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Silica-Gel drying oven Type ST20

Catalogue N°: 03ST20CATR01-E

Revision: 01 - 03.12.2001

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1.0 Function

The air sucked in by a transformer during the cooling phase is dried almost exclusively by Silica Gel dryers: in order to be able to identify the humidity level, the Silica Gel is coloured with a chemical substance that changes colour according to the humidity level of the Silica Gel. In order to maintain its function, the Silica Gel in the dryer must be replaced when damp.

The Silica Gel can be dried and re-used; this is the function for which the ETI ST 20 drying oven has been constructed.

2.0 Construction

Depending on the numbering on drawing N° 3.020.010, the ETI ST20 drying oven is built as follows:

- The inside of the load-bearing structure 1.0, supported by four pivoting wheels 1.0.1, is divided into a drying chamber 2.0 and a chamber for heating the air 4.8, both thermally insulated. The air blowing ventilator 3.0 is also contained within this structure and the control panel 4.0; a handle 1.0.2 is used to move the oven on the four wheels; the structure is built in painted sheet iron;
- The drying chamber 2.0 is fitted with the drum containing the Silica Gel that is being dried and is closed at the top with a lid 2.1. in which a hole has been made 2.1.2 for discharging the wet, damp air. This hole is provided with a filter 2.1.3 to prevent the Silica Gel dust from escaping into the environment, attached to the structure with four clasps 2.1.1;
- The drum 2.0, which contains the Silica Gel, is built of sheet steel and can be removed from the drying chamber when being filled with the Silica Gel; a hole in the bottom 2.0.1 allows the hot, dry air to enter the drum, where it is distributed over the whole section of the Silica Gel load;
- The three heating resistances 4.8, fitted at the bottom of the drying chamber, are easily accessible for maintenance and replacement purposes by removing the front grill 1.3. This also applies to the air blowing ventilator that is accessible by removing grills 1.4;
- The control panel 1.2, fitted at the top of the structure 1.0, can be turned over by unscrewing the two fixing screws, making it possible to gain access to the electrical system below 4.0; the control panel includes, as shown in diagram N° 3.020.011:
    - ◊ the mains switch 4.1 with a voltage control light 4.1.1;
    - ◊ the on/off switch for the resistances 4.3;
    - ◊ the precision thermometer 4.4 which indicates both the actual and the set temperature; the temperature is controlled by a probe 4.4.1 fitted inside the heating chamber 4.8;
    - ◊ the timer 4.2 used to set the dryer cycle time;
    - ◊ the cycle start 4.5.1, halt 4.5.3, emergency halt 4.6 and resetting after thermal tripping 4.7 push-buttons.

The whole electrical system complies with safety standards.

3.0 Operation

The control and adjustment instruments with which the ETI ST20 drying oven is equipped make it possible to optimise the drying cycle according to environmental conditions, regulating its time and temperature, and making the operation completely automatic.

The drying oven must be connected to a 380 V current socket.

After removing the lid of the drying chamber, releasing the clamps, pull out the Silica Gel container and fill it with saturated Silica Gel; the container must then be reinserted into the drying chamber that is closed by locking the lid with the four clasps.

When the mains switch is switched on the command and control instruments are fed with electricity and the control light comes on. Adjust the temperature of the hot air to between 120°C and 140°C using the thermostat and set the timer on the time that previous experience has suggested as being

optimal; usually 60 minutes is enough to dry one load. Then switch on the resistances switch and press the cycle start button; the ventilator and the resistances are switched on and the heated air is forced through the Silica Gel.

Once the set temperature has been reached, the thermostat will maintain it by switching the resistances on and off; when the resistances are functioning the control light will be on.

While the ventilator is functioning a filter fitted inside the lid of the drying chamber prevents Silica Gel dust from being blown out through the vent hole together with the hot air.

The ETI ST20 drying oven switches itself off automatically when the set time has elapsed.

ATTENTION: TO PREVENT BURNS DO NOT OPEN THE LID BEFORE THE TEMPERATURE ON THE THERMOSTAT THERMOMETER HAS GONE BELOW 40°C.

The emergency halt button stops the system completely and switches off the electricity supply to both the resistance and the ventilator.

4.0 Maintenance

Apart from cleaning the filter on the hot air outlet and the Silica Gel container, the ETI ST20 drying oven does not require any particular kind of maintenance.

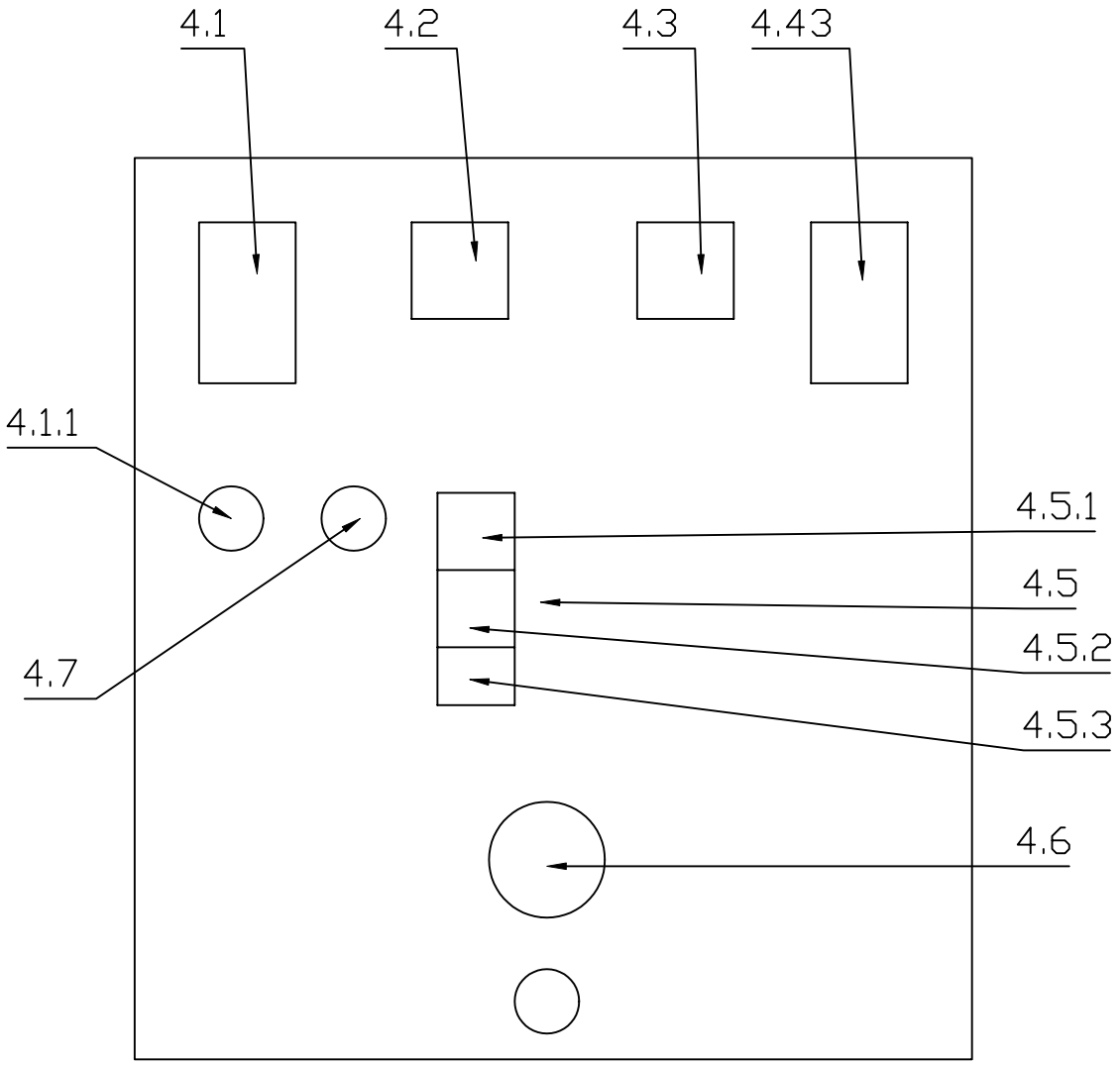
- To clean the filter proceed as follows:
  The filter inside the lid must be cleaned at regular intervals and, in any case, if you should notice a reduction in the flow of hot air; to do this remove the lid itself and remove the net fixed to the inside with four screws; remove the rock wool filter and clean it by blowing it with compressed air or by shaking it;
- After emptying the Silica Gel container at the end of the drying cycle, clean the inside of the container itself also removing any Silica Gel dust that may have fallen under the net fitted at the bottom.

ATTENTION: SILICA GEL DUSTS CAN BE HARMFUL IF BREATHED IN; ALWAYS WEAR PROTECTIVE GLOVES AND A FACEMASK WHEN CARRYING OUT THESE OPERATIONS.

5.0 Rating data

Total weight without Silica Gel	approx. 120 Kg
Voltage	380 V - 20 A
Weight of the Silica Gel load	20 Kg
Heating resistances power	6 kW
Ventilator power	0.75 kW

N.rev	Nota sulla revisione	Data	Firma	Controllo

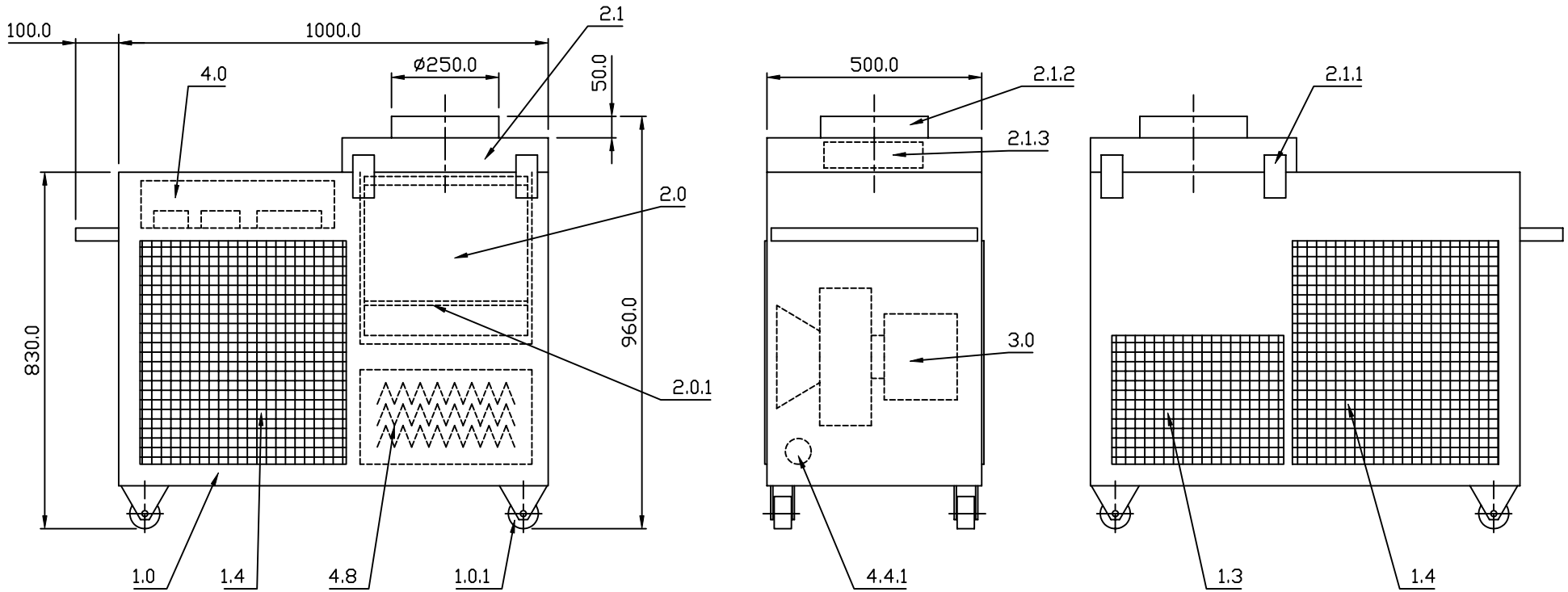


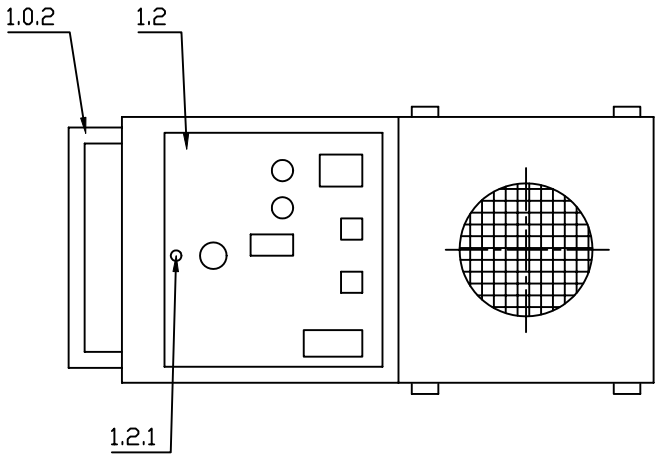
Pos.	Quantità	Descrizione		Materiale	N. articolo
Progettato da		Controllato da	Approvato da – data	Nome file	Data	Scala //

ELETTRINDUSTRIA SRL
20032 CORMANO ITALY

Titolo/Nome
Stufa - Oven - Etuve ST20
Strumenti - Check panel - Panneau de controle

Numero disegno	Modifica	Foglio
3.020.011		





Rif.	Quantità	Titolo/Nome, designazione, materiale, dimensione, etc.			N. articolo/Riferimento	
Progettato da		Controllato da	Approvato da – data	Nome file	Data	Scala //

ELETTRINDUSTRIA SRL
20032 CORMANO ITALY

Titolo/Nome: Stufa essicazione
Dessicating oven Tipo - Typ
Trocknungsofen ST20
Etuve d'essication

Numero disegno: 3.020.010 | Modifica | Foglio

N.rev	Nota sulla revisione	Data	Signatura	Controllo