



# INSTALLATION, OPERATION & MAINTAINANCE INSTRUCTIONS FOR TYPES HOT PLATE SERIES SERIAL No

THIS MANUAL IS FOR THE GUIDANCE OF OPERATORS FOR THE ABOVE  
VECSTAR EQUIPMENT AND SHOULD BE READ AND UNDERSTOOD  
BEFORE INSTALLATION AND OPERATION

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VECSTAR LTD



## 1.0 SYMBOLS & WARNINGS

### 1.1 WARNING LABELS



**Danger of electric shock read any warnings printed by this symbol.**



**Danger hot surface read any warnings printed by this symbol. Warning all surfaces of a hot plate may be hot.**

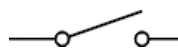


**Earth bonding point for electrical safety.**

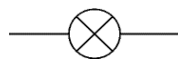
### 1.2 LIGHTS & SWITCHES



**Green mains on light illuminates when the supply is connected to the furnace.(if fitted)**



**Green instrument switch illuminates when turned on. (if fitted)**



**Heat on light illuminates or flashes when power is applied to the element.**



**Red over temperature light illuminates if the furnace trips out in the event of an over temperature condition. (if fitted)**

## **2.0 MANUAL HANDLING & UNPACKING**

### **2.1 MANUAL HANDLING**

**Caution this equipment is heavy and should only be lifted from the base with a person on each corner. Never lift it by the door. Care should be taken not to trap fingers under the feet.**

### **2.2 UNPACKING**

**Visually check for any damage to the shipping container.  
Visually check for any damage to the equipment.  
Retain the original packaging if re-shipment is foreseen or required.**

### 3.0 INSTALLATION & SAFETY

#### 3.1 SITE SELECTION

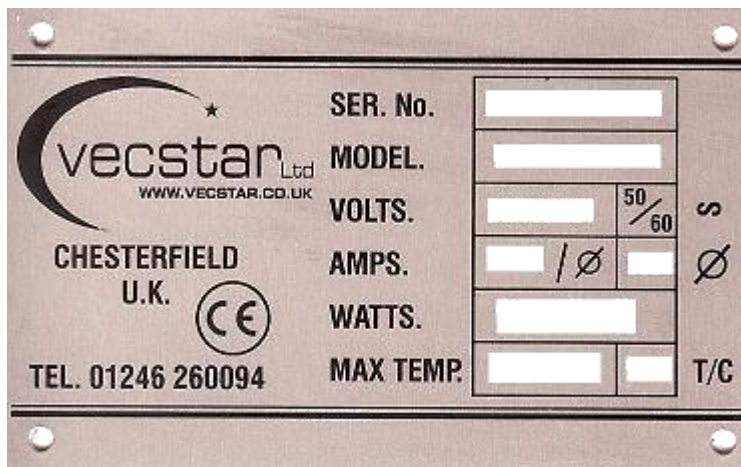
The hot plate should be placed on a heat resistant surface in a well ventilated room. Do not mount the hot plate on an inflammable surface.

There must be at least 6 inches of space around the hot plate to allow adequate ventilation.

Ensure the hot plate is placed in a way it can easily be turned off or disconnected from the electrical supply.

If the hot plate is to be used to heat materials that give off fumes it is recommended to have an extraction hood above the hot plate.

#### 3.2 ELECTRICAL CONNECTION



#### Connection To Mains Supply

Hot Plate Voltage is - - - Volts, single Phase.

Connect to a - - - amp supply using suitable cable.

**Connection by a qualified electrician is recommended.**

**All hot plates covered by this manual are single phase live, neutral and earth non reversible.**

**Before connecting check the hot plate specification plate on the back of the hot plate. Make sure the supply voltage and capacity matches the voltage and amperage on the specification plate.**

**All incoming electrical supplies must be fused correctly.**

**If a cable is fitted either wire straight to a fused isolator or fit a fused line plug.**

**Please Note: The supply cable connections are:**

**Live = Number 1, Neutral = Number 2, Earth = green/yellow**

**Connection by line plug this should be within easy reach of the operator for removal.**

**Connection by isolating switch should disconnect both live and neutral conductors and be in easy reach of the operator to disconnect.**

**The supply must be earthed for safety reasons.**

**If in doubt please contact Vecstar.**

**Servicing should only be carried out by qualified personnel.**

### **3.3 SAFETY**

**Your Vecstar hot plate has been designed with function, reliability and safety in mind. It is the user's responsibility to install it in conformance with local electrical codes.**

**For user safety we strongly recommend the use of protective clothing including face shield and gloves when placing or removing objects from the hot plate. It is advisable to have a heat resistant surface available ready to receive hot objects.**

**To avoid electrical shock, this hot plate must:**

- 1. Use a properly grounded electrical outlet of correct voltage and current handling capacity.**
- 2. Be disconnected from the power supply prior to maintenance and servicing.**

**To avoid burns, this hot plate must:**

- 1. Not be touched on the exterior or interior surfaces during use or for a period of time after use.**

**To avoid personal injury:**

- 1. Do not use in the presence of flammable or combustible materials; fire or explosion may result. This device contains component's that may ignite such material.**
- 2. Refer servicing to qualified personnel.**

## **4.0 OPERATION**

### **4.1 INTENDED USE**

The hot plate is a general purpose laboratory and heat treating of material and should not be used for anything else other than its intended purpose.

4.2 The instructions for operating the controller, over temperature controller if fitted and timer if fitted are given in separate booklets.

### **4.3 PRINCIPLES OF OPERATION**

The hot plate is heated by a mi element placed in a box and insulated with a mixture of ceramic fibre and board. The temperature is controlled by a thermostat or a 'PID' controller using a thermocouple to control the temperature. Instruments on / off switch and the controller will illuminate when turned to the on position.

Heater on the amber light will illuminate whenever the elements are drawing power.

#### **4.4 HOT PLATE LOADING**

**For best results, use only centre two-thirds of the hot plate.**

#### ***CAUTION***

**Do not overload your hot plate. If the load is to be heated uniformly it should not occupy more than two-thirds of the hot plate.**

**If you are heating a number of small parts, spread them throughout the centre two-thirds of the hot plate.**

**Use insulated tongs and mittens when loading and unloading the hot plate.**

**Always wear safety glasses.**



#### **4.5 ELECTRONIC OVER TEMPERATURE**

**When a optional digital over temperature is fitted this must be set to the correct temperature before starting a heat cycle.**

#### **5.0 MAINTAINANCE**

##### **5.1 CLEANING**

**Product spills may build up on the hot plate. This must be removed at regular intervals as it may affect the hot plates efficiency.**

##### **5.2 ELECTRICAL CONNECTIONS**

**All electrical checks should be carried out by qualified personnel.**

**Electrical connections should be checked periodically to make sure all connection are tight.**

## **6.0 SPARES AND REPAIRS**

**Vecstar have a team of qualified engineers that can carry out repairs either at the customer's premises or the hot plate can be returned to our premises for repair. A telephone call in most cases will identify the fault and a spare part can be despatched.**

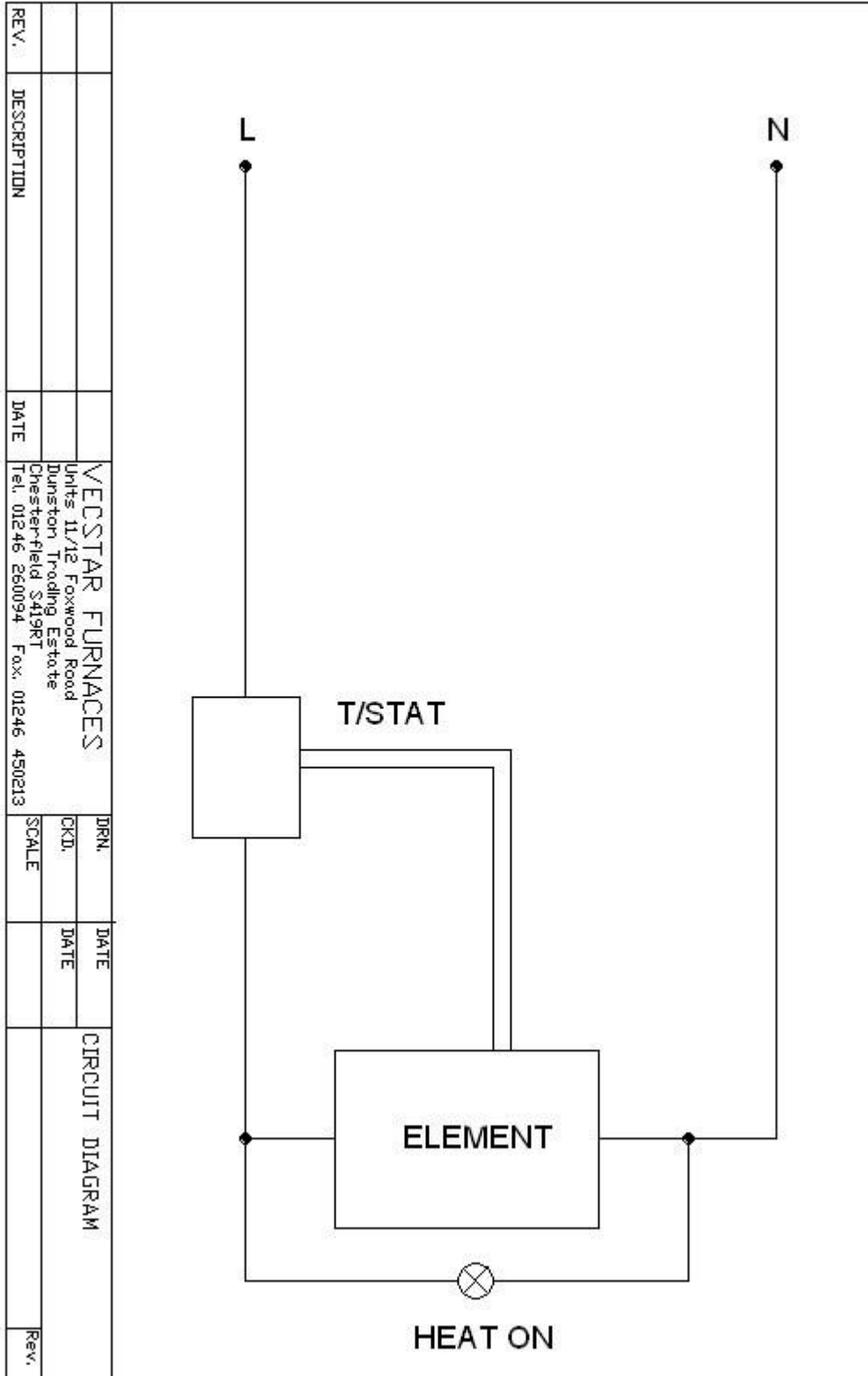
**All hot plates have their own records so please quote the serial number, model type and voltage that can be found on the rating plate on the back of the hot plate.**

**Vecstar can supply a recommended kit of spares or individual spares as required please quote serial number, model type and voltage that can be found on the rating plate on the back of the hot plate.**

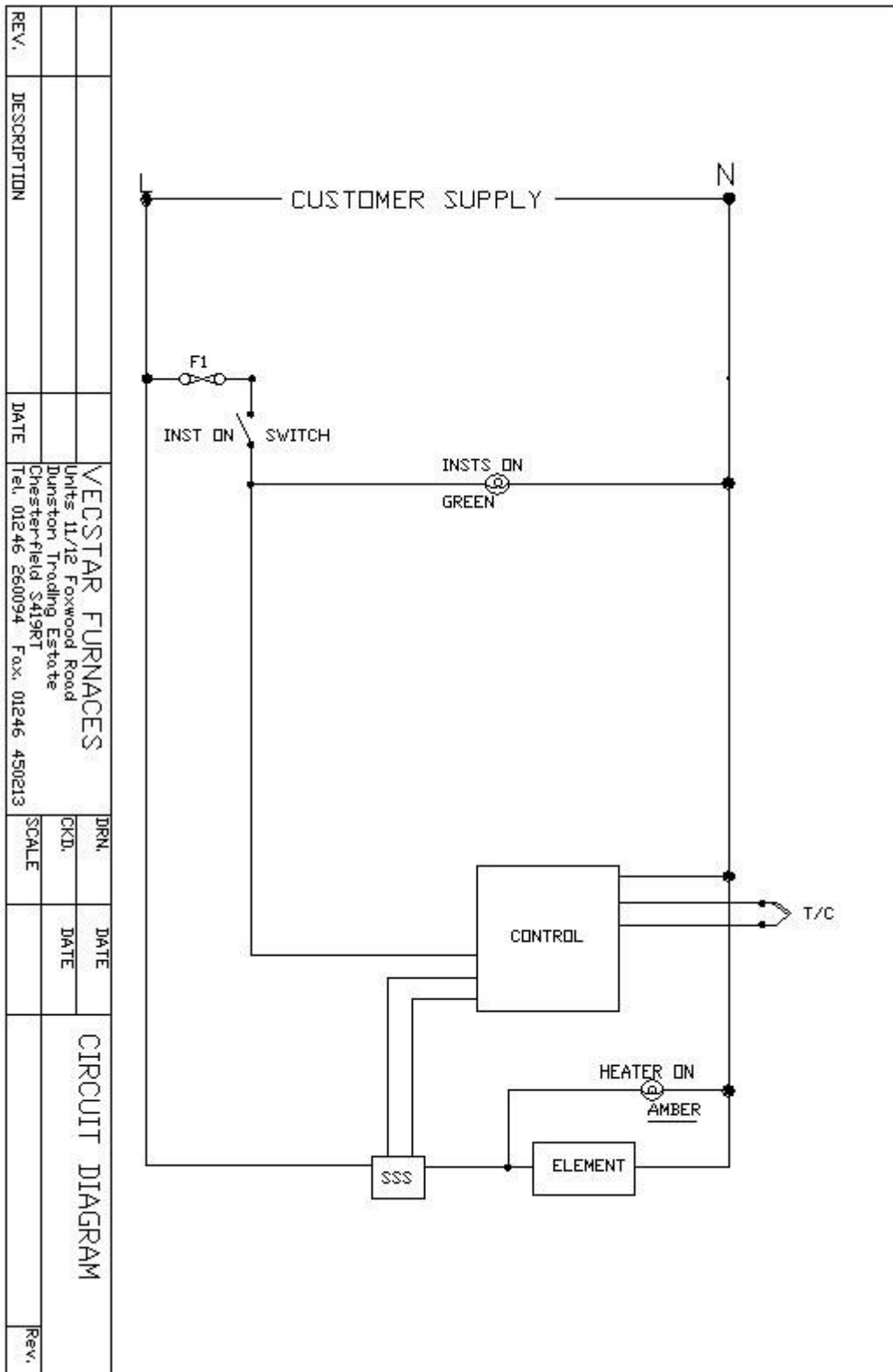
## 7.0 FAULT ANALYSIS

<b><u>FAULT</u></b>	<b><u>Possible causes to check</u></b>	<b><u>Corrective action</u></b>
<p><b><u>The hot plate does not heat up</u></b></p> <p>The heat on light is on</p> <p>The heat on light is off</p> <p><b><u>Hot plate overheats</u></b></p> <p>The heat on light stays on all the time</p>	<p>Heating element</p> <p>Thermocouple</p> <p>SSR switch</p> <p>Door switch</p> <p>Safety contactor</p> <p>Controller</p> <p>Thermal fuse</p> <p>SSR switch</p> <p>Over temp alarm controller</p> <p>Safety relay</p> <p>Wrong thermocouple</p>	<p>Replace element and any contaminated material</p> <p>Replace any part found to be faulty</p> <p>Replace any part found to be faulty</p>

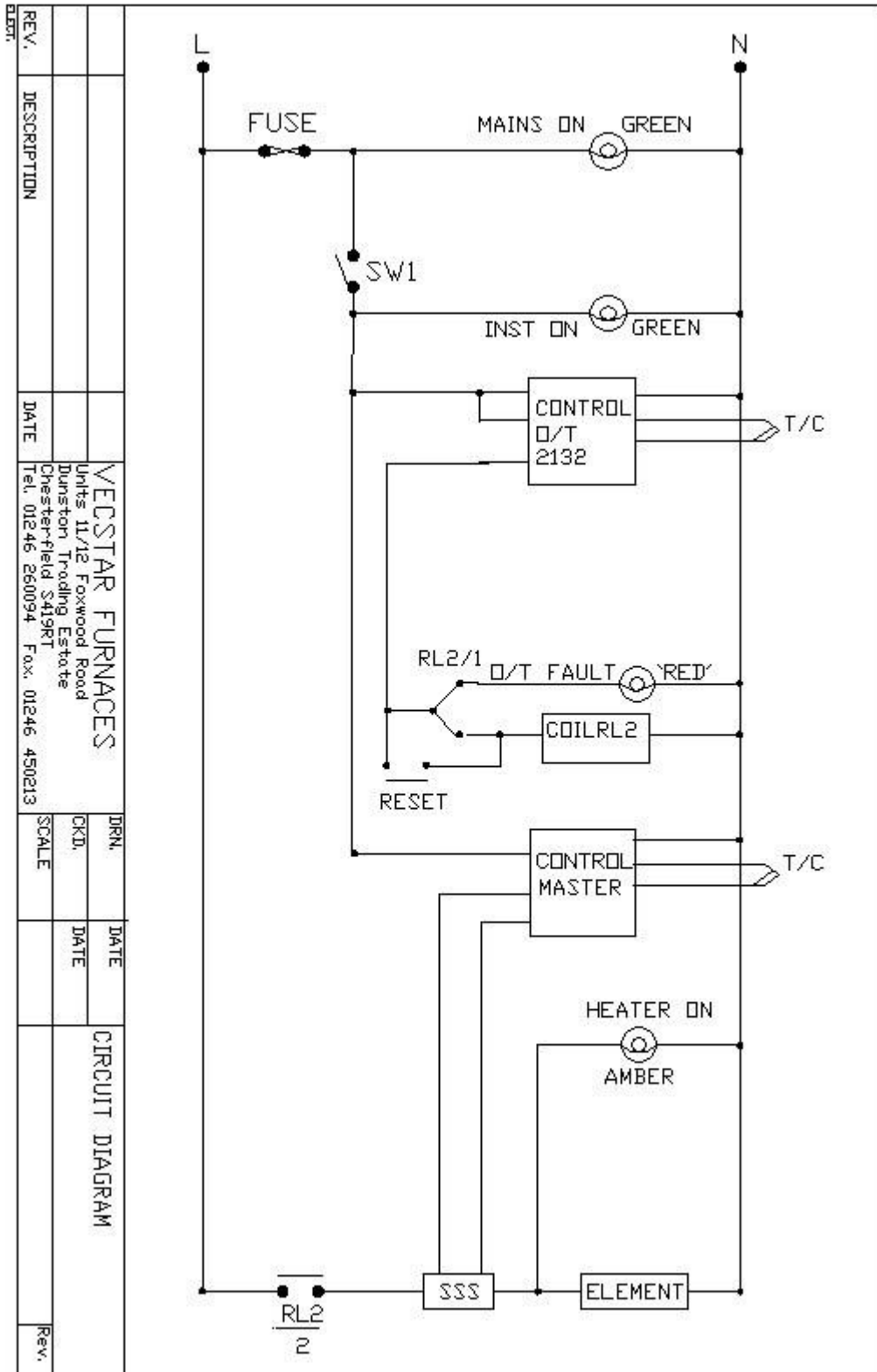
## 8.0 STANDARD WIRING DIAGRAM



## 8.1 DIGITAL CONTROL WIRING DIAGRAM



## 8.2 DIGITAL OVERTEMPERATURE WIRING DIAGRAM





## 10.0 CONTACT DETAILS

The products covered in this manual are only a small part of our extensive range of our ovens, tube furnaces, chamber furnaces and hot plates for laboratory and industrial use. Please visit our web site at [www.vecstar.com](http://www.vecstar.com) or contact us at the address below for more information.

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