Roller hearth furnace for thermal treatment up to 1200 °C

ELIOG – kelvitherm has developed and manufactured industrial ovens, furnaces and advanced thermal equipment up to 1400 °C for 75 years. Based on this experience ELIOG kelvitherm Industrieofenbau GmbH has supplied a gas fired roller hearth furnace in cooperation with SELAS Wärmetechnik GmbH to a well known manufacturer for automotive equipment

(valves). The roller hearth furnace is part of a complete line for thermal treatment within a temperature range from 750 to 1200 °C with a maximum capacity of 250 kg per hour. The charging, respectively off-loading, in special baskets, is effected automatically by controlled roller conveyors. The cycling time can be pre-selected from 30 to 90 minutes. Treatment with inert gas atmosphere is not taken into account; therefore the firing is done with recuperator burners, operating alternatively with natural gas or propane. The firing is divided in two heating- and regulating zones. The controller signal is passed on to the common burner input; working and stop periods are variable. The O_2 content of the furnace atmosphere is variable by means of changing the burner air / gas ratio. The roller conveyor consists of special castings and is divided in three driving units, individually driven by geared motors, mechanical controller rollers and roller chains / sprockets. To minimise energy losses, when opening the in- and outlet lifting doors, the conveyors are operated at fast speed. The main roller conveyor is operated in reverse mode until the process conditions are reached for discharge. The advantages of this roller hearth furnace are low energy consumption and high thermal efficiency. This design is based for various applications, for example for inert gas operation and different charges and capacities. This gas fired roller hearth furnace fulfils all relevant safety standards and regulations for example EN 746. The supply includes CE-label and Test certificate.

(ELIOG-kelvitherm Industrieofenbau GmbH, Römhild / Germany, Tel. +49 (0)36948 / 820-0, www.eliog.de)

Furnace system with multi-zone temperature control

At the beginning of 2004, ELTERMA S.A. signed a contract for the supply of CASEMASTER® sealed quench furnaces for Pratt & Whitney Poland. The complete system consists of two sealed quench furnaces CASEMASTER® AFS 302436E type, BREW tempering furnace, ENE – 10 endothermic atmosphere generators, washing-drying machine and TASKMASTER® loading-unloading equipment. The system operation is fully automatic and will be controlled by superordinated computer system Protherm 9800. The delivery, assembly and start-up of the installation will be completed by the end of September 2004. In March, 2004 ELTERMA S.A. signed another contract to supply complete system based on CASEMASTER® furnace design AFS 303648 ES type for a Russian Concern. The CASEMASTER® furnace meets all requirements of automotive & aircraft industry and many others industries customers due to following design improvements:

- Furnace construction and operation eliminates any potential oxidation of the workload surface after carburizing process.
- To exclude possibility of water access into quenching oil, ELTERMA have introduced air heat exchanger of quenching oil. This solution limits the total water consumption of the furnace.
- Low voltage tubular heating elements, typically heating element life in excess of 30000 hours in carburizing furnaces.
- Robust construction and close control of the carburizing atmosphere and heating systems helps to give the furnace a long operational life.
- Atmosphere circulating fans have profiled blades to ensure high mixing and circulation capacity.
- Temperature uniformity +/- 5 °C, optionally with multi-zone temperature control.

(Elterma S. A. Seco/Warwick Group Poland, Tel. +48 (0)68 / 3819 804, www.elterma.com.pl)

Innovative holding furnaces for the casting of cylinder heads

Induga supplied newly developed installations for induction heating or holding of liquid metals in transport ladles to the light alloy foundry of one of the world's leading automobile manufacturers near Stuttgart (Germany). These installations are important components in eight functionally innovative, automated linear casting lines for cylinder heads. The installations supplied by Induga comprise eight twin heating stations and specially designed ladle changing devices for quick changing of the casting ladle without interrupting the casting cycle. At the first of each pair of heating stations, the ladle with the metal for casting is held at nominal casting temperature