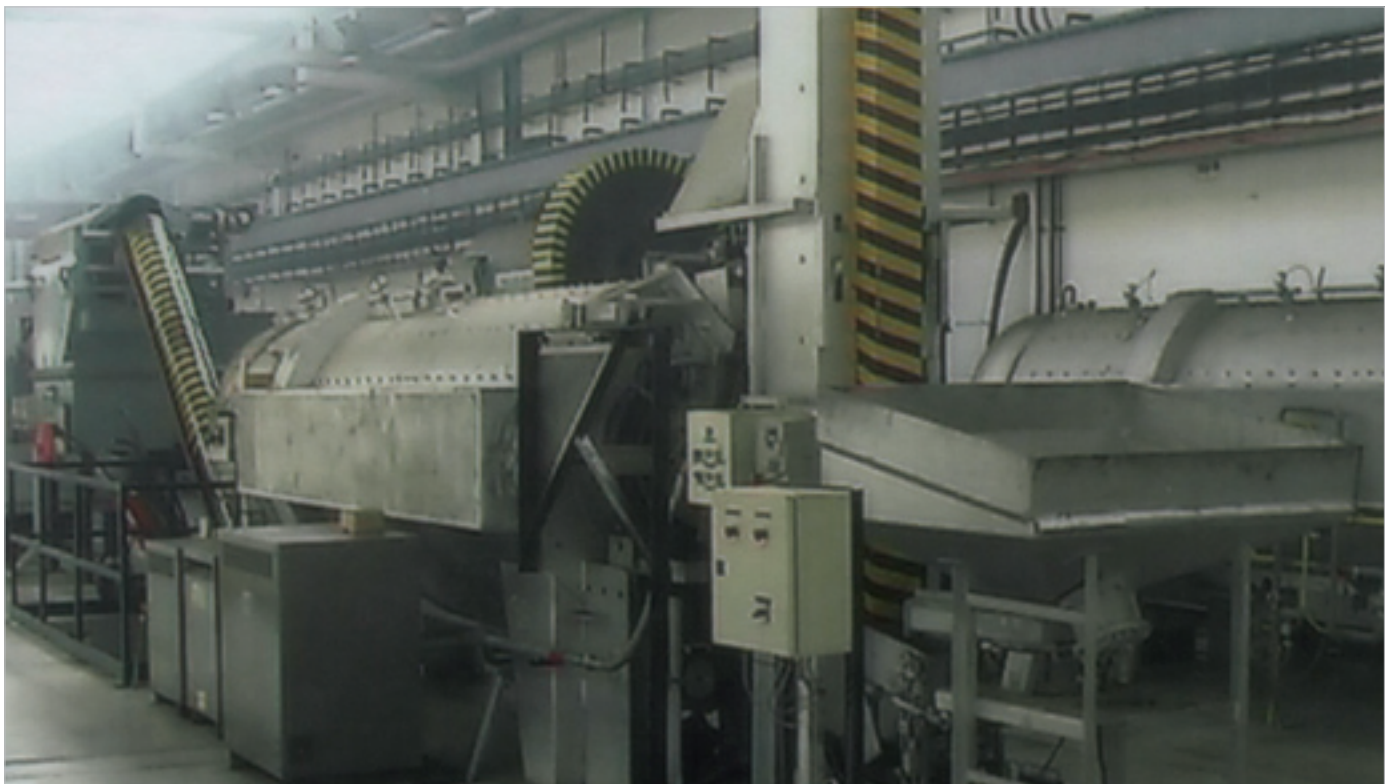


ROTARY DRUM HEAT TREATMENT LINE WITH A PROTECTIVE ATMOSPHERE AND INDIRECT HEATING FOR HARDENING BALLS AND ROLLERS



REVIEW

Heating Method:	Electric resistance heating
Max. Operating Temperature:	Hardening furnace: 950 °C
Tempering Furnace:	700 °C
Thermal Insulation:	ceramic fibres
Controls:	automatic, PLC, PC, thyristor power control
Data Logging::	computerised, with continuous documentation
Heat Treatment Process:	hardening and tempering of bearing balls and rollers

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Description:	<p>Components of the continuous operation heat treatment line:</p> <ul style="list-style-type: none"> • weigher and feeder • rotary retort hardening furnace with a protective atmosphere • oil hardening vat (heatable and coolable) • washing unit • rotary retort tempering furnace • discharge unit
Applications:	<p>The hardening and tempering of balls and rollers of rolling-contact bearings. Particularly suitable for heat-treating small-size mass produced parts (case hardening (carburising), temper-hardening). The atmosphere that is used for protection is endogas (a gas atmosphere that prevents oxidation and decarbonisation). With an appropriate protective atmosphere, in-line carburisation is also possible.</p>
Buying Criteria:	<p>The dimensions, weight and quantity of parts and target parameters of the heat treatment process.</p>
Notes:	<p>The system was purchased second-hand and shipped flame-cut from the US (without any documents or empty electrical cabinets). The difference between the European and US (3 × 270 V, 60 Hz) power supply systems meant that the 460 kW power system needed a major conversion. The entire control system was upgraded and integrated with all the line units. The gas supply system underwent a major modification. A new external cooling unit was designed and manufactured.</p>