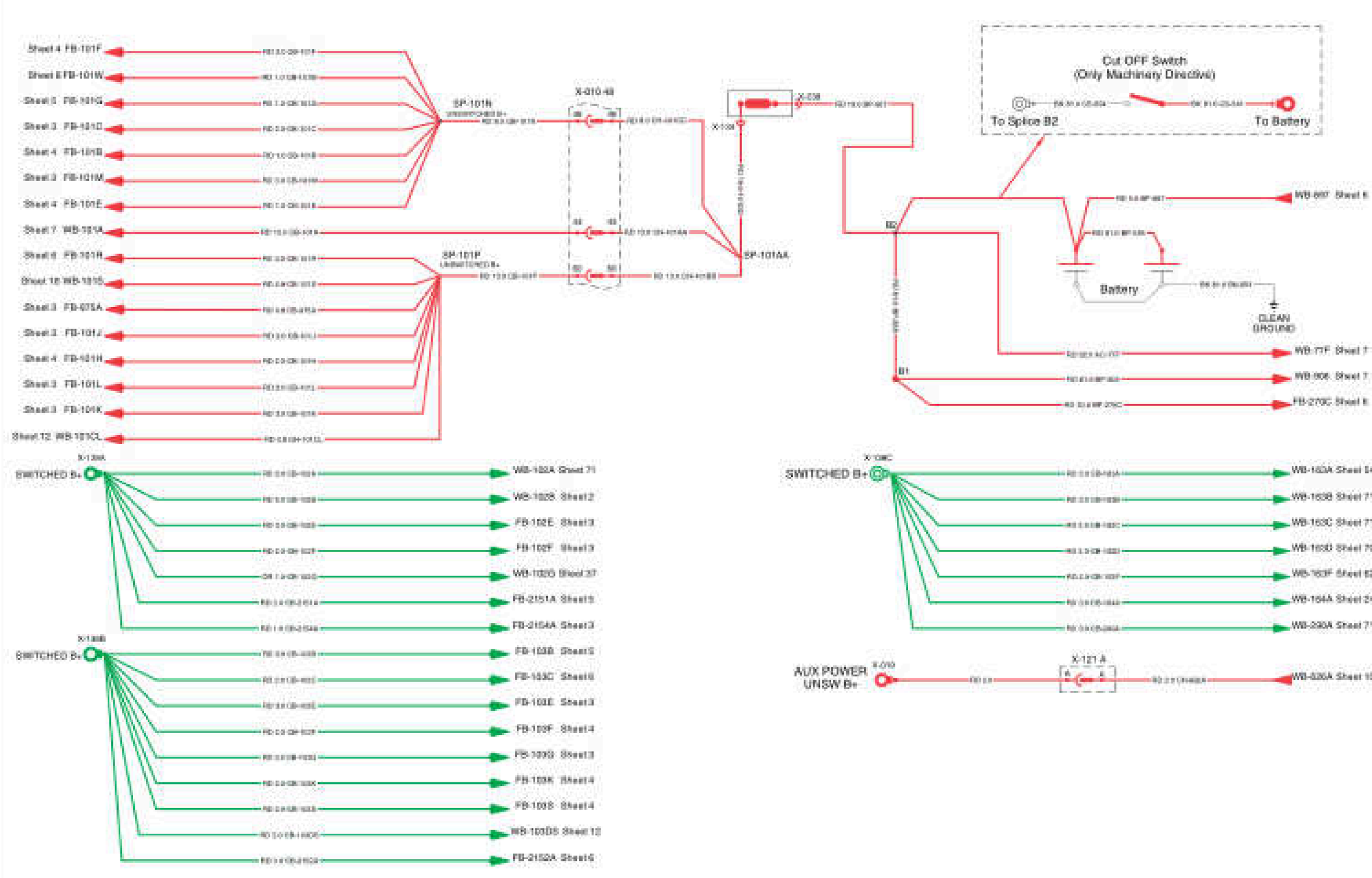
| Abbreviation | Color | | Abbreviation | Color |
|---|---|---|---|---|
| RD | Red | | OR | Orange |
| TN | Tan | | PK | Pink |
| WH | White | | VT | Violet (purple) |
| YE | Yellow | | BL | Dark blue |
| BK | Black | | LB | Light blue |
| GY | Gray | | GN | Green |

**Harness name**

| Abbreviation | Harness | | Abbreviation | Harness |
|---|---|---|---|---|
| CH | Chassis | | SD | Secondary can diagnostic |
| CB | Cab — Magnum/T8. series | | CR | Cab roof — T8. series |
| EN | Engine | | DS | Beacon (dual strobe) |
| HA | Alternator | | FA | Front aux |
| CG | Clutch gnd | | FP | Front PTO |
| AU | Aux — Magnum/T8. series | | SA | Suspended Axle |
| HL | Headlight — Magnum series | | FR | Fender right hand — EURO |
| HN | Headlamp — T8. series NAO | | FL | Fender left hand — EURO |
| HE | Headlamp — T8. series EURO | | LF | Left fender — NAO |
| HT | Can terminator | | RF | Right fender — NAO |
| SW | SWCD | | GP | GPS Antenna |
| AG | Autoguidance outside | | AR | Armrest |
| IS | ISO outside | | EL | EDC link |
| AI | Inside autoguidance | | SS | Steering sensor |
| AN | Adapter, 7-pin — NAO | | AH | Aux headlight |
| AE | Adapter, 7-pin — EURO | | FB | Fuse box (GEP) |
| BA | Backup alarm | | HF | Flasher jumper |
| TR | Terminal (CODI) | | HS | Shelf |
| SB | Secondary can bus | | TB | Trailer brakes |



MidWestTech | Case Magnum 235, 260, 290, 315, 340 Tractor Service Manual | Publi... Order the manual at mid-west-tech.com >




POWER DISTRIBUTION 1




POWER DISTRIBUTION 2



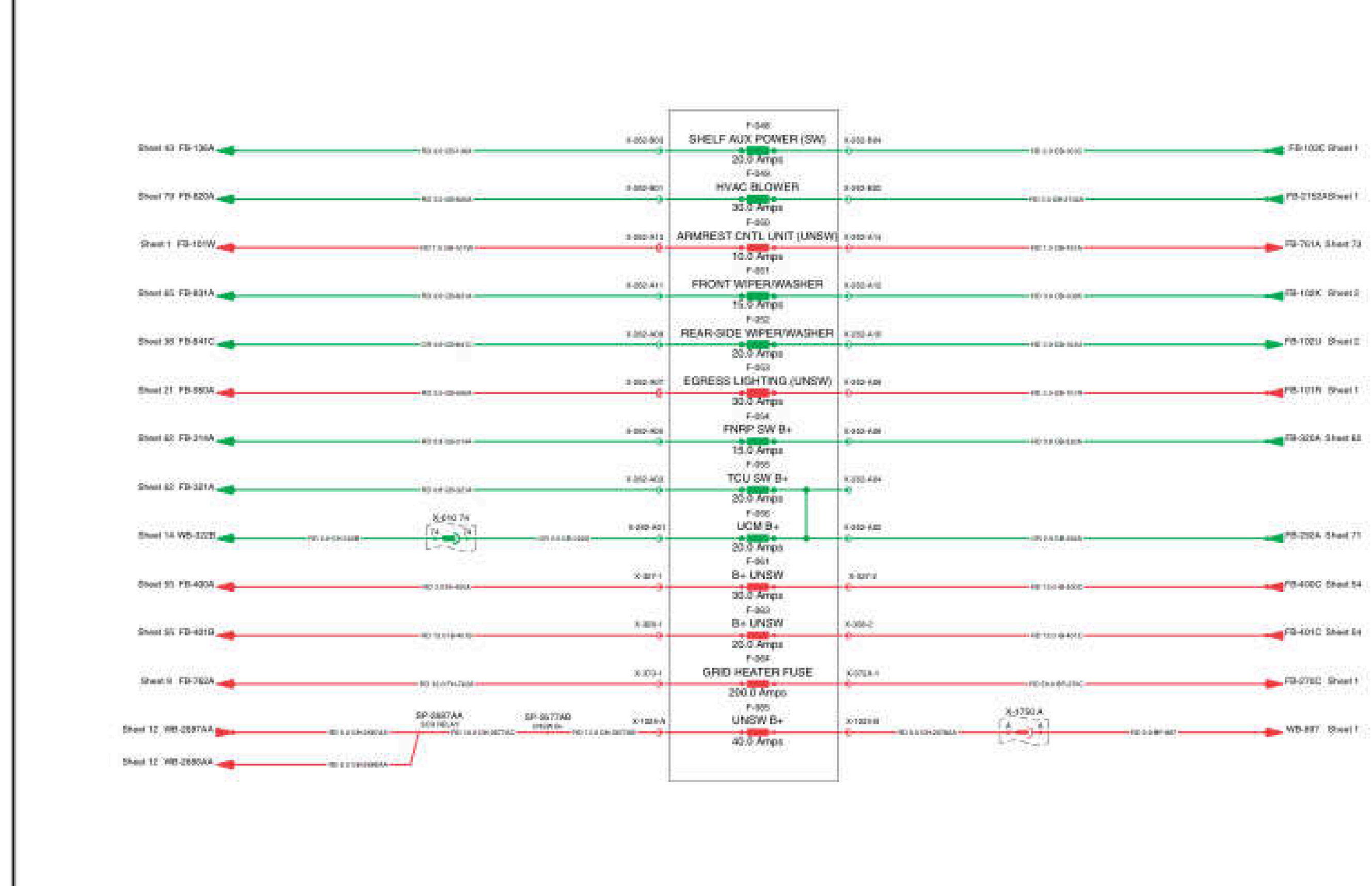

POWER DISTRIBUTION - FUSES 1 TO 15 3



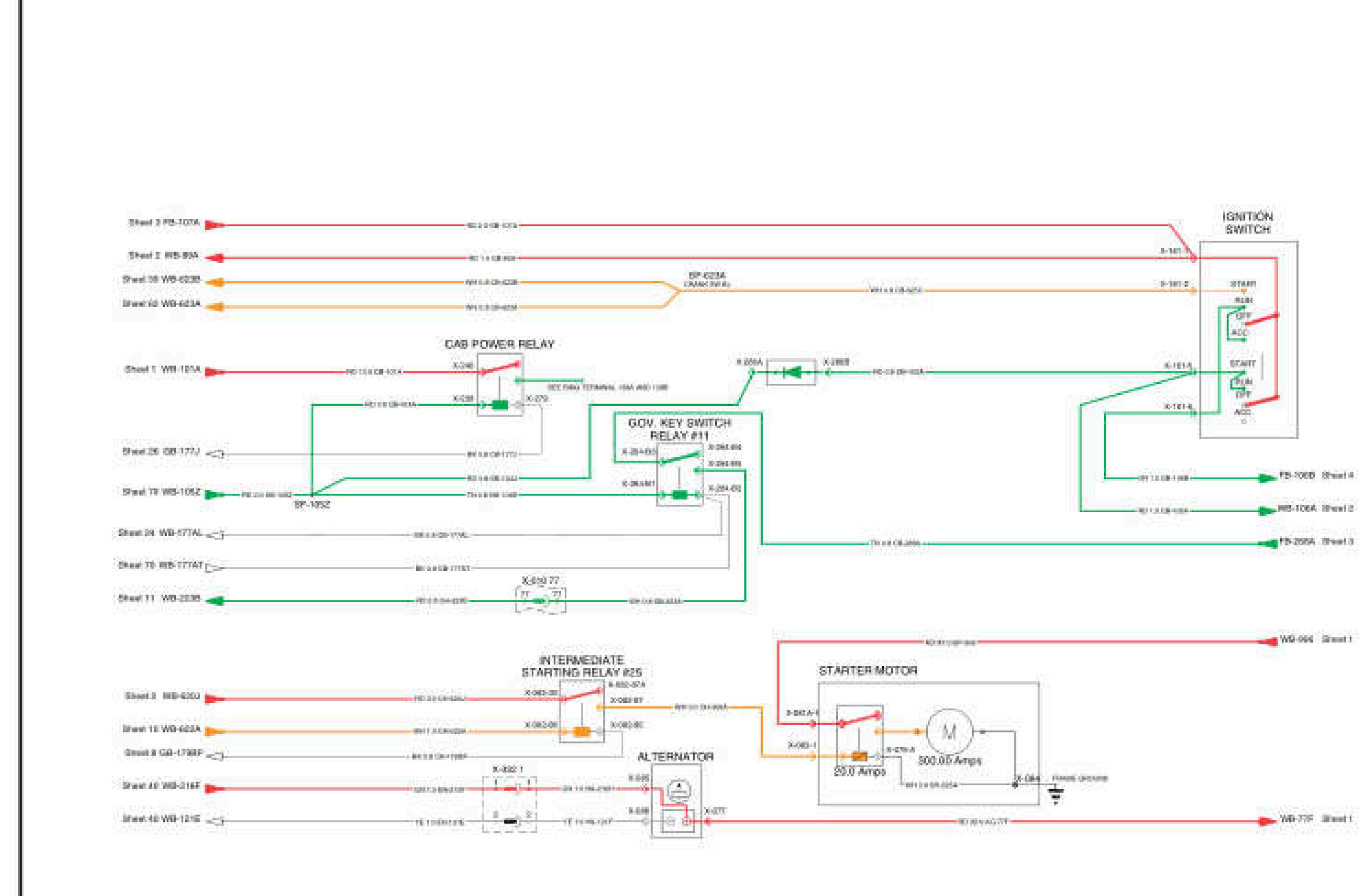

POWER DISTRIBUTION - FUSES 16 TO 32 4



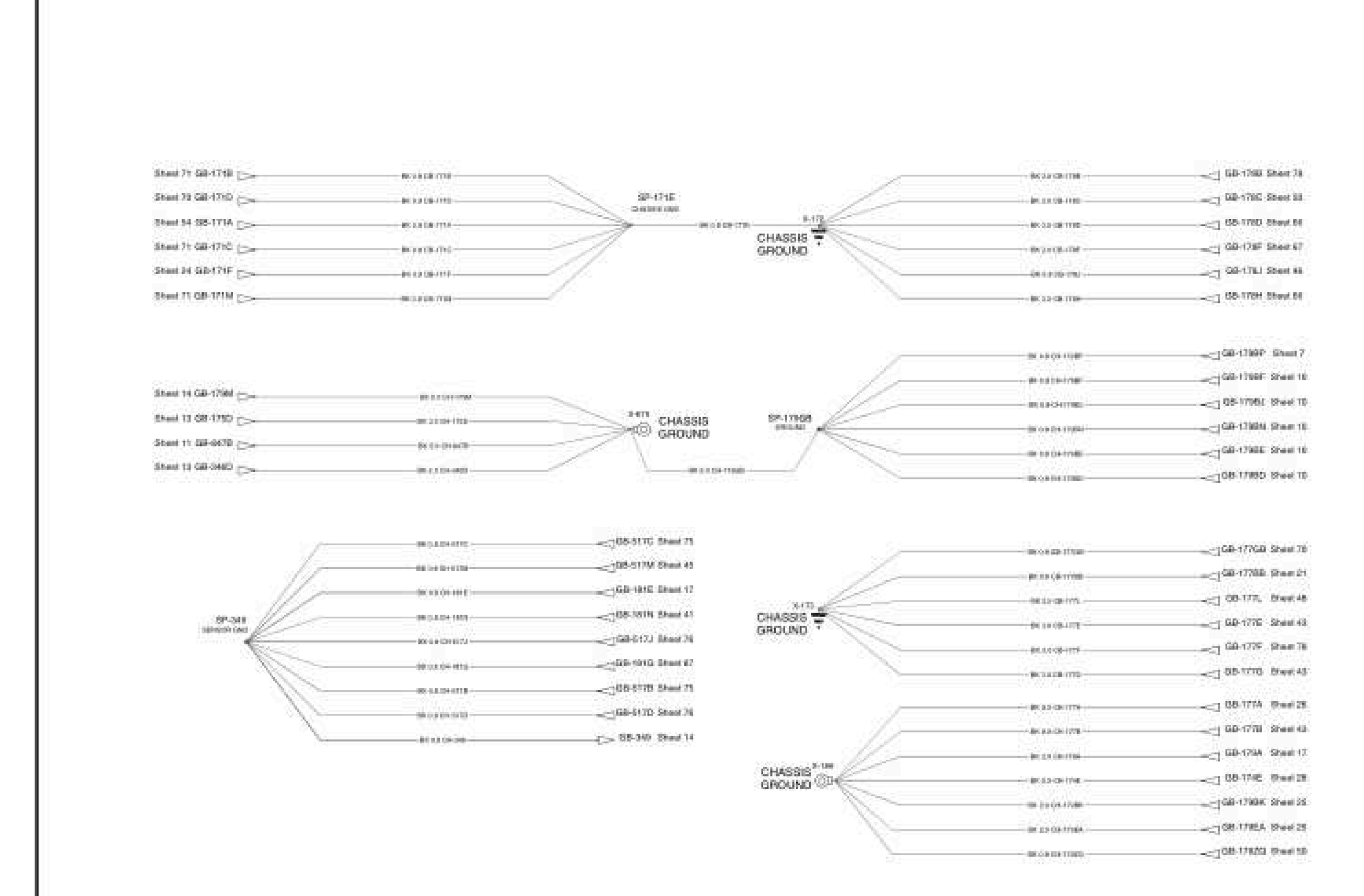

POWER DISTRIBUTION - FUSES 33 TO 47 5



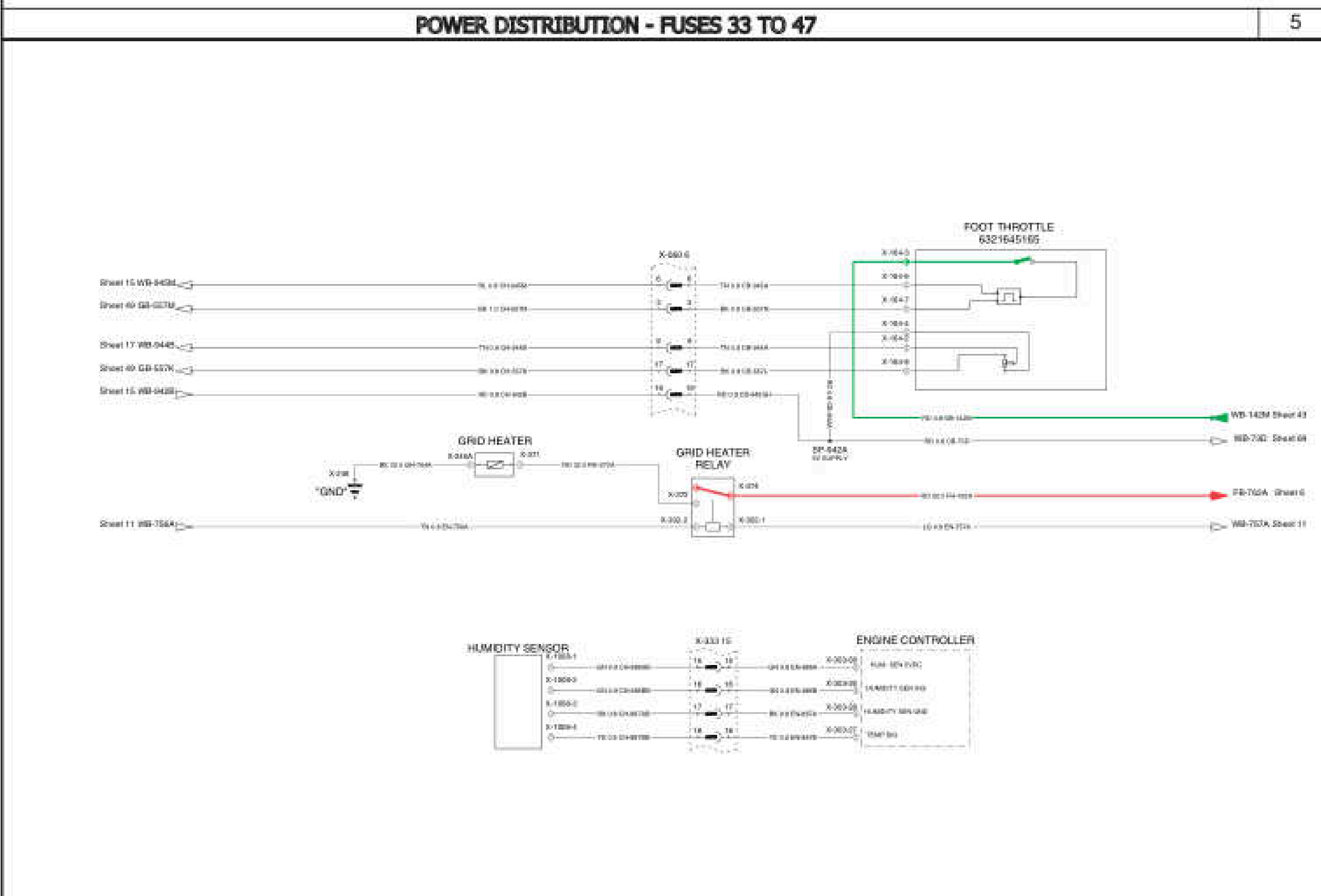

POWER DISTRIBUTION - FUSES 48 TO 65 6



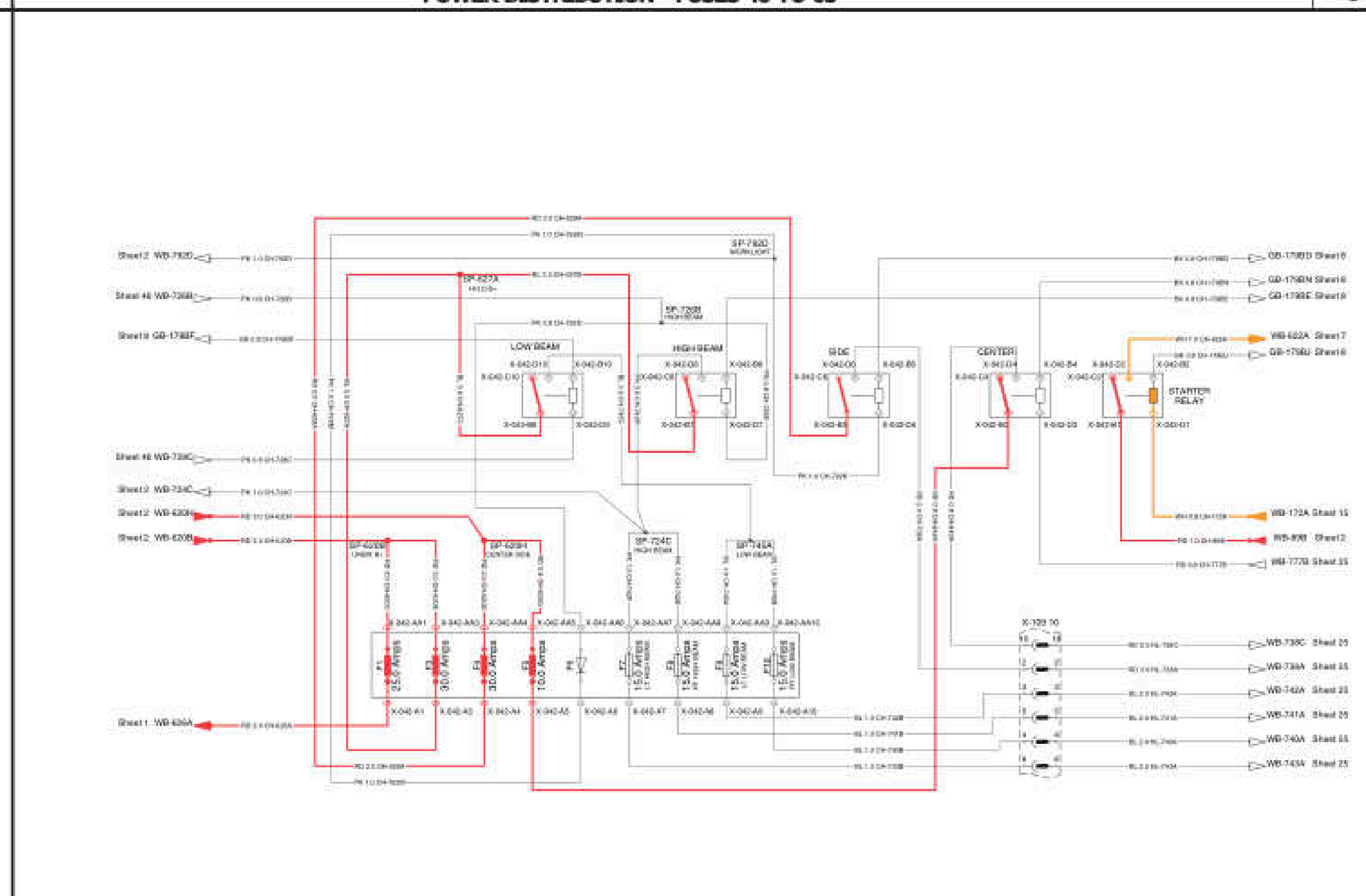

STARTING/CHARGING SYSTEM 7



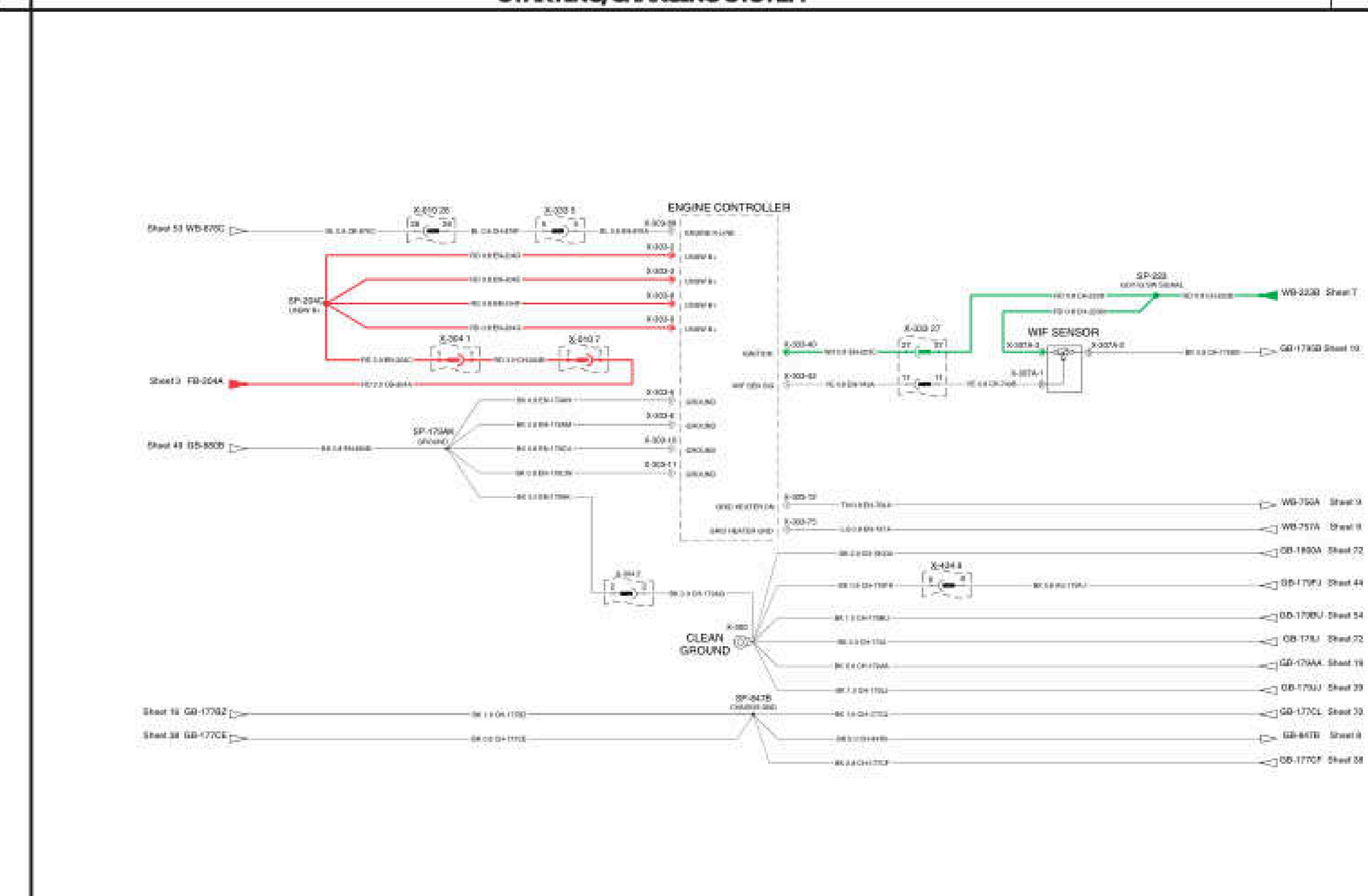

GROUNDING SYSTEM 8



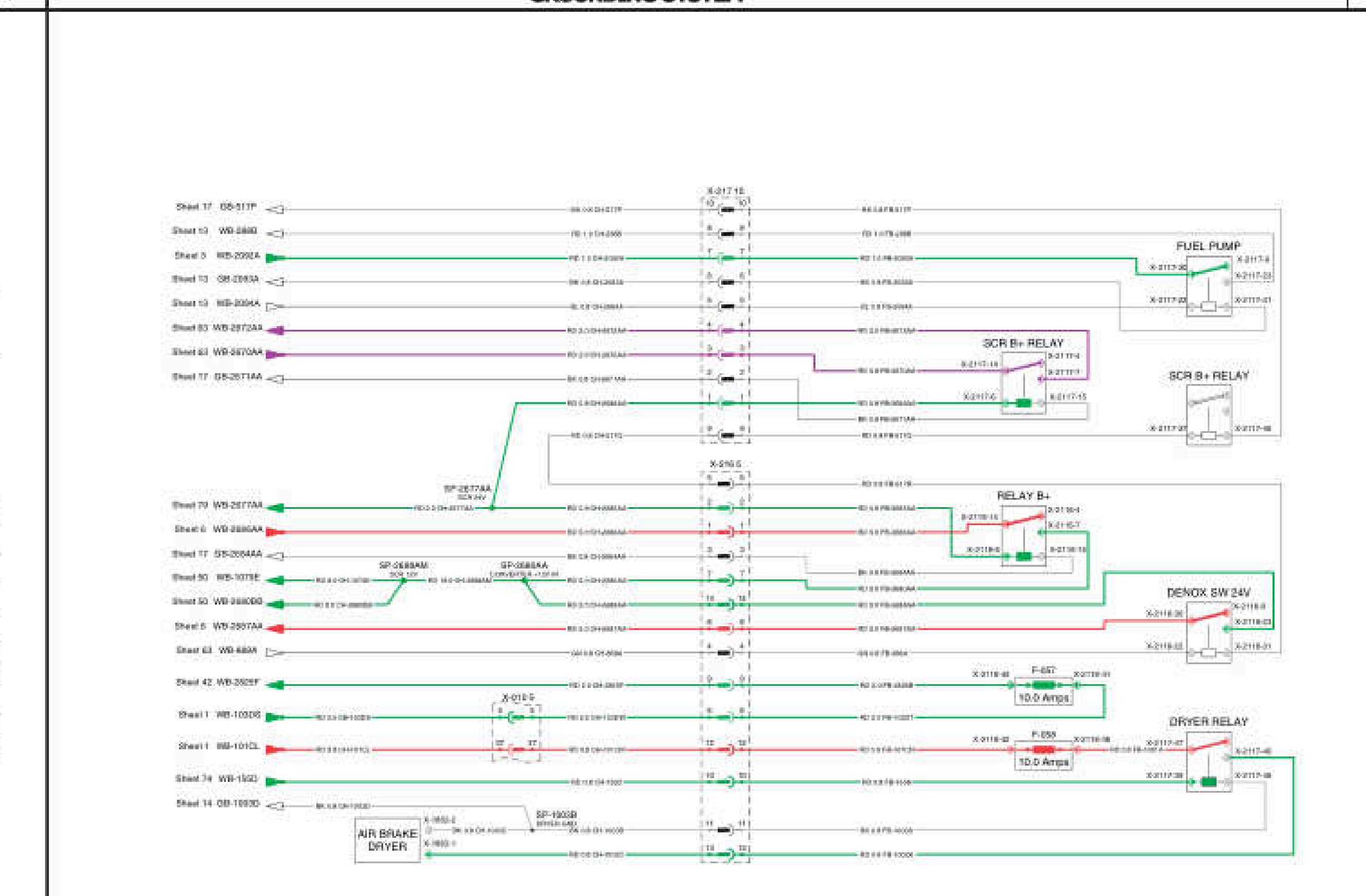

ELECTRONIC ENGINE 9



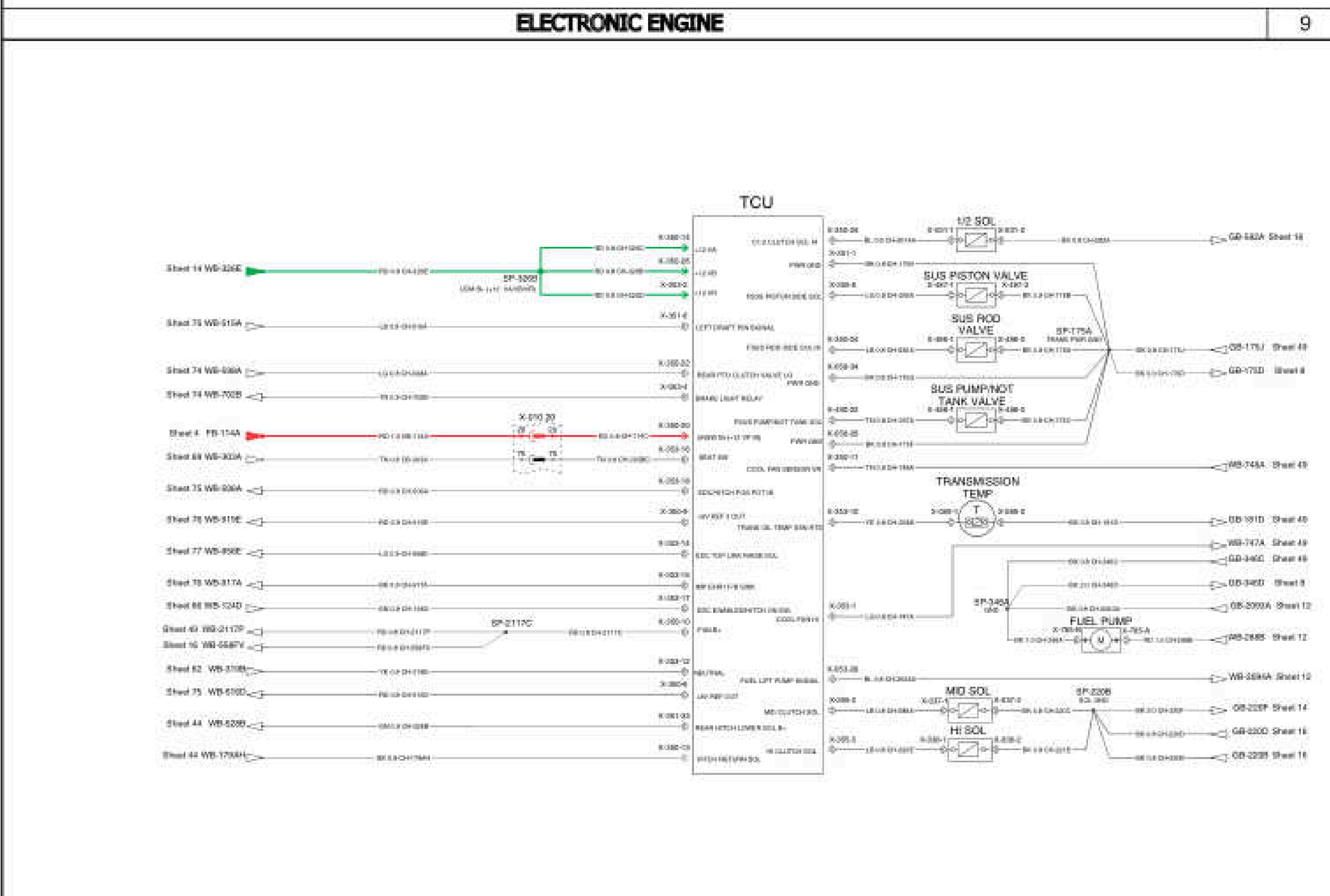

ENGINE FUSE BOX 10



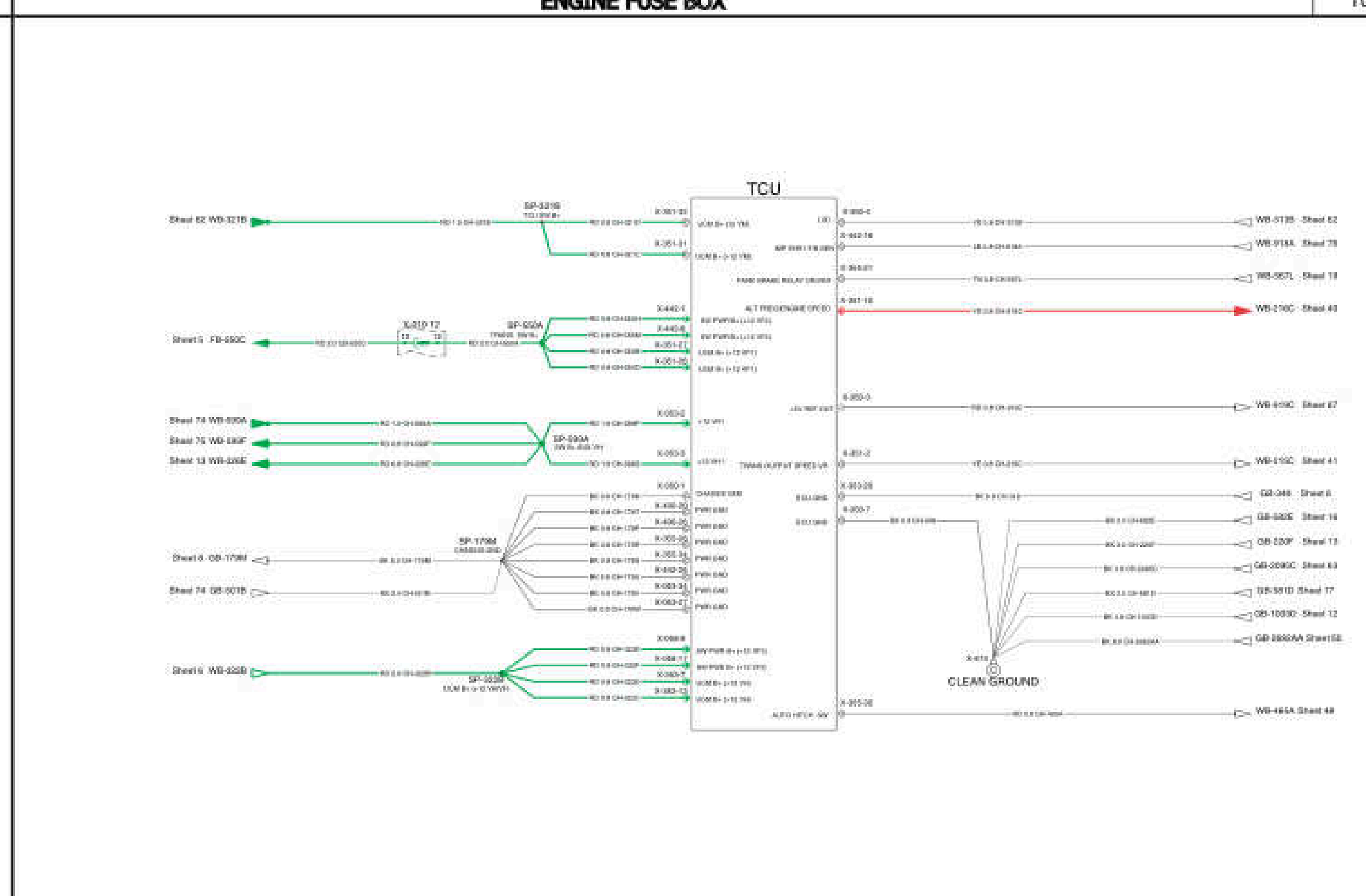

ELECTRONIC ENGINE CONTROLLER 11



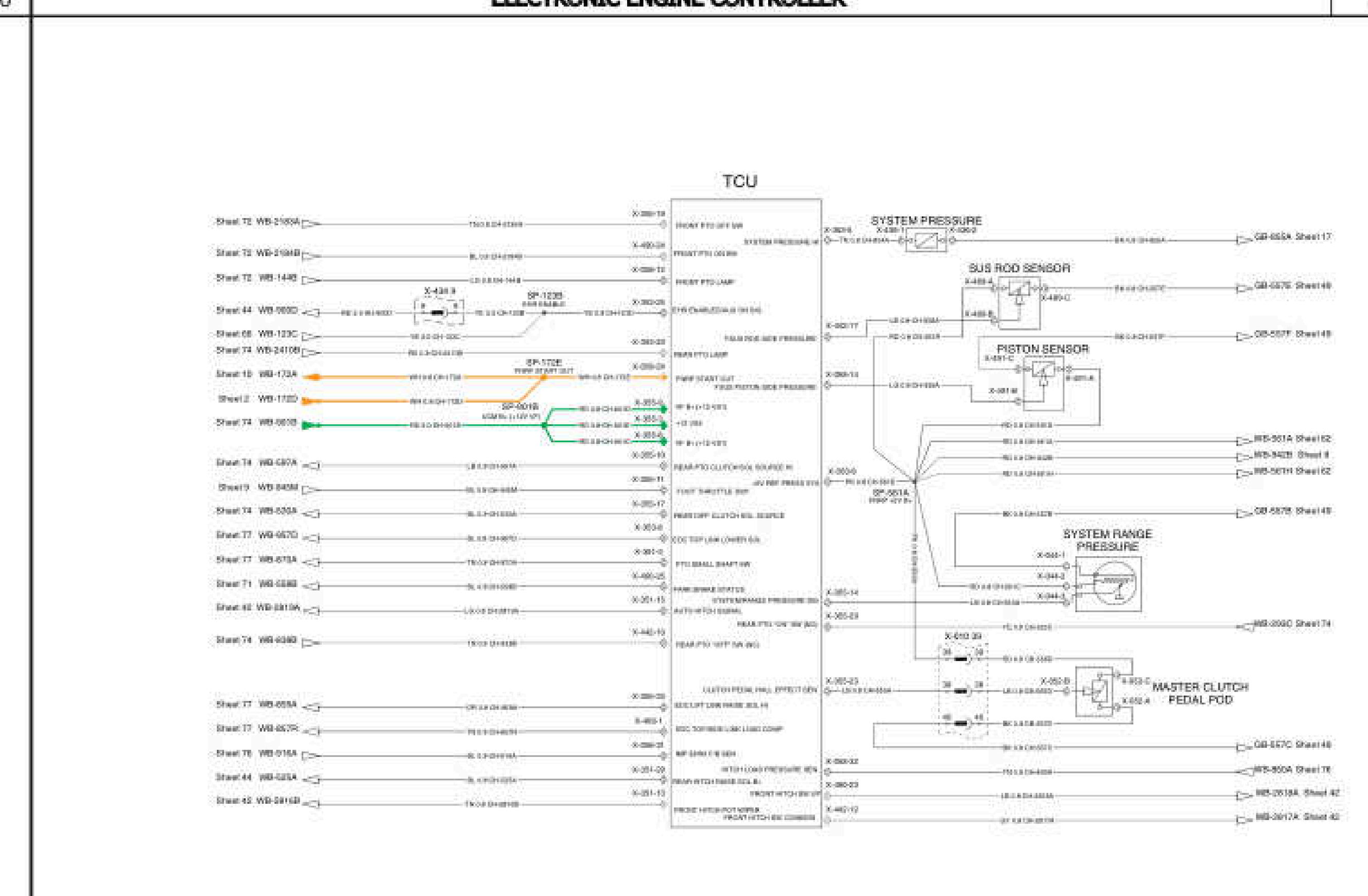

FUSES AND RELAYS BOX 12




POWER SHIFT TRANSMISSION CONTROL SYSTEM 13




POWER SHIFT TRANSMISSION CONTROL SYSTEM 14




POWER SHIFT TRANSMISSION CONTROL SYSTEM 15

# MAGNUM 235, 260, 290, 315 AND 340 TRACTOR SERIES ELECTRICAL SCHEMATIC RAC 84414787

## LEGEND

INDICATES CONSTANT POWER (red)

INDICATES POWER WHEN KEY SWITCH IS ON (green)

INDICATES POWER WHEN KEY SWITCH IS IN START POSITION (orange)

INDICATES 24 VOLT CIRCUIT (purple)

RAC84414787S1S1



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