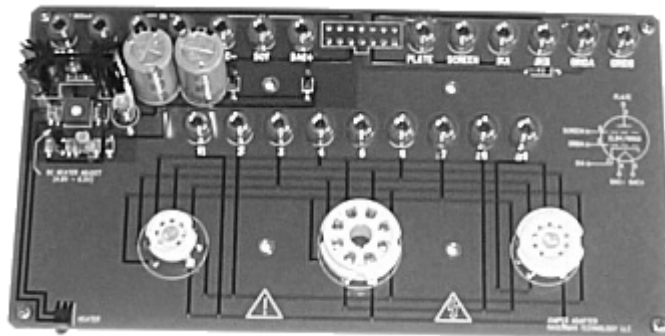
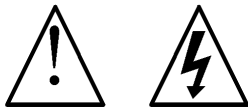




VacuTraceTM

Jumper Adapter Card User's Guide





Warning: Potential Shock Hazard!

This product uses high voltage. Partially exposed jumper connectors and terminals can present an electrical shock hazard. Do not touch plate or screen electrodes while equipment is operating. When installed, the jumper wires provide some insulation protection.

Be careful. Vacuum tubes get hot and can burn your hand. This product is for skilled technicians only.

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1 Getting Started

Description

This Jumper Adapter Card is for use with VacuTrace™ vacuum tube curve tracers. It works just like the standard adapter cards except that it provides for custom wiring of sockets. Although only 7, 8, and 9 pin sockets are mounted on the card, you can connect to virtually any vacuum tube by using spring clip jumpers – especially good for nuvistors. Included is a variable output DC heater supply for small tubes (under 600mA heater current). This is useful for improving stability and repeatability in measurements or for testing at abnormal operating conditions. The output range of this supply is from 4.8V to 6.5V and is adjusted using the small potentiometer.

Installation

The Jumper Adapter Card is mounted to the top of a VacuTrace just like any other adapter card. Simply line up the screw holes and press down so the connector mates. Then add the four wing nuts to secure in place. Once a particular tube is selected for test, the jumpers need to be added. Jumpers complete the circuit and allow for any possible pinout. Even rare tubes can be accommodated.



Figure 1. Jumper Adapter Card installed onto VacuTrace.

2 Connecting Jumpers

Jumpers

Included are nine standard banana plug jumpers for connecting the back row of jacks to the front row. The jacks in the back row are the connections to VacuTrace; jacks in front row go to numbered pins in sockets.

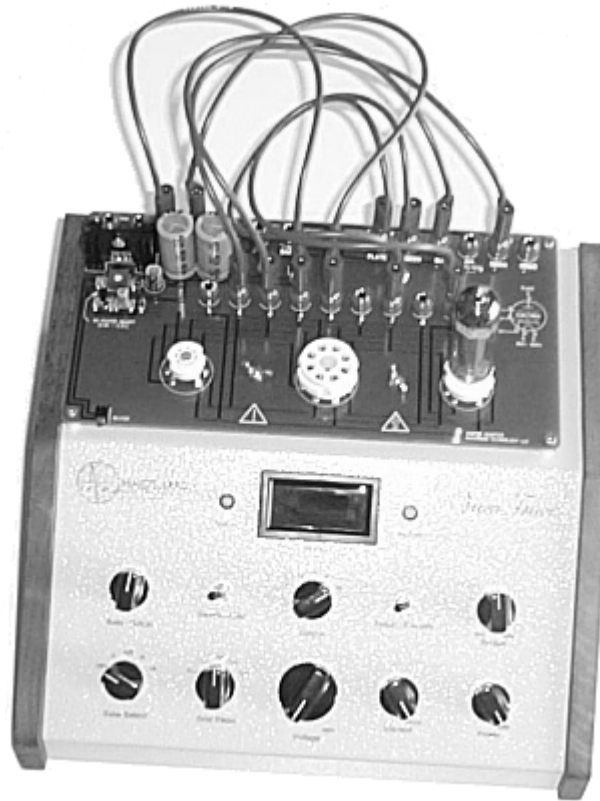


Figure 2. Jumpered for EL84 operation.

Heaters

Due to the relatively narrow trace widths (needed for voltage spacing), the maximum current limit for heaters is 2.0 amps. The onboard adjustable dc heater supply can be adjusted from about 4.8V to about 6.5V using the blue potentiometer. Do not attempt to draw more than 600mA from this supply. It won't fry or smoke, but may pull down the internally regulated supply inside of VacuTrace resulting in abnormal and uncalibrated

operation. Use an external DVM to measure the voltage setting. The dc heater is pre-set at the factory to 6.3V.

The LED on the front edge indicates when the dc heater supply is engaged. However, this circuit can be fooled. If a tube is installed and connected to the ac heater supply, the dc heater regulator becomes engaged at all times. This is ok as it is not in use.

External heaters can be used with caution. It is best to use an external ac supply from a filament transformer when voltages other than 5.0 or 6.3V are needed.

Considerations

There are series 100 ohm resistors in the grid and screen signal paths. If any spurious oscillation is noticed, try to rearrange the jumpers to eliminate coupling between signals. If trouble persists, the 100 ohm value may need to be increased.

Connections

The connections for an EL84/6BQ5 are silk screened on the right side of the jumper board. Use this as a guideline to connect other tubes. The following table lists connections for a few common tubes. Never leave a grid disconnected!

	12AX7	6DJ8	6SN7	6AU6	EL34
PLATE	1, 6	1, 6	2, 5	5	3
SCREEN				6	4
IKA	3	3	3	7, 2	1, 8
IKB	8	8	6		
GRIDA	2	2	1	1	5
GRIDB	7	7	4		
5AC+					
5CT					
5AC-					
6AC+			7		2
6AC-			8		7
DC+	4, 5	4		3	
DC-	9	5		4	

3 Warranty & Service

Warranty

Hagerman Technology LLC warrants this product free of defects in materials and workmanship for 10 years. If you discover a defect, Hagerman Technology LLC will, at its option, repair or replace the product at no charge to you provided you return it during the warranty period, transportation charges prepaid to Hagerman Technology LLC. This warranty does not apply if the product has been damaged by negligence, accident, abuse or misuse or misapplication, has been damaged because it has been improperly connected to other equipment or has been modified without the express written permission of Hagerman Technology LLC. This warranty is limited to the replacement or repair of this product and not to damage to equipment of other manufacturers.

Any applicable implied warranties, including warranty of merchantability, are limited in duration to a period of the express warranty as provided herein beginning with the original date of purchase and no warranties, whether express or implied shall apply to the product thereafter.

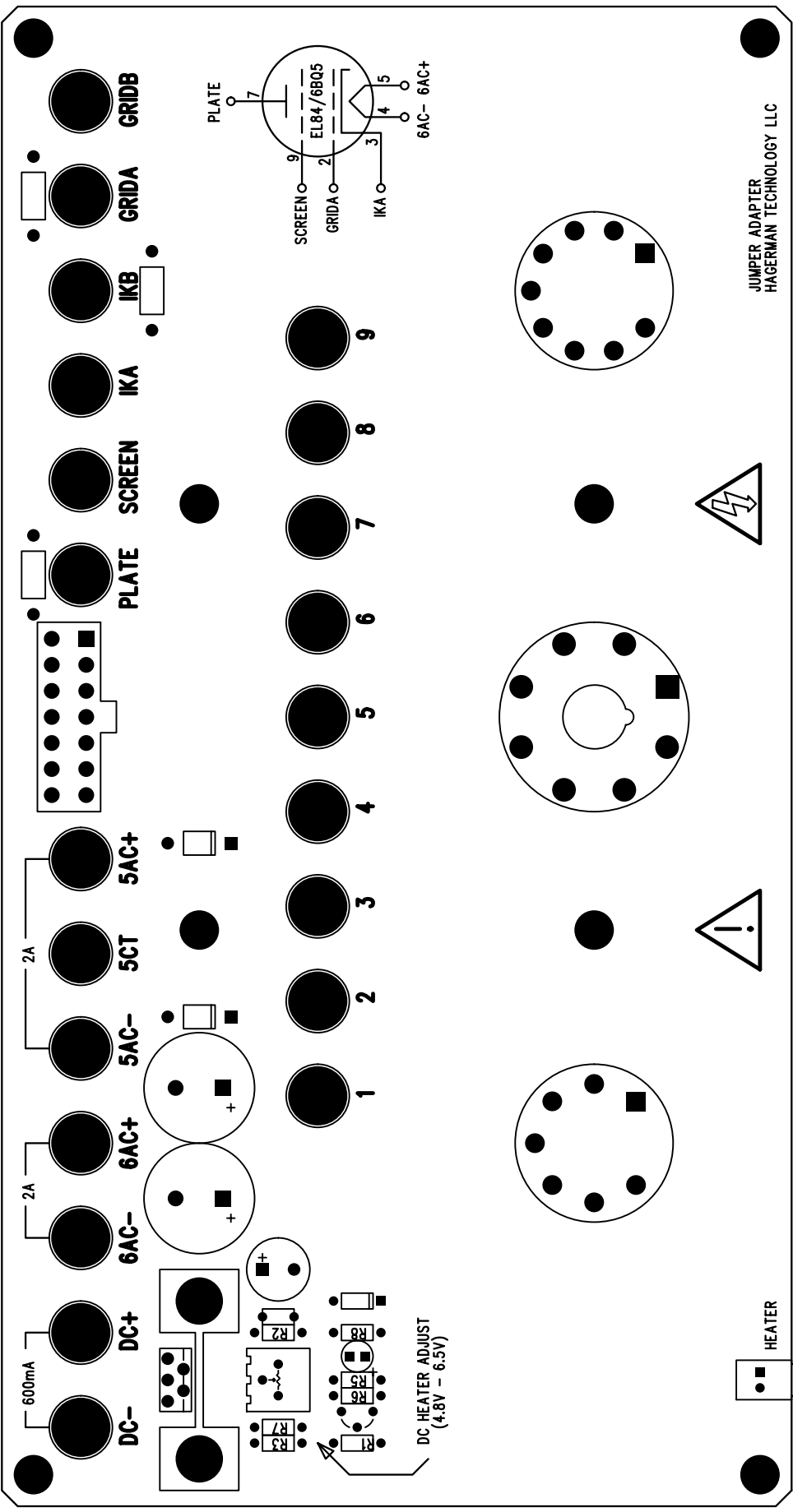
Under no circumstances shall Hagerman Technology LLC be liable for any loss, direct, indirect, incidental, special, or consequential damage arising out of or in connection with the use of this product.

Service

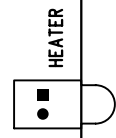
If a problem persists, please contact Hagerman Technology for service at <http://www.hagtech.com>.

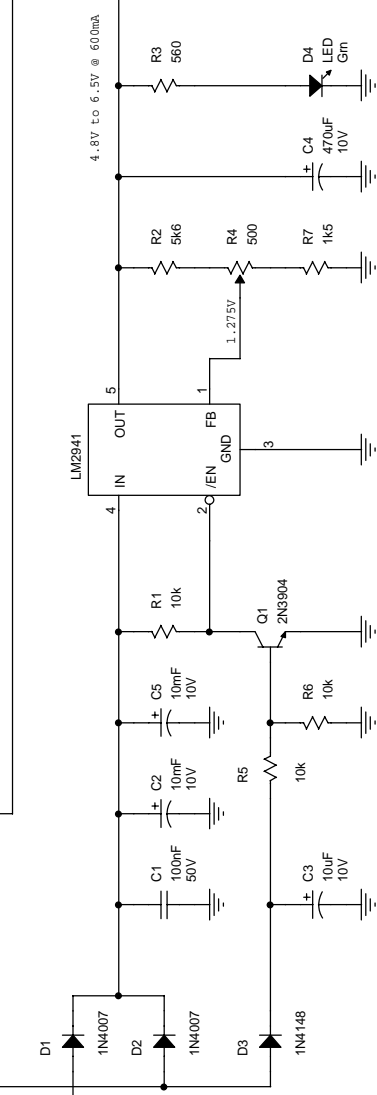
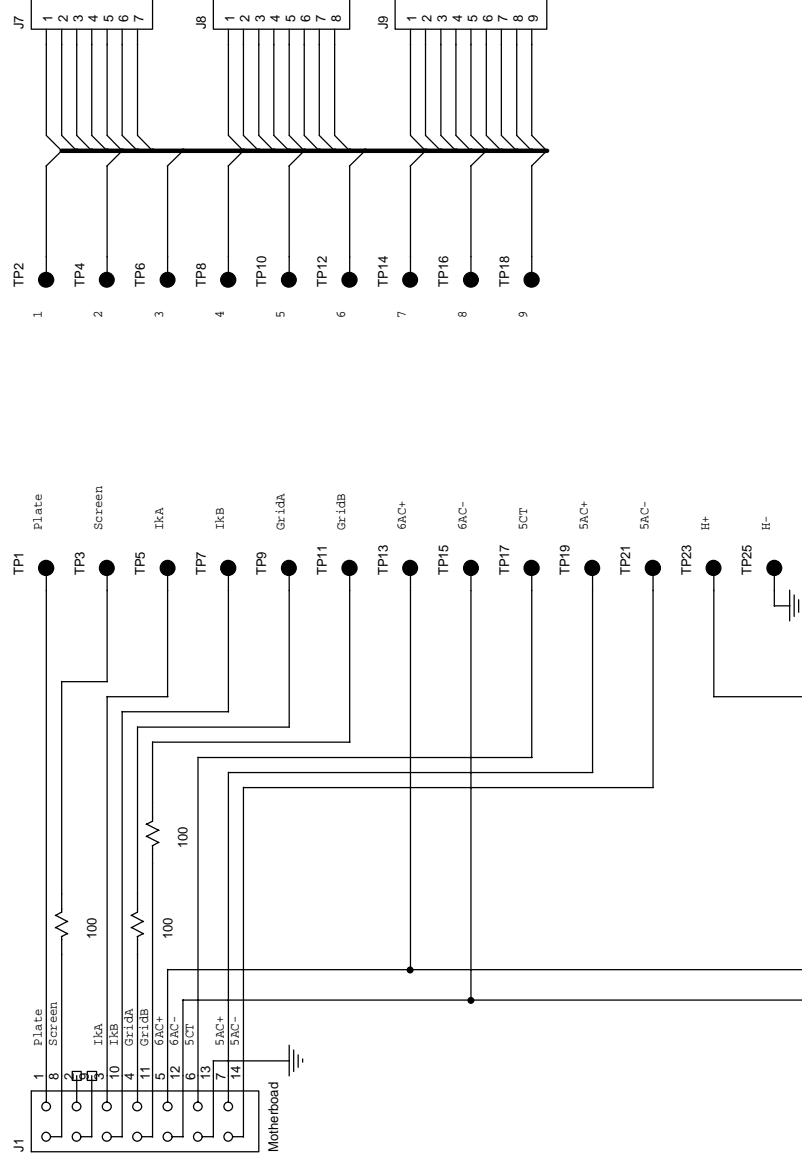
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JUMPER ADAPTER
HAGERMAN TECHNOLOGY LLC





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VacuTrace: Jumper Adapter

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