ZETRIX®

THE ARI PROCESS VALVE

TRIPLE OFFSET DESIGN. METAL SEAL.
SELF-ALIGNING SEALING RING

Your valve made by ARI®
ari-armaturen.com

ZETRIX® – Triple Offset for Challenging Applications!

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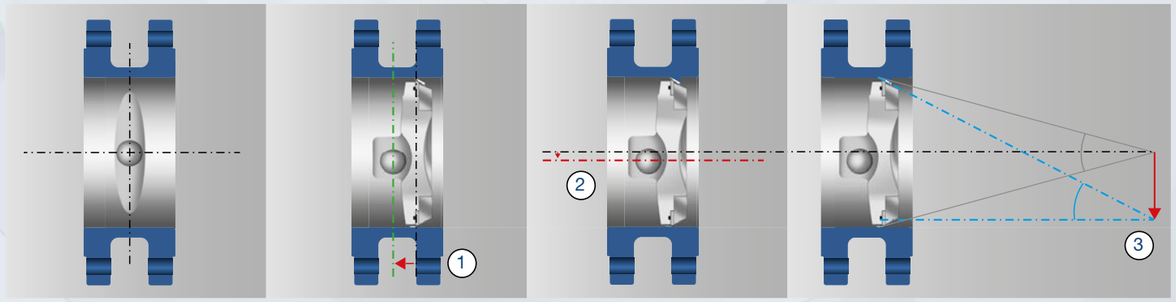
What is “triple offset”?

The rotating shaft of the disc is offset from the centre line of the disc seat and body seal (first offset) and the pipe’s centre line (second offset). as well as the pipe’s centre line (second offset).

With triple offset process valves, the seat’s axis of rotation is also asymmetrically apposed to the pipe axis (third offset).



Centric disc design
The pivot point is centrally disposed to both the seat and the pipe.

1) First offset
The rotating shaft of the disc is offset from the centre line of the disc seat and body seal.

2) Second offset
The pivot point is also displaced from the pipe's centre line.

3) Third offset
The seat's axis of rotation is also asymmetrically apposed to the pipe axis.

Benefits for you:

- Frictionless swivel movement.
- Low torque
- Permanently leak-proof due to the metal seal principle.
- Versatile applications with regard to media and temperature.

Your valve made by ARI®
ari-armaturen.com

ZETRIX® – The Metal Sealing Process Valve

Reliably tight – even in toughest industrial environments

- Due to the triple offset disc design (maximum closing force with minimum effort).
- Due to the “smart” sealing ring (uniform closing force, the ring is self-aligning and free-floating on the sealing surface).
- Due to a wide range of additional safety options.
- Due to the stellited seat (Stellite™ No. 21) as standard version.
- Due to the metal seal principle.

Durability

- Long and maintenance free service life due to the stellited seat.
- Rotary movement without wear or friction (seat and sealing ring) due to the optimised contact angles.
- Hardened stainless steel bearings.

Options:

- “Clean air” bushing acc. to TA-Luft / ISO 15848
- Blow-out protection acc. to API 609
- Double packing with drainage line (e.g. for thermal oil services)
- Flushing port for the shaft bearings and buffer port for protecting the stuffing box
- Flushing port for the bottom flange
- Welded bottom flange
- Test port
- Heating jacket
- RTJ / tongue-and-groove flange
- Solid sealing ring for special applications

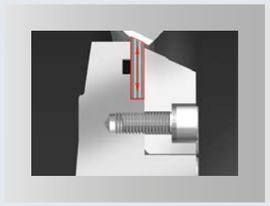
Performance features at a glance:

- **Design:** EN 12516, ASME B16.34, API 609
- **Flange connection*:** EN 1092, ASME 16.5, ASME 16.47
- **Butt-weld ends*:** DIN EN 12627, ASME B16.25
- **Nominal diameter ***
  Double flange: DN 80-1400 / 3" to 56"
  Fully lugged: DN 80-600 / 3" to 24"
  Butt-weld ends: DN 80-800 / 3" to 32"
- **Nominal pressure ***
  PN 10-40, PN 63, PN 100 / Class 150, Class 300, Class 600
- **Face to face ***
  Double flange: DIN EN 558-1 Series 13, 14 and 15, ISO 5752, API 609
  Fully lugged: DIN EN 558-1 Series 16, ISO 5752
  Butt-weld ends: Series 14 acc. DIN EN 558 / ISO 5752
- **Material ***
  Cast carbon steel (1.0619 +N; SA216WCB)
  Cast stainless steel (1.4408; SA351CF8M)
- **Temperature *:** -60°C to +550°C
- **Flow media:** Liquids, gases, vapours
- **Actuators:**
  Manual gearbox, pneumatic, electric, hydraulic drives
- **Approvals:**
  Firesafe, TA-Luft / ISO 15848-1, SIL, ATEX, EAC
- **Typical applications**
  Oil and gas processing, refineries, petrochemicals, chemicals, power plants, district heating, solar thermal power stations, pulp and paper, steelworks, sugar processing, industrial and plant manufacturing — reference lists on request.
- * Other designs on request

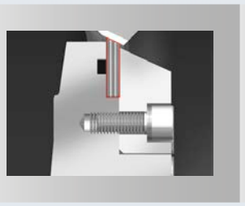
Absolutely tight.
Versatile.
Durable. Safe.

Design

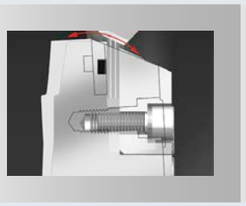
- Body acc. to EN 12516, ASME B16.34 and API 609.
- Tight metal shut-off.
- Triple offset sealing geometry.
- Flexible, self-aligning, lamellar metal sealing ring (floating).
- Optimised characteristic permits shut-off and control function.
- Extended bonnet suitable for pipe insulation from -60°C to +450°C.
- Easy to automate due to the actuator interface incl. position indicator acc. to ISO 5211.



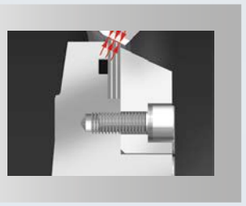
Self-aligning sealing ring facilitates thermal compensation and ensures tightness regardless of temperature variations.



Lamellar structure made of stainless steel and graphite lends additional elasticity to the sealing ring. Double sealing mechanism in the form of a special, spiral-wound gasket made from a heat-resistant elastic material.



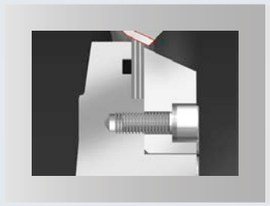
Triple offset design guarantees a frictionless rotary movement of the sealing ring into the seat.



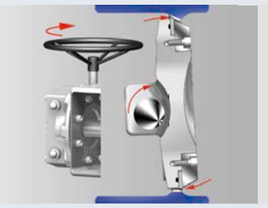
The ZETRIX® process valve seals according to the area seating principle; the required contact pressure is applied via the actuator, the switch-off takes place as a function of the torque.

Safety

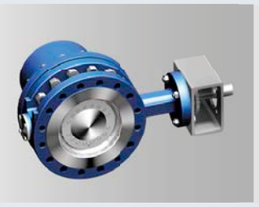
- Tightness (bidirectional) conforming to leakage rate A in accordance with EN 12266, API 598.
- Bearing protectors.
- Blow-out protected stem, optionally also according to API 609.
- Retaining ring and thrust bearing bolts locked.
- Pressure-temperature profile acc. to EN 1092, ASME B16.34.
- Approvals: Firesafe, TA-Luft / ISO 15848-1, SIL, ATEX, EAC.



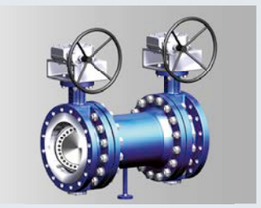
Optimal durability because even the standard version has a stellited seat.



Maximum closing force with minimum effort because the contact angles are optimised with our special geometry optimisation software.

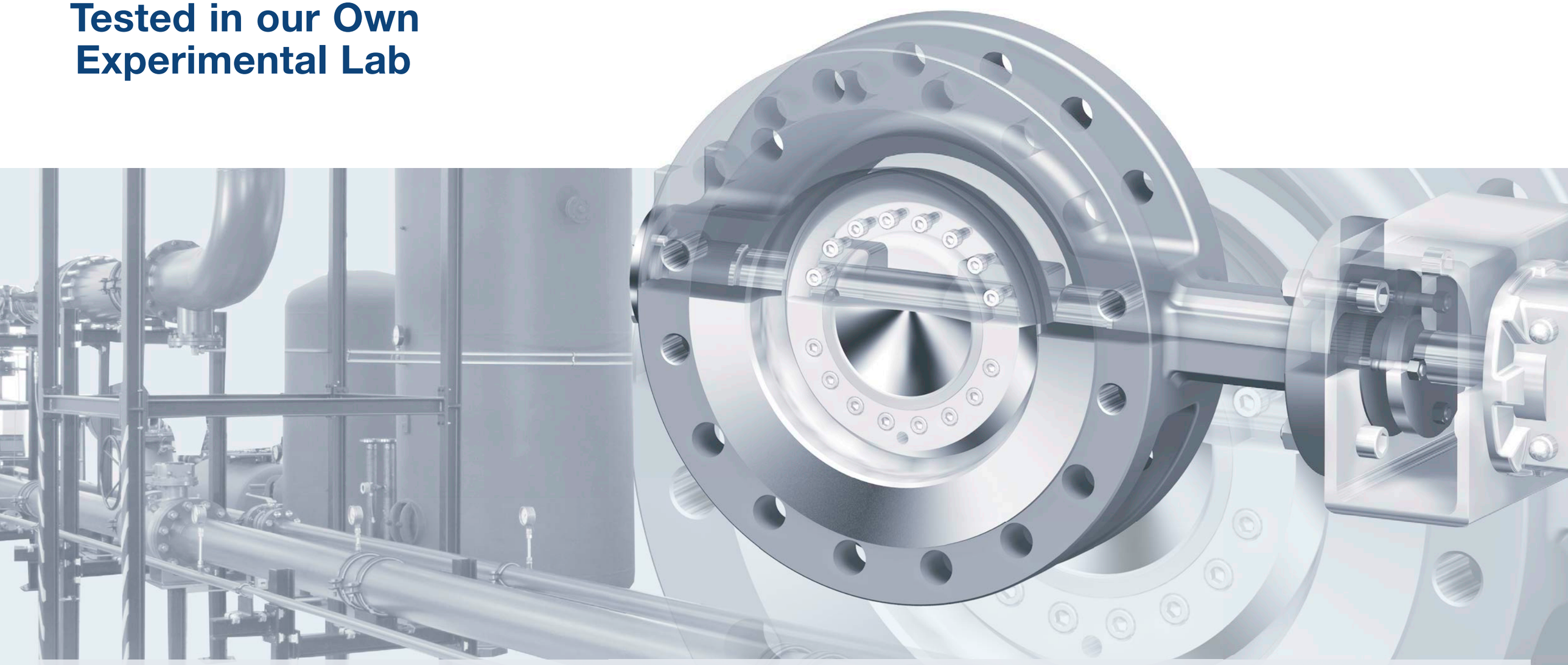


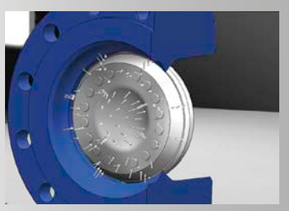
ZETRIX® is extremely versatile. It can be used as a pipe-end valve on both sides (accident pre-vention regulations must be observed). The bracket for mounting the actuator is defined according to ISO 5211. The extended bonnet allows insulation thicknesses in line with industrial standards.



Double block & bleed (DBB) provides safe double blocking with the void monitored and optional pressure relief to atmosphere.

Modern Development Methods, Tested in our Own Experimental Lab

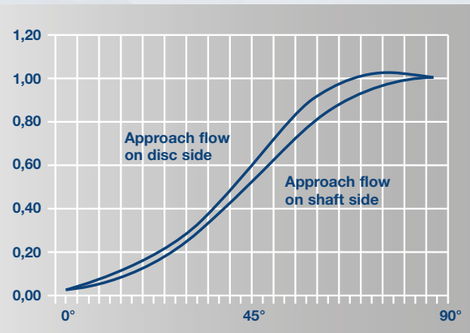




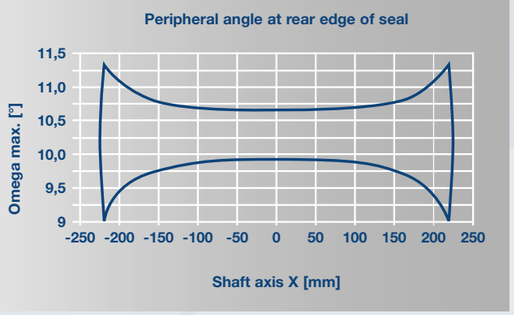
Finite element analysis
The finite element analysis (FEA) is a numerical calculation technique that was used to simulate the stresses and their distribution occurring in the ZETRIX® process valve. The aim was to achieve the required strength at pressure load levels in combination with an optimal weight and a flow friendly shape.

State-of-the-art flow simulations
The twofold objective of uniform flow and high flow capacity was realised with the aid of special flow software. The software simulations enable the flow velocity, flow direction and pressure distribution to be visualised. Due to the optimised ZETRIX® geometry, turbulences and pressure loss are reduced to a minimum.

Rigorous tests (here: firesafe)
“Firesafe” is a basic stipulation in many of the environments where the ZETRIX® process valve is used. As a triple offset process valve with a tight metal seal, ZETRIX® meets all requirements according to ISO 10497 / API 607 6th edition.



Characteristic measurements
The flow values at different opening angles were measured in an accredited testing laboratory.
The resulting curves were used to determine the exact control characteristic of the ZETRIX® process valve.



Contact angle calculation
The peripheral closing angle was optimised to ensure that the valve opens and closes without sticking and without friction. Our sizing software allows the contact angle at the perimeter of the ZETRIX® process valve to be visualised.

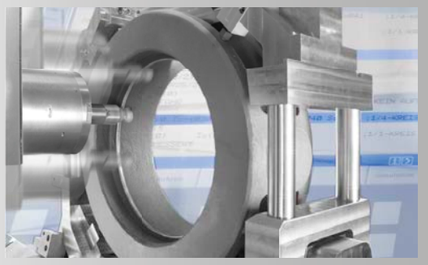
High-precision manufacturing

Modern technologies …

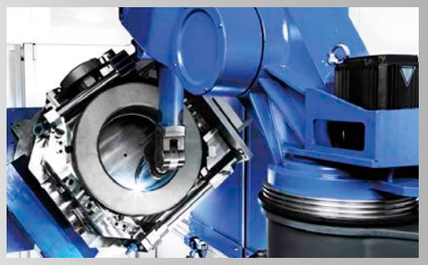
… are the key to optimal safety and reliability.

Our products are manufactured at three different locations – all of them in Germany – promptly and according to rigorous quality criteria.

High performance machining centres, automated assembly cells, programmable assembly robots and a highly qualified team of staff are vital prerequisites of top-quality product solutions specially tailored to your individual requirements.



The valve bodies are manufactured on fully automated, CNC controlled machining centres. Our CNC programs are written on the basis of CAD data and transferred to the control online. The workpieces are clamped in specially designed fixtures that guarantee maximum machining stability and short set-up times.



The sealing surface is coated with stellite by a fully automatic welding robot with an integrated measuring system. All CNC programs are developed by our expert in-house programmers. The precise synchronisation of the welding system's eight axes ensures high product quality.

The benefit for you: Optimal reliability and efficiency.

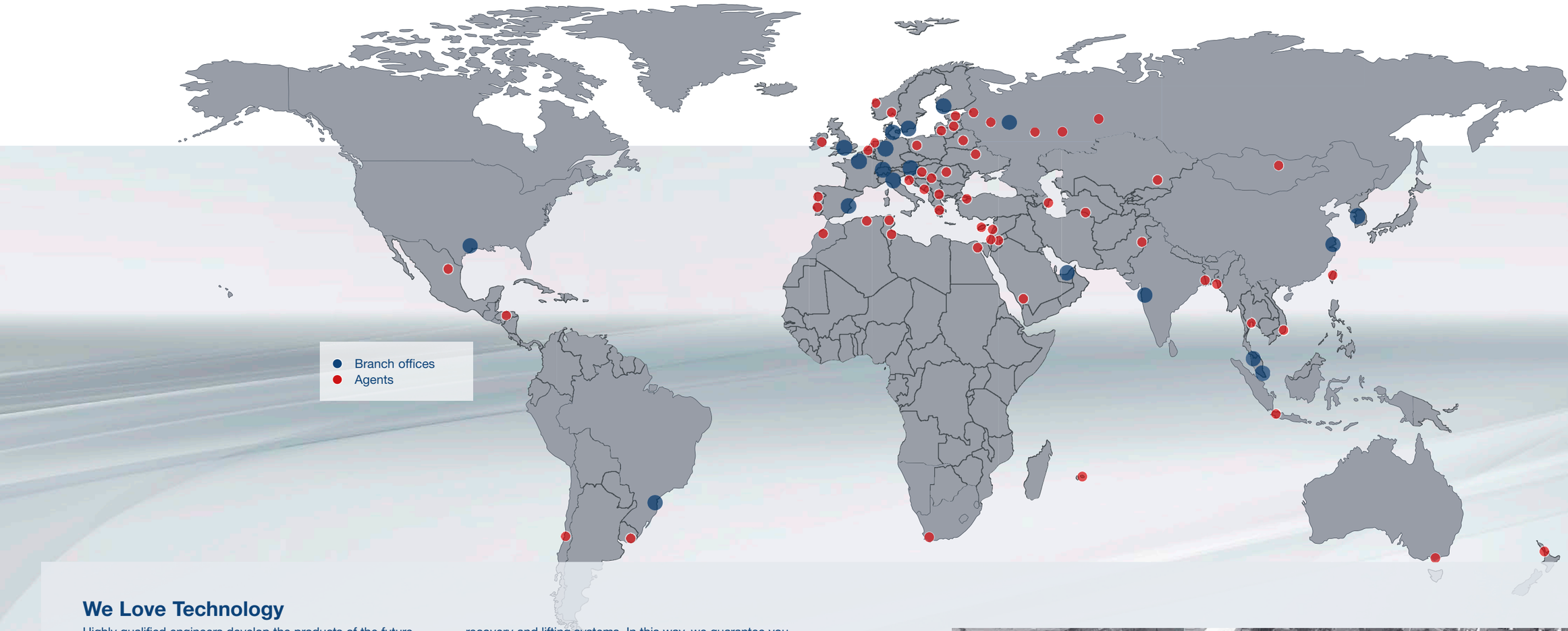
With the three-dimensional measuring system, the valves can be measured and scanned against 3D data and subsequently evaluated and saved on a PC. The measurements are carried out directly in the machine to ensure reliable production processes.

Every ZETRIX® process valve is leak-tested according to DIN EN 12266. The test pressures and times are stored on our computer aided test bench. Special tests can also be performed at the customer's request.

Your valve made by ARI®
ari-armaturen.com

For Control – Isolation – Safety – Steam Trapping – Engineered Systems

Your strong partner – in more than 60 countries worldwide



We Love Technology

Highly qualified engineers develop the products of the future using the latest methods. Already in the selection of our suppliers we set the highest quality standards and thus guarantee already with the materials used a high level of quality. The same applies to our production technologies, which are always one step ahead thanks to our many years of know-how and thus leave no room for error.

Your Local Partner - Worldwide!

Our broad-based sales team is your competent local partner. With sales partners in more than 60 countries worldwide and our own subsidiaries in Austria, Switzerland, Denmark, Great Britain, France, Spain, Italy, Russia, Finland, Sweden, the USA, Brazil, India, China, Malaysia, Singapore, South Korea and Dubai, we are always available for you. A powerful partner!

Customized Product Solutions

20,000 products in more than 200,000 variants offer you almost unlimited possibilities depending on the area of application and thus individual product solutions made to measure. Control valves, pressure reducers, overflow regulators, self-operated temperature regulators, butterfly valves, shut-off valves, safety valves, steam traps, measuring technologies and systems such as pressure reducing stations, heat exchangers and condensate recovery and lifting systems. In this way, we guarantee you maximum flexibility - whatever the application.

Quality is our Claim

As a developer, manufacturer and distributor of valves, actuators and engineered systems, we are certified according to DIN EN ISO 9001:2015. The continuous quality monitoring in all phases of production is documented in about 20 system approvals from acceptance or classification societies such as Det Norske Veritas, Lloyd's Register Quality Assurance, Germanischer Lloyd, SELO (China), CCS (China), Korean Register, Russian Maritime Register of Shipping, EAC, Rostechnadzor (Russia) and many more.

Sustainability

ARI-Armaturen operates a certified environmental management system according to DIN EN ISO 14001:2015 as well as an energy management system according to DIN EN ISO 50001:2018. Sustainability as well as a resource-saving handling have thus become a top priority for us.

Quality made by ARI.

ARI PRODUCT DIVERSITY

Control

Control valves
STEVI® Pro
(Series 422/462, 470/471)

STEVI® Vario
(Series 448/449)

STEVI® Smart (Series 423/463, 425/426, 440/441, 450/451)

Control without auxiliary power
PREDU® / PREDEX® / PRESO® / TEMPTROL®

Isolation

Process valves
ZETRIX®
High Performance-Valves
ZEDOX®

Butterfly valves
ZESA®/GESA®/ZIVA®

Bellows sealed valves
FABA® Plus, FABA® Supra I/C

Stop valves with gland seal
STOBU®

Safety

Safety valves (DIN/EN)
SAFE

Safety valves (DIN/EN)
SAFE TCP

Safety valves (API 526, ASME)
REYCO® R

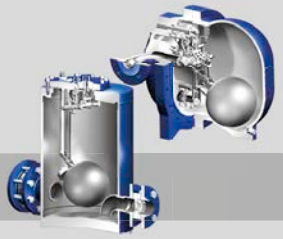
Safety valves (ASME)
REYCO® RL

Steam Trapping

Steam traps CONA®
(mechanical ball float / thermostatic bimetallic and membrane / thermodynamic),
monitoring systems
CONA® Control

Manifolds
CODI® for collecting and diverting purpose

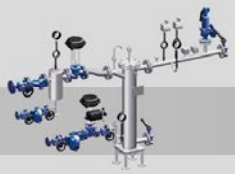
Steam traps with multi-valving technology CONA®
“All-in-One” (incl. stop valve, inside strainer, back-flow protection, drain valve)



Mechanical pump systems
CONLIFT®, CONA® P

Engineered Systems

e.g. pressure reducing station
PREsys®



e.g. heat exchanger
ENCOsys®

e.g. condensate return system
CORsys®

e.g. feedwater tank with deaerator dome

Edition 02/2024 - Data subject to alteration

Profit from diversity made by ARI.
Please don’t hesitate to ask for more information!

Your valve made by ARI®
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