

Accessories for Bale-Out and Tilting Furnaces

Crucible Pulling Feature with Swinging Collar Plate

In standard version, Nabertherm crucible furnaces are built with a collar plate fixed to the furnace. The bale-out is done manually or by robot. As additional equipment, the smaller models up to T 40 can be equipped with a swinging collar plate which allows crucible pulling. To pull the crucible, the collar plate is swung to the side, so that the operator has free access to the crucible from above.



Crucible Pulling Feature with swinging collar plate

Pneumatic Lid Opener for Bale-Out Furnaces for Holding

The crucible furnaces of the T.. product lines can be equipped with an optional pneumatic lid opener. The pneumatic lid opener is activated by depressing a foot pedal. Optionally, the pneumatic lid opener can be controlled and triggered by an external signal to fully automate the ladling process. The furnace lid swings to the side and the operator has free access to the crucible. This practical feature increases energy efficiency because the furnace is only open during charging and bale-out. Over 50 % energy savings can be realized with the pneumatic lid opener vs. an always open furnace (see tables for energy consumption for each model of melting furnace, page 7).



Pneumatic lid opener

Charging Funnel for Ingots

The charging funnel made of stainless steel 1.4301 (304) makes charging the furnace much easier, especially when melting ingots. Long ingots can also be charged extending over the crucible edge, and then sink, guided, into the crucible. Furnaces which are designed with a control system with night-time reduction can, for example, be filled in the evening and, on the following morning a complete melt is ready for use. The funnel is suitable for all melting furnaces, electrically heated or gas- with a side exhaust gas discharge.



Charging funnel for ingots

Work Platform for Loading for Bale-Out and Tilting Furnaces

For bale-out and tilting furnaces, customized work platforms for charging and servicing can be provided as additional equipment. This feature is used to simplify access to the furnace, particularly for larger furnace models. The operator has access to the top of the furnace to charge ingots or clean the melt.



Work platform for K 240/12

Accessories for Bale-Out and Tilting Furnaces



Crucible breakage alarm device under the emergency outlet of a melting furnace

Crucible Breakage Alarm Device (up to T(B)..-/12)

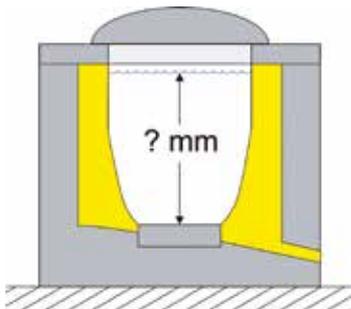
Nabertherm melting furnaces are equipped with emergency outlet. In case of crucible breakage or leaking melt the crucible breakage alarm device will provide for a warning as soon as fluid metal emerges from the emergency outlet. The warning signal of the alarm is both optical, with an signal lamp, and acoustic, using a horn. As additional equipment it is possible to send an alarm as SMS-message to one or more mobile phones. One or more furnaces can be connected to the messaging device in parallel.



Collecting pan under the emergency outlet

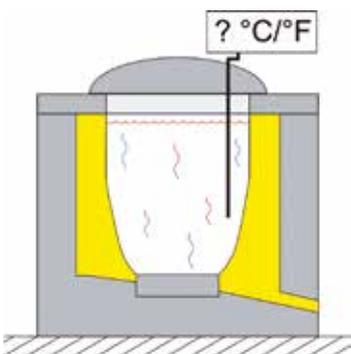
Collecting Pan under the Emergency Outlet

The bale-out furnaces are standardly equipped with an inclined bottom and an emergency outlet for liquid metal in case of a crucible breakage. To collect the liquid melt in case of an emergency the models T..., TB..., K... and KB... can be delivered with a small base frame and a collecting pan. The pan can safely receive full crucible volume and is equipped with a pull-out handle. Unnecessary foundation works can be avoided.



Filling Level Measurement by means of Optical Detection or Weight Loss

When crucible furnaces are used in continuous operation, it can be necessary to monitor the filling level of the crucible and provide for a signal when defined levels are reached. The signal can be either optical, acoustic, or a signal for automatic filling of the crucible. When the minimum level is reached, a signal to fill a crucible is given. On reaching the maximum level this process is stopped. The measurement of fill level can either be done by using a scale under the furnace or by using a measurement probe to detect the fill level and which records the data very precisely independent from external influences.



Separate Bath Temperature Measurement Device

For melting furnaces with only furnace chamber temperature control, a separate bath temperature measurement device can be used to check the bath temperature. The measurement device is suitable for a temperature range from 0 °C to 1300 °C, and can be delivered with different dip pipe lengths (200 mm, 380 mm, 610 mm). Temperature measurement is carried out using a NiCr-Ni thermocouple. The submersion length of the pipe should be 2/3 of the element length to achieve the most ideal reaction time. The average reaction time is 40 seconds. The thermocouple is suitable for all nonferrous metals except phosphor bronze.