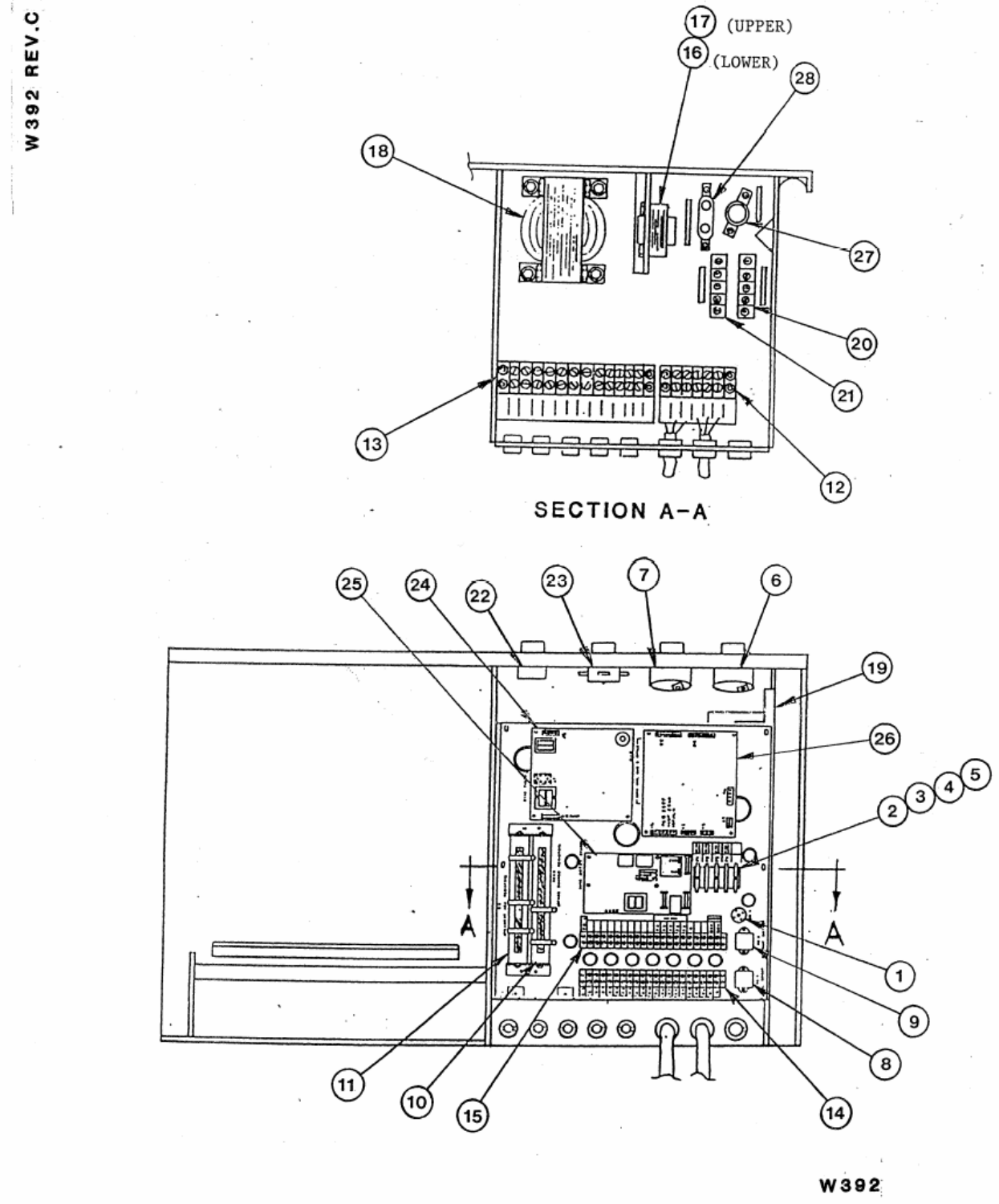
COMPONENT LOCATION IDENTIFICATION

Item No.	Legend	Description
1	BR1	Bridge Rectifier, mA (10A)
2	F1	Fuse, 8A
3	F2	Fuse, 8A
4	F3	Fuse, 10A
5	F4	Fuse, 2A
6	KV Major	Tap Sw., Ohmite 312-8
7	KV Minor	Tap Sw., Ohmite 312-8
8	RE1	Relay, DPDT, 120VAC HH91
9	RE2	Relay, DPDT, 120VAC HH91
10	RSCC	Resistor, 25 Ohm, 175 W
11	RX	Resistor, 100 Ohm, 175 W
12	TB1	Terminal Strip, 5 Terminals
13	TB2	Terminal Strip, 12 Terminals
14	TB3	Terminal Strip, 20 Terminals
15	TB4	Terminal Strip, 20 Terminals
16	TS	Transformer, Stabilizer (CVT), 120/120 volt
17	TSCC	Transformer, Space Charge, 300/30 volt
18	-----	Transformer, Auto
19	-----	Circuit Breaker/On-Off Switch
20	-----	SCR Block, Main
21	-----	SCR Block, Back-up
22	-----	Switch Assembly, Time Select
23	-----	Switch Assembly, mA Select
24	-----	PCB Assembly, Time Select
25	-----	PCB Assembly, kVp, Motor Start
26	-----	PCB Assembly, kVp / mAs / Interlock
27	C1	Capacitor, Rotor Start
28	C2	Capacitor, Stabilizer

COMPONENT LOCATION DIAGRAM

W392 REV.C



Technical Support Dept.
Ph: (800) 729-9729
ext. 1 for customer service
ext. 2 for Tech Service

Original InnoVet Part Description rev.12/06	Part Number
W300, W375, W400, W438 (Generator L802)	
Air Cylinder, Damper for hinged generator tilt	W369 (Bimba 125)
cable, F377 to C118 Timer PCBA	E948
Cable, kVp display	E950
Cable, mAs display	E951
Curtain Strip, OlderTbST W200	W215
Foot Loop	K090
Grid Cabinet	W048
Knob with pointer	W344
Knob without pointer	A312
kVp Tap Switch (8 position)	02255-000
LED replacement kit	00312-000
mA Selector Switch assy	W354
mA selector switch cable	comes with W354
Manual - (See MASTERS = Not in OBSOLETE)	K186
On/Off Circuit Breaker	A365
pcb, kVp/mAs Interlock	F377
pcb, Motor Start (rotor control)	A455
pcb, Timer Driver	C118
Relay, RE-1 / RE-2	HH91
Relay socket assy for RE-2 (exposure)	W351
Relay socket for RE-1 (boost)	HH81
Remote exposure switch (wall mount)	W413
Resistor, Filament 100 Ohm, 175 W RX/RXS	A347
Resistor, Filament 25 Ohm, 175 W RSCC	A345
Rotor Cap 25uF, 330V	HAB18
SCR Kit (includes Instructions)	00424-000
SCR block ^ Please order with instructions ^	00194-000
Sliders, Front Grid Cabinet	00673-000
Snubber/Suppressor (Tap Switch)	W440
Stabilizer cap, C2, 660V 2.5*u*F	A343
Stator Capacitor, C1, 330V 25*u*F(formerly A351)	HAB18
Switches for RemoteAssy (Cap J783)	C414
Two position prep/exposure switch button	J783
Time encoder EPROM (for F377 Board)	W341
Time Selector Switch assy	J976
Time Selector Switch Cable	comes with J976
Transformer, Space Charge	L926
Transformer, Stabilizer, Filament	A342
TS Capacitor, C2	A343
Two position prep/exposure foot switch	A981

GENERAL TIPS

Verify basic voltages: Line tap is correctly set for supply, 120 VAC F1 to F2, on F377 board, H6-5 to H6-6 is 14 VAC, TP9 is +5 VDC, TP11 is -5 VDC, TP10 common

Verify basic connections: P1 white, P2 black, Ground green. XL white, XS green, XC black, M1 red. Rotor 07 black, 08 red, 09 white; typically 30 ohms 07 to 09 and 60 ohms 08 to 09. Insure tight crimps, receptor studs and screw terminals.

"--E--" in mAs window

This occurs because the F377 does not know the kV, mA or time selected. It can happen from improper kV selection (above 125 or below 40 kVp), bad tap switch, timer switch, mA switch, poor cable connections from these devices, P1/P2 voltage in idle (a loose stud on transformer top), or a failure of the F377 board.

1. **kVp window blank and "--E--" in the mAs window**, suspect no tap switch voltage input to the F377 board. Adjust kVp tap switches so that 200 VAC is present between the common poles. Insure 200 VAC is present at pins H7-1 and H7-4 of the F377 board. Find the open connection or replace the board.

2. **kVp window blank and "--E--" in the mAs window**, a second cause is no mA select signal on H3 of the F377. Insure H3-1 is +5 VDC when selecting small filament, H3-2 is +5 VDC for large filament. Insure +5V on H3-3. Remove the H3 plug short pins H3-3 to H3-2 on the board. If the problem is resolved replace the selector and cable, if not, replace the board.

3. **kVp is between 40 and 125 kVp but the mAs window is "--E--"**, the problem is related to the time station code. Monitor H1 pins 3, 4, 2, 5 and 6 (time station code) to insure binary increment count of +5 VDC as time is changed. The pins on H1 as shown above are in Most Significant Bit to Least Significant Bit sequence. Replace time selector and cable if bits are missing.

4. **kVp display reads "333"**, or some other scrambled, invalid kVp, U18 on F377 board (part number W341) has probably been damaged from electrical noise. Cycling power may clear the problem, and replacing the W341 chip will likely clear the problem. It is important to look for sources of noise, such as arcing in the high voltage secondary, rotor circuitry, solid grounding, and so on. Putting a 0.1mfd capacitor from pin 5 to pin 7 of U6, and another from pin 21 to pin 20 of U18 may help. Confirm that in IDLE, D11 to ground is +5VDC. If less, remove U18 and confirm that D11 returns to +5V. If it does, replace U18 (part #W341--even though removing this chip may not clear the "333" during this test). If +5V does not return, replace the F377 board.

No exposure & No "beep" from timer.

The two most likely causes are a failure of the motor start board to transition from boost to run during the prep cycle (due to 50k pot R17), or an open R30 on the kVp/mAs Interlock board. To determine which is the cause, rotate the kVp tap switches while the unit is in prep. If the kVp display changes the F377 kVp/mAs interlock board resistor is bad, if it does not suspect the A455 motor start board.

1. Does LED 1 on the motor start board light? If not, check stator circuitry, stator cap, and stator connections. Replace A455 motor start board.
2. D11 on F377 board must go from +5 VDC to ground at PREP. This signal turns the time select signal into an anticipated pulse count. Most common cause for this signal to be missing is an open R30 on the F377 board. Replace it with a 12k ohm resistor of at least 3 Watts. OC1 on the board is also suspect.
3. If there is a +5V to ground transition at PREP, verify an anticipated pulse count at the J3 input of C118. Pin one of J3 is the +5V supply, pins 2, thru 11 are Most Significant to Least Significant bits of the binary code for anticipated pulse count. If code and +5/+12 VDC supplies are good, replace C118 timer.
4. Is there 120 VAC between J1-1 and J1-2 on the C118 timer board at EXPOSE? If not, check pin 11 of motor start board, connections, and exposure switch.

No exposure, but timer "beeps"

1. Verify line tap is correctly set; the SCR drive voltage is an unregulated supply.
2. Verify filament voltage and mA. Typically 24 VAC in idle, 52 VAC (XL to XC) for 80 kVp at 300 mA boost. If close to zero volts, look for open in control. If 120 VAC look for an open in high voltage secondary.
3. Verify primary voltage and kVp. Look for RE-2 to close, insure good connections from J2 to primary SCR, confirm primary and backup SCRs conduct. Sometimes a resistor/diode component in the harness of the RE-2 socket will be open, preventing backup SCR gating. Replace C118 timer.

kVp or mAs segments do not light

Insure good connections between the wires and the plugs at either end of the kVp/mAs display cables. Remove the spring clip cover at the plug to inspect. Switch cables at control end, then tubestand end, to determine source of the open.

Unit exposes but no mA can be measured

Verify filament voltages (see description above), lit filaments, and presence of kVp. Ensure that the spark gap is not shorted to the top of the transformer.