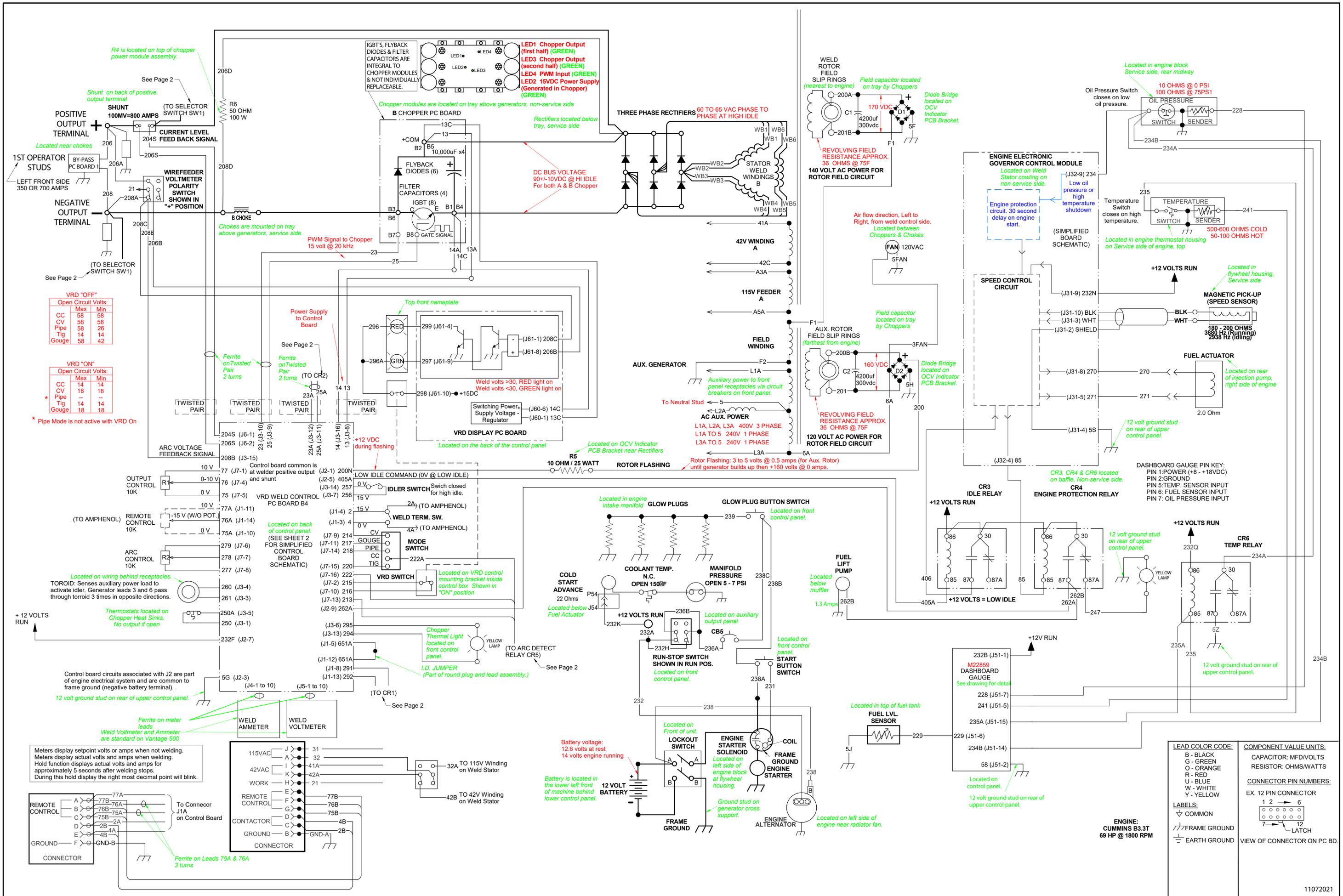
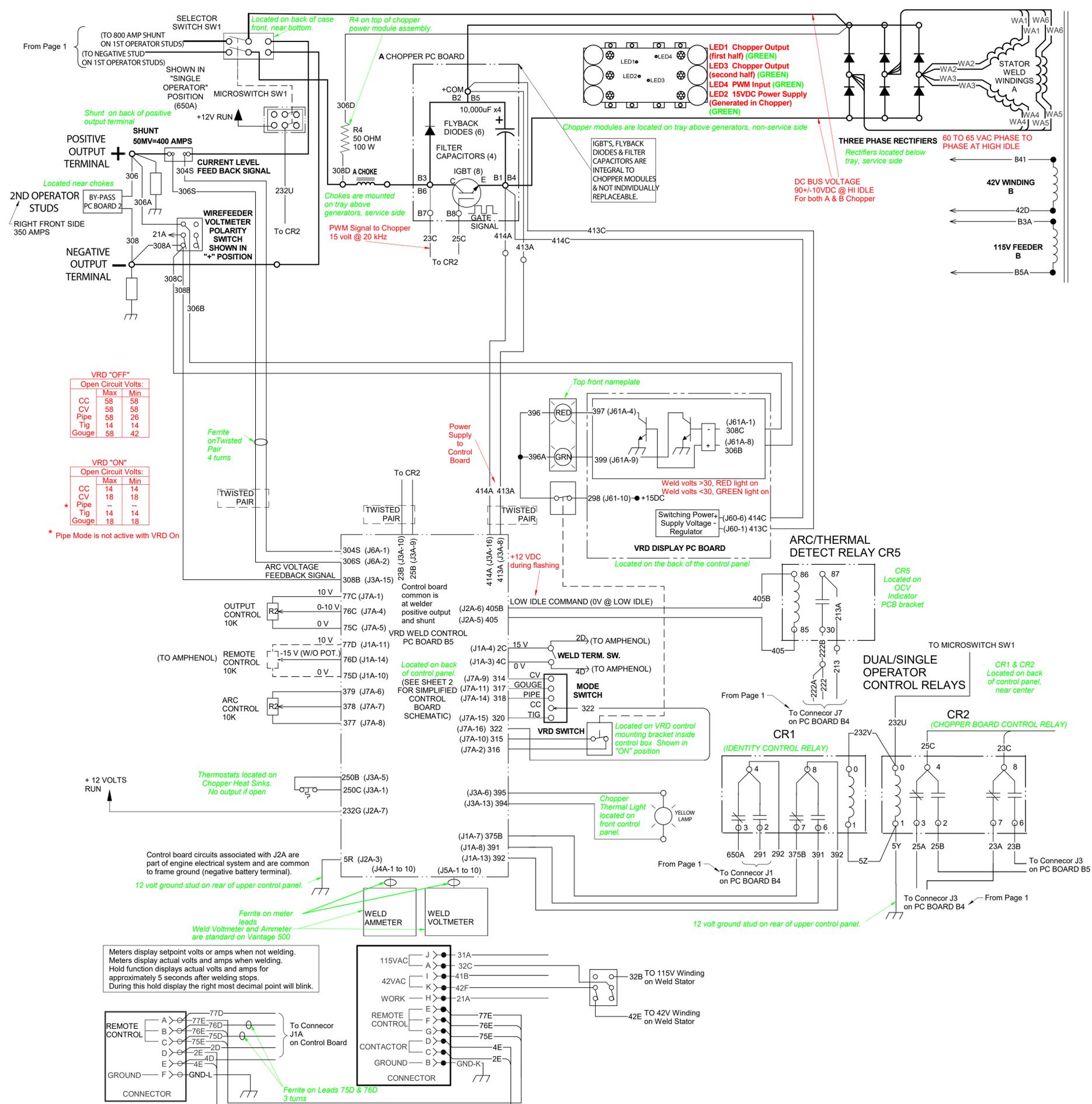


# DUAL VANTAGE 700 MACHINE SCHEMATIC G7424 REV A



# DUAL VANTAGE 700 MACHINE SCHEMATIC G7424 REV A PAGE 2



**VRD "OFF"**  
Open Circuit Volts:

|       | Max | Min |
|-------|-----|-----|
| CC    | 58  | 58  |
| CV    | 58  | 58  |
| Pipe  | 58  | 26  |
| Tig   | 14  | 14  |
| Gouge | 58  | 42  |

**VRD "ON"**  
Open Circuit Volts:

|       | Max | Min |
|-------|-----|-----|
| CC    | 14  | 14  |
| CV    | 18  | 18  |
| Pipe  | --  | --  |
| Tig   | 14  | 14  |
| Gouge | 18  | 18  |

\* Pipe Mode is not active with VRD On

**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

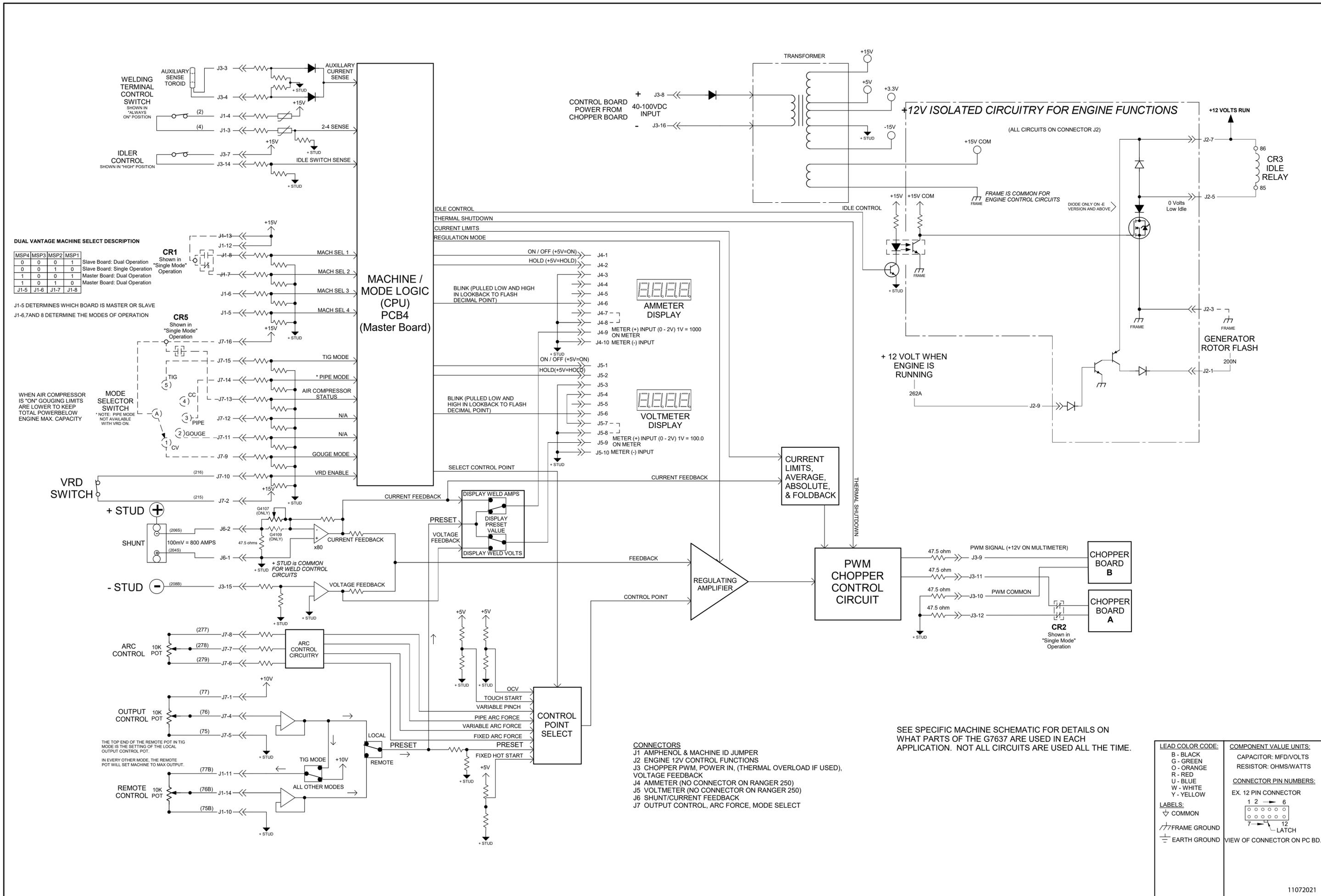
```

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

**LABELS:**

- ∇ COMMON
- ⏏ FRAME GROUND
- ⏏ EARTH GROUND

**VIEW OF CONNECTOR ON PC BD.**



**DUAL VANTAGE MACHINE SELECT DESCRIPTION**

| MSP4 | MSP3 | MSP2 | MSP1 | Slave Board: Dual Operation    |
|------|------|------|------|--------------------------------|
| 0    | 0    | 0    | 1    | Slave Board: Single Operation  |
| 0    | 0    | 1    | 0    | Master Board: Dual Operation   |
| 1    | 0    | 0    | 1    | Master Board: Single Operation |
| 1    | 0    | 1    | 0    | Master Board: Dual Operation   |

J1-5 DETERMINES WHICH BOARD IS MASTER OR SLAVE  
 J1-6,7 AND 8 DETERMINE THE MODES OF OPERATION

WHEN AIR COMPRESSOR IS "ON" GOUGING LIMITS ARE LOWER TO KEEP TOTAL POWER BELOW ENGINE MAX. CAPACITY

**CR1**  
Shown in "Single Mode" Operation



**CR5**  
Shown in "Single Mode" Operation



**MODE SELECTOR SWITCH**  
NOTE: PIPE MODE NOT AVAILABLE WITH VRD ON.



- 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 G7637 ARE USED IN EACH APPLICATION. NOT ALL CIRCUITS ARE USED ALL THE TIME.

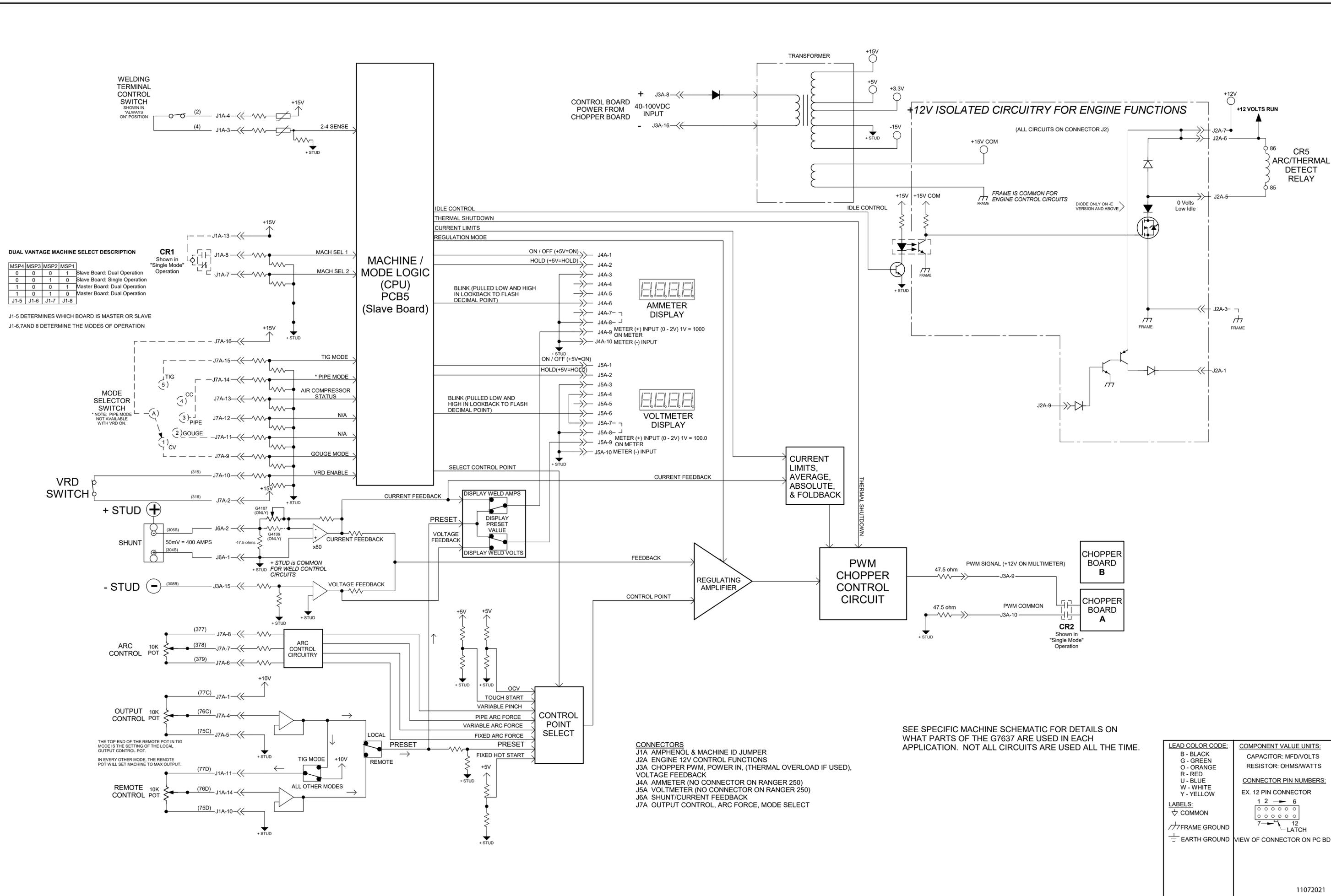
**LEAD COLOR CODE:**  
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 W - WHITE  
 Y - YELLOW

**LABELS:**  
 ∇ COMMON  
 ⊥ FRAME GROUND  
 ⊥ EARTH GROUND

**COMPONENT VALUE UNITS:**  
 CAPACITOR: MFD/VOLTS  
 RESISTOR: OHMS/WATTS

**CONNECTOR PIN NUMBERS:**  
 EX. 12 PIN CONNECTOR

VIEW OF CONNECTOR ON PC BD.



**DUAL VANTAGE MACHINE SELECT DESCRIPTION**

| MSP4 | MSP3 | MSP2 | MSP1 | Operation                      |
|------|------|------|------|--------------------------------|
| 0    | 0    | 0    | 1    | Slave Board: Dual Operation    |
| 0    | 0    | 1    | 0    | Slave Board: Single Operation  |
| 1    | 0    | 0    | 1    | Master Board: Dual Operation   |
| 1    | 0    | 1    | 0    | Master Board: Single Operation |

J1-5 DETERMINES WHICH BOARD IS MASTER OR SLAVE  
 J1-6,7 AND 8 DETERMINE THE MODES OF OPERATION

**CR1**  
 Shown in "Single Mode" Operation



**MODE SELECTOR SWITCH**  
 \* NOTE: PIPE MODE NOT AVAILABLE WITH VRD ON.



**VRD SWITCH**



**SHUNT**  
 50mV = 400 AMPS



**ARC CONTROL**



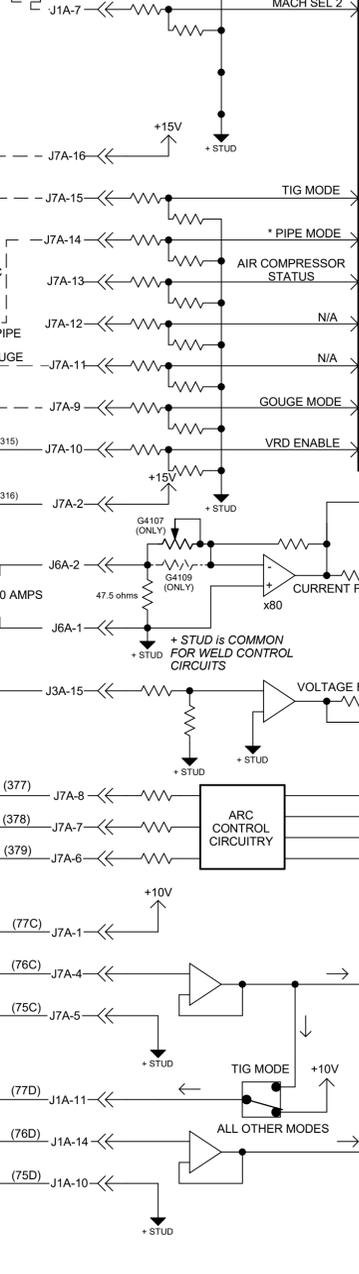
**OUTPUT CONTROL**



**REMOTE CONTROL**



**MACHINE / MODE LOGIC (CPU) PCB5 (Slave Board)**



**CONNECTIONS**

- J1A AMPHENOL & MACHINE ID JUMPER
- J2A ENGINE 12V CONTROL FUNCTIONS
- J3A CHOPPER PWM, POWER IN, (THERMAL OVERLOAD IF USED), VOLTAGE FEEDBACK
- J4A AMMETER (NO CONNECTOR ON RANGER 250)
- J5A VOLTMETER (NO CONNECTOR ON RANGER 250)
- J6A SHUNT/CURRENT FEEDBACK
- J7A OUTPUT CONTROL, ARC FORCE, MODE SELECT

SEE SPECIFIC MACHINE SCHEMATIC FOR DETAILS ON WHAT PARTS OF THE G7637 ARE USED IN EACH APPLICATION. NOT ALL CIRCUITS ARE USED ALL THE TIME.

**LEAD COLOR CODE:**

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**LABELS:**

- ∇ COMMON
- ⏏ FRAME GROUND
- ⏏ EARTH GROUND

**COMPONENT VALUE UNITS:**

CAPACITOR: MFD/VOLTS  
 RESISTOR: OHMS/WATTS

**CONNECTOR PIN NUMBERS:**

EX. 12 PIN CONNECTOR

VIEW OF CONNECTOR ON PC BD.