



[www.rollmod.de](http://www.rollmod.de)

**ROLLMOD**

HIGH TEMPERATURE TRANSPORT SYSTEMS





Peter Hornischer manager of ROLLMOD GmbH.  
Your contact partner for all aspects of the ROLLMOD-product range and coordinator of customer projects.



## DISCIPLINES

Planning and product management

Consultation and sales

Development and construction

Production and assembly

Quality assurance and logistics

Service and maintenance

# ROLL



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Innovative, high performance, customer oriented.

## Annealing, sintering, soldering, hardening using inert protective atmosphere. ROLLMOD specializes in intelligent high temperature transport systems.

ROLLMOD GmbH is a medium sized owner run company and has been successfully established in the market since 1989. ROLLMOD specializes in production systems and components for high temperature production processes. The focus is primarily on transport systems for roller hearth furnaces and additional components such as warning systems and inert gas generators. The activities of ROLLMOD encompass

development, manufacture, sales and servicing of the systems and this on a national and international level.

The company headquarters is in Renningen in the Stuttgart metropolitan area. Development and construction as well as assembly, maintenance and logistics are carried out here. A competent and highly motivated team develops and produces innovative

solutions on the pulse of technological progress and oriented towards concrete customer needs. The results are first class systems, modules and components, which have been tried and tested for over 20 years in demanding high temperature production processes. The international sales are supported by branches in Germany, Europe and the USA.





#### COMPETENCES

##### Product focus:

High temperature transport systems for roller hearth furnaces sealed against inert gas

##### Additional components:

Quenching systems

Inert gas generators



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*»Intelligent automation, precision, functional safety, low maintenance, cost reduction and energy efficiency are particularly crucial productivity factors in high temperature technology – with our ROLLMOD transport systems and our interdisciplinary expertise in the sector of heat process technology we are a sought after and competent solution partner for our customers worldwide.« Dr.-Ing. J.A. Wünnig*

The departments of ROLLMOD GmbH coordinate in an exemplary manner regarding consulting, planning, production and service. Linear, results oriented and responsible, these professionals work in cooperation and at eye level with the customer. In this fashion high quality products and custom functional system solutions are created, which are highly valued and favoured in the global market place.

Dr. Ing. J.A. Wünnig, senior manager, co-founder and creative director. He is the owner of a number of patents, inventor of FLOX® combustion and due to his long standing experience is a valued consultant for technical questions.

Dr. Ing. J.G. Wünnig (left in picture) technical manager, stands for the continuity of the innovative ability in the company. He owns various patents and is involved in many national and international research projects.

Dr. G. Schönfelder (right in picture) commercial manager, is the initiator and co-founder of ROLLMOD GmbH. His vision: internationalization, worldwide sales and efficient workflow in all instances.





#### FACTS

Patented, compact and gas tight module design

Easy to integrate into production lines – also as a retrofitting system for existing applications

Balanced and precise transport of production parts directly onto the rollers with the lowest possible gap between rollers and exact line separation

Even heating from above and below

Easy service configuration: module change in the shortest time possible

Lower energy usage

Low maintenance roller motor and precise transport

Optional photoelectric barrier controlled high gear on furnace inlet and outlet



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**Modular, precise, function safe.**

Due to the alternate right and left assembly into the frame, the furnace systems emerge in a grid pattern of 500 mm. Upper and lower furnaces are flanged exactly to the ROLLMOD system framework and isolated according to the maximum temperature. Individual solutions can be carried out on request at any time.

## Product focus: transport systems from ROLLMOD for roller hearth furnaces and the automatic heat treatment in the production line.

The patented ROLLMOD transport system: the aim of the production process in roller hearth furnaces is to achieve balanced heating of the production parts without large heat losses. Transport systems with single layer feeding, short spacing and low roller diameters are suitable for this. The technological challenge is to solve the constructive and functional problems regarding storage, the motor and the inert gas

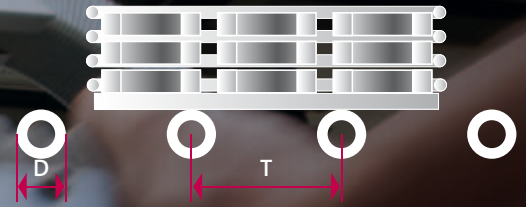
leak proofing of the rollers made of heat resistant steel and/or ceramic material. ROLLMOD achieved this so successfully that it was able to be protected by patent as a ROLLMOD principle. All components of the ROLLMOD transport system are compiled in exchangeable and function safe modules and therefore low maintenance, precise and low cost production units for roller hearth furnaces were achieved.

The ROLLMOD transport systems consist of precise and individually checked rollers, preferably made of high performance ceramics, a highly effective insulation and inert gas leak proof, the robust motor casing, connecting flange and a reliable motor for continual transport or cyclic operation with individual speed regulation.





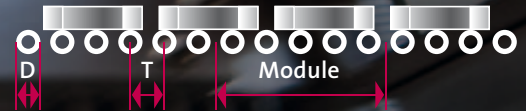
Classic transport system  
in conventional roller  
hearth furnace.



In order to transport heavy load conveyors including production parts as a unit, normally these equipment features apply:

- Metallic rollers:  $D > 100 \text{ mm}$
- Ratio  $T/D > 2$

The ROLLMOD principle:  
Optimized roller hearth  
furnaces with ROLLMOD  
transport modules.



Heavy load conveyors can be dispensed with.  
The production parts are carried individually or  
on light load conveyors directly onto the ROLLMOD  
transport modules of the roller hearth furnaces.

Equipment features:

- Ceramic rollers:  $D \text{ also } < 60 \text{ mm}$
- Ratio  $T/D < 2$  possible



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The heating of the furnace systems can be achieved by alloy radian tubes above and below the roller conveyor with electrical heat cartridges or by using self recuperative burners. Their performance and maximum temperature is adapted according to customer specifications. In this way we can offer complete solutions all in one place.

The ROLLMOD module motors can be linked into the production line with all modern controls. Equally the inert gas operation with inert gas (nitrogen) can be integrated into the control or reaction gases (e.g. with regulated C potential using lambda or oxygen probes), the temperature regulation, roller speed and high gear. The throughput speed can be set to almost whatever you want and cycled. This also

applies to optional, photoelectric barrier controlled high gear stretches on the furnace inlet or outlet.





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Well engineered, efficient, productive.

**Useful for any customer: the ROLLMOD test furnace for test running individual production processes and for determination of requirements and configuration of own production lines.**

At the facility in Renningen there is the opportunity to test and evaluate production samples in ROLLMODS own full scale test furnace and therefore experience all ROLLMOD systems in productive operation and evaluate them. The ROLLMOD test furnace is divided into 3 heating zones of 3 m in length and allows a maximum temperature of 1,250°C. The inert gas leak proofed roller hearth furnace is heated

with ceramic self recuperative burners in a ceramic single ended radiant tube. In terms of inert gases a cracked gas made of  $\text{CO}_2$  /  $\text{CH}_4$  for carbonization, as well as  $\text{NH}_3$ , as a nitrogen dispenser and propane to enrich the atmosphere is available. Additionally the furnace can be operated using tail gas made of natural gas/air as well as with various forming gases or nitrogen from the bottle. Control of the furnace atmosphere

is achieved via oxygen probe. As a quenching medium the GASoFORM® principle, using high velocity air or alternatively a salt and oil bath are available. By powering the module with step motors treatment times of 2 mins to 2 hours can be realized. At the end of the furnace you can optionally work with high gear (250 mm/s) or in furnace speed in the quenching unit. Various measuring devices and interfaces can be used

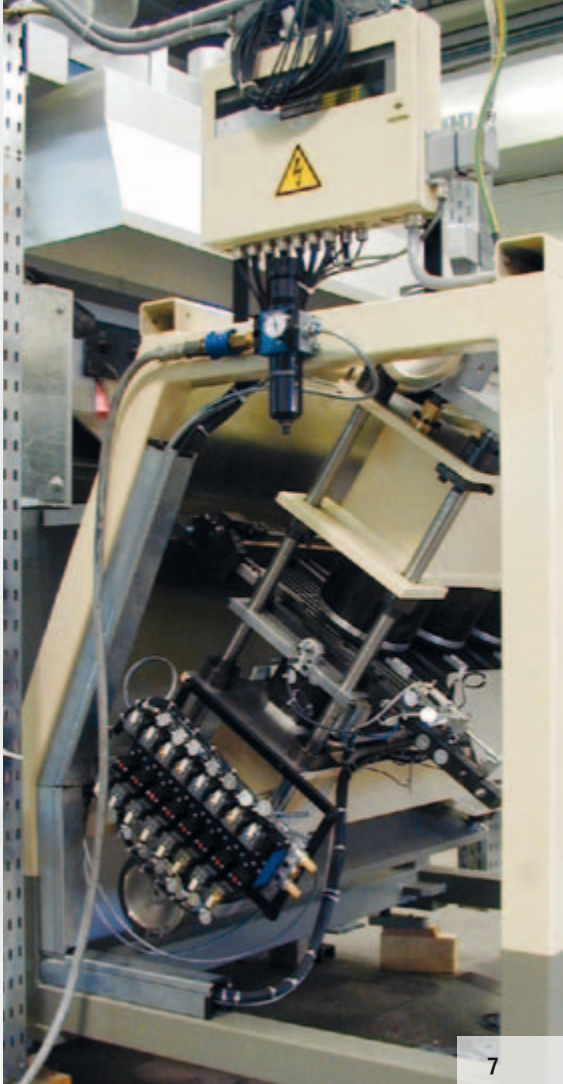




## Additional components:

Pictures right: **The GASoFORM® quenching system from ROLLMOD:** The better alternative to conventional oil hardening ring and disk shaped production parts. The process: the production parts are evenly warmed in the ROLLMOD optimized roller furnace and are put into a special quenching form controlled by a photoelectric barrier. Then they are cooled on all sides with gas coming from the nozzles. A process regulator controls this procedure automatically and very flexibly e.g. for the martensite, bainite or warm bath hardening.

Without picture: **The FLOX® inert gas generator from ROLLMOD for direct attachment to the furnace system.** To supply the furnace system with inert gas independently of delivery gases the inert gas generator with FLOX® heating was developed. Decisive advantages are among other things the direct connection to the furnace; the independence from external inert gas supplies and the environmentally friendly and energy efficient FLOX® operation.



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Picture below: **An exemplary selection of typical production parts, which pass through the transport system of ROLLMOD to the roller hearth furnaces of our customers.**

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for various process analyses. As a result all the relevant parameters and data are available for the test run, in order to be able to define and configure the right system solution for each customer. We will advise and accompany you from planning to installation and operation on location in your production lines.

