



# Service Bulletin



20/09/2021

BULLETIN # 277

## WELDARC 145I

### VRD ACTIVATION

**CAUTION: The following information is intended for use by qualified service personnel. When the unit is energised LETHAL VOLTAGES are present on the electrical and electronic components. It is not intended that persons without suitable training and knowledge attempt to perform service tasks on the components of welding equipment.**

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### Introduction

The Weldarc 145i machines have been found to activate welding output outside of the tolerances of the acceptable VRD activation resistance.

Weldarc 145i machines will arrive as standard, with the VRD **disabled**.

In order to enable the VRD, a minor modification of the main control PCB may be required.

The VRD should be tested to confirm the requirements of this bulletin, prior to any modification being made.

The information provided in this sheet is accurate and reliable, however no warranty of accuracy or reliability is given and no responsibility arising in any other ways by errors or omissions is accepted.

## Removing external covers

Remove:

4 x handle screws and handle.

1 x lower panel screw on right hand side and 1 x lower panel screw on left hand side.

1 x rear panel screw

Gently ease the rear plastic end panel away from the unit (be aware the fan remains attached to the panel and connected to the main control PCB) and then lift the sheet metal cover off the unit. Once the panel is lifted, be careful not to damage the earth wire which is connected to it, remove this earth wire connection (be aware of locking washers that may fall on disconnection).

## Enabling the VRD in all models, all serial numbers

The original design allowed the VRD to be enabled/disabled by moving the DIP switch on the rear of the front display PCB.

Move the switch to the ON position to enable VRD. Move away from ON to disable VRD (See Figure 1).

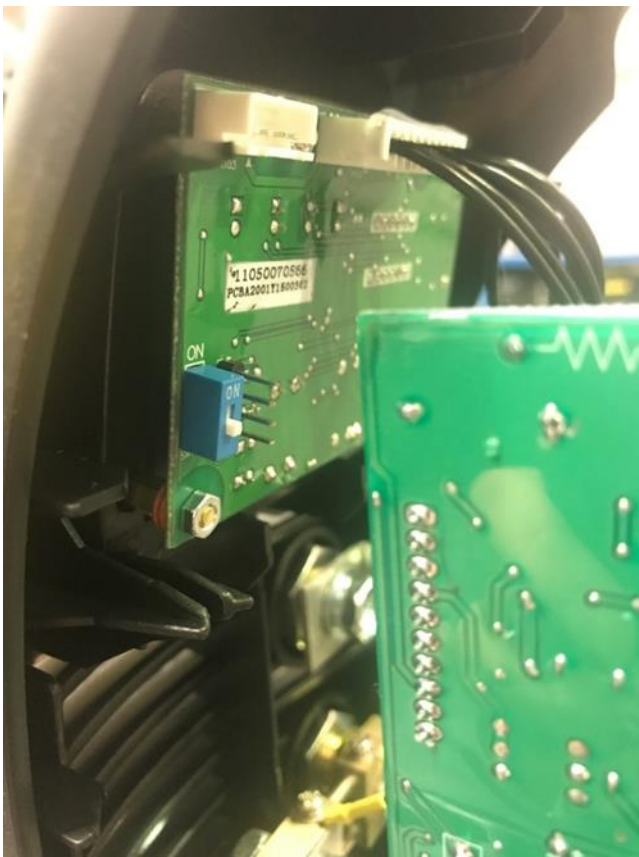


Figure 1 - Front display PCB VRD enable/disable DIP switch

With the machine cover still removed, the activation of the VRD should be tested.

Should the VRD pass the tests, the covers can be refitted. Once the covers have been refitted, the machine function test should be carried out.

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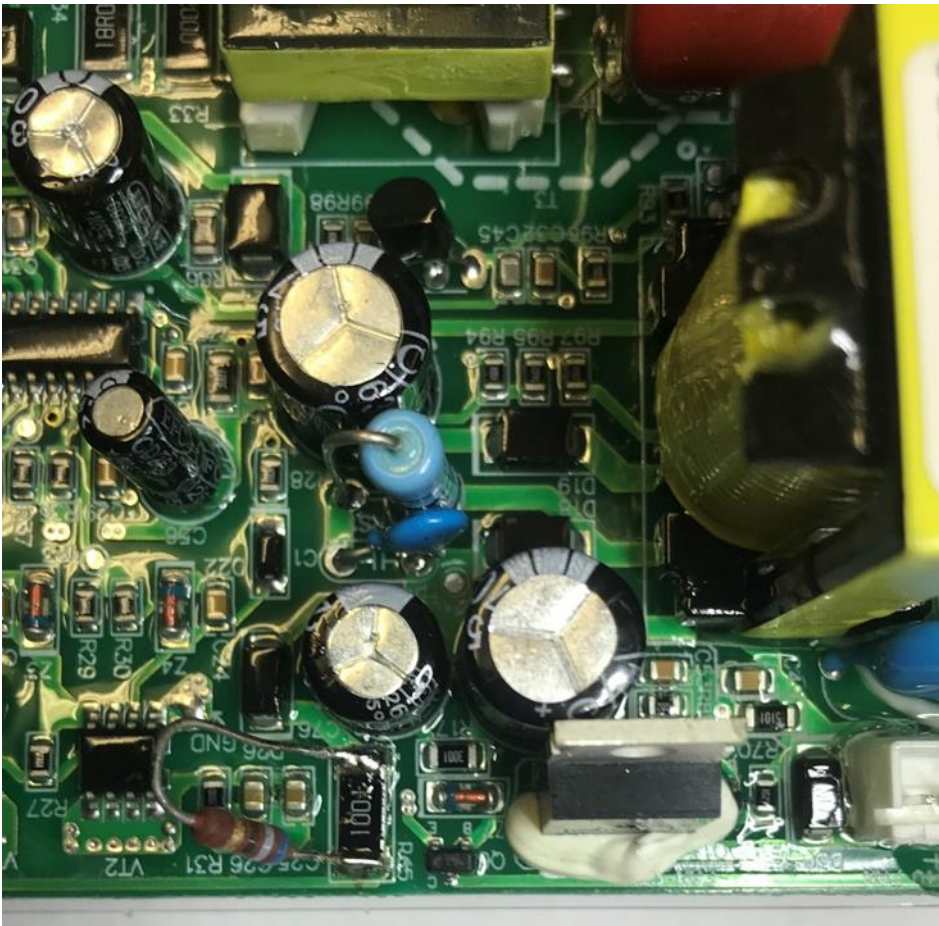


Figure 4 - Additional resistor fitted in parallel with original

Once the modification is completed, the machine should be functionally tested to prove operation. The VRD should be tested to ensure success of the modification and compliance to appropriate standards.

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## Modification to enable VRD in all other models, serial numbers M1062A0520xxx and later

In later models of the Weldarc 145i, the VRD activation circuit was modified to reduce the requirement for modification. It has been found in testing that a variety of serial numbers fail to comply with the testing requirements.

R65 was replaced with a single resistor of 470Ω. This resistor should be replaced with a resistor of 390Ω, 1W rating (refer to Figure 5).



Figure 5 - Close up of R65 on PCB

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## Machine function test

- a) Apply power to the machine
- b) Listen for fan running on start-up. The fan plug can sometimes be disconnected during panel removal/refit.
- c) Conduct a voltage check of open circuit voltage (OCV).

**Note:** With VRD enabled the OCV should be approx. 23 volts DC and the VRD Safe indicator on the front panel should be illuminated until an arc is struck. During welding the VRD Safe indicator will be off. Once welding ceases, the OCV should be approx. 23 volts DC and the VRD Safe indicator on the front panel should be illuminated.

With VRD disabled the OCV should be approx. 70 volts DC and the VRD Safe indicator on the front panel should not be illuminated.

- d) Remove power from the machine, refit the covers (reverse of removal) – Test complete.

### **Affected serial number:**

All MC106 machines and serial number ranges prior to M1062A1121001 are possibly affected by this bulletin

Any modification work required on the PCB is considered warranty. Normal WIA warranty rules and procedures would apply.

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