SS-201-120 & SS-201-240 SOFT-START v3.0
ASSEMBLY & INSTALLATION INSTRUCTIONS

WARNING: Voltages inside the amplifier CAN & WILL KILL YOU! You MUST know how to work around HIGH VOLTAGE safely. If you do not, get assistance from someone who does. You MUST also be able to read your specific amplifier schematic and understand the design, theory and wiring of your amplifier to properly perform this upgrade.

SS-201 SOFT-START ASSEMBLY

(_) **Read, re-read and fully understand these instructions prior to beginning this upgrade.** Make sure to perform the steps in the order they are listed. Also, be sure to label wires as they are disconnected from various points inside the amplifier. This will help when the time comes to re-attach the wires that will be disconnected during installation of the kit.

(_) Go through the Bill of Materials (BOM) and compare that list with the parts in the kit to make sure all parts are present. If you are missing any parts, please contact Harbach Electronics, LLC.

(_) If the SS-201 is to be installed in an SB-200/201 operating from 120 VAC mains (model SS-201-120), the 10Ω 10-watt resistors will be included in the kit. If the SS-201 is to be installed in an SB-200/201 operating from 240 VAC mains (model SS-201-240), the 20Ω 10-watt resistors will be included in the kit.

(_) Solder components C7, C8, D9, K1, K2, R25, R26 and R27 to the top (silk screened) side of the printed circuit board (PCB) according to parts layout diagram and silk screen on the top of the PCB. All components mount flat to the PCB. Trim the component leads flush on the bottom side of the PCB.

(_) Strip ¼" of insulation from both ends of the 8" #20 **RED** wire. Pass one end of the 8" #20 **RED** wire through the small hole marked **"F"** on the top side PCB and solder to the solder pad on the bottom side of the PCB. Trim the wire lead flush on the bottom side of the PCB.

SS-201 SOFT-START INSTALLATION

(_) Unplug the amplifier power cord from the AC mains and let any high voltage stored in the electrolytic capacitors bleed down. Verify the HV has bled down as shown on the HV meter. Remove any input, output and control cables that may be connected to the back of the amplifier.

(_) **Be sure that all high voltage has been properly bled to ground before removing any covers or putting your hands inside the amplifier. You CAN BE KILLED by the high voltages inside this equipment!**

(_) Remove the chassis from the case and remove the perforated sheet metal RF shield from the top of the chassis. Remove the tubes and put them in a safe place.

(_) Place the amplifier upside down with the chassis facing up and the front panel facing you.

(_) Locate a point approximately 6-¾" from the rear of the chassis and approximately 2" from the power supply circuit board cutout. Mark this spot on the chassis with a pencil or other marking tool. This marks the approximate spot of the center of the soft-start module once installed.

(_) Cut the wire bundle lacing from the middle of the power supply PCB toward the rear of the chassis about 1" past the power supply PCB cutout.

(_) Locate the large **RED** wire that goes to terminal #2 of terminal strip "Q" next to the wire bundle near the rear of the chassis. Refer to the supplied pictorial. Pull this wire loose from the other wires and cut it at a point approximately 6-¾" from the rear of the chassis. Strip ¼" of insulation from both ends of the wire and tin each end.

(_) Pass each end of the cut wire through the PCB from the component (top) side and solder each wire to the bottom of the PCB to pads **"A"** and **"C"**. Make sure the **"LOAD"** side of the wire goes to solder pad **"A"** and the **"SWITCH"** side of the wire goes to solder pad **"C"**.

(_) Locate the large **BLACK** wire that goes to terminal #4 of terminal strip "Q" next to the wire bundle near the rear of the chassis. Refer to the supplied pictorial. Pull this wire loose from the other wires and cut it at a point 6-¾" from the rear of the chassis. Strip ¼" of insulation from both ends of the wire and tin each end.

(_) Pass each end of the cut wire through the PCB from the component (top) side and solder each wire to the bottom of the PCB to pads **"B"** and **"D"**. Make sure the **"LOAD"** side of the wire goes to solder pad **"B"** and the **"SWITCH"** side of the wire goes to solder pad **"D"**.

(_) Pass the 8" #20 **RED** wire from the PCB that is coming from hole **"F"** under the wire bundle and under the AC mains voltage select terminal strip "S". Solder the free end of the #20 **RED** wire to lug #2 of the voltage select terminal strip "S" as shown in the supplied pictorial.

(_) Examine the tops of the relay cases on the soft-start" module. If there are vent holes in the tops of the cases, be careful not to cover these holes if you choose to use RTV or silicone to mount the soft-start module.

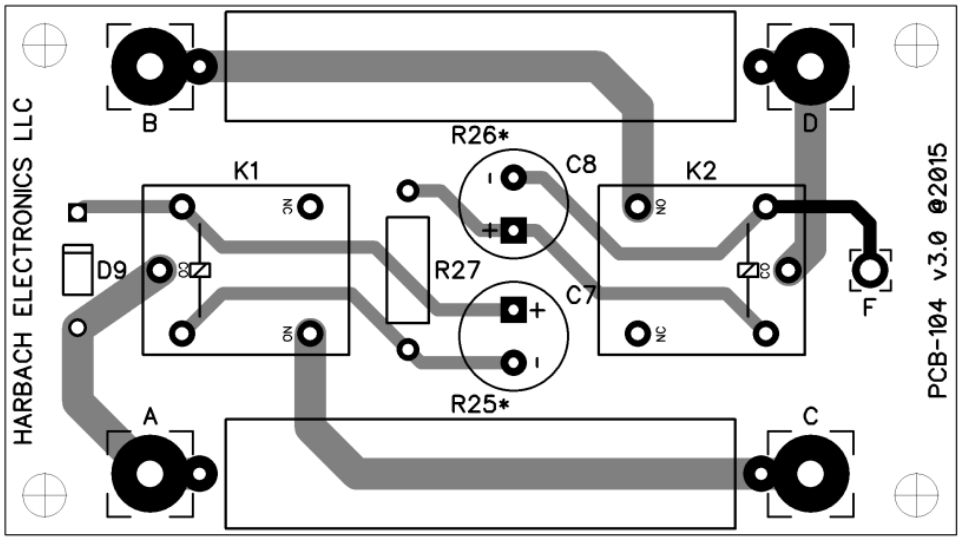
(_) Mount the SS-201 soft-start module using the mounting holes in the corners of the PCB or by using a small dab of RTV or other silicone adhesive on the top center of each relay on the PCB and sticking it to the chassis.

(_) Re-lace the wire bundle with string, lacing or tie wraps.

(_) Put the tubes back into the amplifier and reinstall the perforated sheet metal RF shield on the top of the chassis and put the chassis back into the case.

This completes the installation of the SS-201 soft-start module. You will hardly notice any difference in the operation of your SB-200/SB-201, but you will know it is very well protected from voltage transients and high inrush currents.

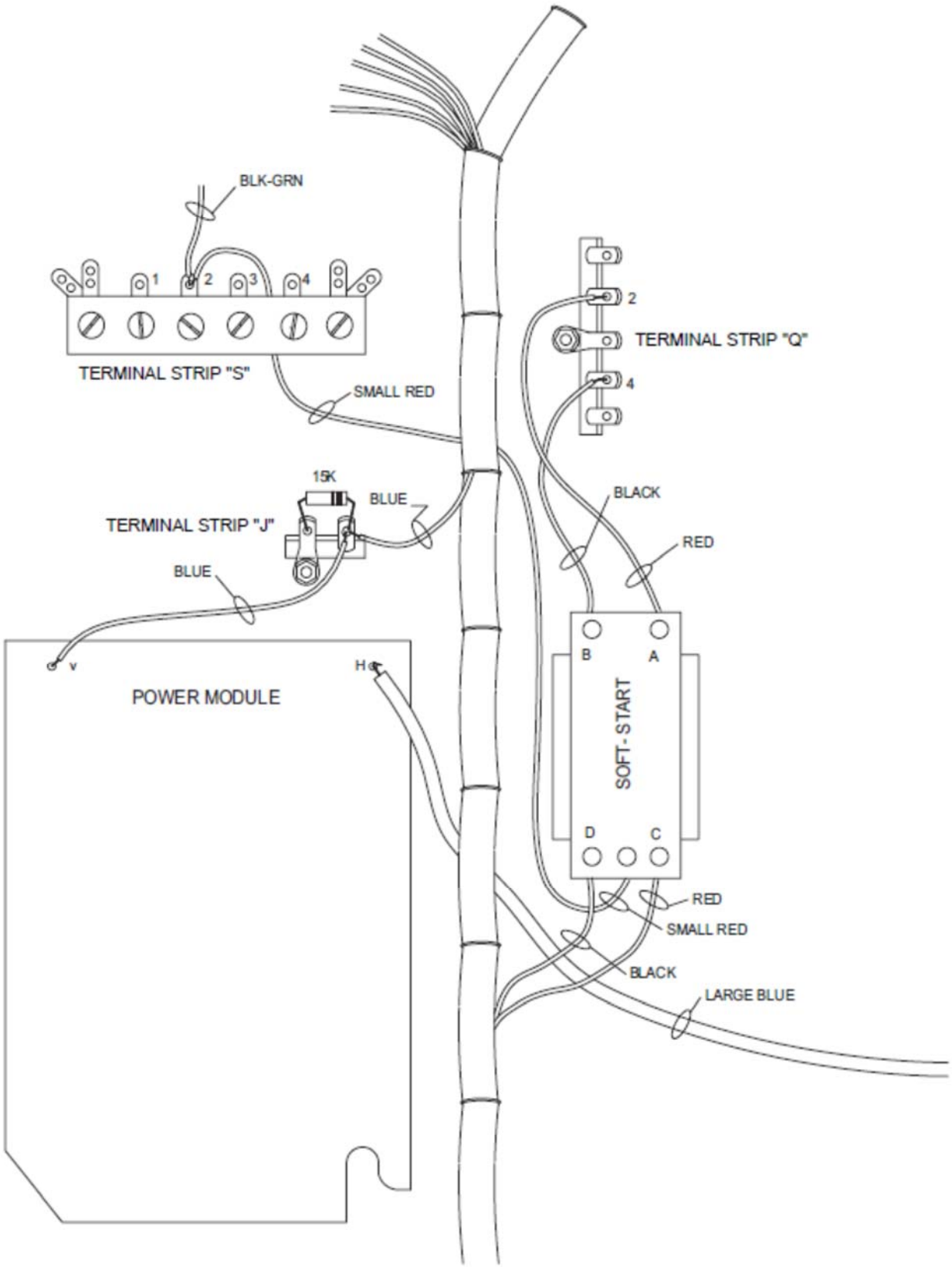
SS-201 SOFT-START PCB PARTS LAYOUT (PCB-104)



SS-201 BILL OF MATERIALS (BOM)				
Verification	**Part Number**	**Quantity**	**Description**	**PCB Designation**
[ ]	PCB-104	1	SS-201 Soft-Start PCB v3.0	N/A
[ ]	CAP-104	2	100µF 63VDC Electrolytic Capacitor	C7, C8
[ ]	DIO-101	1	1A 600 PIV Diode (1N4005)	D9
[ ]	REL-104	2	SPDT 48VDC Relay	K1, K2
[ ]	RES-102*	2	20Ω 10W Resistor	R25, R26
[ ]	RES-104*	2	10Ω 10W Resistor	R25, R26
[ ]	RES-113	1	2.4KΩ 2W Resistor	R27
[ ]	WIR-111	8”	#20 Stranded Red Wire	N/A

*** RES-102 or RES-104 will be supplied with the kit depending on whether the kit is for 120VAC mains operation (SS-201-120) or 240VAC mains operation (SS-201-240).**

HARBACH ELECTRONICS, LLC
Jeff Weinberg – W8CQ
468 County Road 620
Polk, OH 44866-9711
(419) 945-2359
http://www.harbachelectronics.com
info@harbachelectronics.com



SB 200 POWER MODULE AND SOFT-START UNDER-CHASSIS WIRING AND PLACEMENT