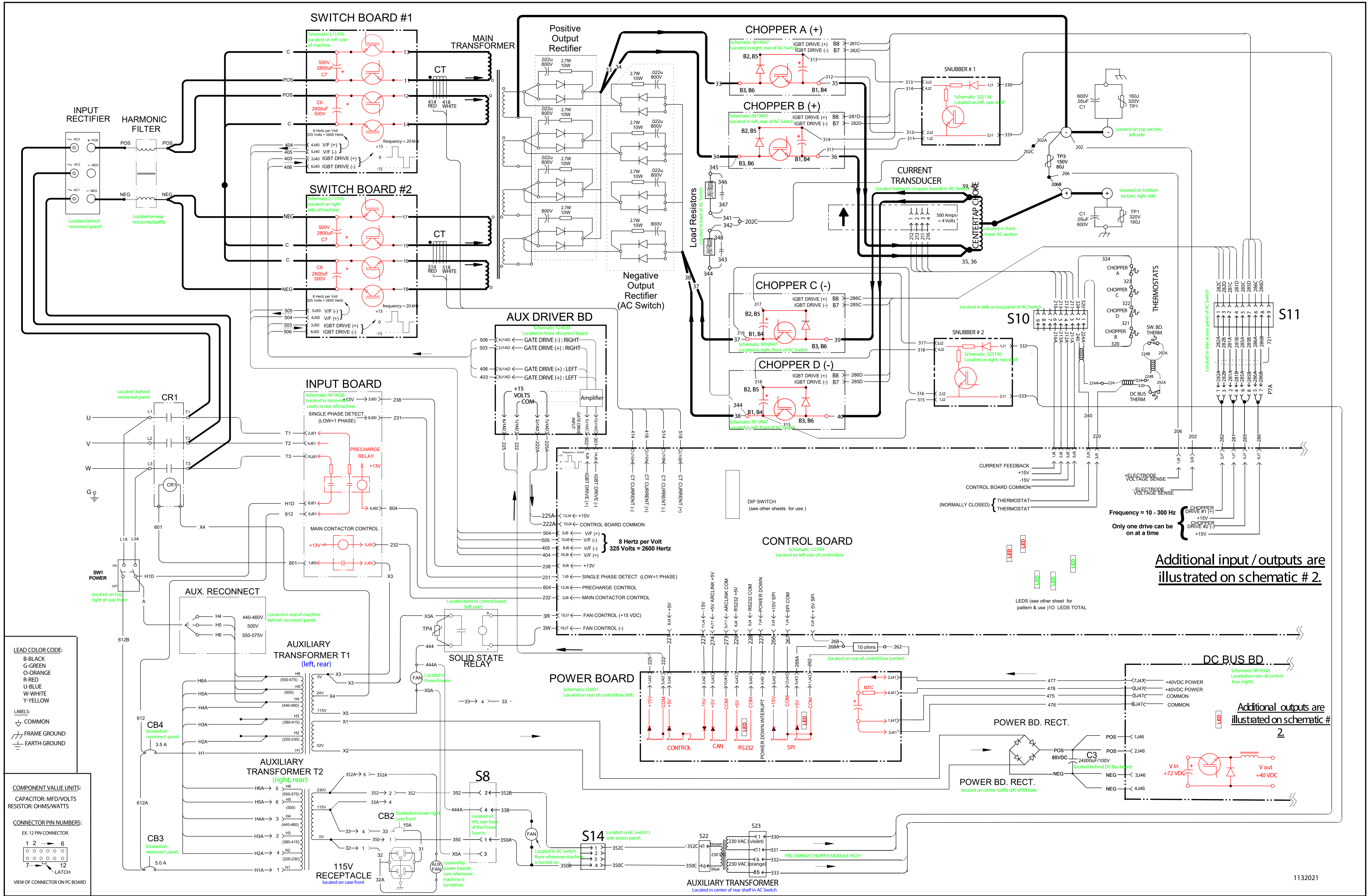
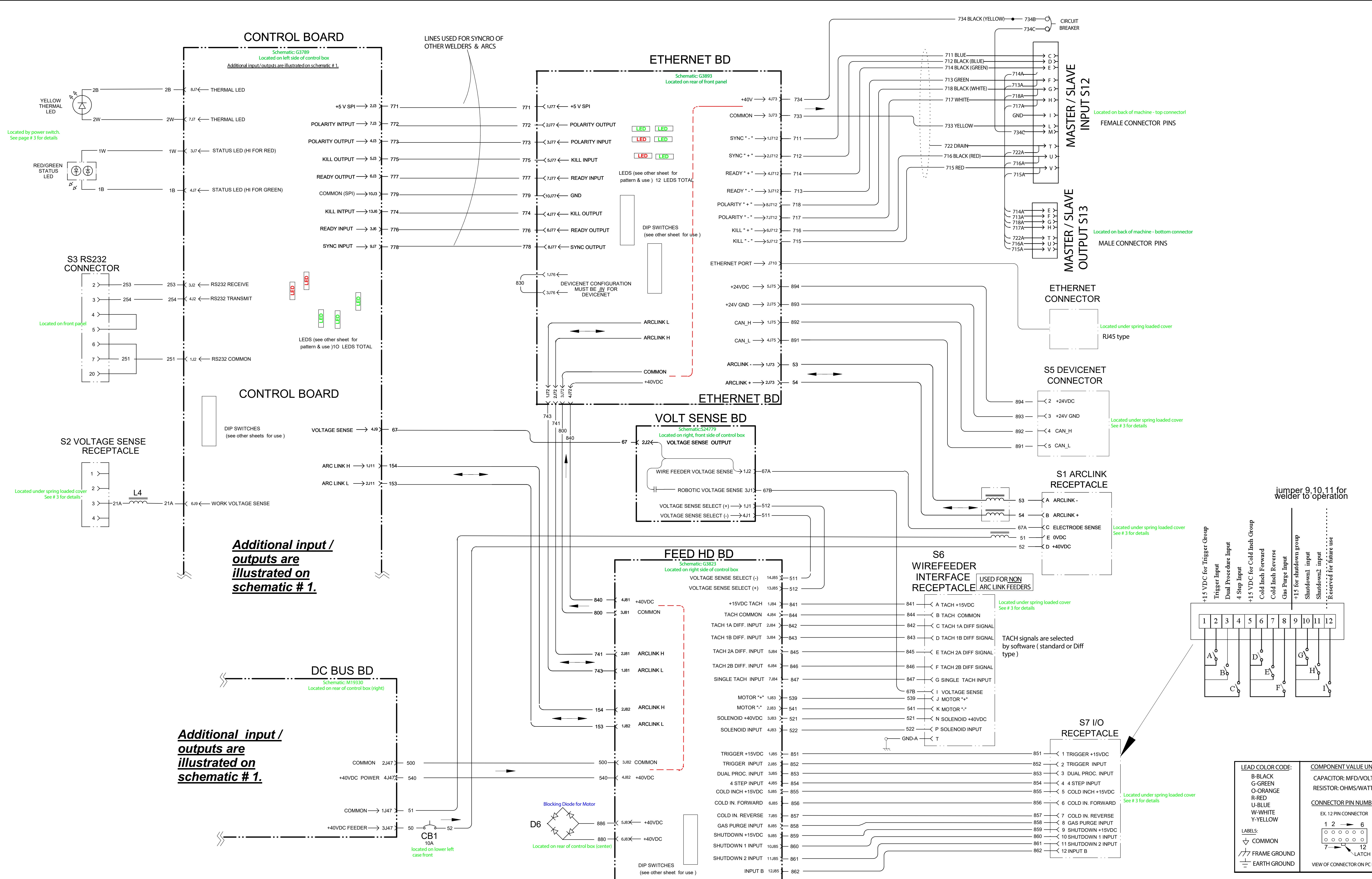


AC/DC 1000 MACHINE SCHEMATIC G4050 REV: A





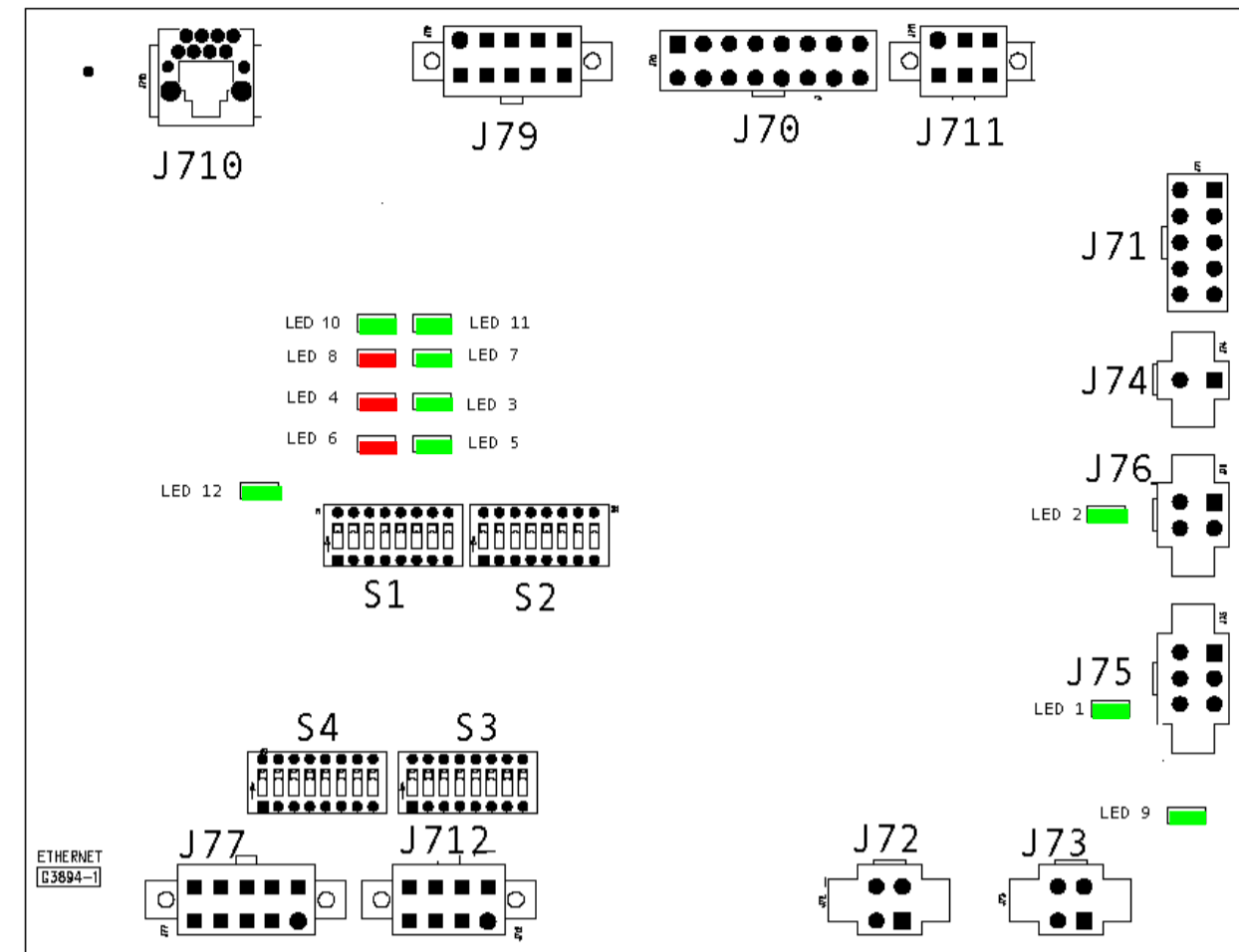
Additional input/ outputs are illustrated on schematic # 1.

Additional input/ outputs are illustrated on schematic # 1.

Schematic numbers are given for reference only.

LEAD COLOR CODE:	COMPONENT VALUE UNITS:
B-BLACK	CAPACITOR: MFD/VOLTS
G-GREEN	RESISTOR: OHMS/WATTS
O-ORANGE	
R-RED	CONNECTOR PIN NUMBERS:
U-BLUE	EX: 12 PIN CONNECTOR
W-WHITE	1 2 → 6
Y-YELLOW	7 → 12
LABELS:	VIEW OF CONNECTOR ON PCB BOARD
⏏ COMMON	
⏏ FRAME GROUND	
⏏ EARTH GROUND	

ETHERNET BOARD



Description of LED functions on the Power Wave AC/DC

For reference only

G3894 Ethernet Gateway PC Board		
LED #	COLOR	FUNCTION
1	Green	Indicates Isolated Module Section Supply is ON
2	Green	Indicates DeviceNet Supply is ON
3	Green	ArcLink Status Indicators (Main System <i>Slave</i> ArcLink Connection) Solid Green only when functional. (See software for error codes)
4	Red	
5	Green	
6	Red	Reserved For Future Use
7	Green	
8	Red	DeviceNet Status Indicators (See software group for coding)
9	Green	Indicates Isolated ArcLink Section Supply is ON
10	Green	10Base-T Link Status ON indicates functional ethernet link has been established
11	Green	Receiver Polarity ON indicates proper ethernet signal polarity
12	Green	Indicates I/O+5V Supply is ON This is used by differential I/O pair 4 circuitry, J712 pins 1 and 2.

Ethernet Board DIP Switch :

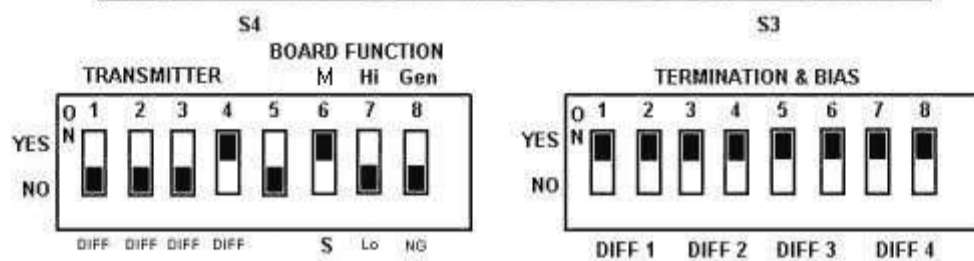
Bank S1		
Switch	Description	Comments
1	Object Instance LSB	Used for ArcLink Configuration
2	Object Instance MSB	
3	Equipment Group 1 Select	
4	Equipment Group 2 Select	
5	Equipment Group 3 Select	
6	Equipment Group 4 Select	
7	Reserved for future use	
8	Reserved for future use	

Table 15

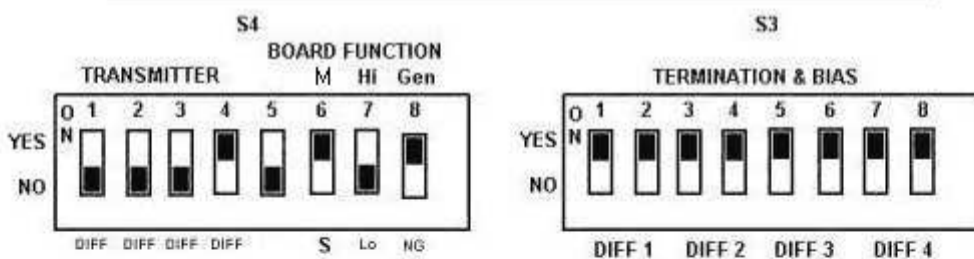
Bank S2		
Switch	Description	Comments
1 - 2	Devicenet Baud Rate	Used for DeviceNet configuration
3 - 4	Devicenet Mac ID	

Configuring the DIP Switches on the Ethernet-Gateway Board

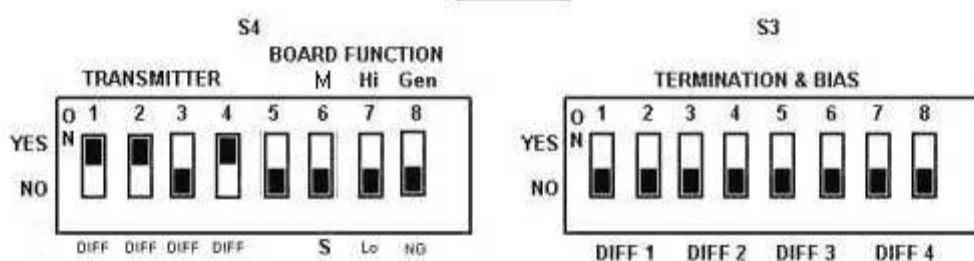
MASTER WITH EXTERNAL PULSE GENERATOR



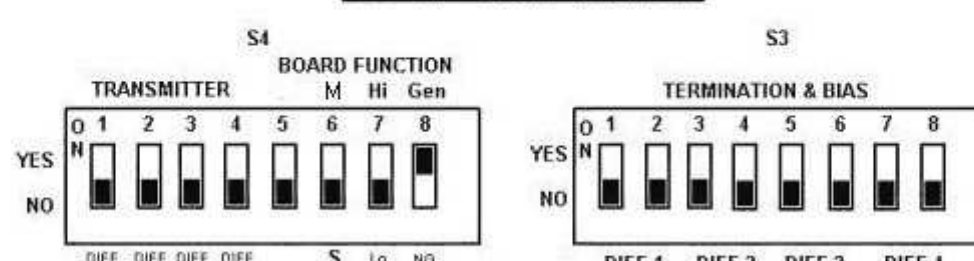
MASTER WITH INTERNAL PULSE GENERATOR



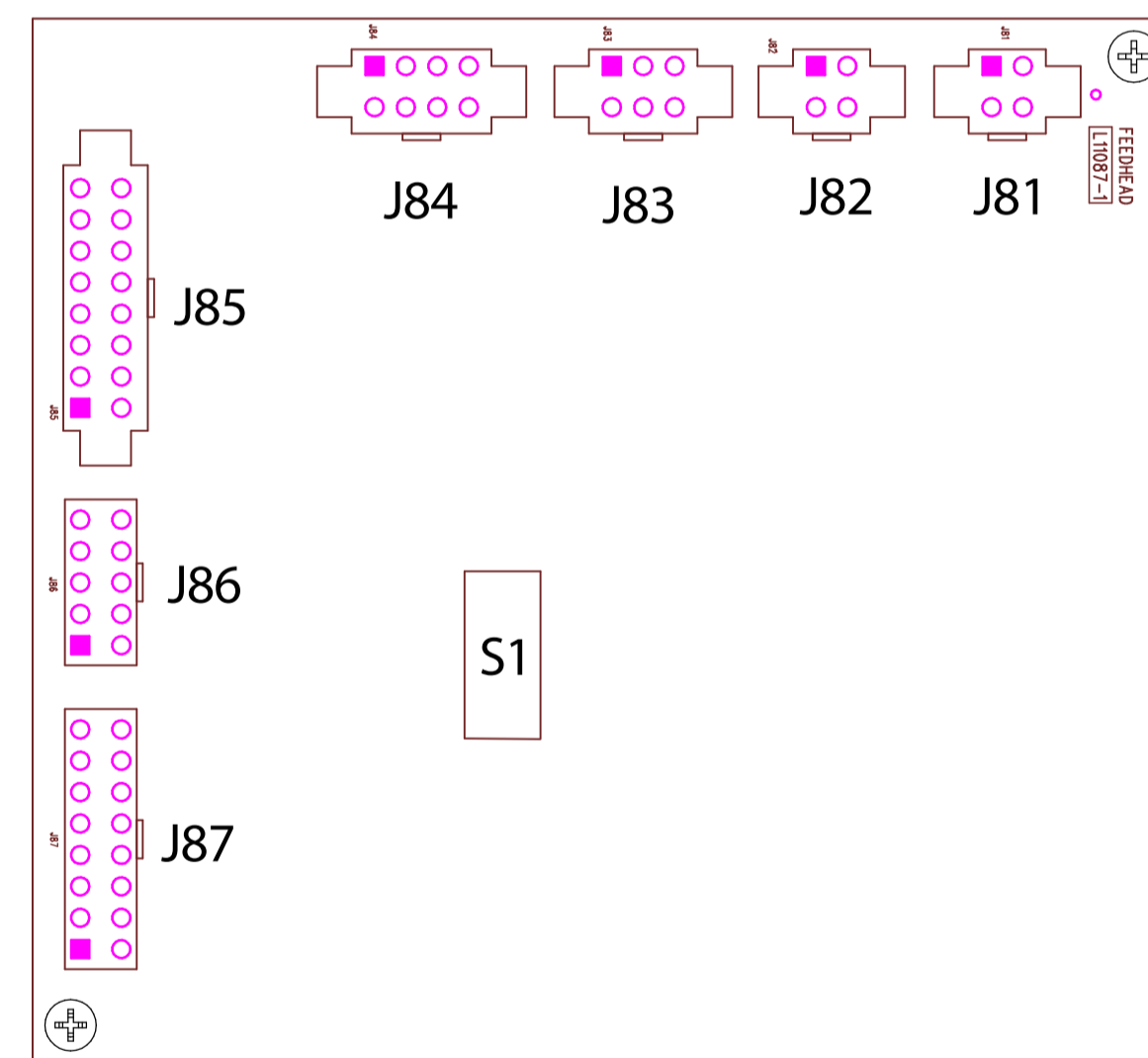
SLAVE



PULSE GENERATOR



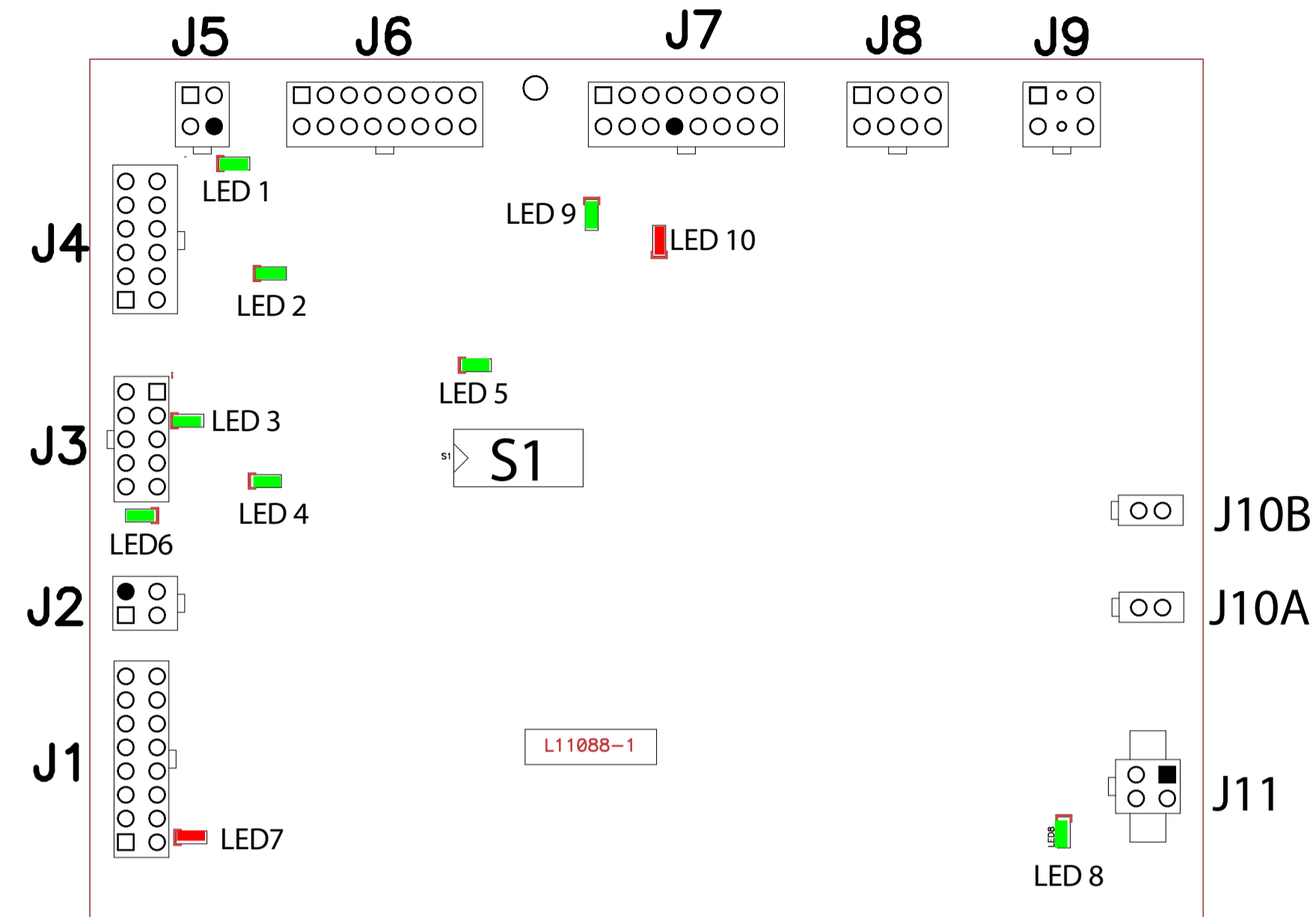
FEEDHEAD BOARD



Feed Head Board DIP Switch:

Switch	Description	Comments
1	Object Instance LSB	Used for ArcLink Configuration
2	Object Instance MSB	
3	Equipment Group 1 Select	
4	Equipment Group 2 Select	
5	Equipment Group 3 Select	
6	Equipment Group 4 Select	
7	off Electrode polarity positive (default)	
8	on Electrode polarity negative	
8	off Low speed gear (default)	Used for configuring wirefeeder gear ratio

CONTROL BOARD



Control Board DIP Switch:

Switch	Description	Comments
1	Object Instance LSB	Used for ArcLink configuration
2	Object Instance MSB	
3	Equipment Group 1 Select	
4	Equipment Group 2 Select	
5	Equipment Group 3 Select	
6	Equipment Group 4 Select	
7	Reserved for future use	
8	off work sense lead not connected	Used for configuring work sense lead
8	on work sense lead connected	

Description of LED functions on the Power Wave AC/DC

For reference only

L11088 Digital Control PC Board		
LED #	COLOR	FUNCTION
1	Green	Indicates +15VDC from power supply board is present
2	Green	Indicates -15VDC from power supply board is present
3	Green	Indicates +5VDC from power supply board is present
4	Green	Indicates +5VDC for +SSPI from power supply board is present
5	Green	Indicates +5VDC for +5V from power supply board is present
6	Green	Indicates +5VDC for +SVRS232 from power supply board is present
7	Red	FAULT Signal (See software group for coding)
8	Green	Indicates +5VDC for +SCAN from power supply board is present
9	Green	ArcLink Status Indicators (Main System <i>Master</i> ArcLink Connection) Solid Green only when functional. (See software for error codes)
10	Red	

Description of LED functions on the Power Wave AC/DC

For reference only

G3632 Digital Power Supply Board		
LED #	COLOR	FUNCTION
1	Red	Indicates +5VDC SPI supply is present
2	Red	Indicates +5VDC control supply is present

L11078 +40 Volt DC Bus Board		
LED #	COLOR	FUNCTION
1	Red	Indicates +40 VDC supply is present

Troubleshooting the PowerWave AC/DC

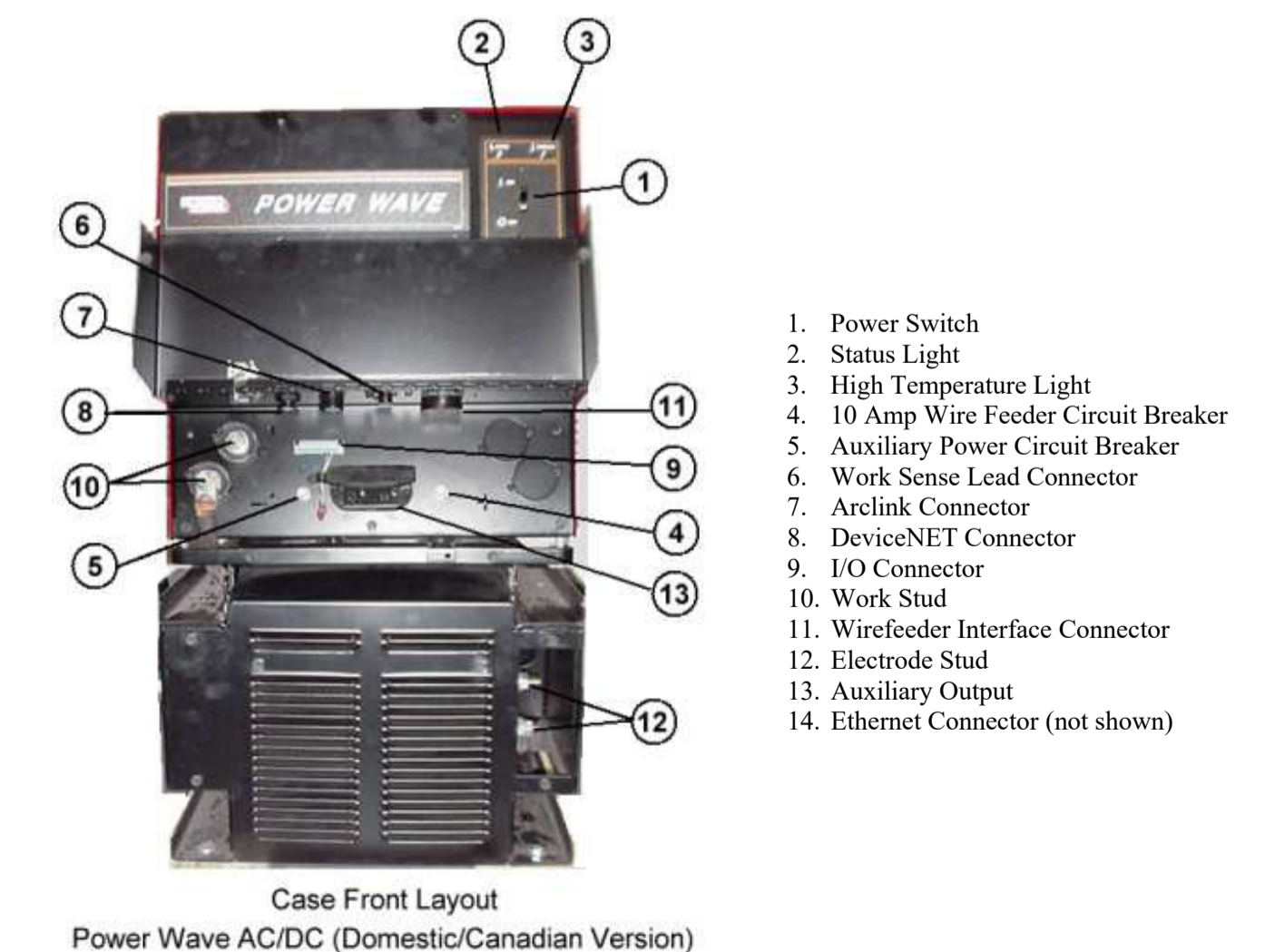
Using the Status LED

LIGHT CONDITION	MEANING
Steady Green	System OK. Power source communicating normally with wire feeder and its components.
Blinking Green	Occurs during a reset, and indicates the Power Wave AC/DC is mapping (identifying) each component in the system. Normal for first 1-10 seconds after power is turned on, or if the system configuration is changed during operation
Alternating Green and Red	Non-recoverable system fault. If the PS Status light is flashing any combination of red and green, errors are present in the Power Wave AC/DC. Read the error code before the machine is turned off. Error Code interpretation through the Status light is detailed in the Service Manual. Individual code digits are flashed in red with a long pause between digits. If more than one code is present, the codes will be separated by a green light. To clear the error, turn power source off, and back on to reset.

Error codes for the PowerWave

The following is a list of possible error codes that the Power Wave AC/DC can output via the status light

Error Code #	Indication
11	CAN communication bus off. Probably due to excessive number of communication errors.
12	User Interface time out error. UI is no longer responding to the Power Source. The most likely cause is a fault/bad connection in the communication leads or control cable.
21	Unprogrammed Weld Mode. Contact the Service Department for instructions on reloading the Welding Software.
22	Empty Weld Table. Contact the Service Department for instructions on reloading the Welding Software.
23	Weld Table checksum error. Contact the Service Department for instructions on reloading the Welding Software.
31	Primary overcurrent error. Excessive Primary current present. May be related to a switch board or output rectifier failure.
32	Capacitor "A" under voltage (Left side facing machine). Low voltage on the main capacitors. May be caused by improper input configuration, or an open/short circuit in the primary side of the machine.
33	Capacitor "B" under voltage (Right side facing machine). Low voltage on the main capacitors. May be caused by improper input configuration, or an open/short circuit in the primary side of the machine.
34	Capacitor "A" over voltage (Left side facing machine). Excess voltage on the main capacitors. May be caused by improper input configuration, or an open/short circuit in the primary side of the machine.
35	Capacitor "B" over voltage (Right side facing machine). Excess voltage on the main capacitors. May be caused by improper input configuration, or an open/short circuit in the primary side of the machine.
36	Thermal error. Indicates over temperature. Usually accompanied by Thermal LED. Check fan operation. Be sure process does not exceed duty cycle limit of the machine.
37	Softstart error. Capacitor precharge failed. Usually accompanied by codes 32-35.
41	Secondary overcurrent error. The secondary (weld) current limit has been exceeded. When this occurs the machine output will phase back to 100 amps, typically resulting in a condition referred to as "noodle welding"
43	Capacitor delta error. The maximum voltage difference between the main capacitors has been exceeded. May be accompanied by errors 32-35.
49	Single phase error. Indicates machine is running on single phase input power. Usually caused by the loss of the middle leg (L2).
Other	Error codes that contain three or four digits are defined as fatal errors. These codes generally indicate internal errors on the PS Control Board. If cycling the input power on the machine does not clear the error, try reloading the operating system. If this fails, replace the control board.



Case Front Layout
Power Wave AC/DC (Domestic/Canadian Version)