

**CURTISS -
WRIGHT**

Valve Group



Product Lines

Phönix Armaturen-Werke
Daume Regelarmaturen
Solent & Pratt
Strack

CURTISS - WRIGHT



At a Glance

The businesses in Curtiss-Wright's Valve Group are leaders in designing and manufacturing highly engineered valves, pumps, electronics and related products for the commercial nuclear power industry, oil and gas processing facilities, a range of critical national defense programs, and a host of solutions for numerous other industries.

Curtiss-Wright 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. For nearly a century Curtiss-Wright has been doing things the Wright way.

**A leader in design
and manufacturing.**

Phönix Group

Four brands – Phönix, Strack, Daume Regelarmaturen, Solent & Pratt – a complete range of high quality first 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 seventy-five responsible and dedicated employees assure a permanent renewal and perfection of Phönix-products. Phönix bellows sealed globe valves have been used worldwide for over 60 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 9001:2008
- API Q 1
- ASME NQA 1
- PED 2014/68/EU
- 2010/35/EC TPED
- AD 2000 HP0
- 94/9/EC ATEX

Industrial Applications

- ASME BPVC Sec VIII Div 1 & 2, U-Stamp Design, R-Stamp
- 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
- Fire Safe (API 607 6FA, BS 6755-2 and ISO 10497)
- AAR Class-F Registration






Nuclear Applications






- ASME BPVC Sec III (NPT-Stamp), National Board VR Stamps #3 and #357
- SNT-TC-1A Level-II Examiners (MT, PT, LT)
- AWS-CWI
- Certified Welders to ASME, BPVC, Section-IX, PMI Program
- STUK/TVO/Areva, EDF, KTA 1401 HAF 604, VdTÜV 100, WB 35






Country Approvals and Product Lines






- EAS, UOP, Euro Chlor
- Manufacturer License China, CSQL China, TÜV Nord
- CSA Z299 Canada, CSA N285.0 Canada












Phönix Armaturen-Werke					
Type	350	350 EC.4 and EC.5	390	382	355 HS
Design					
Description	Globe valve with encapsulated superlong bellows and emergency gland	Globe valve for chlorine service with encapsulated superlong bellows in the body and one piece bonnet	Globe valve with long flushed bellows and emergency gland	Globe valve with flushed bellows and emergency gland	Gate valve with encapsulated superlong bellows and emergency gland
PN	10 - 250	40	10 - 40	10 - 40	325
DN	15 - 500	15 - 350	15 - 150	15 - 100	6 - 120
Class	150 - 1500	300	150 - 300	150 - 300	
NPS	1/2 - 20	1/2 - 14	1/2 - 6	1/2 - 4	
Temperature Rating	-196°C up to +800°C	-40°C up to +120°C	-196°C up to +450°C	-10°C up to +450°C	196°C up to +800°C
Body Forms	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern Body • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern Body • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight pattern body 	<ul style="list-style-type: none"> • Angle Pattern Body
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - Low Temperature • Stainless Steel • Hastelloy • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon steel 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged ends • Other requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged ends 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel • Lever Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Lever Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Lever Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel 	<ul style="list-style-type: none"> • Handwheel • Gear Operator • Pneumatic • Electric • Lever
Application	For highly toxic, aggressive, inflammable, volatile and expensive media under consideration of the material resistance	For liquid chlorine service and similar dangerous, toxic, aggressive and corrosive media (for example phosgene)	For highly toxic, aggressive, inflammable, volatile, polymerising and crystallising media under consideration of the material resistance	Acc. to TA-Luft (German "Clean Air Act"), especially for media which are dangerous for environment and ground water, for additional energy saving and reduction of service costs	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
Approvals	Fire safe VdTÜV Prototype WB 35	Euro Chlor approval 13/04 DGM 29823805.5	Fire safe VdTÜV Prototype		





Phönix Armaturen-Werke					
Type	899 HS	834	359	350 EC.8 and EC.9	350 EC.16 and EC.17
Design					
Description	Excess flow valve (pipe break valve)	Gate valve with encapsulated superlong bellows and emergency gland	Control valve with encapsulated superlong bellows and emergency gland	Control valve for chlorine service with encapsulated superlong bellows in the body and bonnet	Remotely operated shut-off valve for chlorine service with encapsulated superlong bellows in the body and bonnet
PN	325	10 - 160	10 - 250	40	40
DN	6 - 120	15 - 800	15 - 250	15 - 350	15 - 350
Class		150 - 900	150 - 1500	300	300
NPS		1/2 - 30	1/2 - 10	1/2 - 14	1/2 - 14
Temperature Rating	-196°C up to +800°C	-196°C up to +800°C	-196°C up to +650°C	-40°C up to +120°C	-40°C up to +120°C
Body Forms	• Straight Pattern Body	• Straight Pattern Body	• Straight Pattern Body • Angle Pattern Body	• Straight Pattern Body	• Straight Pattern Body
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - Low Temperature • Stainless Steel • Hastelloy • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - Low Temperature • Stainless Steel • Hastelloy • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Threaded Flanges • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Other Requirements
Operation		<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator 	<ul style="list-style-type: none"> • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator
Application	High pressure valves for the high pressure synthesis in the chemical industry (e.g. in urea and ammonia plant, hydrocarbons et.) 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	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)
Approvals		US Patent US 6.202.984 B1 Fire safe	Fire safe VdTÜV Prototype	Euro Chlor approval 13/05	Euro Chlor approval 13/07





Phönix Armaturen-Werke					
Type	370/320	374/324	420	820	829
Design					
Description	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	Check valve spring loaded option	Strainer basket type with extremely huge filtrating area and low pressure drop	Strainer Y-Type
PN	10 - 400	10 - 160	10 - 160	10 - 40	10 - 40
DN	15 - 500	15 - 500	15 - 350	15 - 400	15 - 300
Class	150 - 2500	150 - 900	150 - 900	150 - 300	150 - 300
NPS	1/2 - 20	1/2 - 20	1/2 - 14	1/2 - 16	1/2 - 12
Temperature Rating	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +450°C	-196°C up to +450°C	-196°C up to +450°C
Body Forms	• 3-Way Type		• Straight Pattern Body • Y-Pattern • Angle Pattern Body	• Straight Pattern Body	• Y-Pattern
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • 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	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	For aggressive gases and liquids as far as these are not toxic, inflammable or detrimental to environment 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	In front of measuring equipment to protect sensitive valves, pumps, aggregates and similar plant components under consideration of the material resistance
Approvals			VdTÜV Prototype		






Phönix Armaturen-Werke					
Type	925	919	941	935	309.40 and 309.50
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 cryogenic service with stuffing box seal and long isolation distance	Tanker valve (POV) combination of a pneumatically operated quick closing valve with bellows and a spring-loaded ball check valve
PN	10 - 63	10 - 63	10 - 63	10 - 63	25
DN	15 - 300	15 - 300	15 - 300	15 - 300	40
Class	150 - 300	150 - 300	150 - 300	150 - 300	150
NPS	1/2 - 12	1/2 - 12	1/2 - 12	1/2 - 12	1 1/2
Temperature Rating	-260°C up to +400°C	-260°C up to +400°C	-260°C up to +400°C	-260°C up to +400°C	-50°C up to +70°C
Body Forms	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern • Angle Pattern Body 	<ul style="list-style-type: none"> • Angle Pattern Type
Basic Shell Material	<ul style="list-style-type: none"> • Stainless Steel • Aluminum Body 	<ul style="list-style-type: none"> • Stainless Steel • Aluminum Body 	<ul style="list-style-type: none"> • Stainless Steel • Aluminum Body 	<ul style="list-style-type: none"> • Stainless Steel • Aluminum Body 	<ul style="list-style-type: none"> • Carbon Steel - Low Temperature • Stainless Steel • Other Materials on Request
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Pneumatic Diaphragm Actuator • Manual Override
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	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
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



Phönix Armaturen-Werke					
Type	440-Refrigerant Valve	385-Refrigerant Valve	S57-Coke Oven Gas Valve	661	506/525
Design					
Description	Globe and control valve with stuffing box seal, inside rising stem, in accordance with refrigerant valves (DIN 3158)	Globe and control valve with flushed bellows and emergency gland, inside rising stem (comparable with refrigerant valves - DIN 3158)	Shut off cock and reversing cock (3-Way cock) with lubrication system, approved stem sealing system in accordance with TA-Luft	Globe valve with stuffing box seal, coupled divided stem, integral seat	Globe valve with stuffing box seal, coupled divided stem, renewable disc and seat
PN	10 - 40	10 - 40	10 - 40	160	400/630
DN	15 - 150	15 - 400	65 - 300	8	8
Class	150 - 300	150 - 300	150 - 300	900	2500
NPS	1/2 - 6	1/2 - 16	2 1/2 - 12	1/4	1/4
Temperature Rating	-196°C up to +450°C	-196°C up to +450°C	-20°C up to +800°C	-196°C up to +450°C	-196°C up to +650°C
Body Forms	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Angle Pattern Body
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel - Low Temperature • Stainless Steel • Hastelloy 	<ul style="list-style-type: none"> • Carbon Steel - Low Temperature • Stainless Steel • Hastelloy 	<ul style="list-style-type: none"> • Founding - Spheroidal Graphite Cast Irons for Example: EN-GJS-400-15 (GGG-40) A 536 Grade 60-40-18 	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Flanged Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Wrench • Lever • Special Coke Oven • Plant Operation System 	<ul style="list-style-type: none"> • Handwheel • T-Handle • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • T-Handle • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator
Application	Especially for media which are not dangerous for environment and cold service media. Operation components protected against icing.	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.	Especially for coke oven gas in coke oven plants, battery heating system	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			Stem sealing system approved in accordance with VDI 2440/ TA-Luft		VdTÜV approved in accordance with WB 35

Phönix Armaturen-Werke				
Type	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 encapsulated 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 style="list-style-type: none"> • Straight Pattern Body • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Angle Pattern Body
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - High and Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • Brass • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Flanged Ends • Other Requirements 	<ul style="list-style-type: none"> • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Flanged Ends • Other Requirements 	<ul style="list-style-type: none"> • Inlet: Male Plug G 1/2 Acc. to DIN EN 837-1 • Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 (Form A) or Female G 1/2 (Form B) • Test: Male Plug M 20X1.5 	<ul style="list-style-type: none"> • Inlet: Butt and Socket Welding Ends, Threaded Ends • Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283 • Test: Male Plug M 20X1.5
Operation	<ul style="list-style-type: none"> • Handwheel • T-Handle • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • T-Handle • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel 	<ul style="list-style-type: none"> • 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 Armaturen-Werke				
Type	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
NPS	1/8	1/8	1/8	1/8
Temperature Rating	-196°C up to +450°C	-196°C up to +450°C	-196°C up to +450°C	-196°C up to +450°C
Body Forms	• Straight Pattern Body	• Straight Pattern Body	• Straight Pattern Body	• Straight Pattern Body
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Inlet: Butt and Socket Welding Ends, Threaded Ends • Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283 • Test: Male Plug M 20X1.5 	<ul style="list-style-type: none"> • Inlet: Butt And Socket Welding Ends, Threaded Ends • Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283 • Test: Male Plug M 20X1.5 	<ul style="list-style-type: none"> • Inlet: Butt And Socket Welding Ends, Threaded Ends • Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283 • Test: Male Plug M 20X1.5 	<ul style="list-style-type: none"> • Inlet: Butt And Socket Welding Ends, Threaded Ends • Outlet: Male Plug G 1/2-LH with Adjusting Nut G 1/2 Acc. to DIN 16283 • Test: Male Plug M 20X1.5
Operation	<ul style="list-style-type: none"> • Handwheel • T-Handle 	<ul style="list-style-type: none"> • Handwheel • T-Handle 	<ul style="list-style-type: none"> • Handwheel • T-Handle 	<ul style="list-style-type: none"> • 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

Phoenix Armaturen-Werke				
Type	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, stuffing box seal, 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 style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - High and Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - High and Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - High and Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel <ul style="list-style-type: none"> - High and Low Temperature • Stainless Steel <ul style="list-style-type: none"> - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Inlet: Butt And Socket Welding Ends, Threaded Ends • Outlet: Directly Flanged to Transducer (Acc. to DIN 19213) • Test: Male Plug M 20X1.5 	<ul style="list-style-type: none"> • Inlet: Butt And Socket Welding Ends, Threaded Ends • Outlet: Directly Flanged to Transducer (Acc. to DIN 19213) • Test: Male Plug M 20X1.5 	<ul style="list-style-type: none"> • Inlet: Butt and Socket Welding Ends, Threaded Ends • Outlet: Directly Flanged to Transducer (Acc. to DIN 19213) • Test: Male Plug M 20X1.5 	<ul style="list-style-type: none"> • Inlet: Butt and Socket Welding Ends, Threaded Ends • Outlet: Directly Flanged to Transducer (Acc. to DIN 19213) • Test: Male Plug M 20X1.5
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	VdTÜV approved in accordance with WB 35	VdTÜV approved in accordance with WB 35	VdTÜV approved in accordance with WB 35



Strack					
Type	S 20/S 24	S 04/S 03	S 21	S 27	S 29
Design					
Description	Globe valve with stuffing seal and rotating or non rotating, rising stem	Gate valve with stuffing seal and non-rotating, rising stem	Globe valve with integrated stuffing seal in the body, non-rotating and rising stem	Piston check valve spring loaded option	Strainer
PN	10 - 160	10 - 160	630	630	630
DN	15 - 300	50 - 600	10 - 50	10 - 65	10 - 250
Class	150 - 2500	150 - 2500	4500	4500	4500
NPS	1/2 - 18	2 - 40	1/2 - 2 1/2	1/2 - 2 1/2	1/2 - 10
Temperature Rating	-196°C up to +650°C	-196°C up to +800°C	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C
Body Forms	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern • Angle Pattern Body 	<ul style="list-style-type: none"> • Circular and Flat Types • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Monel • 6Mo • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature • Other Special Alloys 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Threaded Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel • Lever Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator 	<ul style="list-style-type: none"> • Handwheel • Lever Chainwheel • Gear Operator • Electric Actuator • Pneumatic Piston Actuator 	<ul style="list-style-type: none"> • Handwheel • Chainwheel • Pneumatic Piston Actuator • Electric Actuator 		
Application	For gases and liquids as well as boiler and cooling water, saturated steam and similar under consideration of the materials resistance	For gases and liquids as well as boiler and cooling water, saturated steam and similar under consideration of the materials resistance	High pressure and temperature service in power plants. For non-aggressive liquids, gases and vapours	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
Approvals	Fire safe, VdTÜV-Prototype	Fire safe	VdTÜV-Prototype	VdTÜV-Prototype	






Strack					
Type	S 02	S 17	S 22	S 15	S 16
Design					
Description	Gate valve API 600	Gate valve with stuffing box seal	Forged - high pressure Globe valve with stuffing box seal and pressure seal bonnet	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		16 - 400	160 - 630	160 - 630	160 - 400
DN		15 - 50	50 - 250	50 - 600*	50 - 600*
Class	150 - 2500	150 - 2500	900 - 4500	900 - 4500	900 - 4500
NPS	2 - 48	1/2 - 2	2 - 12	2 - 24*	2 - 24*
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	-196°C up to +650°C
Body Forms	• Straight Pattern Body	• Straight Pattern Body	• Straight Pattern Body • Y-Pattern • Angle Pattern Body	• 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 • 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 • 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 • Other Special Alloys
Connections	• Flanged Ends • Butt Welding Ends	• Flanged Ends • Butt Welding Ends • Socket Welding 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 • Lever Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator	• Handwheel • Electric Actuator	• Handwheel • Lever Chainwheel • Gear Operator • Pneumatic Piston Actuator • Pneumatic Diaphragm Actuator • Electric Actuator	• Handwheel • Lever • Chainwheel • Gear Operator • Electric Actuator	• Handwheel • Lever • Chainwheel • Gear Operator • Electric Actuator
Application	For gases and liquids as well as boiler and cooling water, saturated steam and similar under consideration of the materials resistance refining and chemical processes	Chemical- and petrochemical plants	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 power plants, including the new generation of power plants with temperatures up to 650°C	Chemical plants, petrochemical plants and offshore
Approvals	Fire safe	Fire safe			






* Bigger on request





Strack					
Type	S 601 & S 603	S 72	S 70/S 25/S 73	S 40	S 50
Design					
Description	Forged - high pressure Preheater valve with pressure sealed bonnet	Forged - high pressure Swing check valve with pressure sealed bonnet	Check valve	Bottom valve	Lift plug valve, non-lubricated
PN	160 - 400	160 - 400	160 - 400	10 - 40	10 - 160
DN	150 - 600	50 - 600	50 - 500	15 - 250	15 - 500
Class	900 - 4500	900 - 4500	150 - 2500	150 - 300	300 - 1500
NPS	2 - 24	2 - 24	2 - 20	1/2 - 10	1/2 - 20
Temperature Rating	up to +550°C	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +800°C
Body Forms	<ul style="list-style-type: none"> Quick Closing 3-Way Valve and T- or Angel Quick Closing Check Valve 	<ul style="list-style-type: none"> Straight Pattern Body 	<ul style="list-style-type: none"> Swing and Piston Check Types 	<ul style="list-style-type: none"> Disc Opens into Tank and Opens into Valve 	<ul style="list-style-type: none"> Straight Pattern Body
Basic Shell Material	<ul style="list-style-type: none"> Carbon Steel - High Temperature 	<ul style="list-style-type: none"> Carbon Steel - High and Low Temperature Stainless Steel - High Temperature - High Chromium Hastelloy Inconel Pure Nickel Other Special Alloys 	<ul style="list-style-type: none"> Carbon Steel - High and Low Temperature Stainless Steel - High Temperature - High Chromium Hastelloy Inconel Pure Nickel Titanium Monel 6Mo Other Special Alloys 	<ul style="list-style-type: none"> Carbon Steel - High and Low Temperature Stainless Steel - High Temperature - High Chromium Hastelloy Inconel Pure Nickel Titanium Monel 6Mo Other Special Alloys 	<ul style="list-style-type: none"> Carbon Steel - High and Low Temperature Stainless Steel - High Temperature - High Chromium Hastelloy Inconel Pure Nickel Titanium Monel 6Mo Other Special Alloys
Connections	<ul style="list-style-type: none"> Butt Welding Ends 	<ul style="list-style-type: none"> Flanged Ends Butt Welding Ends Socket Welding Ends Threaded Ends Other Requirements 	<ul style="list-style-type: none"> Flanged Ends Butt Welding Ends Socket Welding Ends Other Requirements 	<ul style="list-style-type: none"> Flanged Ends Other Requirements 	<ul style="list-style-type: none"> Flanged Ends Butt Welding Ends Socket Welding Ends Other Requirements
Operation				<ul style="list-style-type: none"> Handwheel Chainwheel Pneumatic Piston Actuator Pneumatic Diaphragm Actuator Electric Actuator 	<ul style="list-style-type: none"> Handwheel and Lever Automatic Mechanism with Pneumatic- and Electric Actuators
Application	Power plants	Chemical plants, petrochemical 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	Chemical plants, petrochemical plants	Valves for special services, abrasive, synthetic media and offshore







* Bigger on request

Strack					
Type	S 51	S 97/S 98/S 99	S 96		
Design					
Description	3-Way lift plug valve special design, non lubricated	Globe and check valves for HF-service	Gate valve for HF-service	TA-LUFT - special services gate and globe valves with stuffing box packing with additional spring loading	Repairing and service Strack and external gate, globe and check valves
PN	10 - 100	10 - 250	10 - 250		10 - 400
DN	25 - 300	15 - 350	15 - 350		15 - 800
Class	300	300 - 2500	300 - 2500		150 - 2500
NPS	1 - 12	1/2 - 12	1/2 - 12		1/2 - 32
Temperature Rating	-196°C up to +650°C	-10°C up to +450°C	-10°C up to +450°C	-120°C up to +650°C	
Body Forms	<ul style="list-style-type: none"> • 3-Way and 4-Way Design 	<ul style="list-style-type: none"> • Straight Pattern Body • Y-Pattern Body • Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Springs on both packing stud bolts (decentralized) 	
Basic Shell Material	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Titanium • Other Special Alloys 	<ul style="list-style-type: none"> • Cast Carbon Steel Combination with Monel • Other Special Alloys 	<ul style="list-style-type: none"> • Cast Carbon Steel Combination with Monel • Other Special Alloys 	<ul style="list-style-type: none"> • All Kinds of Materials 	<ul style="list-style-type: none"> • Carbon Steel - High and Low Temperature • Stainless Steel - High Temperature - High Chromium • Hastelloy • Inconel • Pure Nickel • Monel • 6Mo • Other Special Alloys
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Other Requirements 		<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Socket Welding Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel and Lever • Automatic Mechanism with Pneumatic- and Electric Actuators 	<ul style="list-style-type: none"> • Handwheel • Pneumatic- and Electric Actuators 	<ul style="list-style-type: none"> • Handwheel • Pneumatic- and Electric Actuators 		<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Operators
Application	High demanding valves for special services abrasive, synthetic media	Alkylation plants	Alkylation plants		All kind of plants
Approvals		UOP approved TA-Luft approved	UOP approved TA-Luft approved		

Daume Regelarmaturen					
Type	390-1	390-6	190-6	186-6	189-6
Design					
Description	Feed-water control valve	Bypass control valve	Injection control valve	Condensate control valve	Discharge valve
PN	10 - 630	10 - 630	10 - 630	10 - 160	10 - 630
DN	15 - 600	15 - 125	15 - 200	15 - 600	15 - 600
Class	150 - 4500	150 - 4500	150 - 4500	150 - 900	150 - 4500
NPS	1/2 - 24	1/2 - 24	1/2 - 8	1/2 - 24	1/2 - 24
Temperature Rating	-60°C up to +540°C	-60°C up to +540°C	-60°C up to +540°C	-60°C up to +540°C	-60°C up to +650°C
Body Forms	<ul style="list-style-type: none"> • Straight Pattern Body and Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body and Angle Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body and Z-Style 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body and Angle Pattern Body
Basic Shell Material	<ul style="list-style-type: none"> • Cast/Forged Carbon Steel - High and Low Temperature • Cast/Forged Stainless Steel - High Chromium 	<ul style="list-style-type: none"> • Cast/Forged Carbon Steel - High and Low Temperature • Cast/Forged Stainless Steel - High Chromium 	<ul style="list-style-type: none"> • Cast/Forged Carbon Steel - High and Low Temperature • Cast/Forged Stainless Steel - High Chromium 	<ul style="list-style-type: none"> • Cast Carbon Steel - High and Low Temperature • Cast Stainless Steel - High Chromium 	<ul style="list-style-type: none"> • Cast/Forged Carbon Steel - High and Low Temperature • Cast/Forged Stainless Steel - High Chromium
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators 	<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators 	<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators 	<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators 	<ul style="list-style-type: none"> • 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	Industrial applications, high pressure and temperature service in power plants, petrochemical plants

Daume Regalarmaturen					
Type	189-1	189-1	189 + VKR	189 + 900	187-6
Design					
Description	Steam conditioning valve	Steam start up valve	Steam conditioning valve	Steam conditioning valve	Distribution and mixing 3-Way control valve
PN	10 - 630	10 - 630	10 - 630	10 - 630	10 - 630
DN	15 - 600	15 - 600	15 - 600	15 - 600	15 - 600
Class	150 - 4500	150 - 4500	150 - 4500	150 - 4500	150 - 4500
NPS	1/2 - 50	1/2 - 24	1/2 - 50	1/2 - 50	1/2 - 24
Temperature Rating	-60°C up to +650°C	-60°C up to +650°C	-60°C up to +650°C	-60°C up to +650°C	-60°C up to +650°C
Body Forms	• Straight Pattern Body and Angle Pattern Body	• Straight Pattern Body and Angle Pattern Body	• Straight Pattern Body and Angle Pattern Body	• Straight Pattern Body and Angle Pattern Body	• 3-Way
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	• Cast Carbon Steel - High and Low Temperature • Cast Stainless Steel - High Chromium
Connections	• Flanged Ends • Butt Welding Ends • Other Requirements	• Flanged Ends • Butt Welding Ends • Other Requirements	• Flanged Ends • Butt Welding Ends • Other Requirements	• Flanged Ends • Butt Welding Ends • Other Requirements	• Flanged Ends • Butt Welding Ends • Other Requirements
Operation	• Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators	• Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators	• Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators	• Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators	• 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	Industrial applications, high pressure and temperature service in power plants, petrochemical plants

Daume Regelarmaturen				
Type	50-2A	50-2A	186-6	
Design				
Description	Natural gas control valve	Oxygen control valve	Control valve	Repairing and services own and external valves
PN	10 - 160	10 - 160	10 - 160	
DN	15 - 600	15 - 600	15 - 600	
Class	150 - 900		150 - 900	
NPS	1/2 - 24		1/2 - 24	
Temperature Rating	-10°C up to +200°C	-10°C up to +60°C	-60°C up to +450°C	
Body Forms	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	<ul style="list-style-type: none"> • Straight Pattern Body 	
Basic Shell Material	<ul style="list-style-type: none"> • Cast Carbon Steel - High and Low Temperature • Cast Stainless Steel - High Chromium 	<ul style="list-style-type: none"> • Cast Carbon Steel - High and Low Temperature • Cast Stainless Steel - High Chromium 	<ul style="list-style-type: none"> • Cast Carbon Steel - High and Low Temperature • Cast Stainless Steel - High Chromium 	<ul style="list-style-type: none"> • Cast/Forged Carbon Steel - High and Low Temperature • Cast/Forged Stainless Steel - High Chromium
Connections	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements 	<ul style="list-style-type: none"> • Flanged Ends • Butt Welding Ends • Other Requirements
Operation	<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators 	<ul style="list-style-type: none"> • Automatic Mechanism with Pneumatic Actuators 	<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators 	<ul style="list-style-type: none"> • Handwheel • Lever • Electric-, Hydraulic- and Pneumatic Actuators
Application	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	Steelworks and piping	Industrial applications, high pressure and temperature service in power plants, petrochemical plants	All kind of plants

Solent & Pratt						
Type	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						
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	
PN						
DN						
Class						
NPS						
Temperature Rating	Temperatures 700° C (1292° F)	Temperatures 700° C (1292° F)				
Body Forms						
Basic Shell Material	<ul style="list-style-type: none"> • 316 Stainless Steel • Duplex & Super Duplex • 6 Mo Stainless Steel • Bronze • Monel • Incoloy • Hastelloy B & C • Titanium • Zirconium 	<ul style="list-style-type: none"> • 316 Stainless Steel • Duplex & Super Duplex • 6 Mo Stainless Steel • Bronze • Monel • Incoloy • Hastelloy B & C • Titanium • Zirconium 	<ul style="list-style-type: none"> • 316 Stainless Steel • Duplex & Super Duplex • 6 Mo Stainless Steel • Bronze • Monel • Incoloy • Hastelloy B & C • Titanium • Zirconium 	<ul style="list-style-type: none"> • 316 Stainless Steel • Duplex & Super Duplex • 6 Mo Stainless Steel • Bronze • Monel • Incoloy • Hastelloy B & C • Titanium • Zirconium • Seal material: Nitrile / Viton / EPDM • E-Series lining - Bonded hard natural rubber 	<ul style="list-style-type: none"> • 316 Stainless Steel • Duplex & Super Duplex • 6 Mo Stainless Steel • Bronze • Monel • Incoloy • Hastelloy B & C • Titanium • Zirconium 	<ul style="list-style-type: none"> • Stainless Steel • Carbon Steel • Ductile Iron • Aluminium materials
Connections	Double Flanged	Double Flanged	Double Flanged	Double Flanged	Double Flanged	
Operation						
Application						
Approvals	Firesafe to: - BS 6755: Part 2 - API 6FA: API 607 4th Edition - BS EN ISO 10497	Firesafe to: - BS 6755: Part 2 - API 6FA: API 607 4th Edition - BS EN ISO 10497	Firesafe to: - BS 6755: Part 2 - BS EN ISO 10497		Firesafe to: - BS 6755: Part 2 - API 6FA: API 607 4th Edition - BS EN ISO 10497	

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