

A photograph of two men in a factory or industrial setting. The man on the left is wearing a light blue striped shirt and a purple tie, and is holding a green valve component. The man on the right is wearing a white shirt and a red striped tie, and is holding a small electronic device. They are both smiling. The background shows industrial machinery and a large green valve component.

# RTK - more than just control valves

When it comes to controlling fluids, RTK in Kornwestheim is the place to be. This company has been offering custom-made solutions to thermal and refrigeration flow control problems for the past twenty-five years. From a strong customer base in Germany, RTK is now looking to expand its business and introduce its philosophy and products to a wider audience. Its recent membership of the global Circor group will certainly help further that aim. Valve World took a trip down the Autobahn to Kornwestheim to hear more about what makes RTK special from Mr Hänle and Mr Laube (on left and right, respectively, on main photo above).

About eight million. That's the number of different finished product combinations that RTK can offer its customers. It's a number that is hard to grasp but it speaks volumes about the flexibility of the company whose history dates back to 1975, a time when processors still had to be invented and electronics were processing analogue data. Since then, RTK has developed into a high-tech specialist provider of globe-style control valves for thermal and refrigeration applications. One thing that hasn't changed,

though, is RTK's philosophy, according to commercial managing director Peter Laube: "Our philosophy, which forms the heart of our business, is to offer optimised flow control solutions and build up relationships with our customers. It means that we do not consider ourselves to be mere valve manufacturers but see ourselves more as problem solvers. Many of our customers don't know what they need in terms of products, they just know what they want to achieve in terms of process control. We have the skills

to design, manufacture and assemble complete, custom-made packages to suit their processes. On top of that, we feel that a long term relationship based on openness and honesty is very important. In some cases we may advise customers how they can solve their flow control problems without using any RTK products at all!"

### Flexibility

One of the things that definitely makes RTK an exceptional manufacturer is that all the eight million different product combinations can be produced in-house. That's a staggering feat, requiring exceptional organisational abilities from all departments, indicated Mr Laube. "We make our size work for us," he commented. "RTK is a medium-sized company, so we can be very flexible at all levels. We have a flat organisational structure, where key departments such as sales, engineering and manufacturing work seamlessly together. If a special enquiry is received, the departmental heads meet very quickly to make the order happen."

An important kick-off point for any new valve enquiry is the sales department. At RTK this department is not manned by 'traditional' salesmen, but by engineers who know the industries they are serving. In addition to their own expertise they have a very powerful tool at their disposal: RTK-WIN. This custom-made software can be used to select and size RTK-valves. Export sales manager Thomas Eisele: "First, all the peripheral conditions are entered into the computer, such as flow rates, pressures, media, temperatures etc. Then, on the basis of this information, the system designs a valve from all the components that RTK is capable of making. If required, the software can then be used to design an appropriate actuator as well and even put together a complete flow control loop. This software contains additional features, such as operating experiences for most of the typical applications where our valves are used. Using this historical data, we can reli-

### Digital Actuator Control DAC® system

The DAC is a microcontroller system for controlling and monitoring actuators, valves and processes in motion. It can be integrated into the actuator. No torque or limit switches are needed to run this device. Features of the DAC®:

- **Self initialisation routine**  
During initialisation the individual characteristics of valve like upper and lower limit, speed of actuator, backlash in the system are detected and permanently stored
- **Detection of input signal**  
DAC® automatically detects which input signal is used for driving the actuator (for example 4..20 mA, 3 point step 24V DC to 230 V AC, potential free 3 point step from DCS,..)
- **Intelligent limit switches**  
The limit positions will be detected by the controller during the initialisation. The values for 0% and 100% position will be permanently saved and always controlled by the controller.
- **Closing function**  
After reaching the close position the system waits for 5 second before driving the actuator to "closing tight". Therefore stress to the system is reduced when operating at low flow rates.
- **Safety position on interrupted 4..20 mA signal**  
If the input signal is interrupted DAC® can drive to a safety position, which could be 0% or 100% of stroke depending on set-up. Certainly the valve can also remain at position.
- **Detection of failure**  
Blockage of actuator because of dirt, malfunction is immediately detected before any harm happens to process and an alarm can be initiated via a potential isolated error output relay.
- **Self adapting control characteristic**  
If control of actuator is unstable, speed of actuator is reduced to stabilise the process. This change of gain is done depending on the position of the valve.



ably model how our valves will fare in actual practice, and can show the client how systems can be 'tweaked' to provide optimum flow control."

### Valves and actuators

Once the order has been confirmed, the data generated by RTK-WIN is fed into the manufacturing process. A tour of RTK's facilities shows that this department, too, is run along flexible lines. The stores area contains a vast array of castings (even up to DN300!) and machined parts ready for quick assembly whilst the spotless production hall boasts state-of-the-art CNC equipment, many with unique tools specially produced for RTK. "RTK has invested in some highly sophisticated machinery so that we can easily accommodate the short valve runs which are a core element of our business. Throughput times are fast too – we offer a 72 hour emergency service, for instance. Moreover, as these machines monitor the dimensions of the machined items we can have complete confidence in the

quality of the finished components," said Mr Laube.

Not all of RTK's processes have been automated. Indeed, craftsmanship is an important part in ensuring the quality of certain components. Seat grinding, for example, is still a job executed by hand. Mr Laube: "CNC machines are ideal for repeat items. However, some fifteen per cent of our flow control solutions require one-off valves specially designed for customers. Here at RTK we have both the engineering and manufacturing skills needed to make those items. However, don't get the impression that RTK just focuses on specials. We provide a full range of control valves from DN 15 up to DN 300 in various materials and pressure classes. A line of thermal oil valves for the quality end of the market is also available ex-stock. This is definitely a volume business and indicates, I believe, that we can successfully operate in diverse markets."

As a complement to the valve production facilities on the ground floor, RTK has a



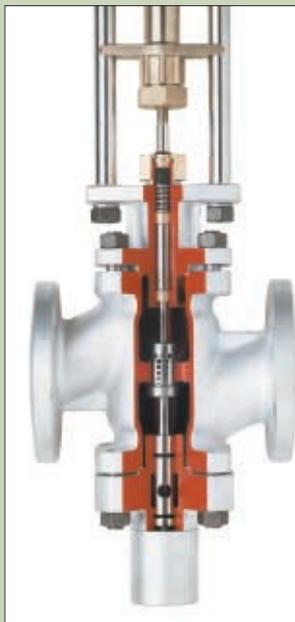
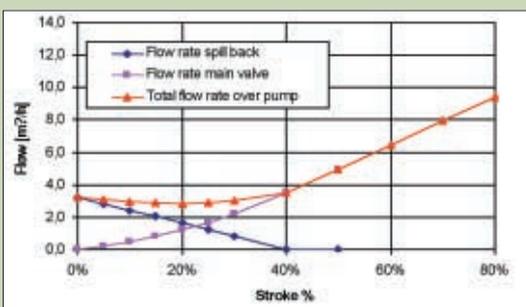
RTK's in-house service department has been providing repairs, spares and maintenance activities for many years. Now the service package is being extended to on-site maintenance contracts with selected customers.

well-equipped shop on the first floor for the manufacture of pneumatic and electric actuators. Technical managing director Mathias Hänle: "Our actuators are built on a modular basis, covering the whole range of our valves. However, we also work closely with leading actuator manufacturers to accommodate clients wishing to standardise on a particular make of actuator." RTK's actuators are leading edge items and

in fact the company has its own R&D department for electronic components. Mr Hänle: "Our goal is to be at the forefront of new developments. For example, RTK was the first company to introduce and patent a digital system for electric actuators on industrial valves. Also, we introduced our Profibus modules some two years before the issue of fieldbuses really gained attention."

### Feed water control valve with spillback

This ingenious control valve design for high-pressure pumps has an integral recirculation port. The specially designed internals guarantee the required minimum flow for the pump. The spillback function only operates when the main valve moves towards close position (see chart). This prevents pump overheating and cavitation which contributes to an improved wear life. The adjustable recirculation internals reduce the flow to the actual amount required and can therefore contribute to savings in operating costs. Excellent control stability is achieved with this trim.



With some eight million different finished product combinations, RTK has an enviable track record in solving thermal and refrigeration flow control problems.

are currently made in Germany and Europe, although it also has a strong presence in Scandinavia, the US and countries such as Thailand, Taiwan and Korea. Mr Laube: "At the moment we still see plenty of growth opportunities for RTK in Europe, we plan to expand in areas such as Eastern Europe, the Middle East and South Africa and have a keen eye on the US. The development of true ANSI valves will certainly help that aim. Our recent joining with the Circor group should further help expansion of our geographical markets. We can benefit from Circor's global sales reach and at the same time offer group

### Maintain growth

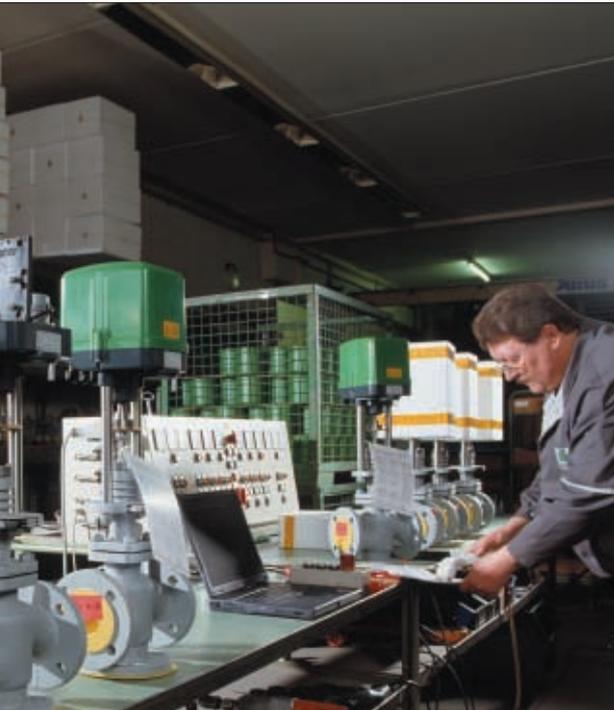
Developing a sophisticated product line is one thing, marketing it to prospective clients is quite another. In this area too RTK has been successful, with steady growth figures unaffected by economic swings. Most of RTK sales

members' complementary products to existing clients."

Specialised knowledge and experience are the preconditions many customers expect from RTK and its representatives. Mr Eisele explains: "Custom-made products such as ours do not lend themselves to sales through stockists. The product range is too vast, and the level of expertise required too specific. Instead, RTK conducts its sales directly to the customers, using qualified representatives in regions outside our direct reach. We are now actively looking for

actuators would also be brought onto the market. RTK is also likely to expand its activities in bus systems, expected to become much more important thanks to new technological developments. Not only will RTK develop new products, there will also be a stronger focus on after-sales service, indicated Mr Laube. "We have had a competent in-house service department, providing repairs, spares and maintenance activities for many years already. We are picking up signals that clients would like us to extend the range of services offered

even further. That's because end users want to get on with their core businesses, and have little time and even less inclination to perform maintenance activities. Especially on high-tech components such as control valves. Therefore we have started setting up on-site maintenance contracts with selected customers and maintain valve status catalogues for them. These are just examples of how we can enhance our after-sales service. This area is so important it may become a business on its own. But overall, our objective with all our activities, be they R&D, marketing, after-sales activities, etc, is to remain a leading manufacturer of control valves and provider of flow control solutions." ■



agents who have the right qualifications to market our products, especially in countries outside of Europe."

RTK's management believes that a wider product portfolio will also benefit its sales figures. Products for the refrigeration market are also expected continuing to sell strongly. Asked what developments might be expected, Mr Hänle said that RTK was looking to design valves capable of operating at higher differential pressures and that a new generation of electric



RTK fully tests all valves before they are allowed to leave the premises. Testing includes checking the seat tightness; a key area all too often overlooked.

## FACTS & FIGURES

Core markets:	Controllers for Thermal and Refrigeration Technology
Products:	Globe valves (two and three-way), electric actuators, pneumatic actuators, sensors, complete flow control loops
Typical applications:	Modulating control valves for temperature, pressure and level control.
Special applications:	Bottom blowdown & continuous blowdown valves for boiler application; feedwater control with recirculation protection; steam conversion; emergency shutdown
Controlled media:	Process media such as water, steam, air, thermal oil, coolant, refrigerant, gases, natural gas, etc
Founded:	1975
Employees:	90
HQ:	Kornwestheim (5 km north of Stuttgart, Germany)
Subsidiaries:	RTK Control Systems Ltd, Letchworth, UK
Reps:	8 domestic, 18 international
PED - certification:	November 2001