

## VACUUM BELL FURNACE WITH A PROTECTIVE ATMOSPHERE



### FEATURES OF THE APPLIANCE IN THE PHOTO

Heating Method:	electric resistance heating, indirect, with a strip heater
Voltage:	3 x 400 V, 50 Hz
Power:	260 kW
Chamber Dimensions (mm):	Ø 1600 x 2500
Max. Operating Temperature:	800 °C
Batch Weight:	10.000 kg
Thermal Insulation:	ceramic fibres
Controls:	PLC, PC programme control with comprehensive data logging. The operator-in-charge has to enter a dedicated password prior to adding a process programme or intervening in the heat-treating process. Every password entered access and intervention is recorded together with the heat-treating process parameters.
Heat Treatment Process:	bright annealing of copper alloy strip coils (e.g.: brass, alpaca)
Protective Gases:	95%N2+5%H2 (protective atmosphere), 75%N2+25%H2 (active gas)

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<p>Description:</p>	<p>This is a directly heated heat-treating furnace that is designed for batch operation, with a vertical chamber and floor-level loading. Below the loading level is the furnace bottom, which is fitted with a powerful fan to ensure uniform heat transfer to the charge column. The coils that are to be heat-treated are craned onto the furnace base. When the loading is completed, a protective bell is lowered to enclose the charge column. The furnace proper (i.e. the heating bell) is then craned onto the protective bell. The heating bell has ceramic fibre insulation and is fitted with electric resistance heating. Before the heating-up process is started, a vacuum is generated to evacuate the air from the hearth, which is then filled with protective gas. Then, the circulation fan is started. On completion of the heating-up and holding cycles, the heating bell is removed and replaced with a cooling bell to cool down the charge through the protective bell by using air and then water. With the charge cooled, both bells are removed and the charge is taken from the furnace base. Bell furnaces usually have two bases (stations) and are installed in groups.</p>
<p>Applications:</p>	<p>Heat treatment (mainly annealing and normalisation) coiled products (e.g. strips, wires, etc.) in the iron and metal industries; normally used without a protective atmosphere in the steel industry and with active gas in the metal industry to prevent oxidation</p>
<p>Buying Criteria:</p>	<p>Dimensions, quantities and weight of products, the required heat treatment process and its target parameters</p>