



GYSPOT PTI : MAIN ELECTRONIC BOARD REPLACEMENT PROCEDURE

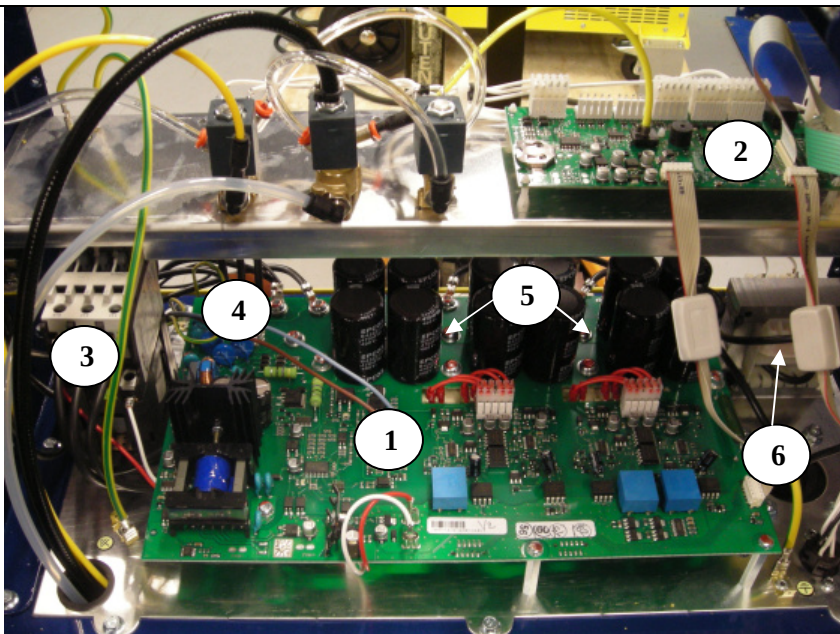
The following procedure describes how to change the main electronic board and the IGBT modules inside a GYSPOT PTI machine.

- 1) Unplug the machine from the mains power supply.
- 2) Wait 1 minute for the power capacitors to discharge.
- 3) Remove the accessory box stand on top of the machine : unscrew the 4 screws using a size 8mm socket wrench.
- 4) Remove the machine top metallic cover : unscrew the 8 screws on each side using a size 8mm socket wrench.

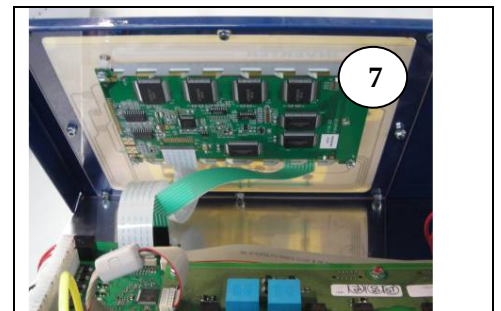


- 5) two earth wires are connected inside the top metallic cover. Disconnect these wires to remove the metallic cover.

1) Global view of the inside of the machine



1. Main electronic board (97027C)
2. Command board
3. Contactor
4. Diode bridge (under the PCB)
5. IGBT Modules (x2, under the PCB)
6. Intensity transformer
7. Display board



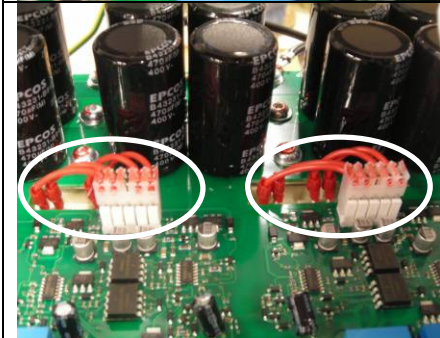
2) Disconnect the wires and connectors on the main board



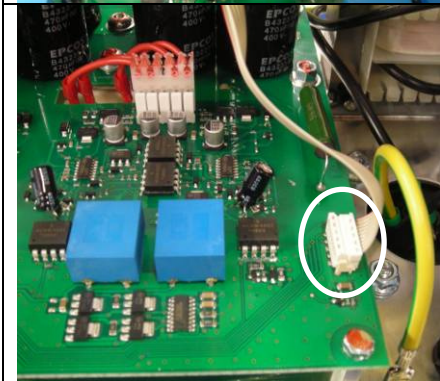
Disconnect the red wires and white wires shown left.



Disconnect the blue wire and the brown wire shown left.



Disconnect the 2 white connectors close to the power capacitors. The red wires connected to the IGBT modules do not need to be disconnected, as there is a clearance on the PCB to let the connectors go through.

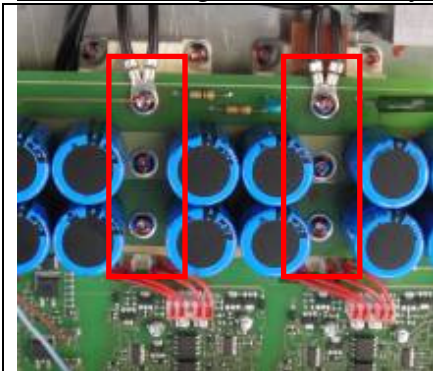


Disconnect the connector shown left.

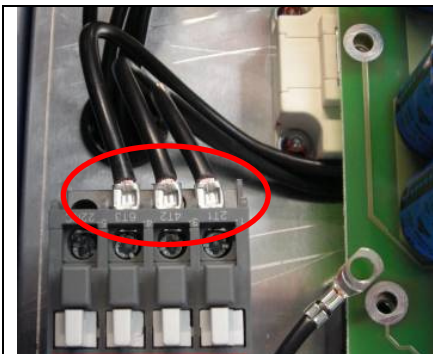
3) Unscrew the screws on the diode bridge and IGBT modules



Unscrew the 5 screws on the diode bridge. Make sure to keep the washers. Use a size 4 Allen key. Note : it is explained further in this procedure how to connect back the diode bridge.

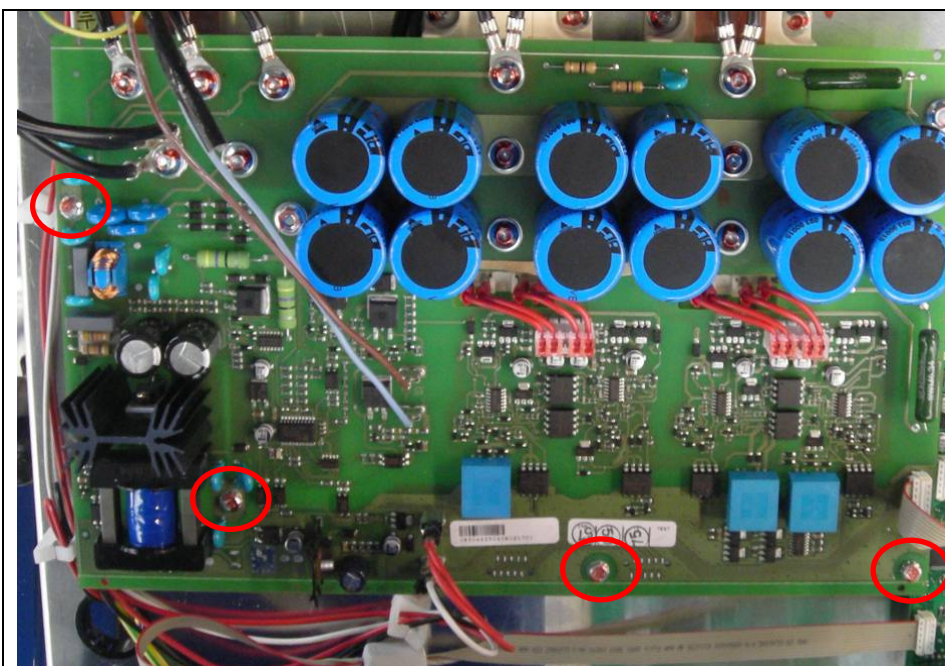


Unscrew the 3 screws on each IGBT module. Make sure to keep the washers.



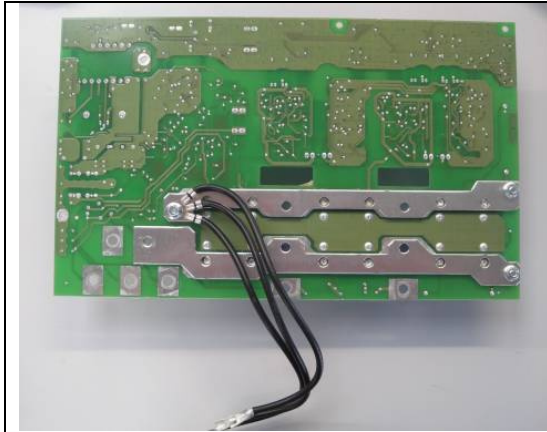
Unscrew the 3 wires connected on the contactor (see photograph left). It is not necessary to memorise in which order they were connected as there is no order to connect them back, but it is compulsory to connect them to the T1, T2, T3 terminals or L1, L2, L3 terminals, depending on the types of contactors.

4) Remove the main electronic board and the IGBT modules



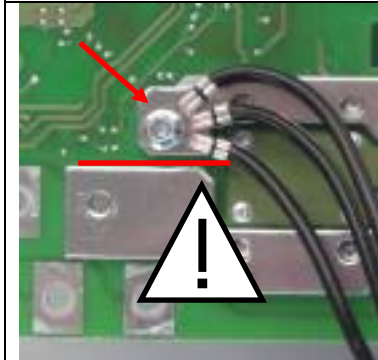
Unscrew the 4 screws holding the main board shown left. Make sure to keep the washers. Use a size 7 socket wrench.



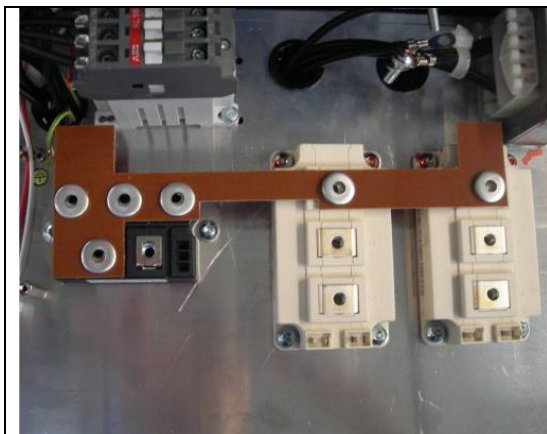
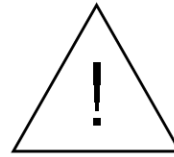


Lift the main electronic board and remove it. Some metallic bars are assembled on the back of the PCB (2 times 2 bars). It is important to take those bars and assemble them on the new board. The shape of the bars is drawn on the back of the PCB, therefore it helps to put them back correctly. Use a size 8 socket wrench to remove the screws.

Remove the 3 black wires that connect to the contactor and assemble them on the new board also.

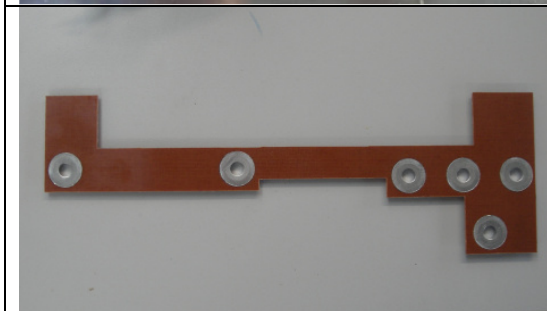


When the 3 black wires are assembled back on the new board, make sure that no lug touches or comes close to the other set of bars.

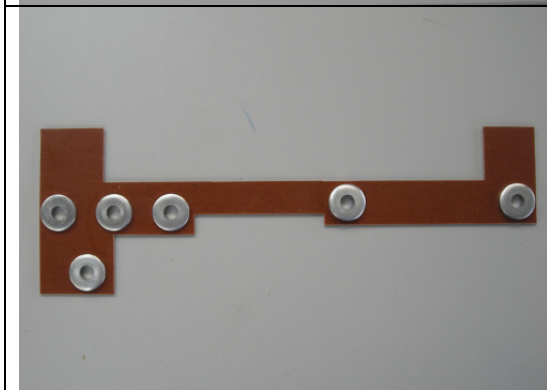
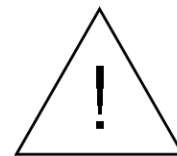


A bakelite plate is placed on the diode bridge and the 2 IGBT modules. Some washers are positioned on this plate.

The photograph left shows how this plate should be positioned on the diode bridge and the IGBT modules.

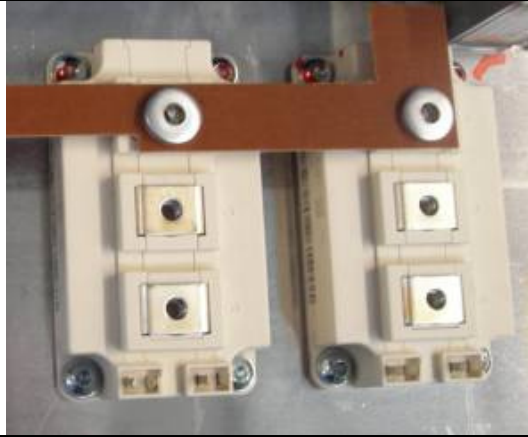


On this side, the washers lie on the same level as the plate.



On this side of the plate, the washers come off by a few mm.

If the washers fall off the plate, it is extremely important to put them back on the plate as described here, as they determine the position of the electronic board with respect to the diode bridge and IGBT modules. If the washers are not placed correctly, there is a high risk to generate an electrical failure of the machine.



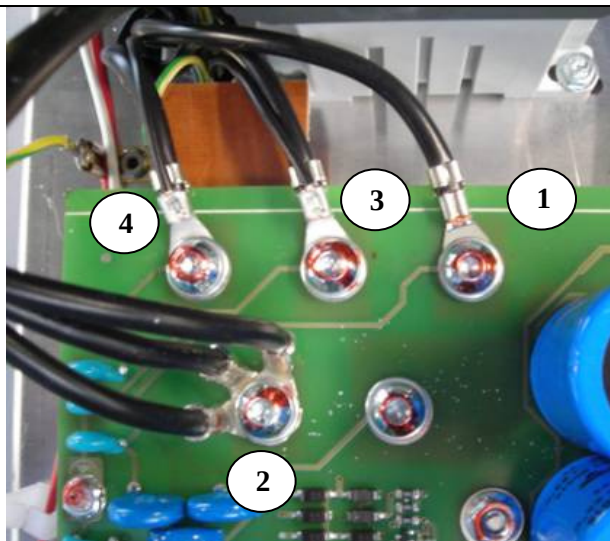
If the electronic board is changed for a power issue, it is highly recommended to also change the two IGBT modules.

If the two IGBT modules need to be changed, unscrew them from the metallic plate, and screw the new ones instead.

5) Reassembly

For the reassembly, proceed as follows :

- Place the bakelite plate with the washers on the diode bridge and the IGBT modules (pay particular attention to the position of the washers on the plate).
- Take the new board, where the bars will have been assembled along with the 3 black wires that connect to the contactor.
- Insert the white IGBT connectors through the clearance in the main board. The 3 black wires should pass below the Bakelite plate. Position the Bakelite plate and the new main board so as to align with the diode bridge and IGBT modules. Screw the middle screw on the IGBT modules to hold the whole assembly in position.
- Screw back the 4 screws on the main board, on the columns.
- Connect back the 3 black wires on the contactor; there is no order to respect.
- Screw the other screws on the IGBT modules; screw the black wires on the edge of the board, in the IGBT modules.
- Connect back the command board connector.
- Connect back the wires on the board (see paragraph 1)
- Connect back the diode bridge.



To connect back the diode bridge, consider the following advices :

In position 1, connect a large diameter black wire coming from the circuit breaker on the back of the product.

In position 2, connect the 3 black wires coming from the contactor.

In position 3 and 4, respectively connect a group of 2 wires : a large diameter black wire coming from the circuit breaker and a small diameter black wire coming from the bottom part of the machine.

- Assemble the top metallic cover back on the machine. Connect back the 2 earth wires on the inside of the metallic cover. Screw back all the screws on the metallic cover.