DESALINATION TECHNOLOGY

Valves ▪ Actuators ▪ Automation Technology

The valve people

EBRO ARMATUREN®

CONTENT

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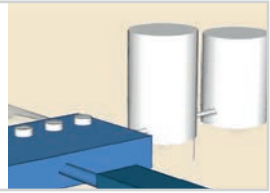
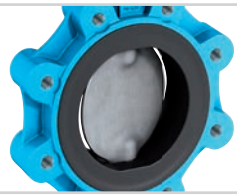
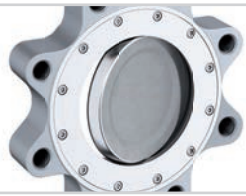


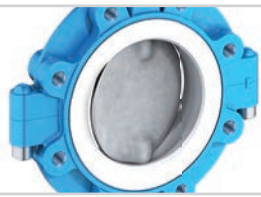
Soft Seated Valves



High Performance Valves



PTFE Valves

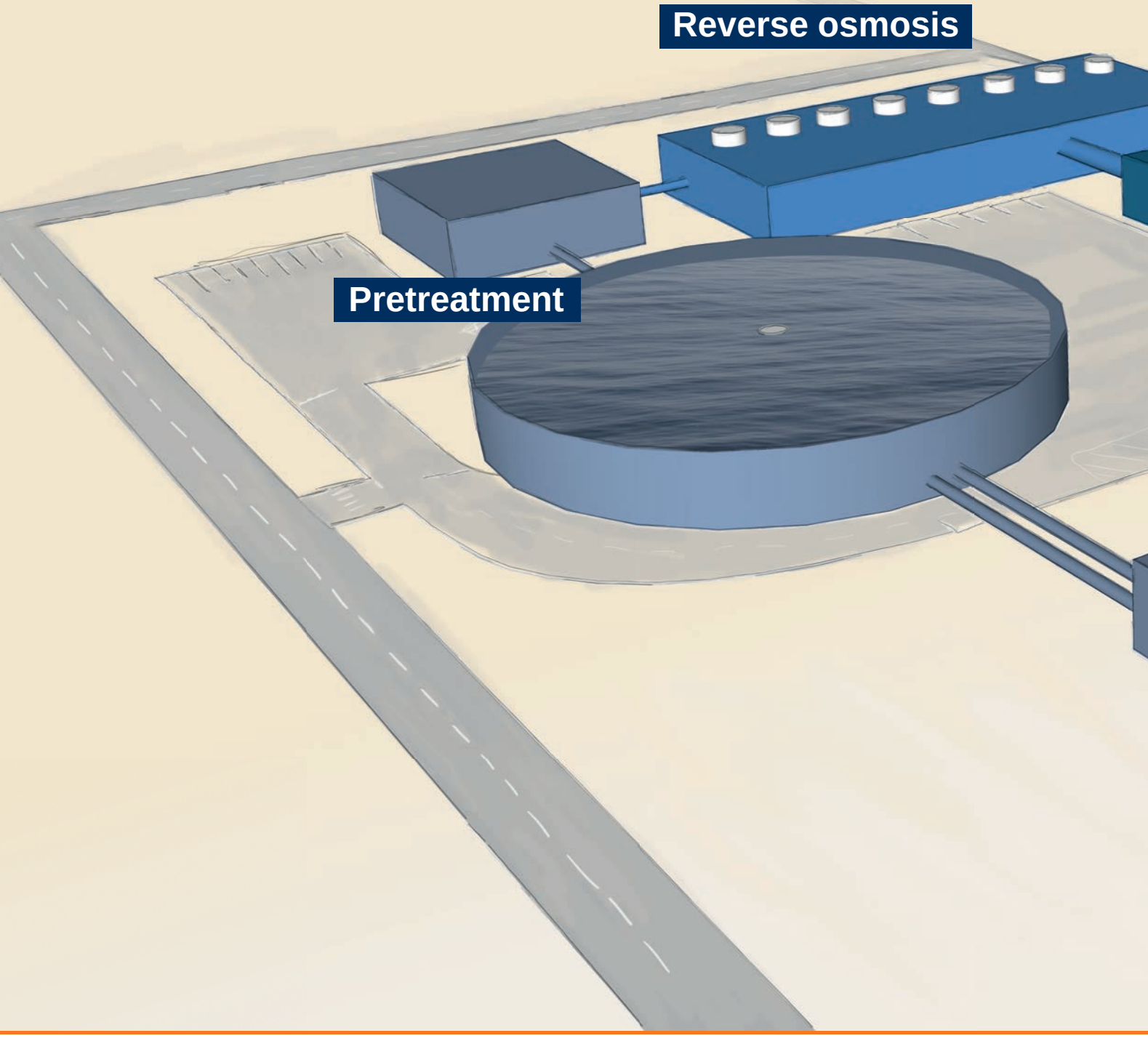


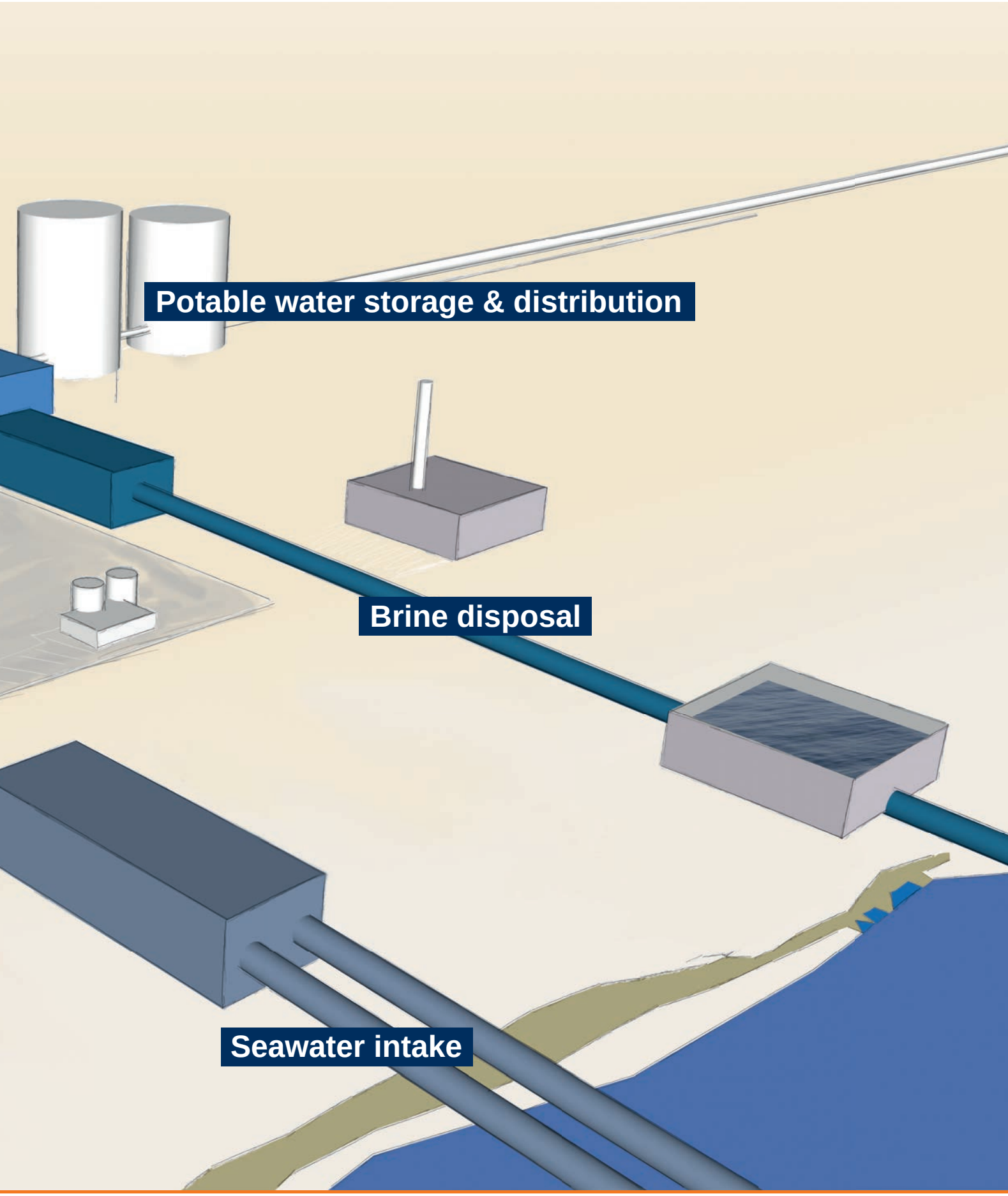
Actuator Technology

Control Elements

Applications in a Desalination Plant

Valves and Automation Components in a desalination plant have to be selected very carefully, as many of the applications require high quality and long service life. Whether it is highly corrosive seawater or sensitive potable water - the selection of suitable materials on a top quality level must be the first criteria when choosing components.
EBRO offers a wide range of valves and actuators for all the tasks in such plants.
Soft seated for low pressure lines – high performance valves for high pressure – we offer a suitable, top quality solution for all the applications.



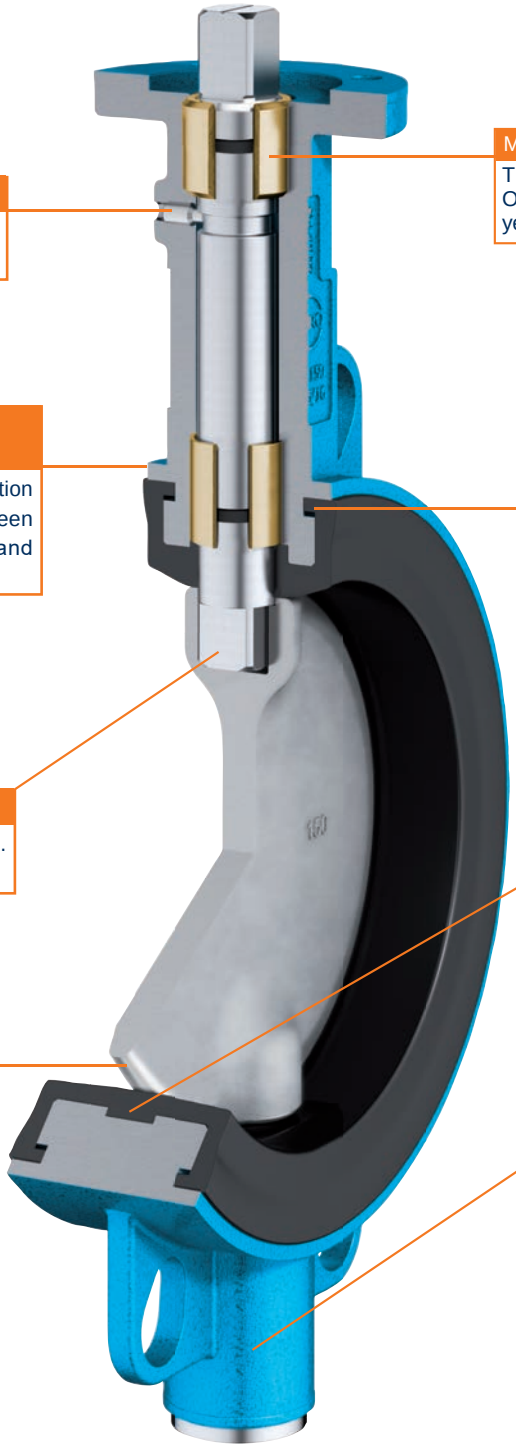


EBRO ARMATUREN®

Thanks to their design and material diversity, centrally mounted, shaft protected, soft seated shut-off and control valves are almost universally usable. Whether the medium is water, powder or gas – with a broad range of materials and our expertise based on 40 years of experience, we can offer you the optimal solution for your application.

	Z 011-A	Z 014-A	F 012-A / F 012-K1
	Universally usable wafer-type butterfly valve in accordance with EN-593. Due to the diversity of base materials available, this valve is suitable for various fields of application.	Lug-type butterfly valve with tapped holes. This design enables downstream pipe dismantling. Series Z 014-B: Butterfly vale with vulcani-zed-in liner up to DN 300 available.	Double-flanged butterfly valve suitable for use in cooling and industrial water circuits in seawater desa-lination. The vulcanised-in liner is suitable for operating pressures up to max. 25 bar.
Nominal diameter:	DN 20 - DN 600	DN 20 - DN 600	DN 50 – DN 2000
Face-to-face:	EN 558 Series 20	EN 558 Series 20	EN 558 Series 13 ISO 5752 Series 13
Flange accommodation:	EN 1092 PN 6/10/16 ASME Class 150 AS 4087 PN 16	EN 1092 PN 6/10/16 ASME Class 150 AS 4087 PN 16	EN 1092 PN 6/10/16/25 ASME B16.5 / B16.47 ASME Class 150 ASME Class 300 AS/NZS 4087 PN 16 / PN21 / PN35 Others on request
Flange Surface Design:	EN 1092 Form A/B ASME RF, FF	EN 1092 Form A/B ASME RF, FF	EN 1092 Form A/B ASME RF, FF
Tightness check:	EN 12266 (Leakage rate A) ISO 5208, Category 3	EN 12266 (Leakage rate A) ISO 5208, Category 3	EN 12266 (Leakage rate A) ISO 5208, Category 3
Temperature range:	-40 °C to + 200 °C (depending on pressure, medium and material)	-40 °C to + 200 °C (depending on pressure, medium and material)	-40 °C to + 200 °C (depending on pressure, medium and material)
Max. Operating pressure:	max. 16 bar	max. 16 bar	max. 25 bar
Vacuum:	up to 1 mbar absolute	up to 1 mbar absolute	up to 1 mbar absolute

Soft Seated Valves



SHAFT RETAINER
The shaft retainer guarantees blow-out protection for the shaft.

MULTIPLE BEARINGS
The shafts have multiple bearings. Optimal guidance even after many years of use.

CONVEX SHAPE OF THE LINER
This feature absorbs the deformation of the liner when mounted between flanges and avoids damage and increasing torques.

DOUBLE SIDED PROFILES
Double sided profiles ensure the sleeve/body engagement in the outer body recess.

SOLID DISC/SHAFT
Secure disc/shaft connection. No bolts, no wear.

BED GROOVE DESIGN
The liner is embedded in the body. This prevents movement when operated.

POLISHED SEALING SURFACES
Disc edges fully machined.

BODY & COATING
Precision machined bodies form the basis for perfect sealing of the liner and precise positioning of the shaft. All working surfaces fully machined. High Protection against enviroental influences. Coating acc. to C3 or C4 for indoor use, C5M coating for outdoor use.

APPLICATIONS
- Seawater Intake
- Pretreatment
- Low pressure RO-lines
- Post-treatment
- Potable water (storage/ distribution)

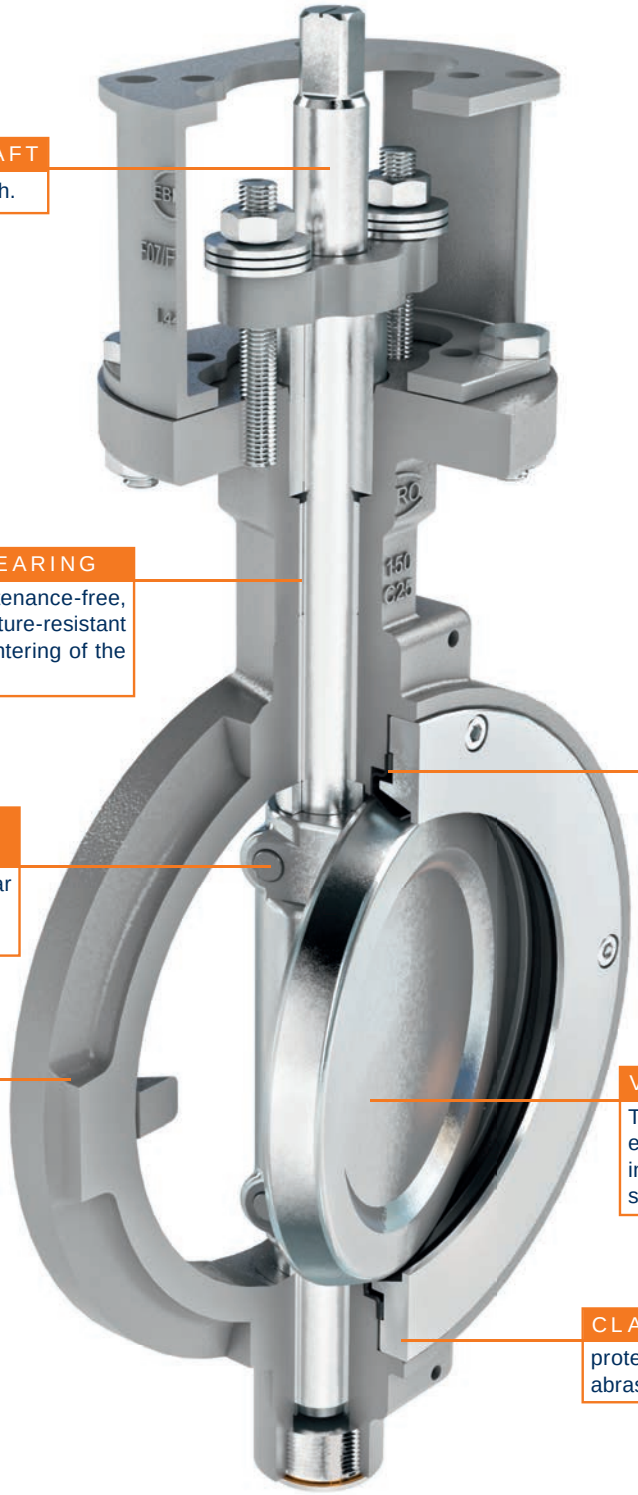
CERTIFICATES
- DVGW
- WRAS
- NSF
- AEL
- SIL

EBRO ARMATUREN®

High operating pressures and extreme temperatures – wherever other valves reach their physical limits, this series is the ideal solution. The double eccentric design of the valve disc, high-quality materials and outstanding workmanship ensure safety even in extreme conditions of use. Different sealing systems enable an optimal solution for the respective field of application.

	HP 111	HP 114	HP 112
	Wafer-type butterfly valve in double eccentric design. Reliable sealing even under extreme pressure and temperature stresses.	Lug-type butterfly valve in double eccentric design. Reliable sealing even under extreme pressure and temperature stresses.	Double-flange type butterfly valve in double eccentric design. Reliable sealing even under extreme pressure and temperature stresses.
Nominal diameter:	DN 50 - DN 1200	DN 50 - DN 1200	DN 80 - DN 600
Face-to-face:	EN 558 Series 20, Series 25 ISO 5752 Series 20 API 609 Table 1	EN 558 Series 20, Series 25 ISO 5752 Series 20 API 609 Table 1	EN 558 Series 13 Others upon request
Flange accommodation:	EN 1092 PN 10/16/25/40 ASME Class 150 AS 4087 PN 16/21	EN 1092 PN 10/16/25/40 ASME Class 150 AS 4087 PN 16/21	EN 1092 PN 10/16/25/40 ASME Class 150 ASME Class 300 AS 4087 PN 16/21
Flange Surface Design:	EN 1092 Form A/B ASME RF, FF	EN 1092 Form A/B ASME RF, FF	EN 1092 Form A/B ASME RF, FF
Leak testing for R-PTFE Seat:	EN 12266 (Leakage Rate A)	EN 12266 (Leakage Rate A)	EN 12266 (Leakage Rate A)
Leak testing for Inconel Seat:	EN 12266 (Leakage Rate B) ISO 5208, Category 3	EN 12266 (Leakage Rate B) ISO 5208, Category 3	EN 12266 (Leakage Rate B) ISO 5208, Category 3
Temperature range:	–60°C to +600°C (depending on pressure, medium and material)	–60°C to +600°C (depending on pressure, medium and material)	-60°C to +600°C (depending on pressure, medium and material)
Operating pressure:	max. 40 bar up to DN 150 > DN 150 max. 25 bar	max. 40 bar up to DN 150 > DN 150 max. 25 bar	max. 40 bar up to DN 150 > DN 150 max. 25 bar
Vacuum:	up to 1 mbar absolute	up to 1 mbar absolute	up to 1 mbar absolute

High Performance Valves



STRAIGHT THROUGH SHAFT
ensures maximum bending strength.

MAINTENANCE-FREE BEARING
For all nominal diameters maintenance-free, overlong corrosion and temperature-resistant bearings are used for exact centering of the valve discs.

FORCE-LOCKED CONNECTION
between disc and shaft. Low shear stresses thanks to tangentially arranged tapered pins.

BODY
A solid one piece body made of high grade stainless steel guarantees maximum protection against environmental influences.

INCONEL SEAT RING
The Inconel seat ring guarantees absolute tightness and compensates for wear. The seat ring can be replaced without disassembling the shaft and valve disc.
Alternative: R-PTFE or Fire-safe

VALVE DISC
The valve disc has a double eccentric bearing design, resulting in low torques and low wear. All sealing surfaces are machined.

CLAMPING RING
protects the seat ring from abrasion and erosion.

APPLICATIONS

- High Pressure lines
- Reverse Osmosis

CERTIFICATES

- T.Ü.V
- DGRL
- CRS
- CCS

EBRO ARMATUREN®

EBRO PTFE-lined shut-off and control valves are designed for use in chemically aggressive leaches and acids, for example. The minimum 3 mm thick lining comprising virgin PTFE ensures optimal permeation protection. In conjunction with the double shaft seal, this series offers maximum operational safety, even with corrosive and toxic media.

T 211-A

Wafer-type butterfly valve for shut-off and control applications in the chemical industry.

T 214-A

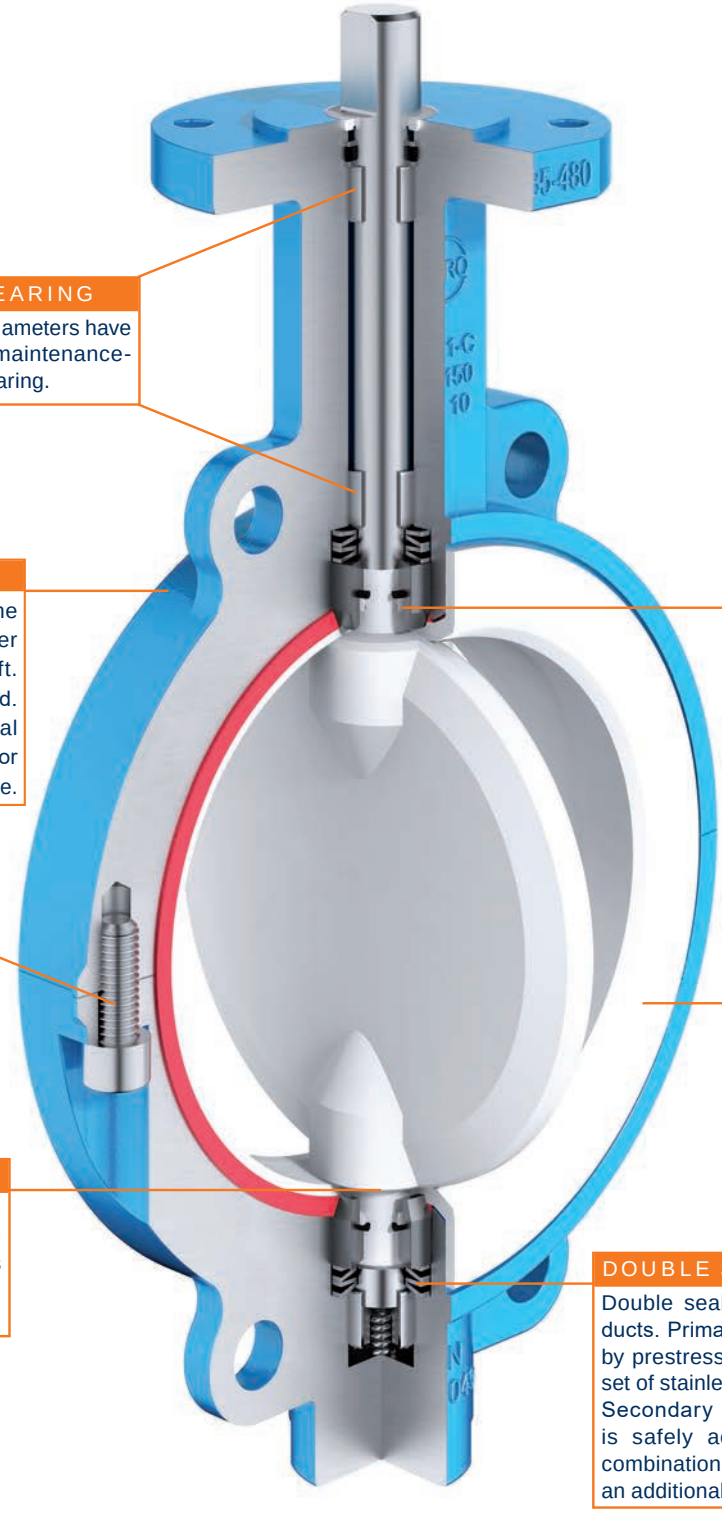
Lug-type butterfly valve for shut-off and control applications in the chemical industry.

T 212-A

Double-flanged butterfly valve for shut-off and control applications in the chemical industry.

Nominal diameter:	DN (40)50 - DN 300	DN (40)50 - DN 300	DN 350 – DN 900
Face-to-face:	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 2	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 2	EN 558 Series 20 ISO 5752 Series 20 API 609 Table 1
Flange accommodation:	EN 1092 PN 10/16 ASME Class 150 AS 4087	EN 1092 PN 10/16 ASME Class 150 AS 4087	EN 1092 PN 10/16 ASME Class 150 ASME B16.47, Serie A & B AS 4087
Flange Surface Design:	EN 1092, Form A/B ASME RF, FF	EN 1092, Form A/B ASME RF, FF	EN 1092 Form A/B ASME RF, FF
Tightness check:	EN 12266 (Leakage Rate A)	EN 12266 (Leakage Rate A)	EN 12266 (Leakage Rate A)
Temperature range:	–40 °C to + 200 °C (depending on pressure, medium and material)	–40 °C to + 200 °C (depending on pressure, medium and material)	–40 °C to + 200 °C (depending on pressure, medium and material)
Max. Operating pressure:	max. 10 bar (16 bar for spec. version)	max. 10 bar (16 bar for spec. version)	max. 10 bar (16 bar for spec. version)
Vacuum:	up to 1 mbar absolute	up to 1 mbar absolute	up to 1 mbar absolute

PTFE Valves



SHAFT BEARING
All nominal diameters have a multiple, maintenance-free shaft bearing.

BODY & COATING
Precision machined bodies form the basis for perfect sealing of the liner and precise positioning of the shaft. All working surfaces fully machined. High Protection against enviroental influences. Coating acc. to C3 or C4 for indoor use, C5M coating for outdoor use.

SAFETY SEAL
The one-piece, blow-out proof shaft/disc is coated with PFA including the safety seal. The disc is covered with at least 3mm. All sealing surfaces are machined.

INTERNAL BODYSCREW
The bodyscrew is mounted within the body and thus protected against corrosion.

PTFE LINER
The PTFE liner is isostatically pressed and at least 3 mm thick. The broad, chambered sealing strips also serve as a double-sided flange seal.

BALL PRINCIPLE
The proven seal according to the ball principle between disc and PTFE liner ensures reliable long-term operation, without critical transitions.

DOUBLE SEALS
Double seals as standard on both shaft ducts. Primary seal (= main seal) achieved by prestressing through maintenance-free set of stainless steel disc springs.
Secondary seal (= EBRO safety seal) is safely achieved through a matched combination of a PTFE-Chevron seal and an additional O-ring.

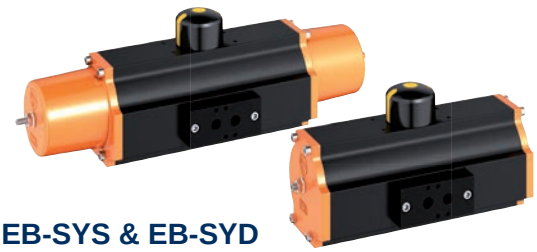
APPLICATIONS
- Chemical dosing lines
- Pretreatment

CERTIFICATES
- T.Ü.V
- PED
- SIL

EBRO ARMATUREN®

Actuator Technology

Something not many people know: EBRO produces its own actuators - and has been doing so for 30 years. For EBRO customers this means that butterfly and gate valves can always be equipped with the most suitable actuator. No compromises, just the best possible match of components - this is what the EBRO actuator series stands for. Pneumatic actuators, single or double acting, have been proven for decades. However, industrial process air is expensive. Energy efficiency is therefore the topic of the day. As a manufacturer of valves and actuators, EBRO can specifically match single product components according to customer requirements and within the scope of operating conditions, thus substantially reducing regular operating costs.



EB-SYS & EB-SYD

The scotch-yoke principle in the EB actuators exactly matches the valve torque characteristics, thus reducing size and air consumption.

E65 - E210

A compact series of electric actuators for open/close and control functions.

Torque range:	27 - 9768 Nm (based on supply pressure of 6 bar)	**Actuation time from 0° - to 90°:**	6 sec. - 25 sec.
End positions:	exactly adjustable between -8°/3°	**Rated torque:**	40 Nm - 3500 Nm
Limit switch- and Control valve-fitting:	VDI / VDE 3845	**Rated current:**	0,15 A - 8,8 A
Control pressure:	min. 2,5 bar, max. 8 bar	**Starting current:**	0,18 A - 12,5 A
Control air:	Filtered compressed air dry or lubricated.	**Power consumption:**	0,04 kW - 0,54 kW
Temperature range:	-20°C to +80°C (standard) -40°C to +80°C (low temperture) -15°C to +120°C (high temperture)	**Rated voltage:**	24 V - 400 V
Cylinder liner:	high quality marine grade Aluminium alloy, hard anodized. Other coatings upon request	**Frequency:**	50 Hz - 60 Hz
		Duty cycle:	30%
		Protection class:	IP 67 IP 68 optional

Control Elements

Automated valves play a central role in process technology:
They regulate flow rates, lock product flows and release pipes.
The challenge is the fact that the valve and actuator perfectly harmonize with each other. The automation technology simplifies complex systems, ensures a lower error rate and thus speeds up work.

SBU Advanced

Smart Valve Monitoring via Bluetooth interface. Continuous checking of the main functions of valve and actuator.

EP 100

The analog positioner EP 100 with input signal 4..20 mA serves to activate single or double acting pneumatic quarter turn actuators.

EP 501

Compact positioner for assembly with rotary and linear actuators with digital display.

Temperature range:	-20°C to +70°C	–40 to +80 °C	0°C to +60°C
Adjustment range:	0 to 240°	-	-
Power supply:	24VDC ±10%	-	-
Body:	Aluminium (powder coated)	Aluminium lacquered with DD-Coating	Aluminium (plastic coated)
Contact termination:	Spring Type Terminal	Pneumatic & Electric	Threaded ports G ¼
Screws:	Stainless steel	-	-
Output signals:	Digital outputs 24 VDC	-	-
Protection class:	IP 68 according to EN 60529	IP 65	IP 65/67 acc. to EN 60529
Positioner system:	-	Single- and doubleacting	Single- or double acting
Power consumption:	max. 200mA	-	-
Interface:	Bluetooth	-	-
Solenoid valve:	24 VDC, max 5W	-	-
Operating voltage:	24VDC ±10%	-	24VDC ±10%

EBRO ARMATUREN®

High Quality

As an acknowledged partner in international plant engineering, we are thoroughly committed to optimising the quality of our high-end products in respect of performance and lifecycle costs.

A quality management system - first certified to ISO 9001 in 1993 - that is consistently focused on continuous improvement, together with highly motivated staff, ensures the consistent implementation of international standards.

The conformity of our premium-class products with the Pressure Equipment Directive and documentation according to the Machinery Directive provide the basis for instantly verifiable quality - a formula that has served our satisfied customers well for the past four decades.

The Bröer Group

The companies EBRO ARMATUREN and Stafsjö Valves are acknowledged partners to the international plant construction industry. EBRO butterfly valves and actuators fulfill the highest demands of industrial plant construction in complex and sensitive applications. For many years, Stafsjö has been one of the leading producers of high-quality knife-gate valves for the paper and pulp industry, water and sewage technology, biogas plants and other processing industries.

The merger of the two companies in 2006 brought our customers an additional level of cross-sector expertise, in practically all industrial applications. As owner-managed family businesses, both Stafsjö and EBRO aim to achieve sustainable economic success. This is why we are continuously investing in research and development on one hand and in the technical expertise of our employees on the other.

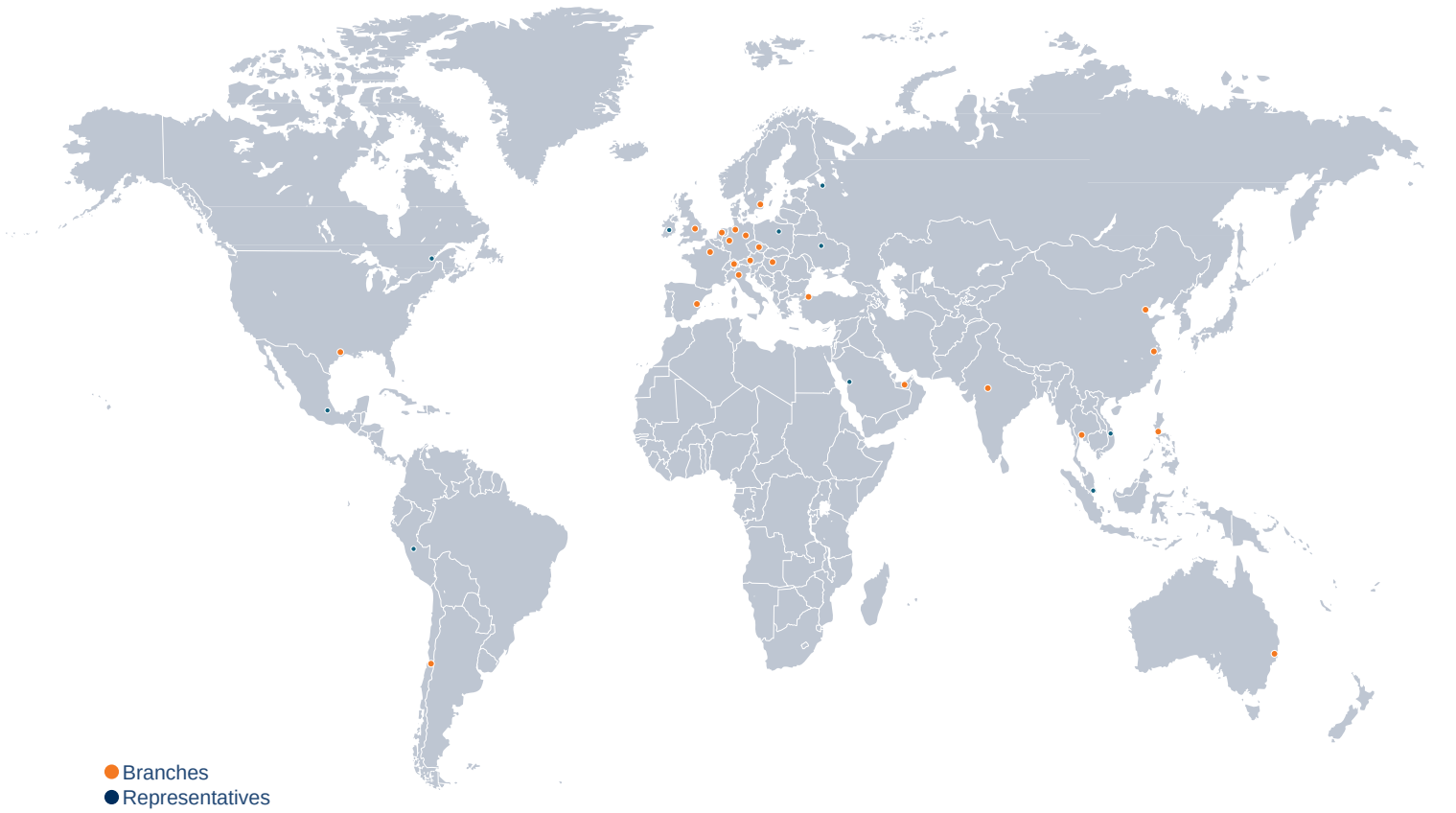
The result is top quality and reliability.

Lydia and Peter Bröer

EBRO ARMATUREN®

THE WORLD OF EBRO ARMATUREN

Our international network



EBRO ARMATUREN
Gebr. Bröer GmbH

Karlstr. 8
D-58135 Hagen

Tel. +49 (0)2331 / 904 – 0
Fax +49 (0)2331 / 904 – 111

A company of the Bröer Group

Current addresses can be found at
www.ebro-armaturen.com

EBRO ARMATUREN®