





# **Product Lines**

Phönix Armaturen-Werke Daume Regelarmaturen Solent & Pratt Strack







# At a Glance

The businesses in Phönix Valve Group are leaders in designing and manufacturing highly engineered valves for the commercial nuclear power industry, oil and gas processing facilities and a host of solutions for numerous other industries. Phönix Valve Group has a history of solving tough problems that begins with a passion for understanding customer needs. Add to that unparalleled technical expertise, the highest standards of quality and a long heritage of innovative thinking.

# A leader in design and manufacturing.

# **Phönix Group**

Four brands – Phönix, Strack, Daume Regelarmaturen, Solent & Pratt – a complete range of high quality fist class products that provide long lasting safety and reliability in chemical plants, refineries and power plants. Worldwide, we offer valves conforming to national and international design standards (DIN, ANSI, ASME etc.) in highest quality as well as technical advice, and service for complete valve packages to our customers.



## Phönix Armaturen-Werke

Founded in 1910 as a small company, Phönix Armaturen-Werke Bregel GmbH is today a leading manufacturer of high quality specialty valves. One hundred and fifty responsible and dedicated employees assure a permanent renewal and perfection of Phönix-products. Phönix bellows sealed globe valves have been used worldwide for over 70 years for critical media in the chemical industry and have – due to design and quality – contributed substantially to the improvement of air quality.

### Strack

Strack GmbH was founded in 1922 and has become a well-known manufacturer of high quality valves conforming to all design standards. Strack manufactures specialty valves and today uses the excellent technological capabilities of Phönix for the fabrication of its products.

### **Daume Regelarmaturen**

Daume Regelarmaturen valves have been designed, constructed and manufactured in Hanover since 1947. The products are characterized by a construction according to customized requirements, highest quality and a longevity of products. A number of well-known clients of power stations, nuclear facilities, chemistry and refineries have gained excellent long-term experiences with Daume Regelarmaturen. Local service on commissioning and shutdown in close co-operation with our clients are within the scope of our performance.

#### Solent & Pratt

Founded in 1961, Solent & Pratt has been at the forefront of the design, development and manufacture of high quality rotary valves for over 50 years. S&P offers a fully customized in house design, test and manufacturing facility which can adapt to changes in the market place and offer a fully bespoke package to satisfy even the most demanding specifications & applications. S&P offers an extensive range of rotary valve products, which includes high performance butterfly valves; metal-seated, zero leakage, bi-direction triple offset segment valves. S&P range also includes double block & bleed and our unique triple offset gate valve series.



# **Certificates and Approvals**

## Management System

- ISO 9001:2015
- PED 2014/68/EU CE0525)
- PE(S)R 2016 (UKCA0038)
- 2010/35/EC TPED
- AD 2000 HP0
- 94/9/EC ATEX

## **Industrial Applications**

- ASME BPVC Sec VIII Div 1 & 2, Design
- ASME Pressure Piping (PP), ASME Steam Boiler (S), National Board Registered
- API 600, API 6D, ANSI N45.2, Lloyds DOT Rule 54 Appendix D
- EPA Method 21 (Gland Emissions), TA- Luft approved
- ISO 15848-1 Approval
- Fire Safe (API 607 6FA, BS 6755-2and ISO 10497)
- AAR Class-F Registration
- SIL approved designs

## **Nuclear Applications**

AWS-CWI

- Certified Welders to ASME, BPVC, Section-IX, PMI Program
- Manufacturer approval Framatome acc. to ISO 19443:2018, QN-100 GEN Rev. B/C
- STUK/TVO/Areva, KTA 1401 HAF 604, VdTÜV 100, WB 35

# Country Approvals and Product Lines

- UOP
- Euro Chlor GEST 17/492
- Manufacturer License China, CSQL China, TÜV Nord
- CSA Z299 Canada, CSA N285.0 Canada



Phönix	Armaturen-Werke			PHÖN
Туре	350	390	355 HS / 431 HS	834
Design				
Description	Globe valve with encapsulated superlong bellows and emergency gland	Globe valve with long flushed bellows and emergency gland	Globe valve with encapsulated superlong bellows and emergency gland or gland packed	Gate valve with encapsulated superlong bellows and emergency gland
PN	10 - 250	10 - 100	325	10 - 160
DN	15 - 500	15 - 150	6 - 120	15 - 800
Class	150 - 1500	150 - 300		150 - 900
NPS	1/2 - 20	1/2 - 6		1/2 - 30
Temperature Rating	-196°C up to +800°C	-196°C up to +450°C	196°C up to +800°C	-196°C up to +800°C
Body Forms	• Straight Pattern Body • Y-Pattern Body • Angle Pattern Body	<ul> <li>Straight Pattern Body</li> <li>Y-Pattern Body</li> <li>Angle Pattern Body</li> </ul>	Angle Pattern Body	Straight Pattern Body
Basic Shell Material	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys
Connections	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Threaded Flanges     Flanged Ends     Butt Welding Ends     Socket Welding Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements
Operation	Handwheel     Lever     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     Lever     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     Gear Operator     Pneumatic     Electric     Lever	Handwheel     Chainwheel     Gear Operator     Electric Actuator
Application	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile, polymerising and crystallising media under consideration of the material resistance	High pressure valves for the high pressure synthesis in the chemical industry (e.g. in urea and ammonia plant, hydro-hydrocarbons et.) under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance
Approvals	Fire safe VdTÜV Prototype WB 35 ISO 15848-1 AH	Fire safe, TPED 2010/35/EU VdTÜV Prototype ISO 15848-1 AH		Patented wedge design US, Europe, China Fire safe

Phönix	Armaturen-Werke	PHÖN		
Туре	350 EC.4 / 14 and EC.5 / 15	350 EC.8 and EC.9	350 EC.16 and EC.17	359
Design				
Description	Globe valve for chlorine service with encapsulated superlong bellows in the body and one piece bonnet. EC.14 and EC.15: one piece stem design	Control valve for chlorine service with encapsulated superlong bellows in the body and one piece bonnet	Remotely operated shut-off valve for chlorine service with encapsulated superlong bellows in the body and one piece bonnet	Control valve with encapsulated superlong bellows and emergency gland
PN	40	40	40	10 - 250
DN	15 - 350	15 - 350	15 - 350	15 - 250
Class	300	300	300	150 - 1500
NPS	1/2 - 14	1/2 - 14	1/2 - 14	1/2 - 10
Temperature Rating	-40°C up to +120°C	-40°C up to +120°C	-40°C up to +120°C	-196°C up to +650°C
Body Forms	Straight Pattern Body	Straight Pattern Body	Straight Pattern Body	<ul> <li>Straight Pattern Body</li> <li>Angle Pattern Body</li> </ul>
Basic Shell Material	Carbon Steel     Low Temperature     Stainless Steel     Hastelloy	Carbon Steel     Low Temperature     Stainless Steel     Hastelloy	Carbon Steel     Low Temperature     Stainless Steel     Hastelloy	Carbon Steel     - High and Low Temperature     Stainless Steel     - High Temperature     - High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys
Connections	Flanged ends     Other requirements	Flanged Ends     Other Requirements	Flanged Ends     Other Requirements	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Threaded Ends</li> <li>Other Requirements</li> </ul>
Operation	Handwheel     Lever Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator	Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator
Application	For liquid chlorine service and similar dangerous, toxic, aggressive and corrosive media (for example phosgene)	For liquid chlorine service and similar dangerous, toxic, aggressive and corrosive media (for example phosgene)	For liquid chlorine service and similar dangerous, toxic, aggressive and corrosive media (for example phosgene)	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance
Approvals	Euro Chlor approval 20/01 DGM 29823805.5 ISO 15848-1 AH	Euro Chlor approval 20/02 SIL approved	Euro Chlor approval 20/08 SIL approved ISO 15848-1 AH	Fire safe VdTÜV Prototype SIL approved

Phönix	Armaturen-Werke			PHÖN
Туре	320 / 370	320 B / 370 B	374 / 324	820
Design		() I A A A A A A A A A A A A A A A A A A		670
Description	Change-over-Valve with flushed superlong bellows and emergency gland or with stuffing box seal	Change-over-Valve with flushed superlong bellows and emergency gland or with stuffing box seal	3-Way Valve with encapsulated superlong bellows and emergency gland or with stuffing box seal	Strainer basket type with extremely huge filtrating area and low pressure drop
PN	10 - 400	10 - 400	10 - 160	10 - 40
DN	15 - 500	15 - 500	15 - 500	15 - 400
Class	150 - 2500	150 - 2500	150 - 900	150 - 300
NPS	1/2 - 20	1/2 - 20	1/2 - 20	1/2 - 16
Temperature Rating	-196°C up to +650°C	up to +650°C -196°C up to +650°C -196°C up to +650°C		-196°C up to +450°C
Body Forms	• 3-Way Type	• 3-Way Type		Straight Pattern Body
Basic Shell Material	Carbon Steel     - High and Low Temperature     Stainless Steel     - High Temperature     - High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	Carbon Steel     - High and Low Temperature     Stainless Steel     - High Temperature     - High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	Carbon Steel     - High and Low Temperature     Stainless Steel     - High Temperature     - High Temperature     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	<ul> <li>Carbon Steel</li> <li>High and Low Temperature</li> <li>Stainless Steel</li> <li>High Temperature</li> <li>High Chromium</li> <li>Hastelloy</li> <li>Other Special Alloys</li> </ul>
Connections	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements
Operation	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	
Application	Switch-over valve or in combination with safety valves for toxic, aggressive and inflammable gases and liquids, boiler and cooling water, saturated steam etc., under consideration of the material resistance	Switch-over valve or in combination with safety valves for toxic, aggressive and inflammable gases and liquids, boiler and cooling water, saturated steam etc., under consideration of the material resistance	Regulating valve or mixing valve for toxic, aggressive and inflammable gases and liquids, boiler and cooling water, saturated steam etc., under consideration of the material resistance	In front of measuring equipment to protect sensitive valves, pumps, aggregates and similar plant components under consideration of the material resistance
Approvals		Patented design 370B/320B: US, Europe, China, Russia		

Phönix	Armaturen-We		PHÖN		
Туре	829	309.40 and 309.50	309 stationary	141	142
Design					
Description	Strainer Y-Type	Tanker valve (POV) combination of a pneumatically operated quick closing valve with bellows and a spring-loaded ball check valve	Valves for Stationary Tanks / storage containers	Pressure Relief Valve	Pressure Relief Valve and shut/ off function
PN	10 - 40	25	25, 40	40	16 - 40
DN	15 - 300	40	25 - 150	15 - 100	15 - 50
Class	150 - 300	150	150, 300	150 - 300	150 - 300
NPS	1/2 - 12	1 1/2	1 - 6	1/2 - 4	1/2 - 2
Temperature Rating	-196°C up to +450°C	-50°C up to +70°C	- 40°C - 120°C	- 200°C - 400°C	- 200°C - 400°C
Body Forms	• Y-Pattern	Angle Pattern Type	Angle Pattern Body	Angle Pattern Body     Straight Pattern Body	Angle Pattern Body     Straight Pattern Body
Basic Shell Material	<ul> <li>Carbon Steel</li> <li>High and Low Temperature</li> <li>Stainless Steel</li> <li>High Temperature</li> <li>High Chromium</li> <li>Hastelloy</li> <li>Other Special Alloys</li> </ul>	Carbon Steel     - Low Temperature     Stainless Steel     Other Materials on     Request	carbon steel (high and low temperature) * stainless steel	<ul> <li>carbon steel (high and low temperature)</li> <li>stainless steel (high temperatur, high chromium)</li> </ul>	<ul> <li>carbon steel (high and low temperature)</li> <li>stainless steel (high temperatur, high chromium)</li> </ul>
Connections	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Other Requirements	Flanged Ends	Flanged Ends     Butt Welding Ends     Socket Welding Ends	Flanged Ends     Butt Welding Ends     Socket Welding Ends
Operation		<ul> <li>Pneumatic Diaphragm Actuator</li> <li>Manual Override</li> </ul>	Handwheel     Pneumatic Piston Actuator     Pneumatic Diaphragm     Actuator     Electric Actuator	Handwheel	Handwheel
Application	In front of measuring equipment to protect sensitive valves, pumps, aggregates and similar plant components under consideration of the material resistance	Acc. to DIN 26028, CEFIC UN 14, GGV Annex XI with ref. for railway tankers, ISO-Container (309.50) and trucks top loading for extremely dangerous media, e.g. chlorine, hydrofluoridric	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance
Approvals		Prototype 06D2, BAM approved, Euro Chlor approval 96/01; 96/02; 96/03; 96/07, eg 2010/35 (TPED) Prototype tests DIN EN 14432	Eurochlor Approval pending		

Phönix	Armaturen-Werke			PHÖN
Туре	925	919	941	935
Design				
Description	Globe and control valve for cryogenic service with encapsulated superlong bellows and emergency gland with extractable trim and displacer	Globe and control valve for cryogenic service with stuffing box seal, extractable trim and displacer	Globe and control valve for cryogenic service with encapsulated superlong bellows and emergency gland, long isolation distance	Globe and control valve for cryogen- ic service with stuffing box seal and long isolation distance
PN	10 - 63	10 - 63	10 - 63	10 - 63
DN	15 - 300	15 - 300	15 - 300	15 - 300
Class	150 - 300	150 - 300	150 - 300	150 - 300
NPS	1/2 - 12	1/2 - 12	1/2 - 12	1/2 - 12
Temperature Rating	-270°C up to +400°C	-270°C up to +400°C -270°C up to +400°C -270°C up to +400°C		-270°C up to +400°C
Body Forms	• Straight Pattern Body • Y-Pattern • Angle Pattern Body	• Straight Pattern Body • Y-Pattern • Angle Pattern Body	<ul> <li>Straight Pattern Body</li> <li>Y-Pattern</li> <li>Angle Pattern Body</li> </ul>	<ul> <li>Straight Pattern Body</li> <li>Y-Pattern</li> <li>Angle Pattern Body</li> </ul>
Basic Shell Material	• Stainless Steel • Aluminum Body	• Stainless Steel • Aluminum Body	• Stanless Steel • Aluminum Body	<ul> <li>Stainless Steel</li> <li>Aluminum Body</li> </ul>
Connections	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements
Operation	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     Chainwheel     Gear Operator     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator
Application	For cryogenic use e.g. oxygen, nitrogen and similar liquids, gases and vapours and extreme low service temperatures, for cold box installation	For cryogenic use e.g. oxygen, nitrogen and similar liquids, gases and vapours and extreme low service temperatures, for cold box installation	For cryogenic use e.g. oxygen, nitrogen and similar liquids, gases and vapours and extreme low service temperatures, for cold box installation	For cryogenic use e.g. oxygen, nitrogen and similar liquids, gases and vapours and extreme low service temperatures, for cold box installation
Approvals				

Phönix	Phönix Armaturen-Werke				
Туре	385-Refrigerant Valve	420	661	506 / 525	
Design					
Description	Globe and control valve with flushed bellows and emergency gland, inside rising stem (comparable with refrigerant valves - DIN 3158)	ntrol valve Check valve spring loaded option Globe valve with stuffing box seal, coupled divided stem, integral seat vith refrigerant valves		Globe valve with stuffing box seal, coupled divided stem, renewable disc and seat	
PN	10 - 40	10 - 160	160	400/630	
DN	15 - 400	15 - 350	8	8	
Class	150 - 300	150 - 900	900	2500	
NPS	1/2 - 16	1/2 - 14	1/4	1/4	
Rating	-196°C up to +450°C	-196°C up to +450°C	-196°C up to +450°C	-196°C up to +650°C	
Body Forms	• Straight Pattern Body • Y-Pattern • Angle Pattern Body	• Straight Pattern Body • Y-Pattern • Angle Pattern Body	<ul> <li>Straight Pattern Body</li> <li>Angle Pattern Body</li> </ul>	Straight Pattern Body     Angle Pattern Body	
Basic Shell Material	<ul> <li>Carbon Steel</li> <li>Low Temperature</li> <li>Stainless Steel</li> <li>Hastelloy</li> </ul>	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	<ul> <li>Carbon Steel</li> <li>Stainless Steel</li> <li>Other Special Alloys</li> </ul>	<ul> <li>Carbon Steel <ul> <li>High and Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Hastelloy <ul> <li>Other Special Alloys</li> </ul> </li> </ul>	
Connections	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Threaded Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Threaded Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Threaded Ends</li> <li>Other Requirements</li> </ul>	Butt Welding Ends     Socket Welding Ends     Threaded Ends     Flanged Ends     Other Requirements	
Operation	<ul> <li>Handwheel</li> <li>Chainwheel</li> <li>Gear Operator</li> <li>Pneumatic Piston Actuator</li> <li>Pneumatic Diaphragm Actuator</li> <li>Electric Actuator</li> </ul>		<ul> <li>Handwheel</li> <li>T-Handle</li> <li>Pneumatic Piston Actuator</li> <li>Pneumatic Diaphragm Actuator</li> <li>Electric Actuator</li> </ul>	Handwheel     T-Handle     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	
Application	Acc. to TA-Luft (German "Clean Air Act"), especially for media which are dangerous for environment and cold service media. Operation components protected against icing.	For aggressive gases and liquids as far as these are not toxic, inflammable or detrimental to environment under consideration of the material resistance	For liquids, gases and vapours under consideration of the material resistance, also be used as first interception valve	For liquids, gases and vapours under consideration of the material resistance, also be used as first interception valve	
Approvals		VdTÜV Prototype		VdTÜV approved in accordance with WB 35	

Phönix	Armaturen-Werke			PHÖNIX
Туре	662	570 / 535	580 / 582 / 584	664
Design				
Description	Globe valve with encapsulated bellows and emergency gland, coupled divided stem, integral seat	Globe valve with encapsulated bellows and emergency gland, coupled divided stem, renewable disc and seat	Pressure gauge valve with stuffing box seal, vent screw (DIN 16270), test connection (DIN 16271), blocking test connection (DIN 16272)	Pressure gauge valve with encapsu- lated bellows and emergency gland, vent screw, coupled divided stem, integral seat
PN	100	250 / 400	400	100
DN	8	8	3.5	3.5
Class	600	1500 / 2500	2500	600
NPS	1/4	1/4	1/8	1/8
Temperature Rating	-196°C up to +450°C	-196°C up to +650°C	-40°C up to +120°C	-196°C up to +450°C
Body Forms	<ul> <li>Straight Pattern Body</li> <li>Angle Pattern Body</li> </ul>	<ul> <li>Straight Pattern Body</li> <li>Angle Pattern Body</li> </ul>	Straight Pattern Body	<ul> <li>Straight Pattern Body</li> <li>Angle Pattern Body</li> </ul>
Basic Shell Material	<ul> <li>Carbon Steel</li> <li>Stainless Steel</li> <li>Other Special Alloys</li> </ul>	<ul> <li>Carbon Steel</li> <li>High and Low Temperature</li> <li>Stainless Steel</li> <li>High Temperature</li> <li>High Chromium</li> <li>Other Special Alloys on request</li> </ul>	<ul> <li>Carbon Steel</li> <li>Stainless Steel</li> <li>Brass</li> <li>Other Special Alloys on request</li> </ul>	Carbon Steel     Stainless Steel     Other Special Alloys on request
Connections	<ul> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Threaded Ends</li> <li>Flanged Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Threaded Ends</li> <li>Flanged Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Inlet: Male Plug G 1/2 Acc. to DIN EN 837-1</li> <li>Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 (Form A) or Female G 1/2 (Form B)</li> <li>Test: Male Plug M 20X1.5</li> </ul>	<ul> <li>Inlet: Butt and Socket Welding Ends, Threaded Ends</li> <li>Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283</li> <li>Test: Male Plug M 20X1.5</li> </ul>
Operation	Handwheel     T-Handle     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel     T-Handle     Pneumatic Piston Actuator     Pneumatic Diaphragm Actuator     Electric Actuator	Handwheel	Handwheel     T-Handle
Application	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance, also be used as first interception valve	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance, also be used as first interception valve	For liquids, gases and vapours under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance
Approvals		VdTÜV approved in accordance with WB 35, DGM 297 21 782.8		

Phönix	Phönix Armaturen-Werke PHÖN					
Туре	587	597	589	599		
Design						
Description	Pressure gauge valve with test connection, stuffing box seal, coupled divided stem, renewable disc and seat	Pressure gauge valve with test connection, bellows and emergency gland, coupled divided stem, renewable disc and seat	Pressure gauge valve with blocking test connection, stuffing box seal, coupled divided stem, renewable disc and seat	Pressure gauge valve with blocking test connection, bellows and emergency gland, coupled divided stem, renewable disc and seat		
PN	400	250	400	250		
DN	3.5	3.5	3.5	3.5		
Class	2500	1500	2500	1500		
Tomporaturo	1/0	1/0	1/0	1/0		
Rating	-196°C up to +450°C					
Body Forms	Straight Pattern Body	Straight Pattern Body	Straight Pattern Body	Straight Pattern Body		
Basic Shell Material	<ul> <li>Carbon Steel <ul> <li>Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Chromium</li> </ul> </li> <li>Hastelloy</li> <li>Other Special Alloys on request</li> </ul>	<ul> <li>Carbon Steel <ul> <li>Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys on request</li> </ul>	<ul> <li>Carbon Steel <ul> <li>Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys on request</li> </ul>	<ul> <li>Carbon Steel <ul> <li>Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys on request</li> </ul>		
Connections	<ul> <li>Inlet: Butt and Socket Welding Ends, Threaded Ends</li> <li>Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283</li> <li>Test: Male Plug M 20X1.5</li> </ul>	<ul> <li>Inlet: Butt And Socket Welding Ends, Threaded Ends</li> <li>Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283</li> <li>Test: Male Plug M 20X1.5</li> </ul>	<ul> <li>Inlet: Butt And Socket Welding Ends, Threaded Ends</li> <li>Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283</li> <li>Test: Male Plug M 20X1.5</li> </ul>	<ul> <li>Inlet: Butt And Socket Welding Ends, Threaded Ends</li> <li>Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283</li> <li>Test: Male Plug M 20X1.5</li> </ul>		
Operation	<ul> <li>Handwheel</li> <li>T-Handle</li> </ul>	Handwheel     T-Handle	• Handwheel • T-Handle	• Handwheel • T-Handle		
Application	For liquids, gases and vapours under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance	For liquids, gases and vapours under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance		
Approvals	VdTÜV approved in accordance with WB 35	VdTÜV approved in accordance with WB 35	VdTÜV approved in accordance with WB 35	VdTÜV approved in accordance with WB 35		

Phönix	hönix Armaturen-Werke PHĊ					
Туре	626	659	630	631		
Design						
Description	Manifold with 3 valves and test connection, stuffing box seal, coupled divided stem, renewable disc and seat	Manifold with 3 valves and test connection, bellows and emergency gland, coupled divided stem, renewable disc and seat		Manifold with 5 valves and test connection, bellows and emergency gland, coupled divided stem, renewable disc and seat		
PN	400	250	400	250		
DN	8	8	8	8		
Class	2500	1500	2500	1500		
NPS	1/4	1/4	1/4	1/4		
Temperature Rating	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C -196°C up to +650°C			
Body Forms	Straight Pattern Body	Straight Pattern Body	Straight Pattern Body	Straight Pattern Body		
Basic Shell Material	<ul> <li>Carbon Steel <ul> <li>High and Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys</li> </ul>	<ul> <li>Carbon Steel <ul> <li>High and Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys</li> </ul>	<ul> <li>Carbon Steel <ul> <li>High and Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys</li> </ul>	<ul> <li>Carbon Steel <ul> <li>High and Low Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys</li> </ul>		
Connections	<ul> <li>Inlet: Butt And Socket Welding Ends, Threaded Ends</li> <li>Outlet: Directly Flanged to Transduc- er (Acc. to DIN 19213)</li> <li>Test: Male Plug M 20X1.5</li> </ul>	<ul> <li>Inlet: Butt And Socket Welding Ends, Threaded Ends</li> <li>Outlet: Directly Flanged to Transducer (Acc. to DIN 19213)</li> <li>Test: Male Plug M 20X1.5</li> </ul>	<ul> <li>Inlet: Butt and Socket Welding Ends, Threaded Ends</li> <li>Outlet: Directly Flanged to Transduc- er (Acc. to DIN 19213)</li> <li>Test: Male Plug M 20X1.5</li> </ul>	<ul> <li>Inlet: Butt and Socket Welding Ends, Threaded Ends</li> <li>Outlet: Directly Flanged to Transduc- er (Acc. to DIN 19213)</li> <li>Test: Male Plug M 20X1.5</li> </ul>		
Operation	• T-Handle	• T-Handle	• T-Handle	• T-Handle		
Application	For liquids, gases and vapours under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance	For liquids, gases and vapours under consideration of the material resistance	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance		
Approvals	VdTÜV approved in accordance with WB 35					

Solent & Pratt						
Туре	Triple Offset Valve	Triple Offset Gate Valve	T Series - PTFE Sealed Firesafe Valve	E & R Series - Resilient Seal Butterfly Valve	Double Block & Bleed	Actuated Valves
Design	<u>()</u>	<b>W</b>				
Description	Wafer Lugged, Wafer Flangeless, Double Flanged	Double Flanged, Face to Face ANSI B16.10	Wafer lugged, Wafer Flangeless, Double Flanged	Wafer Lugged, Wafer Flangeless, Double Flanged	Double Flanged	Control Valve, Double Flanged, Wafer Lugged/Flangeless
PN						
DN						
Class	150 - 2500	150 - 500	150 - 300	150 - 300	150 - 1500	Up to 2500
NPS	2 - 84	2 - 36	2 - 48	2 - 138	4 - 36	Up to 138
Tempera- ture Rating	Temperatures 700° C (1292° F)	Temperatures 700° C (1292° F)				
Body Forms	ASME 16.34 API609 ISO 5752	ASME 16.34 API609	ASME 16.34 API609	ASME 16.34 API609	ASME 16.34 API609	ASME 16.34 API609
Basic Shell Material	<ul> <li>316 Stainless Steel</li> <li>Duplex &amp; Super Duplex</li> <li>6 Mo Stainless Steel</li> <li>Bronze</li> <li>Monel</li> <li>Incoloy</li> <li>Hastelloy B &amp; C</li> <li>Titanium</li> <li>Zirconium</li> </ul>	<ul> <li>316 Stainless Steel</li> <li>Duplex &amp; Super Duplex</li> <li>6 Mo Stainless Steel</li> <li>Bronze</li> <li>Monel</li> <li>Incoloy</li> <li>Hastelloy B &amp; C</li> <li>Titanium</li> <li>Zirconium</li> </ul>	<ul> <li>316 Stainless Steel</li> <li>Duplex &amp; Super Duplex</li> <li>6 Mo Stainless Steel</li> <li>Bronze</li> <li>Monel</li> <li>Incoloy</li> <li>Hastelloy B &amp; C</li> <li>Titanium</li> <li>Zirconium</li> </ul>	<ul> <li>316 Stainless Steel</li> <li>Duplex &amp; Super Duplex</li> <li>6 Mo Stainless Steel</li> <li>Bronze</li> <li>Monel</li> <li>Incoloy</li> <li>Hastelloy B &amp; C</li> <li>Titanium</li> <li>Zirconium</li> <li>Seal material: Nitrile / Viton / EPDM</li> <li>E-Series lining - Bonded hard natural rubber</li> </ul>	<ul> <li>316 Stainless Steel</li> <li>Duplex &amp; Super Duplex</li> <li>6 Mo Stainless Steel</li> <li>Bronze</li> <li>Monel</li> <li>Incoloy</li> <li>Hastelloy B &amp; C</li> <li>Titanium</li> <li>Zirconium</li> </ul>	Stainless Steel     Carbon Steel     Ductile Iron     Aluminium materials
Connections Flange Type	ASME B16.5 ASME B.16.47	ASME B16.5 ASME B.16.47	ASME; ANSI; API; MSS; BS ; ISO	ASME; ANSI; API; MSS; BS ; ISO	ASME B16.5 ASME B.16.47	ASME B16.5 ASME B.16.47
Operation	Manual, pneumatic, electric, hydraulic	Manual, pneumatic, electric, hydraulic	Manual, pneumatic, electric, hydraulic	Manual, pneumatic, electric, hydraulic	Manual, pneumatic, electric, hydraulic	Pneumatic, electric, hydraulic
Application	-	-	-	-	-	
Approvals	Firesafe to: - BS 6755: Part 2 - API 6FA: API 607 4th Edition - BS EN ISO 10497 Bidirectional shutoff: - API 598; API 6D	Firesafe to: - BS 6755: Part 2 - API 6FA: API 607 4th Edition - BS EN ISO 10497 Bidirectional shutoff: - API 598	Firesafe to: - BS 6755: Part 2 - BS EN ISO 10497 Bidirectional shutoff: - API 598 External anti-blowout to: - API 609 optional	Bidirectional shutoff: -API 598 External anti-blowout to: -API 609 optional Lloyds to DOT Rule 54 App.D	Firesafe to: - BS 6755: Part 2 - API 6FA: API 607 4th Edition - BS EN ISO 10497	

Strack				STRACK
Туре	S 02 / S 03 / S 04 / S 17	S 20 / S 24	S 40	S 21
Design				
Description	Gate valve with stuffing seal and non-rotating, rising stem	Globe valve with stuffing seal and rotating or non rotating, rising stem	Bottom valve	Globe valve with integrated stuffing seal in the body, non-rotating and rising stem
PN	10 - 160	10 - 160	10 - 40	160 - 630
DN	50 - 600	15 - 300	15 - 250	10 - 50
Class	150 - 800	150 - 2500	150 - 300	900 - 4500
NPS	1/2 - 24	1/2 - 18	1/2 - 10	1/2 - 2 1/2
Temperature Rating	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C
Body Forms	Straight Pattern Body	<ul> <li>Straight Pattern Body</li> <li>Y-Pattern</li> <li>Angle Pattern Body</li> </ul>	Disc Opens into Tank and Opens into Valve	Straight Pattern Body
Basic Shell Material	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Monel     6Mo     Other Special Alloys	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Other Special Alloys	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Monel     6Mo     Other Special Alloys	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     Other Special Alloys
Connections	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	Flanged Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements
Operation	<ul> <li>Handwheel</li> <li>Lever Chainwheel</li> <li>Gear Operator</li> <li>Electric Actuator</li> <li>Pneumatic Piston Actuator</li> </ul>	<ul> <li>Handwheel</li> <li>Lever Chainwheel</li> <li>Gear Operator</li> <li>Pneumatic Piston Actuator</li> <li>Pneumatic Diaphragm Actuator</li> <li>Electric Actuator</li> </ul>	<ul> <li>Handwheel</li> <li>Chainwheel</li> <li>Pneumatic Piston Actuator</li> <li>Pneumatic Diaphragm Actuator</li> <li>Electric Actuator</li> </ul>	Handwheel     Chainwheel     Pneumatic Piston Actuator     Electric Actuator
Application	For gases and liquids as well as boiler and cooling water, saturated steam and similar under consider- ation of the materials resistance refining and chemical processes	For gases and liquids as well as boiler and cooling water, saturated steam and similar under consider- ation of the materials resistance	Chemical plants, petrochemical plants	High pressure and temperature service in power plants. For non-aggressive liquids, gases and vapours
Approvals	Fire safe	Fire safe, VdTÜV-Prototype		VdTÜV-Prototype

Strack				STRACK
Туре	S 27	S 29 / S 68	S 15	S 16
Design				
Description	Piston check valve spring loaded option	Strainer	Forged - high pressure Gate valve with stuffing box seal and pressure seal bonnet	Forged - high pressure Gate valve with stuffing box seal and bolted bonnet
PN	160 - 630	160 - 630	160 - 630	160 - 400
DN	10 - 65	10 - 250	50 - 600*	50 - 300*
Class	900 - 4500	900 - 4500	900 - 4500	900 - 2500
NPS	1/2 - 2 1/2	1/2 - 10	2 - 24*	2 - 12*
Temperature Rating	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C
Body Forms	Straight Pattern Body	Straight Pattern Body     Y-Pattern	Straight Pattern Body	Straight Pattern Body
Basic Shell Material	Carbon Steel     - High and Low Temperature     Stainless Steel     - High Temperature     Other Special Alloys	Carbon Steel     - High and Low Temperature     Stainless Steel     - High Temperature     Other Special Alloys	Carbon Steel     High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Other Special Alloys	Carbon Steel     - High and Low Temperature     Stainless Steel     High Temperature     High Chromium     Other Special Alloys
Connections	Flanged Ends     Butt Welding Ends     Socket Welding Ends     Threaded Ends     Other Requirements	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Threaded Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Other Requirements</li> </ul>
Operation			<ul> <li>Handwheel</li> <li>Gear Operator</li> <li>Electric Actuator</li> </ul>	<ul> <li>Handwheel</li> <li>Gear Operator</li> <li>Electric Actuator</li> </ul>
Application	High pressure and temperature service in power plants. For non aggressive liquids, gases and vapours	In front of measuring equipment to protect sensitive valves, pumps, aggregates and similar plant components under consideration of the material resistance	Chemical plants, petrochemical plants and offshore power plants, including the new generation of power plants with temperatures up to 650°C	Chemical plants, petrochemical plants and offshore
Approvals	VdTÜV-Prototype			

\* Bigger on request

Strack					STRACK
Туре	S 22 / S74	S 72	S 70 / S 25 / S 73	S 600	S 601 / S 603
Design					
Description	Forged - high pressure Globe valve with stuffing box seal and pressure seal bonnet	Forged - high pressure Swing check valve with pressure sealed bonnet	Check valve with bolted bonnet	Spring Loaded Bypass Valve with stuffing box seal and pressure seal bonnet	Forged - high pressure Preheater valve with pressure sealed bonnet
PN	160 - 630	160 - 630	25 - 400		160 - 630
DN	50 - 300	50 - 450	50 - 400	200 - 500	150 - 600
Class	900 - 4500	900 - 4500	150 - 2500	up to 2500 special	900 - 4500
NPS	2 - 12	2 - 18*	2 - 16*	8 - 20	6 - 24
Temperature Rating	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C	as per ASME 16.34	up to +550°C
Body Forms	<ul> <li>Straight Pattern Body</li> <li>Y-Pattern</li> <li>Angle Pattern Body</li> </ul>	Straight Pattern Body	Swing and Piston Check Types	Straight Pattern Body	Quick Closing 3-Way Valve and T- or Angel Quick Closing Check Valve
Basic Shell Material	<ul> <li>Carbon Steel <ul> <li>High and Low</li> <li>Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys</li> </ul>	<ul> <li>Carbon Steel <ul> <li>High and Low</li> <li>Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys</li> </ul>	<ul> <li>Carbon Steel <ul> <li>High and Low</li> <li>Temperature</li> </ul> </li> <li>Stainless Steel <ul> <li>High Temperature</li> <li>High Chromium</li> </ul> </li> <li>Other Special Alloys</li> </ul>	Carbon Steel     Other Requirements	Carbon Steel     High Temperature
Connections	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Other Requirements</li> </ul>	<ul><li>Flanged Ends</li><li>Butt Welding Ends</li><li>Other Requirements</li></ul>	<ul><li>Flanged Ends</li><li>Butt Welding Ends</li><li>Other Requirements</li></ul>	Butt Welding Ends     Other Requirements	Butt Welding Ends
Operation	Handwheel     Gear Operator     Pneumatic Piston Actuator			None (handwheel only for setting the set pressure)	
Application	Chemical plants, petrochemi- cal plants and offshore power plants, including the new generation of power plants with temperatures up to 650°C	Chemical plants, petrochemi- cal plants and offshore power plants, including the new generation of power plants with temperatures up to 650°C	High demanding valves for special and dangerous services	Power plants	Power plants
Approvals					

\* Bigger on request

Strack					STRACK
Туре	S 50	S 51	S 96 / S 97	S 98 / S 99	S 57-Coke Oven Gas Valve
Design					
Description	Lift plug valve, non-lubricated	3-Way lift plug valve special design, non lubricated	Gate valve for HF-service	Check valves for HF-Service	Shut off cock and reversing cock (3-Way cock) with lubrication system, approved stem sealing system in accordance with TA-Luft
PN	10 - 160	10 - 100			10 - 40
DN	15 - 500	25 - 300			65 - 300
Class	300 - 1500	300	150 - 800	150 - 800	150 - 300
NPS	1/2 - 20	1 - 12	1/2 - 24	1/2 - 24	2 1/2 - 12
Temperature Rating	-196°C up to +800°C	-196°C up to +650°C	as per ASME 16.34	as per ASME 16.34	-20°C up to +800°C
Body Forms	<ul> <li>Straight Pattern Body</li> </ul>	<ul> <li>3-Way Design</li> </ul>	<ul> <li>Straight Pattern Body</li> </ul>	Straight Pattern Body	Straight Pattern Body
Basic Shell Material	Carbon Steel     High and Low     Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Monel     6Mo     Other Special Alloys	Carbon Steel     High and Low     Temperature     Stainless Steel     High Temperature     High Chromium     Hastelloy     Inconel     Pure Nickel     Titanium     Other Special Alloys	Monel     Carbon Steel with Monel     Other Requirements	Monel     Carbon Steel with Monel     Other Requirements	Founding - Spheroidal Graphite Cast Irons for Example: EN-GJS-400-15 (GGG-40) A 536 Grade 60-40-18
Connections	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Other Requirements</li> </ul>	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Socket Welding Ends</li> <li>Other Requirements</li> </ul>	Flanged Ends     Threaded Ends     Other Requirements
Operation	Handwheel and Lever     Automatic Mechanism with     Pneumatic- and Electric     Actuators	Handwheel and Lever     Automatic Mechanism with     Pneumatic- and Electric     Actuators	Handwheel     Other Requirements	None	Wrench     Lever     Special Coke Oven     Plant Operation System
Application	Valves for special services, abrasive, synthetic media and offshore	High demanding valves for special services abrasive, synthetic media	Alkylation plants	Alkylation plants	Especially for coke oven gas in coke oven plants, battery heating system
Approvals			UOP approved TA-Luft approved	UOP approved TA-Luft approved	Stem sealing system approved in accordance with VDI 2440/ TA-Luft

Daume Regelarmaturen					
Туре	390	189	189 + VKR	930	
Design					
Description	High Pressure control valve	Control valve-Angel type	Steam conditioning valve with venturi cooler	Desuperheater	
PN	16 - 500	16 - 500	16 - 500	16 - 500	
DN	15 - 600	15 - 600	15 - 600	15 - 600	
Class	150 - 4500	150 - 4500	150 - 4500	150 - 4500	
NPS	1/2 - 24	1/2 - 24	1/2 - 50	1/2 - 50	
Temperature Rating	-60°C up to +600°C				
Body Forms	Straight Pattern Body	Angel type Body	Angel Pattern Body	Angle Pattern Body	
Basic Shell Material	Cast/Forged Carbon Steel     - High and Low Temperature     Cast/Forged Stainless Steel     - High Chromium	Cast/Forged Carbon Steel     - High and Low Temperature     Cast/Forged Stainless Steel     - High Chromium	Cast/Forged Carbon Steel     - High and Low Temperature     Cast/Forged Stainless Steel     - High Chromium	Cast/Forged Carbon Steel     - High and Low Temperature     Cast/Forged Stainless Steel     - High Chromium	
Connections	Flanged Ends     Butt Welding Ends     Other Requirements				
Operation	Handwheel     Lever     Electric-, Hydraulic- and Pneumatic     Actuators				
Application	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	
Approvals					

Daume Regelarmaturen					
Туре	187	50-1A / 50-4A	186	600	
Design					
Description	3-Way control valve	Diaphragm control valve	Single seated control valve	Double Shell Control Valve	
PN	16 - 160	16 - 160	16 - 160	3,5 - 16	
DN	15 - 600	15 - 600	15 - 600	40 - 80	
Class	150 - 900	150 - 900	150 - 900		
NPS	1/2 - 24	1/2 - 24	1/2 - 24		
Temperature Rating	-60°C up to +530°C	-10°C up to +230°C	-60°C up to +530°C	-10°C up to +50°C	
Body Forms	• 3-Way	Straight Pattern Body and 3-Way body	Straight Pattern Body	Double walled body	
Basic Shell Material	Cast Carbon Steel     High and Low Temperature     Cast Stainless Steel     High Chromium	Cast Carbon Steel     High and Low Temperature     Cast Stainless Steel     High Chromium	Cast Carbon Steel     High and Low Temperature     Cast Stainless Steel     High Chromium	• Stainless Steel	
Connections	<ul> <li>Flanged Ends</li> <li>Butt Welding Ends</li> <li>Other Requirements</li> </ul>	Flanged Ends     Other Requirements	Flanged Ends     Butt Welding Ends     Other Requirements	Flanged Ends     Butt Welding Ends	
Operation	Handwheel     Lever     Electric-, Hydraulic- and Pneumatic     Actuators	Automatic Mechanism with     Pneumatic Actuators	Handwheel     Lever     Electric-, Hydraulic- and Pneumatic     Actuators	Handwheel     Pneumatic Diaphragm Actuator     Electric Actuator	
Application	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	Substances hazardous to water	
Approvals				DIBt Z-38.4-276	

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