

Hendrick Industrial Equipment Ltd Through Feed Double Bogie Shuttle Heat Treatment Furnace to AMS 2750 rev E



Stock No	OA2255
Manufacturer	Hendrick Industrial Equipment Ltd
Model	Bogie Hearth
Year of Manufacture	2003 (Ref)
Serial	CP938
Condition	From a working environment, Good Condition
Internal Size (WxDxH mm)	1050 x 900 x 500
Max Temp	1050°C rating of 40kW
Other Info	12 Point Survey AMS 2750 rev E
Location	Our Central Warehouse, Aldridge, UK
Weight (kgs)	2000
External Dimensions (WxDxH mm)	2100 x 4900 x 2300

Description

Hendrick Industrial Through Feed Annealing Furnace

The Hendrick Industrial through feed furnace is a single zone furnace incorporating power graded nickel/chrome heating elements on the sides and roof of the heating chamber wired in star configuration, and insulated with grade 26 refractory bricks and ceramic fibre blanket insulation.

The working dimensions of the 12 point surveyed heating chamber are 900mm x 900mm x 500mm high.

Significant quantity of spares including elements and thermocouples.

The bottom of the furnace is formed by a bogie insulated with hard and soft refractory bricks and ceramic fibre blanket.

On top of the hard refractory bricks sits a nickel/chrome removable work carrier, there are two bogies connected together and running on a track driven by a chain and motor drive there are limit switches that dictate the travel available for the bogies and can be adjusted to facilitate the lining up of the bogie to the bottom of the furnace.

At either end of the furnace is a pneumatically operated load/unload door for the loading and unloading operation. Power to the elements is fed via a three phase thyristor controlled by a Eurotherm 3216 controller with a second 3216 as the over temperature device.

The furnace power rating is 40kW. The furnace has two alarms one for work protection and one for furnace shutdown, the work protection alarm is in the 3216 controller and is a differential alarm and is set 10°C above the working set point.

The furnace shutdown alarm is in the over temperature instrument and is a full scale high alarm and is set to the maximum working temperature of the furnace 1000°C .

The temperature is measured by a duplex N type thermocouple.

The furnace is a class 2 furnace at and below 750°C and a class 4 furnace above 750°C.

The furnace has passed a TUS at 750°C and 925°C and is compliant with AMS2750 rev E. A TUS jig is included with the furnace encompassing the working volume of the furnace.

Operation

- Ensure both vertical doors are closed.
- The two manual pneumatic lever door valves should be in the down position.
- Push down on the door handles at either end of the doors.
- One bogie should be outside the furnace and the other should be inside acting as the bottom of the furnace.

Set Working Temperature

- On the Eurotherm temperature controller adjust the temperature required using the up/down arrowed buttons on the controller.

Set the over Temperature

- On the Eurotherm over temperature instrument adjust the shutdown temperature 10°C above the controller temperature.
- Turn the heat switch to ON. The furnace will start to heat up.

Loading the first bogie outside the furnace

- Place the nickel/chrome grid on the supporting bricks on the bogie.
- Place the components on the grid.

Loading the furnace

- Open both doors by the lever operated pneumatic valves one for the left door and one for the right door both doors will open
- If bogie 1 is outside the furnace press the bogie 1 pushbutton bogie 1 will enter the furnace on the left and bogie 2 will leave the furnace on the right. If bogie 2 is outside the furnace press the bogie 2 pushbutton bogie 2 will enter the furnace on the right and bogie 1 will leave the furnace on the left.
- Close both the doors by pulling the pneumatic lever valves to the down position, the doors will close.
- Push down on the door handles to ensure a tight heatproof seal.

Processing time

- The temperature of the furnace will fall with the doors open.
- When the doors are closed the temperature will start to climb back to the setpoint.
- Calculate the processing time from when the furnace is 10□ below setpoint.

Loading the second bogie outside the furnace

- Wait until the bogie has cooled down
- Place the nickel/chrome grid on the supporting bricks on the bogie
- Place the components on the grid.

End of Processing time

- At the end of the processing time repeat 7b to 7F, 8 and 9 for the second batch of work continue in this manner until all work processed.

Cooling the furnace down

- Turn the Heat Switch to OFF the furnace will cool down.

Photographs taken prior refurbishment. Our refurbishment service is not available on all machines.