

RA-150 TR-3/4 v2.0 PLUG-IN RELAY MODIFICATION KIT INSTRUCTIONS

PARTS SUPPLIED WITH THIS KIT:

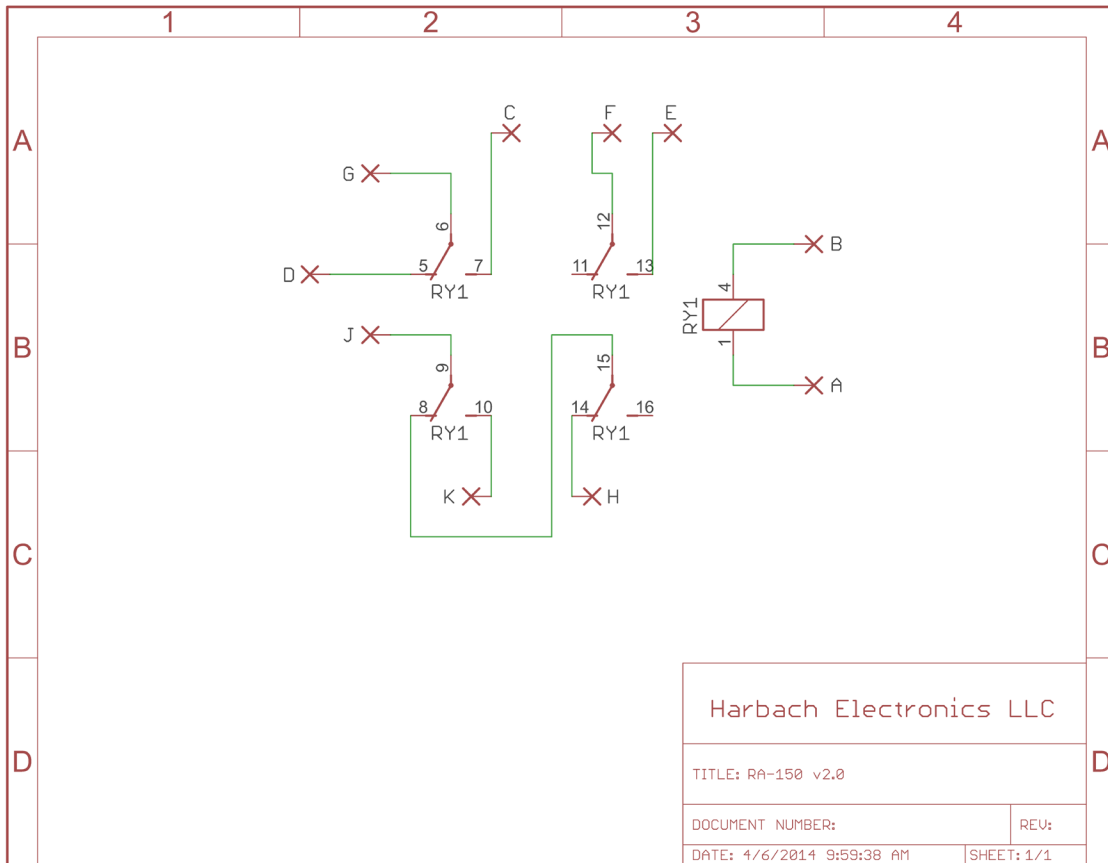
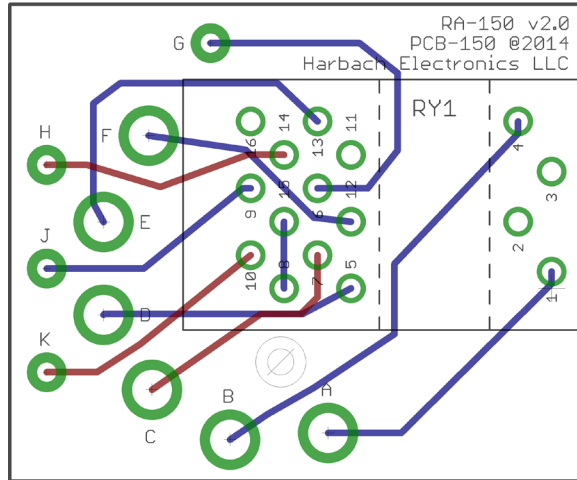
(1) TR-3/4 v2.0 Plug-In Relay PC Board	(1) Relay Socket
(1) Plug-In Relay	(1) 12" #22 Solid Bare Wire
(1) Relay Retainer Clip	(1) 12" #19 Spaghetti Tubing
(1) Instruction Sheet	(1) 6" #22 Black Wire
(1) 1.5k Ω 2-Watt Resistor	

Read **ALL** instructions very carefully before starting the installation.

- () Remove the top and bottom covers from the chassis and remove seven (7) screws securing the power amplifier (PA) cage. Remove the PA cage.
- () Remove the #12 fuse lamp from the socket. **CAUTION: Pull the lamp straight out of the socket, DO NOT twist!**
- () Unsolder the RF choke (RFC7) from the LOAD capacitor frame and from the center conductor of SO-239 connector.
- () Clip ten (10) leads to the original T/R relay. Remove two (2) screws securing the original T/R relay to the chassis. NOTE: RF choke (RFC8) will be removed and is not re-installed as it will no longer be needed due to a direct connection between the new relay and feed-through capacitor C90.
- () Unsolder the center conductor of small coax from terminal #6 of the #12 fuse lamp socket and the shield from ground. **BE CAREFUL, the lamp socket is very fragile.**
- () Remove the SO-239 connector.
- () **Carefully** unsolder all connections from the feed-through capacitor terminal posts and remove excess solder. **CAUTION: The bodies of the feed-through capacitors are made from ceramic and will not withstand excessive pressure or abuse.**
- () Install the relay socket on to the PC board and solder.
- () Route the small coaxial cable that was unsoldered from the #12 fuse lamp socket and ground through the access hole near pads A and B on the new relay board.
- () Align the new relay board over the feed-through capacitor terminals and check for proper alignment. NOTE: It may be necessary to bend the terminal posts slightly for proper alignment.
- () Slide the new relay board over the feed-through capacitor terminal posts and position so that the PC board lays on the flats of the terminal posts. NOTE: Some terminal posts are crimped, thereby enabling the PC board to rest on the crimps. In these units, position the relay board down upon the crimps. **DO NOT attempt to go beyond the crimps on the terminal posts.**

- () After checking for proper alignment of the relay board, solder all terminal posts to the corresponding pads labeled A-F. NOTE: It may be necessary to maintain slight pressure on top of the relay board to maintain alignment during soldering.
 - () Re-install the SO-239 connector.
 - () Solder the center conductor of the small coaxial cable from the hole in the relay board to terminal #6 of the #12 fuse lamp socket and solder the shield to ground. Terminal #6 of the fuse lamp holder is furthest away from the SO-239 connector.
 - () Connect hole H on the relay board to terminal #5 of the #12 fuse lamp socket using a piece of the supplied #22 bare hookup wire and spaghetti tubing. Solder both connections. Terminal #5 of the fuse lamp holder is closest to the SO-239 connector.
 - () Connect hole J on the new relay board to the center conductor of the SO-239 using a piece of the supplied #22 bare hookup wire and #19 spaghetti tubing. Solder both connections.
 - () Connect hole G on the relay board to the ground lug on the #12 fuse lamp using a piece of the supplied #22 black hookup wire. Solder both connections. NOTE: If there isn't a ground lug on the #12 fuse lamp bulb, any convenient ground will suffice.
 - () **For installation of the RA-150 kit in the TR-4**, connect hole K on the relay board to the junction of a 10 pF disc capacitor and the LOAD capacitor terminal using a piece of the supplied #22 bare hookup wire and #19 spaghetti tubing. Solder both connections. NOTE: On some units there will be a 2.2 MΩ resistor at this junction.
- For installation of the RA-150 kit in the TR-3**, connect hole K on the relay board to the stator connection lug on the rear-most section of the load capacitor using a piece of the supplied #22 bare hookup wire and #19 spaghetti tubing. Solder both connections.
- () Re-solder the RF choke (RFC7) to the LOAD capacitor frame and to the center conductor of SO-239 connector.
 - () Install the plug-in relay into the socket.
 - () Install the relay retainer clip over the relay body if desired. NOTE: It will be a tight fit and difficult to get the clip in its proper position.
 - () Replace #12 fuse lamp in socket and reattach the PA cage to the chassis using seven (7) screws.
 - () Remove the wire from pin 1 of the 6EV7 tube socket.
 - () Solder one end of the 1.5 kΩ 2-watt resistor to pin 1 of the 6EV7 tube socket.
 - () Solder the wire removed from pin 1 of the 6EV7 socket to the free end of the 1.5 kΩ resistor. Insulate the flying connection as required.
 - () Recheck all solder connections and dress all wire leads as needed.
 - () Replace the top and bottom covers.

This completes the installation of the RA-TR3/4 Plug-In Relay Modification Kit.



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