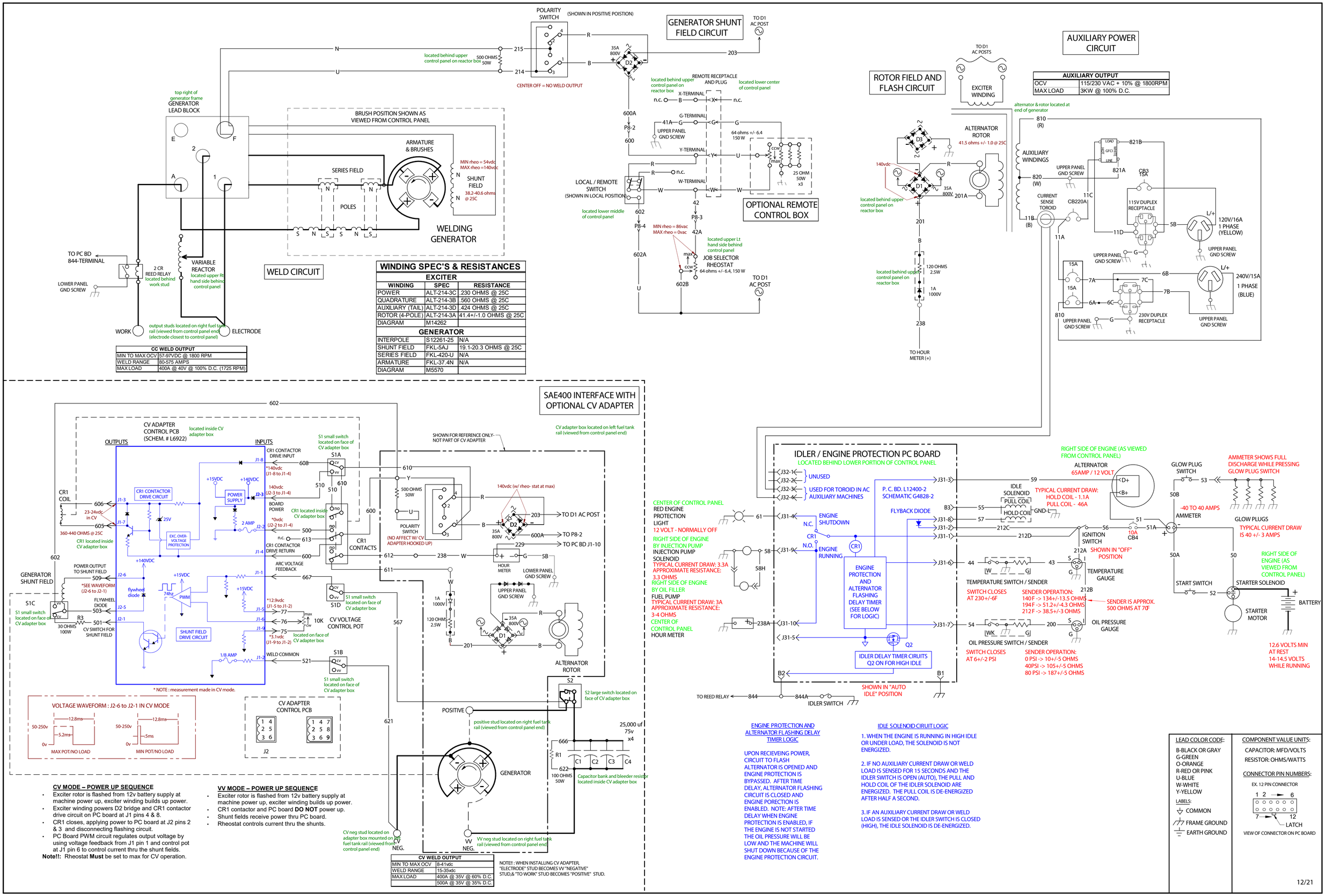
SAE 400 MACHINE SCHEMATIC G7146 REV: A



AUXILIARY OUTPUT	
OCV	115/230 VAC + 10% @ 1800RPM
MAX LOAD	3KW @ 100% D.C.

CC WELD OUTPUT	
MIN TO MAX OCV	57-97VDC @ 1800 RPM
WELD RANGE	80-575 AMPS
MAX LOAD	400A @ 40V @ 100% D.C. (1725 RPM)

WINDING SPEC'S & RESISTANCES		
EXCITER		
WINDING	SPEC	RESISTANCE
POWER	ALT-214-3C	.230 OHMS @ 25C
QUADRATURE	ALT-214-3B	.560 OHMS @ 25C
AUXILIARY (TAIL)	ALT-214-3D	.424 OHMS @ 25C
ROTOR (4-POLE)	ALT-214-3A	41.4+/-1.0 OHMS @ 25C
DIAGRAM	M14262	
GENERATOR		
INTERPOLE	S12261-25	N/A
SHUNT FIELD	FKL-5AJ	19.1-20.3 OHMS @ 25C
SERIES FIELD	FKL-420-U	N/A
ARMATURE	FKL-37.4N	N/A
DIAGRAM	M5570	

CV WELD OUTPUT	
MIN TO MAX OCV	8-41vdc
WELD RANGE	15-35vdc
MAX LOAD	400A @ 35V @ 60% D.C.
	500A @ 35V @ 35% D.C.

NOTE!! : WHEN INSTALLING CV ADAPTER, "ELECTRODE" STUD BECOMES VV "NEGATIVE" STUD,& "TO WORK" STUD BECOMES "POSITIVE" STUD.

CV MODE – POWER UP SEQUENCE

- Exciter rotor is flashed from 12v battery supply at machine power up, exciter winding builds up power.
- Exciter winding powers D2 bridge and CR1 contactor drive circuit on PC board at J1 pins 4 & 8.
- CR1 closes, applying power to PC board at J2 pins 2 & 3 and disconnecting flashing circuit.
- PC Board PWM circuit regulates output voltage by using voltage feedback from J1 pin 1 and control pot at J1 pin 6 to control current thru the shunt fields.

Note!!: Rheostat **Must** be set to max for CV operation.

VV MODE – POWER UP SEQUENCE

- Exciter rotor is flashed from 12v battery supply at machine power up, exciter winding builds up power.
- CR1 contactor and PC board **DO NOT** power up.
- Shunt fields receive power thru PC board.
- Rheostat controls current thru the shunts.

ENGINE PROTECTION AND ALTERNATOR FLASHING DELAY TIMER LOGIC

UPON RECIEVEING POWER, CIRCUIT TO FLASH ALTERNATOR IS OPENED AND ENGINE PROTECTION IS BYPASSED. AFTER TIME DELAY, ALTERNATOR FLASHING CIRCUIT IS CLOSED AND ENGINE PORECTION IS ENABLED. NOTE: AFTER TIME DELAY WHEN ENGINE PROTECTION IS ENABLED, IF THE ENGINE IS NOT STARTED THE OIL PRESSURE WILL BE LOW AND THE MACHINE WILL SHUT DOWN BECAUSE OF THE ENGINE PROTECTION CIRCUIT.

IDLE SOLENOID CIRUIT LOGIC

1. WHEN THE ENGINE IS RUNNING IN HIGH IDLE OR UNDER LOAD, THE SOLENOID IS NOT ENERGIZED.

2. IF NO AUXILIARY CURRENT DRAW OR WELD LOAD IS SENSED FOR 15 SECONDS AND THE IDLER SWITCH IS OPEN (AUTO), THE PULL AND HOLD COIL OF THE IDLER SOLENOID ARE ENERGIZED. THE PULL COIL IS DE-ENERGIZED AFTER HALF A SECOND.

3. IF AN AUXILIARY CURRENT DRAW OR WELD LOAD IS SENSED OR THE IDLER SWITCH IS CLOSED (HIGH), THE IDLE SOLENOID IS DE-ENERGIZED.