SERVICE BULLETIN

19 January 2006 BULLETIN # 201

MC91-0, MC92-0 & MC93-0

SECURING THE PLANAR TRANSFORMER

If a Weldarc MC91, 92 or 93 series machine prior to the serial numbers listed below is subject to severe impact (ie by being dropped on its front), the planar transformer may move forward. This can cause components on the Voltage Boost pcb to short against the Logic/Display Control PCB, which may cause the microprocessor to fail. A symptom of this is that the machine may become locked into one mode.

The heatsink plates fitted on the top and bottom of the transformer have been changed to incorporate notches which secure the transformer, and then the bottom plate has a hole which fits over a screw head fitted to the main heatsink. This change was implemented in the factory from the following serial numbers:

MC91-0, (Weldarc 125i) - M910B1105010029 MC92-0, (Weldarc 145i) - M920B1105010021
MC93-0, (Weldarc 165i) - M930B1205011001

Any machine prior to these serial numbers which is received for service work should have the the transformer secured before being put back into service. Rather than try to retrofit new heatsink plates, a better field fix is to secure the heatsink plates to the transformer and to the main heatsink with silicone adhesive (Dow Corning 748 or equivalent). Care must be taken to ensure that a minimum amount of adhesive enters the space between the flat face of the transformer and the heatsink plates to ensure that efficient heat transfer can be maintained from the transformer.

PROCEDURE:

1. Isolate the power to the welder.
2. Remove the 12 screws (includes 4 for feet and 4 for strap anchors) that secure the outer cover. Remove the outer cover.
3. Undo the wiring connections to the Voltage Boost pcb. Undo the 3 screws and remove the Voltage Boost PCB.
4. Undo and remove the 3 extended nuts located under the Voltage Boost pcb.
5. Lift the shunt to enable access to the screws underneath it.
6. Undo the 2 screws that secure 2 aluminium busbars to the output rectifier and remove the busbars.
7. Undo the transformer spring clip and lift up high enough to remove the top aluminium heat sink plate, then slide out the transformer. Finally remove the lower heat sink plate.
8. Put 4 spots of silicon adhesive on the lower heatsink ridges, and then place the lower heatsink plate on these. Position it so the front edge is 1-2mm back from the front edge of the main heat sink, and fitting tightly against the near edge as in Fig 2.

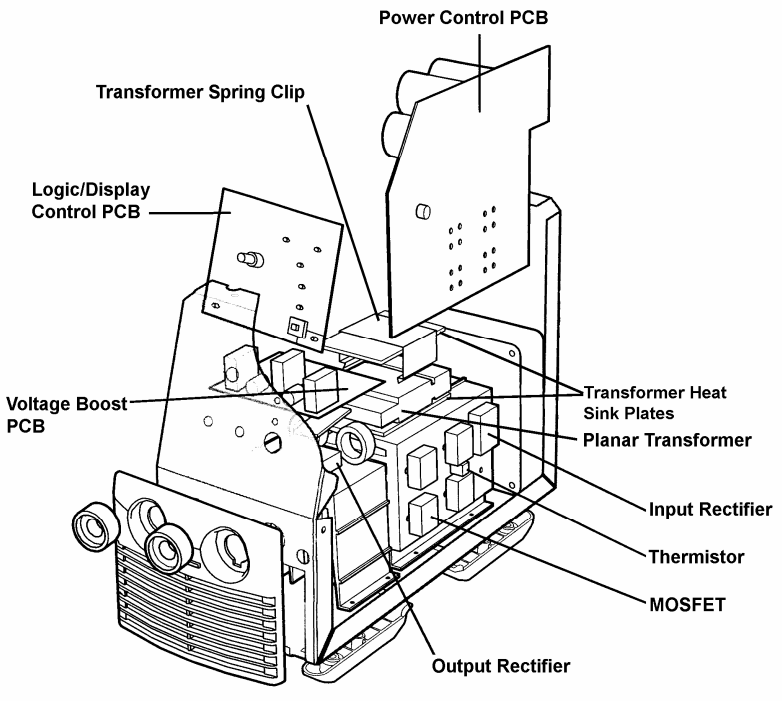

Fig 1 Component Indentification

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9. Carefully place 4 spots of silicon adhesive onto the lower face of the transformer. Keep these towards the perimeter of the flat lower face so that excess adhesive can squeeze out. It is important to keep the amount of adhesive used to a minimum so that heat is conducted efficiently from the transformer.
10. Fit the transformer into position so that its front edge is approx 1-2 mm away from the front edge of the main heatsink, and its near edge is flush against the near edge of the main heatsink. Fig 3 shows the correct position.
11. Fit the upper heatsink plate onto the transformer and put a spot of adhesive onto the top of it, underneath where the clip fits, then close the transformer spring clip. If the plates and transformer are correctly in position, the spring clip should latch without effort.
12. Undo the clip and put a spot of adhesive between the clip and the main heatsink so it cannot open.

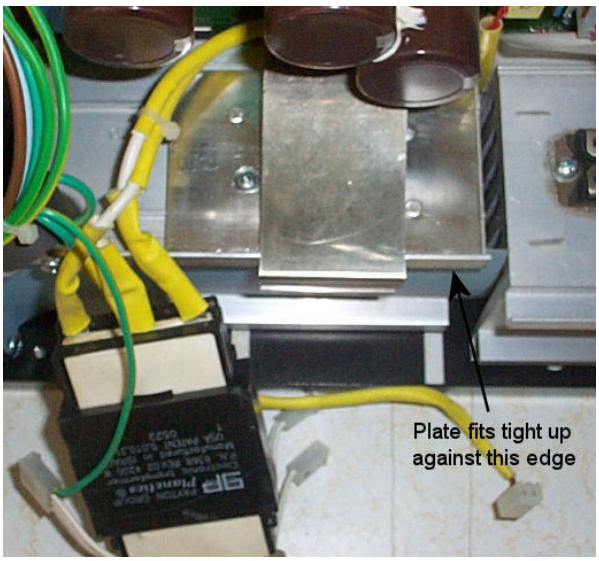

Fig 2 Heatsink Plate Location

13. If necessary, reshape the aluminium busbars so that they have 90° bends as per Fig 3, then fit the right one back onto the right transformer terminal with the 4mm bolt.
14. Refit the flat washer and spring washer to the 4 mm bolt, and then fit the extended nut.
15. Refit screw to secure the aluminium busbar to the output rectifier.
16. Lower the shunt and secure with 4 mm bolt and extended nut. Note this extended nut must have the reduced diameter facing down to clear the connection on the shunt.
17. Fit the nearest busbar and secure both ends. Only a spring washer is used below the extended nut on this one.
18. Replace the ferrite inductor (L0016) on the Voltage Boost pcb if it is damaged. Whether this inductor is replaced or not, always ensure there is some silicone cement underneath the ferrite inductor to prevent it from moving if the unit is dropped.

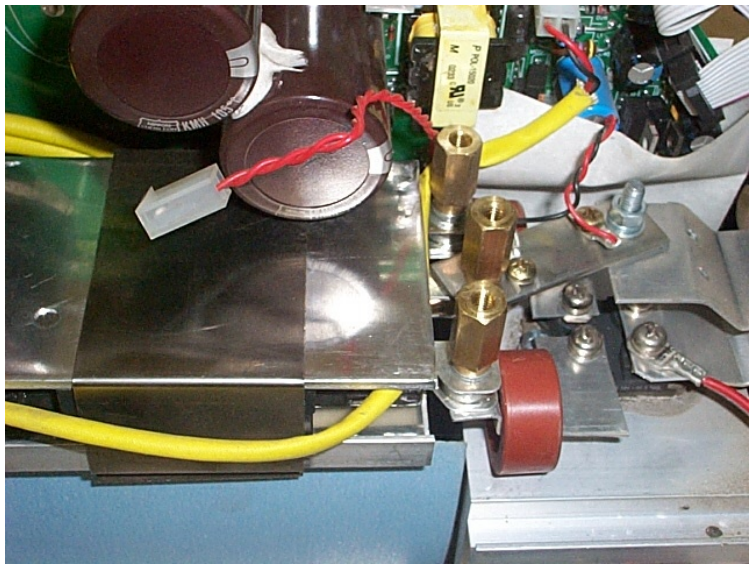

Fig 3 Component Layout

19. If the ferrite inductor on the Voltage Boost pcb has shorted to the case, the wire from the Voltage Boost pcb to the output rectifier may be damaged, in which case it must be replaced. It is 150 mm long with a ring lug at one end.
20. Refit Voltage Boost pcb, and reconnect plugs, taking care that they are connected in the same position as before. Refer to Fig 4 for connections.
21. Reconnect any other wires previously disconnected.
22. Check all earth wiring on machine and 3 pin plug for damage. Replace any damaged parts.
23. Test machine operation.
24. Refit covers.

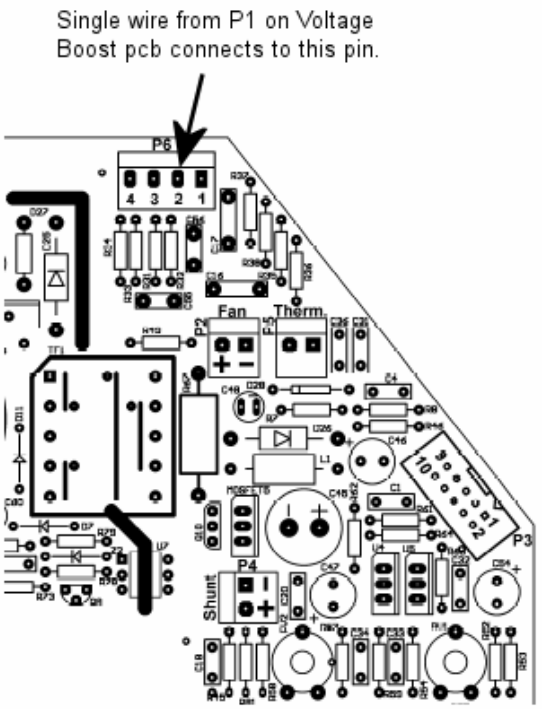

Fig 4 Connector Identification

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