

# Izzo Alex Mk1 Gicar Controller Relocation

A project that was to go hand in hand with the insulation of my Izzo Alex Mk1 boiler was; relocation of the Gicar Controller from its position at the top of the machine to one 3 or 4 inches lower.

My reason for doing this was to protect the electronics within the Gicar from high temperatures and increase its lifespan. Although insulating the boiler will help a little, I felt its position within the machine could be improved and considerably lower the temperatures it was exposed to during its service life (whether insulated or not).

I have had 2 Gicar controllers fail on my machine; I was told that both were from a batch of controllers made in late 1995 that were believed to be faulty, so this came as no surprise to me. The controllers were of course, replaced under warranty.



The brown “scorch” mark is actually located above a small 12V transformer that supplies power to the Sirai autofill solenoid (this controls whether water enters the brew circuit or the boiler, a 2 way valve). In both cases the brown mark was in the same place.

Whether all or some of the “faulty batch” were susceptible to heat, or whether it was a non-heat related problem I am not sure.

However, Izzo Vivi machines from the same period have not (to my knowledge) had any problems with the Gicar controller. Possibly this is because the controller in the Vivi is mounted lower than in the Alex.

*Vivi*



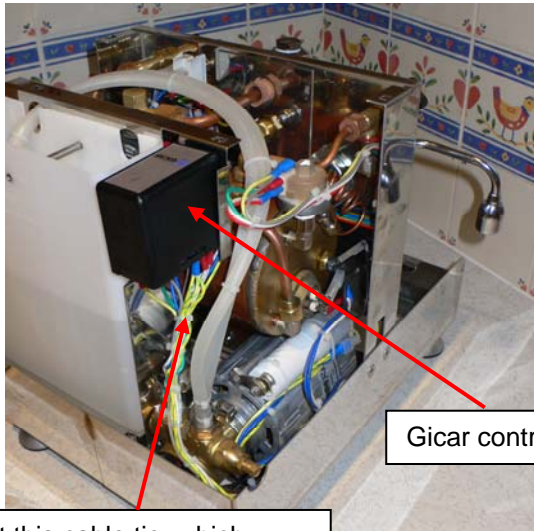
*Alex*



A logical assumption is; the increased heat from the position in the Alex **may** stress the controller more, thus any batch with a weakness may be more likely to become faulty in the Alex, than in a machine where it was located in a cooler position.

My current replacement has been in just a few weeks and is of recent manufacture. Although I have no reason to believe that this will fail and I am not aware of any failures in current machines. I felt relocating it would make me feel happier and could only benefit the machine in general.

*At this point I should stress that by doing such relocation without the permission from your supplier, you would invalidate the warranty of the machine*



Gicar controller

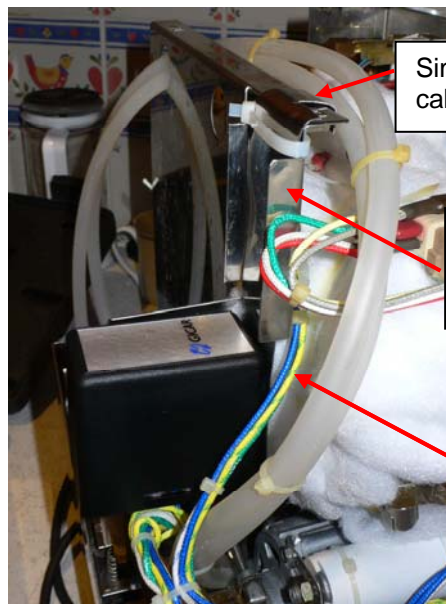
Cut this cable tie, which allows the box to move down



This metal plate is made by simply cutting a strip of steel approx 45mm wide and approx 140mm long. A single hole is drilled in the bottom centre, to remount the Gicar box using the existing fittings

As you can see from the before and after shots, the Gicar controller is approximately 90mm lower, this may not seem much but should expose the unit to considerably less heat

The plate is shown diagrammatically below, both plan and side views, a single cable tie holds the plate in position at the top and when the machine is reassembled, also pressure from the top plate that screws into position holds the whole assembly firmly



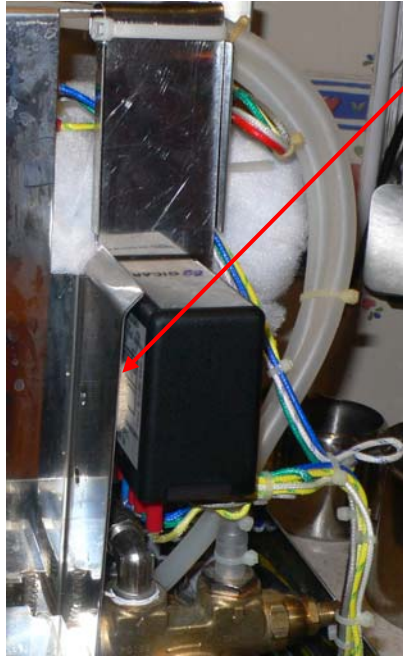
Simply hooks into place, cable tie stops it moving

It's just wide enough to be a snug fit in the "guides"

We cut the top cable tie earlier, to allow these to separate so the Gicar could be lowered

This method ensures that the procedure is reversible as well as being very simple to do with the minimum of tools. The ease of removal (reversibility) does make working on the machine in future much easier. The steel plate itself can be fairly thin as it does not have any real structural work to do, you will however need "tin snips" or "aero snips" to cut it.

Another view of the installation is shown below with some notes

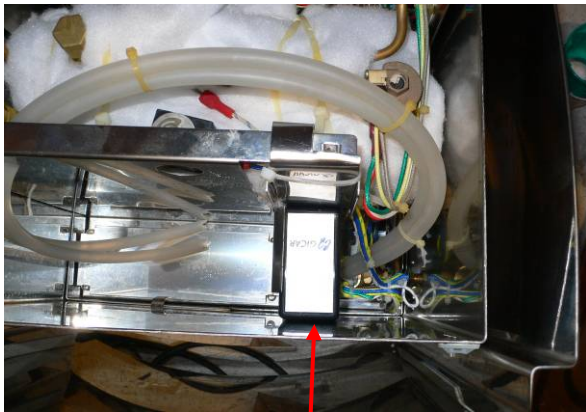


A felt stick on pad is used here. This is to prevent contact with the metal and any possible heat transfer (or vibration buzz)

Create a gentle bend in the wiring to avoid stressing the wiring near the "spade" connectors



Don't go too low and stay clear of the pump fittings



I placed a small sticky felt pad here as well, between the Gicar and the case



Once the case is on, you can see it is reasonably well protected from water damage. You will need to be more careful when filling the tank

## **Conclusion**

I believe this will make the Gicar installation run much cooler and place less stress on the electronics within the Gicar unit. The increased space above the unit will further improve the "ventilation" allowing hot air to escape. I measured the temperatures in the Gicars original position (where the top of the Gicar would have been), 52.8 C and at the top of the Gicar in its modified position, 35.4 C. This difference is 17C and I believe would be even greater if the boiler was not insulated.

Does this procedure work (and is it even valid) on MK2 Alex machines, well only if they are the same inside as my Mk1 and have the room to relocate the Gicar. Whether this makes any difference to the service life of the Gicar unit is unknown, however, I personally feel happier having finally done the modification.

## **The big questions:**

### **Should you do this?**

*Only if you think the same way I do, have the tools, equipment and you are technically competent. Also your machines warranty may be affected check with your supplier.*

### **Is this a design problem?**

*I have no idea, I just feel happier with mine mounted lower and running cooler, especially as my machine is on 12hours+ per day every day! As far as I am aware, Gicar units' failing in the Alex is **not** a common fault (in fact I only know of it happening in my machine).*

### **I have a brown mark on my Gicar box, is it going to fail?**

*Not necessarily, with time the tops of these units do go brown in places (on all makes of machines) and like all electronics, it does have a "service life", so won't last forever.*

### **Are Gicar units any good?**

*Yes, Gicar units are considered to be of excellent quality and reliability. I am always very happy to see a Gicar controller unit in any machine.*