



Projekt pt. „Badania przemysłowe modułów pomiarowych rzeczywistego zużycia energii elektrycznej”
współfinansowany ze środków Europejskiego Funduszu Rozwoju Regionalnego
w ramach Programu Operacyjnego Innowacyjna Gospodarka
Nr umowy: UDA-POIG.01.04.00-24-006/11-00

Specification of essential terms and conditions (SETC)

Parts for construction of a furnace for thermomagnetic treatment

Inquiry procedure includes the purchase of items needed to make the furnace with specification:

Name of parts	Description	Price PLN/EUR *
Non magnetic stainless steel sheet		
Automatics parts		
Heating elements		
Electrical installation elements		
Isolation elements		
Supporting structure elements		
Mechanical elements		
Ventilation system elements		
Power supply and control system elements		
Construction materials		
Standardized elements		

Delivery dates of individual elements of the furnace set at 15/06/2012.

* delete as applicable

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(date and signature)

FURNACE FOR THERMOMAGNETIC TREATMENT

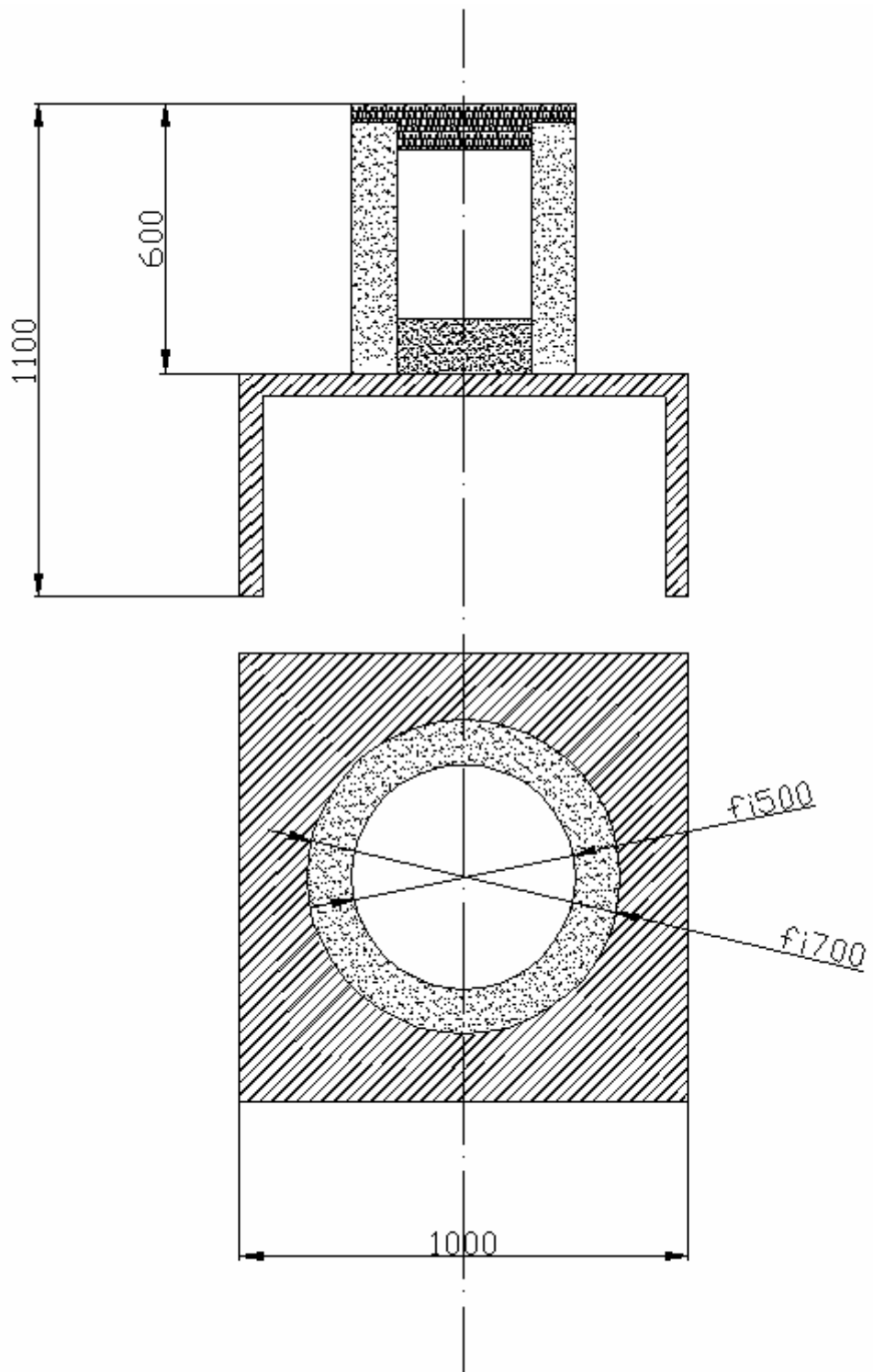


Fig. 1. Cross-section of the furnace together with the platform

TECHNICAL SPECIFICATION

Lp.	Parameter	Value
1	Max. temperature	650°C
2	Min. chamber dimensions	φ300 x 250mm
3	Usable volume dimensions	φ300 x 150mm
4	Outer dimensions of furnace	according to drawing
5	Position of the furnace	Platform according to drawing
6	Max. power	about 20kVA
7	Power supply	400 V, 50Hz
8	Temperature control	JUMO IMAGO500
9	Thermocouples	3 x typ „K”
10	Repeatable control accuracy	± 1°C
11	The protective atmosphere	N2 and Ar
12	Method of charging	top of the furnace
13	Min. weight of the charge	30kg
14	Heating system	External
15	The material used for the implementation of the furnace cover	Non magnetic stainless steel
16	The material used for the implementation of the platform	Non magnetic stainless steel

Additional functions of the furnace:

- **Setting the parameters of heat treatment**
- **Measurement of the temperature at any point in the furnace chamber**
- **Annealing material:** nanocrystalline cores
- **Painting color:** to establish
- **SAFETY:** according to CE standards

FUNCTIONAL DESCRIPTION OF FURNACE

1. Construction parts of furnace

The components of the furnace, ie case, the platform on which the furnace will be placed, pipes for protective atmosphere and hot air should be made of nonmagnetic stainless steel.

2. Control of the furnace

The JUMO IMAGO 500 is a process and program controller with up to 8 controller channels or 4 program channels. The controller features up to 8 analog inputs and 6 logic inputs, as well as six expansion slots for switched or analog outputs. Four of these slots can be used

alternatively for analog inputs or outputs. The regulator should have possibility to connect to PC.

3. Temperatur control in chamber

Using three thermocouples type "K" is to ensure the possibility of setting them anywhere in the chamber. This solution will allow to control temperature at any point annealing batch.

4. Loading batch

Using the manual covers the top of furnace allows manual loading / unloading of batch and setting of thermocouples.

5. Heating system

Because of specification of annealing, the use of an external heating system allows to ensure the temperature distribution inside furnace with accuracy $\pm 1^{\circ}\text{C}$.