



Darrah Solid State Ignitron Tube Replacements Installation Instructions, Water Cooled

1. Before removing ignitrons, locate and mark all thermostat wires and each ignitron striker as left and right.
2. Drain and disconnect water lines.
3. Remove both ignitron tubes and thermostats.
4. Directly connect the K1 bus or cathode (the bus with two holes) of the Darrah controller to the lower left hand ignitron mounting bracket. (As you look into the controller, the lower left-hand mounting bracket will be pointing directly down towards the bottom of the cabinet.) With this connection, your Darrah controller is mechanically mounted and needs no other screws or bolts. This connection should be made with the existing hardware which mounted on the original ignitron tube. The surface of the mounting bracket should be clean and flat to insure good electrical connection.
5. Connect a jumper (not supplied) from the controllers K2 bus or anode bar to the upper left-hand ignitron mounting bracket. This cable should be a multi-strand welding cable equal in size or larger than the cables that feed the transformer. The jumper connections must be clean and flat to insure good electrical contact. The hardware should be the same as the original ignitron tube connections.
6. Connect left striker lead to terminal #4 on the octal base plug.
7. Connect right striker lead to terminal #5 on the octal plug.
8. Connect two red thermostat wires from the Darrah controlled to the existing marked thermostat wires.
9. Connect water lines in and out through Darrah controller. Do not put any restrictions in water flow (i.e., no flow switches).
10. **(The following procedure should be followed to insure that the Darrah controller is properly connected inside the control panel.)** Turn the power on. The neon light on the top of the black module, which is plugged into the octal base, will light up if all electrical connections are correct. If it does not light up, turn off the power and reverse the striker leads #4 and #5.

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11. Once the neon light is on, try a trial weld. The neon light should go out or dim during the weld period, depending upon the setting of the heat control.
12. CAUTION: At no time should the central clamping bolt which holds the SCR's heat sinks and springs be adjusted. This bolt is adjusted at the factory and is set to a specified torque. *Warranty is void if this bolt is adjusted.*
13. Care must be taken when connecting the main bus bar connections. Excess force could result in damaging the heatsink and insulated mounting bracket which in turn may affect the pre-set clamping force on the devices.
14. Darrah Electric recommends connecting an R/C snubber circuit and a metal oxide varistor (MOV) across the pair of SCR's (or the K1 and K2 bus bars). These circuits will protect the SCR's from voltage surges and help prevent false triggering.

The following part numbers and values are recommended:

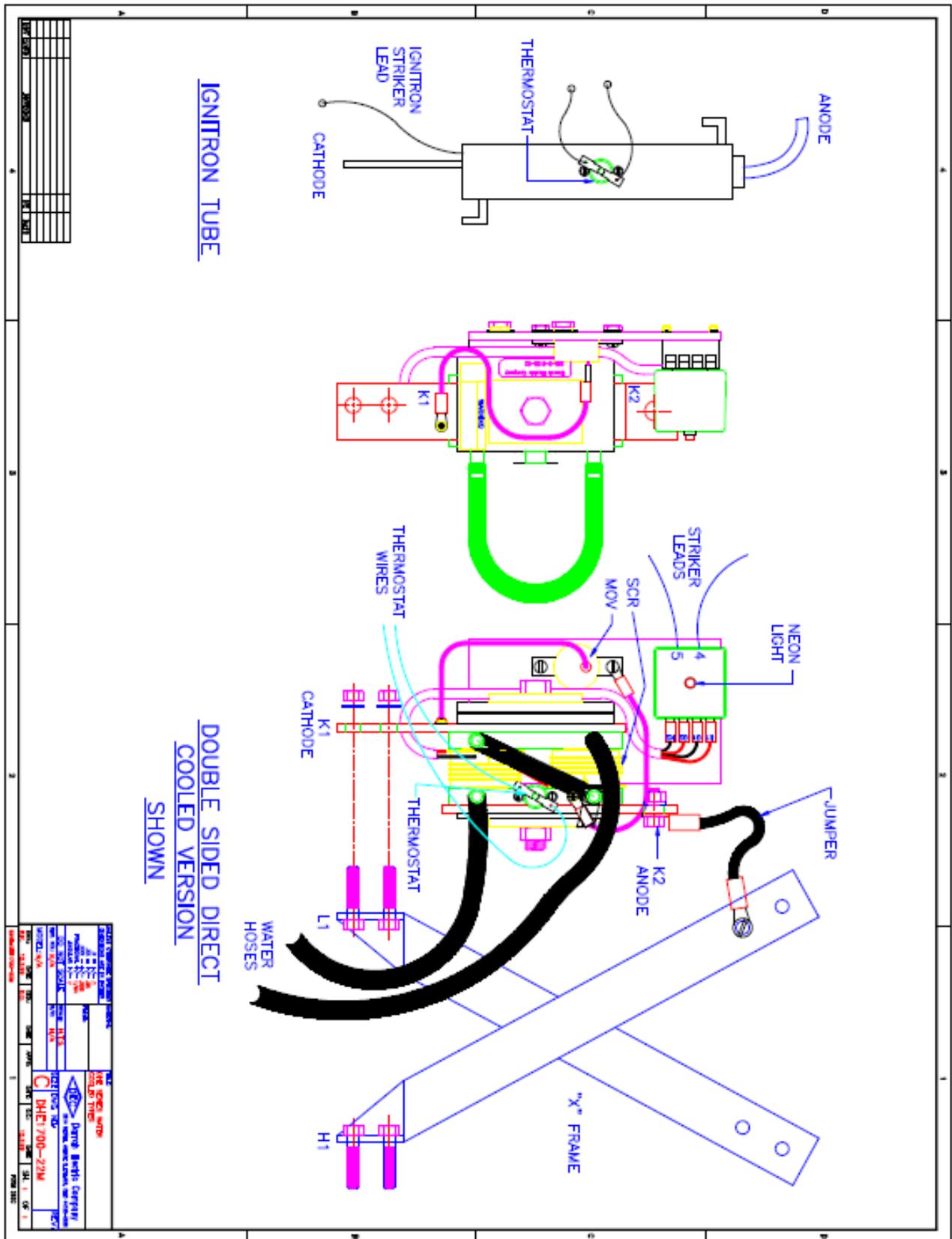
R/C Snubber:

Resistor ratings – 15 Ohm
Capacitor ratings - .22 MF, 660 VAC
Darrah Part No.: RC 1522

Metal Oxide Varistor (MOV):

For 230 volt lines, use #Z320PA40C
or 480 volt lines, use #Z575PA80A
or 550 volt lines, use #Z660PA100A

Ask for descriptions and price lists of stocked MOV's.



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