

Torch Stays On – Click Heard

1. Does the plasma cutter possess a 2T and 4T option?

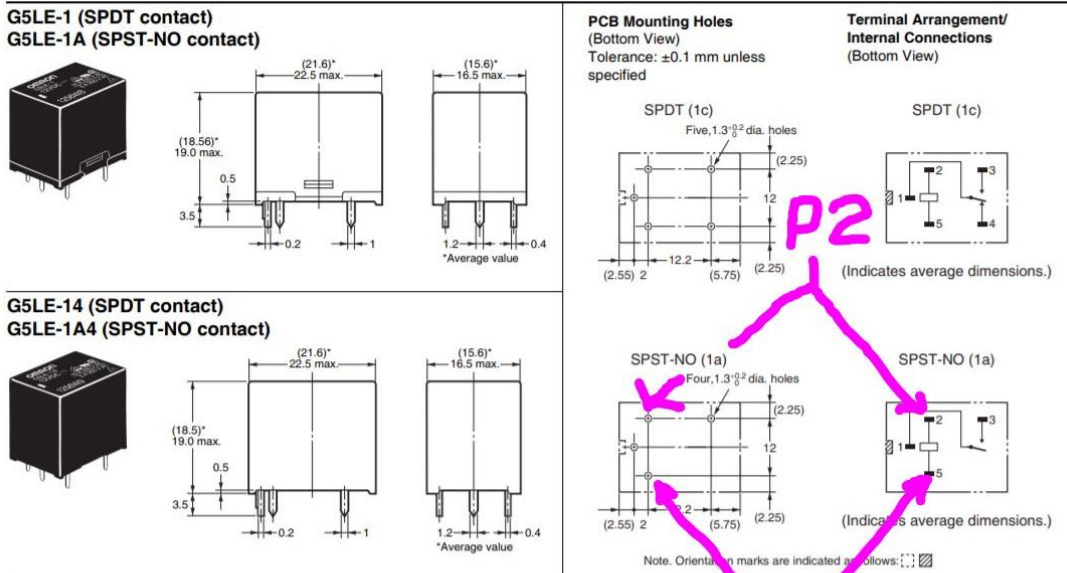
Razorweld plasma cutters provide users with 2T (2 trigger conditions) and 4T (4 trigger conditions). The 2T mode results in On and Off conditions only. The 4T mode steps up to ½ power, steps up ½ again to full power, steps down to ½ power and steps down to Off.

The plasma cutter needs switched to 2T mode for CNC operation.

2. Verify the coil in the relay is intact.

- Remove the Torch Fire Circuit from the Motion Control Board, MCB.
- Place the probes from the multimeter at P1 and P2 on the solder connections of the torch on/off relay. See the image of the relay below.
- Measure the resistance across the coil. Expect 1.44 KΩ

■Dimensions

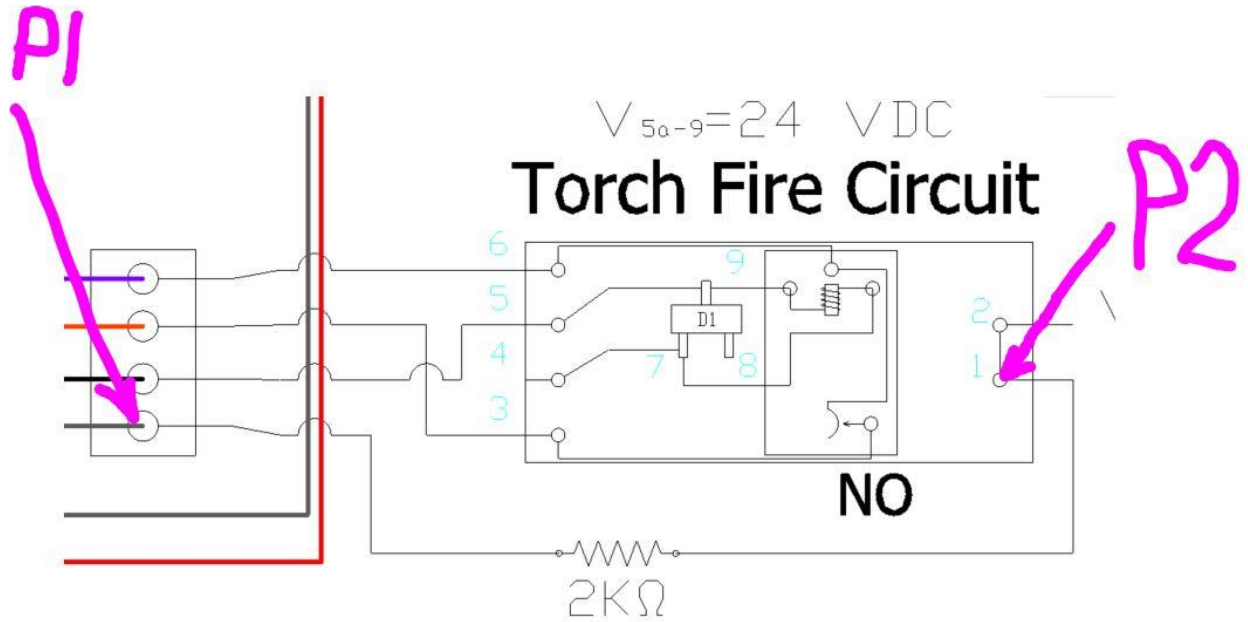


2

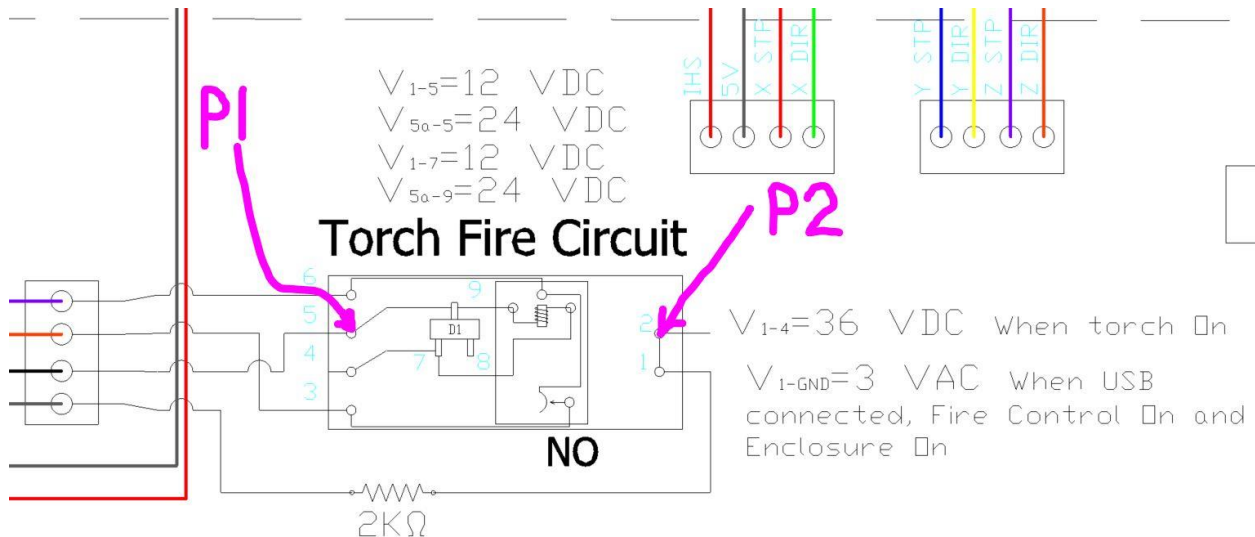
3. Verify the relay is open when not energized.

- Remove or verify removed the Torch Fire Circuit from the Motion Control Board, MCB.
- Measure the resistance between pin 3 and pin 6 on the Torch Fire Control circuit. See the light blue numbers on the below picture of the Fire Control Circuit. Expect infinite resistance (greater than 1 MΩ).

4. Verify the resistor in the Motion Control Board is functional.
 - a. Remove or verify removed the Torch Fire Circuit from the Motion Control Board, MCB.
 - b. Place probe 1, P1, on the black wire and probe 2 in socket 1 of the Motion Control Board.
 - c. Expect around 2000 Ω (same as 2K Ω).



5. Verify adequate voltage exists to activate the switch.
 - a. Remove or verify the Torch Fire Circuit is removed.
 - b. Connect USB to the computer, turn on Fire Control and turn on power to the enclosure.
 - c. Place the probes of the multimeter into the sockets on the Motion Control Board. Place one probe in 5 and the second in 2. See the figure below to find where 2 and 5 are located. The places are labeled P1 and P2.
 - d. Expect a voltage of 36 VDC for CrossFire Pro and 24 VDC for CrossFire. This voltage is an open circuit value.



6. Verify Fire Control actuates torch fire.
 - a. Remove or verify removed the Torch Fire Circuit from Motion Control Board.
 - b. USB connected between computer and enclosure.
 - c. Turn off power to the enclosure.
 - d. Remove the white wire (from power supply).
 - e. Measure the resistance between 2 and 5 as the torch is turn on and off in Fire Control
7. Why is the Motion Control Board computer telling the Torch to Fire. When in Fire Control can you manually fire the Torch circuit and hear the click? Or, is the Motion Control Board ignoring Fire Control? Upon power up click (torch on) and only when power off click (torch off).
8. When Fire Control cannot override Motion Control Board.
 - a. With the USB unplugged energize the electronics enclosure. Does the Torch On/Off relay click on and off.
9. With Torch stuck on disconnect Torch On/Off cable from table electronics. Does the torch continue firing? If so the torch circuit within the plasma cutter is malfunctioning.

10. Is Motion Control Board screws crushing the MCB card.
 - a. Disconnect the USB and Power Cord from the electronics enclosure.
 - b. Measure the resistance between ground and each of the 4 screws. Place a probe from the voltmeter on 1 and the ground 0. Expect Infinite ($M\Omega$ or Overload).
 - c. Repeat the above measure this time with a probe on the connection of the black wire. See 2 below.

