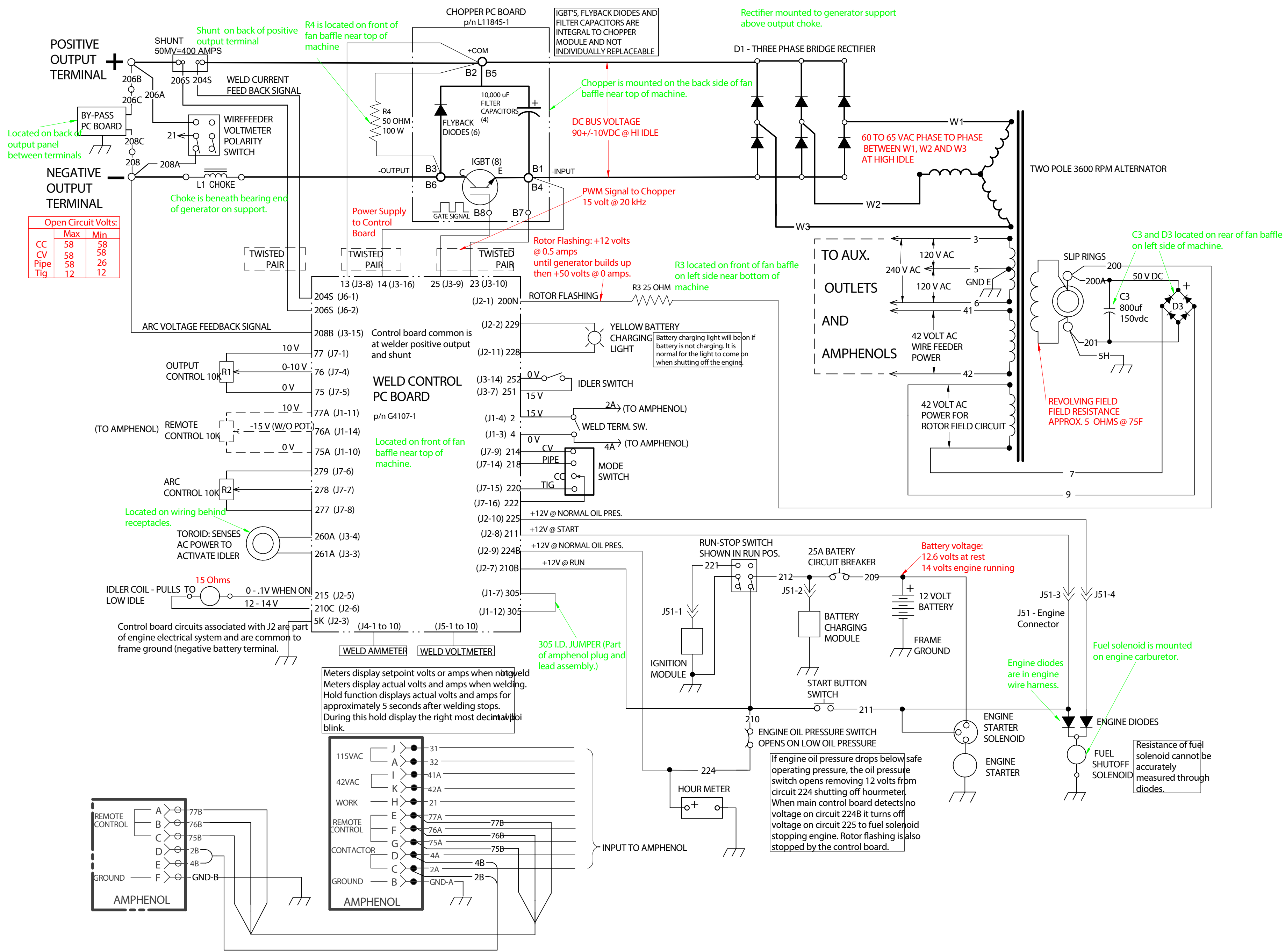


# RANGER 305G MACHINE SCHEMATIC L11943 REV: A



Open Circuit Volts:

	Max	Min
CC	58	58
CV	58	58
Pipe	58	26
Tig	12	12

Meters display setpoint volts or amps when not weld  
Meters display actual volts and amps when welding.  
Hold function displays actual volts and amps for approximately 5 seconds after welding stops.  
During this hold display the right most decimal point will blink.

If engine oil pressure drops below safe operating pressure, the oil pressure switch opens removing 12 volts from circuit 224 shutting off hourmeter. When main control board detects no voltage on circuit 224B it turns off voltage on circuit 225 to fuel solenoid stopping engine. Rotor flashing is also stopped by the control board.

Resistance of fuel solenoid cannot be accurately measured through diodes.

Battery voltage: 12.6 volts at rest 14 volts engine running

305 I.D. JUMPER (Part of amphenol plug and lead assembly.)

Located on wiring behind receptacles.

Located on front of fan baffle near top of machine.

R3 located on front of fan baffle on left side near bottom of machine

Rotor Flashing: +12 volts @ 0.5 amps until generator builds up then +50 volts @ 0 amps.

Chopper is mounted on the back side of fan baffle near top of machine.

Rectifier mounted to generator support above output choke.

R4 is located on front of fan baffle near top of machine

Shunt on back of positive output terminal

Located on back of output panel between terminals

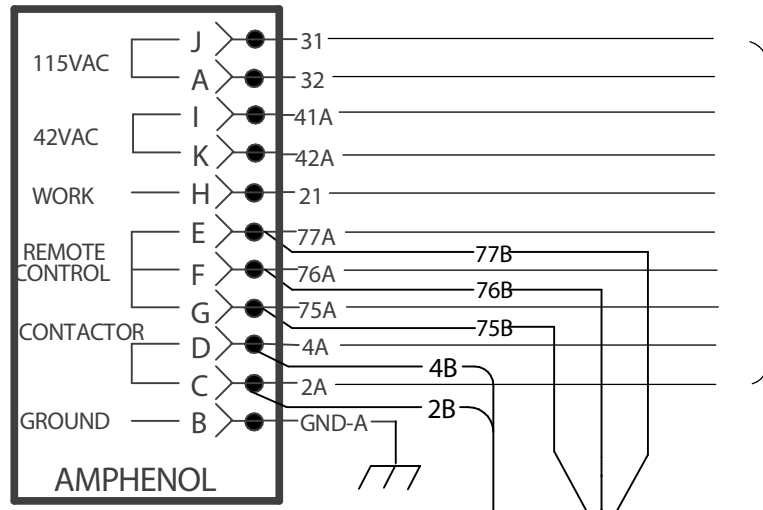
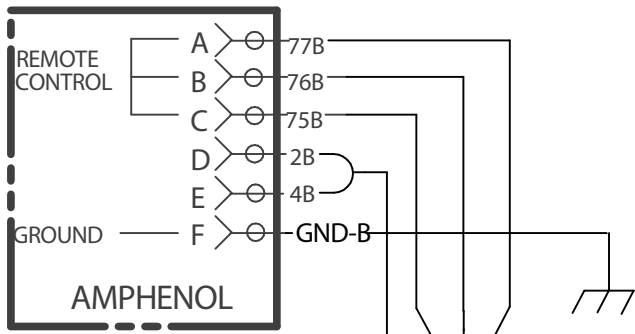
Choke is beneath bearing end of generator on support.

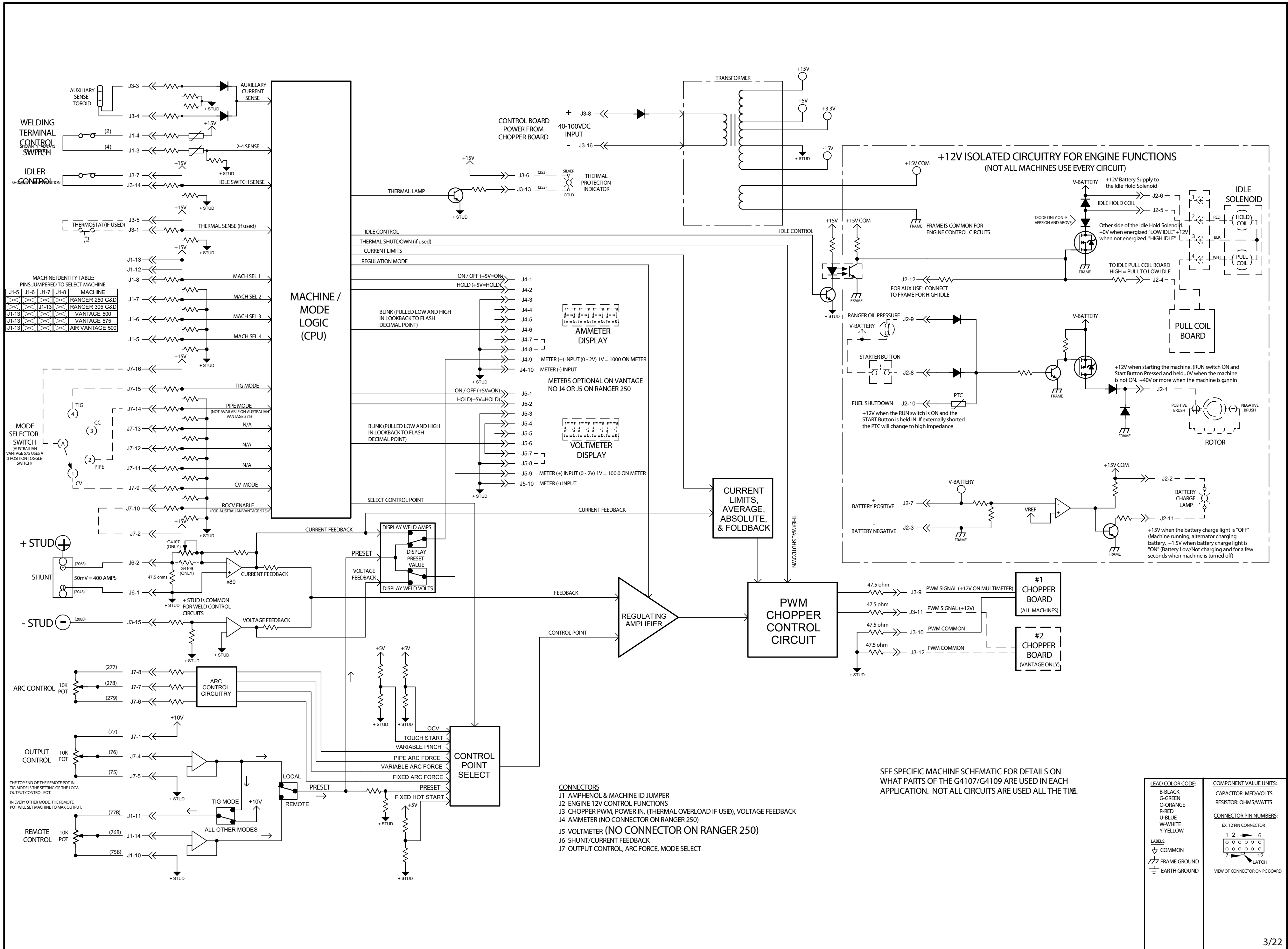
C3 and D3 located on rear of fan baffle on left side of machine.

REVOLVING FIELD FIELD RESISTANCE APPROX. 5 OHMS @ 75F

Battery charging light will be on if battery is not charging. It is normal for the light to come on when shutting off the engine.

Control board circuits associated with J2 are part of engine electrical system and are common to frame ground (negative battery terminal).





**MACHINE IDENTITY TABLE:**  
PINS JUMPERED TO SELECT MACHINE

J1-5	J1-6	J1-7	J1-8	MACHINE
○	○	○	○	RANGER 250 G&D
○	○	○	○	RANGER 305 G&D
○	○	○	○	VANTAGE 500
○	○	○	○	VANTAGE 575
○	○	○	○	AIR VANTAGE 500

- CONNECTORS**
- J1 AMPHENOL & MACHINE ID JUMPER
  - J2 ENGINE 12V CONTROL FUNCTIONS
  - J3 CHOPPER PWM, POWER IN, (THERMAL OVERLOAD IF USED), VOLTAGE FEEDBACK
  - J4 AMMETER (NO CONNECTOR ON RANGER 250)
  - J5 VOLT METER (NO CONNECTOR ON RANGER 250)
  - J6 SHUNT/CURRENT FEEDBACK
  - J7 OUTPUT CONTROL, ARC FORCE, MODE SELECT

SEE SPECIFIC MACHINE SCHEMATIC FOR DETAILS ON WHAT PARTS OF THE G4107/G4109 ARE USED IN EACH APPLICATION. NOT ALL CIRCUITS ARE USED ALL THE TIME.

**LEAD COLOR CODE:**

- B-BLACK
- G-GREEN
- O-ORANGE
- R-RED
- U-BLUE
- W-WHITE
- Y-YELLOW

**COMPONENT VALUE UNITS:**

CAPACITOR: MFD/VOLTS  
RESISTOR: OHMS/WATTS

**CONNECTOR PIN NUMBERS:**

EX 12 PIN CONNECTOR

1	2	3	4	5	6
7	8	9	10	11	12

VIEW OF CONNECTOR ON PC BOARD