



PROCESS TECHNOLOGY & COMPONENTS 2025

Water | Wastewater | Environmental Technology

Energy | Oil | Gas | Hydrogen

Mechanical Engineering | Shipbuilding | Heavy Industry

Chemistry | Pharmaceuticals | Biotechnology

Food and Beverage Industry



Advantages of the low-noise optimised bearing

The advantages of the Type 2580 overflow valve go beyond pure noise protection:

- **Increased safety:** Continuous depressurisation keeps the system within the safe operating range without exceeding critical thresholds.
- **Efficient utilisation:** Only as much gas is released as is absolutely necessary for depressurisation, gas losses are reduced to a minimum.
- **Longer service life:** Relieving the tank of extreme pressure fluctuations reduces mechanical stress. The safety valves do not have to take on a control task and last longer.
- **Environmental and neighbourhood protection:** The low-noise pressure control contributes to trouble-free operation and meets the requirements of TA Lärm (Technical Instructions on Noise Abatement).

Conclusion

The storage of cryogenic gases is an indispensable part of modern industries but requires sophisticated solutions to ensure safety and environmental standards. Goetze KG Armaturen is therefore advancing the state of the art.

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WMArchitect™ single-use solutions

Watson-Marlow Fluid Technology Solutions (WMFTS) recently launched WMArchitect™ single-use solutions. The flexible, single-use solutions range has been developed by building on years of experience including the predecessor brands of puresu® and asepticu®, and is designed to streamline a biopharmaceutical company's process, safeguard its product and reduce its regulatory burden.

WMArchitect is a new end-to-end, single-use fluid path management solution consisting of:

- **Customised designs** (to meet a company's specific requirements; the open architecture model allows full flexibility and compatibility with existing fluid-contact materials used in a company's bio-process)



- **Single-use fluid transfer assemblies** (which are ready-to-use, pre-designed assemblies, all with lot traceable tubing and components, which optimise fluid transfer between equipment and process steps)
- **Fill/finish single-use assemblies** (to safeguard therapeutic products during the filling process with a wide range of sterility-assured assembly configurations)
- **Validation testing** (specialists from WMFTS support users of WMArchitect with bioprocessing expertise and tailored validation packages to help reduce a company's regulatory burden)

The WMFTS global supply network provides uninterrupted supply security and robust lead times. By partnering with WMArchitect, biopharmaceutical companies can be confident that supply will keep pace as their business grows.

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Fail-safe supply of pneumatic, electric and data communication

So that the table rotates, not the staff: specially developed rotary unions enable 360-degree movement for rotary tables with clamping fixtures

Rotary tables, used for processing complex and heavy components, present challenges for plant engineers: as automation increases, so does the degree of integration. In addition to the medium required by the system, such as compressed air, vacuum or hydraulic oil, the rotary tables also need to be supplied with electricity and data interfaces. To provide a fail-safe transfer from the stationary to the rotating machine elements, complex rotary unions are required, which often need to be designed for specific applications due to the many variables involved. For new rotary tables with pneumatic clamping fixtures for the production of body parts that can continuously rotate 360 degrees, thyssenkrupp Automotive Body Solutions turned to KONSTANDIN GmbH. The family business based in Karlsbad designed and manufactured 24 rotary unions, each featuring two compressed air connections with G 1½" threads, a signal line for Profinet and two additional power conductors. Thanks to lifetime lubrication, the rotary unions are completely maintenance-free.

"For our rotary tables with clamping fixtures, we needed specially manufactured rotary unions to enable continuous 360-degree freedom of movement without damaging the lines," reports Patrick Hofsommer, Head of Assembly Service Body-in-White at thyssenkrupp Automotive Body Solutions. While rotary unions for various media such as compressed air, vacuum or hydraulic oil are available as standard modules, the combination of pneumatic transfer with components for power and data transmission required in this case had to be specifically designed for the application.

Compressed air, power and data for continuously rotating rotary tables

The newly developed rotary union can rotate 180 degrees in five to six seconds, with the motion being intermittent, oscillating or continuous. "Generally, we try to use proven standard components for new parts as well to keep production costs as low as possible," explains Mathias Kraft, Technical Director at KONSTANDIN. "We followed this approach here as well, realising the medium section, as we have done many times before, by reworking a standard module."

The component is made of stainless steel and aluminium, features an interchangeable NBR sealing system and transfers compressed air and vacuum between -0.8 and 8 bar over two channels. This ensures the functionality of the clamping fixture on the rotary table, as continuous motion is required both under pressure and without pressure. The necessary power transfer component, however, had to be specially developed and designed by the manufacturer for use at thyssenkrupp Automotive Body Solutions. For use in harsh industrial environments, the power section is dust-tight and protected against splashing water in accordance with IP64. Additionally, the rotary union features lifetime lubrication, making the on-site replaceable seal the only wear part.



Fig. 3: KONSTANDIN designed and manufactured a total of 24 rotary feedthroughs for thyssenkrupp Automotive Body Solutions, each of which is equipped with two compressed air connections with G 1/2" threads, a signal cable for Profinet and two additional power conductors. Source: KONSTANDIN

Combination of standard modules and custom solutions

As all technical requirements were discussed and clearly communicated in advance, KONSTANDIN was able to manufacture and deliver the first eight rotary unions within just three months. Potential problem areas, such as the attachment of components to the rotary tables at thyssenkrupp Automotive Body Solutions, were identified using 3D models and incorporated into the design from the outset. "Our rotary unions are typically solutions that are tailored and optimised according to customer requirements," summarises Kraft. "Thanks to our extensive portfolio, we can create application-specific products with minimal effort using existing rotary union parts." Patrick Hofsommer also expresses great satisfaction with the collaboration with KONSTANDIN.

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Heat recovery saves energy and minimises costs

Heating with compressors

Compressor operators have a distinct advantage when it comes to reducing energy consumption and costs, because the savings are already there for the taking. The key to this potential 'gold mine' lies in heat recovery – up to 96 percent of the energy that is used to produce compressed air remains available for reuse as heat.

100 percent of the drive energy fed to a compressor is converted into heat. Air- and water-cooled rotary screw compressors are the best-suited compressor technologies for efficient heat recovery. The greatest part of the energy consumed by these compressors, some 76 percent, is transferred to the cooling medium. A further 15 percent is transferred to the compressed air, and heat losses from the electrical motor account for up to 5 percent. Modern, fully-encapsulated rotary screw compressors can use targeted cooling to recover this energy. In



Fig. 1: Rotary tables used to process complex and heavy components present challenges for plant engineers: As automation increases, so does the degree of integration. Source: thyssenkrupp Automotive Body Solutions GmbH



Fig. 2: For use in harsh industrial environments, the power section of the rotary union is dust-tight and protected against splashing water in accordance with IP64. Source: thyssenkrupp Automotive Body Solutions GmbH