



Product Lines

PHÖNIX

STRACK

DAUME

REGELARMATUREN

Phönix, Strack, Daume Regelarmaturen – eine sichere Anlage in der Welt seit 1910

Unsere Vision:

3 Brands - Phönix, Strack, Daume Regelarmaturen - ein Gesamtprogramm erstklassiger Produkte in ausgezeichneter Qualität gewährleisten dauerhafte Sicherheit und Zuverlässigkeit in Chemieanlagen, Raffinerien und Kraftwerken.

Wir bieten weltweit unseren Kunden Armaturen in allen Standards (DIN, ANSI u.a.) und hervorragender Qualität, technische Beratung und Service auf höchstem Niveau für komplette Armaturenpakete.

Unsere Firmen:

Phönix

Im Jahre 1910 aus kleinsten Anfängen entstanden, zählt die Phönix Armaturen-Werke Bregel GmbH heute zu den führenden Herstellern von hochwertigen Spezialarmaturen. 175 verantwortungsbewusste und engagierte Mitarbeiter gewährleisten eine ständige Erneuerung und Vervollkommnung der Phönix-Produkte. Phönix-Faltenbalgventile werden bereits seit über 60 Jahren weltweit in der Großchemie in sensiblen Medienbereichen eingesetzt und haben durch ausgezeichnete Qualität und hervorragendes Dichtverhalten die Reinhaltung der Luft wesentlich verbessert.

Strack

Die Strack GmbH wurde 1922 gegründet und ist einer der bekanntesten Hersteller von hochwertigen Armaturen in allen Standards. Strack fertigt Sonderarmaturen und nutzt heute die hervorragenden technologischen Möglichkeiten von Phönix und POB zur Fertigung von Strack-Produkten. Mit über 30 eigenen Armaturenspezialisten bietet Strack auch ein komplettes Serviceprogramm (Reparaturen, Umbauten, Service vor Ort) für Phönix-, Strack-, Daume Regelarmaturen und andere Fabrikate an.

Daume Regelarmaturen

Daume Regelarmaturen werden seit 1947 in Hannover entwickelt, konstruiert und gefertigt. Die Auslegung nach kundenspezifischen Anforderungen, höchste Qualität und Langlebigkeit kennzeichnen die Produkte. Zahlreiche namhafte Kunden in der ganzen Welt in Kraftwerken, kerntechnischen Anlagen, in der Chemie und Raffinerien verfügen über hervorragende langjährige Erfahrungen mit Daume Regelarmaturen. Service vor Ort bei der Inbetriebnahme und Stillständen in enger Zusammenarbeit mit unseren Kunden gehören zum Leistungsumfang.

POB

Die POB GmbH wurde 1998 gegründet und verfügt über modernste Bearbeitungstechnologien für den Armaturenbau. Über 30 hochqualifizierte und engagierte Mitarbeiter fertigen an CNC-Hochleistungsbearbeitungszentren und ergänzen damit die Fertigungskapazität für Phönix-, Strack- und Daume Regelarmaturen-Produkte.

Unsere Zertifikate und Zulassungen

ISO 9001, HPO, PED 97/23, TPED 2010/35/EG, VdTÜV 1065, Fire Safe, GOST-R, Euro Chlor, API, KTA 1401, Rostechnadzor, UOP, EDF

Phönix, Strack, Daume Regelarmaturen – a safe Investment all over the world since 1910

Our vision:

3 brands – Phönix, Strack, Daume Regelarmaturen – a complete range of high quality first class products that guarantee 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.

Our companies:

Phönix

Founded in 1910 as a small company, Phönix Armaturen-Werke Bregel GmbH is today a leading manufacturer of high quality specialty valves. 175 responsible and dedicated employees guarantee 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 and POB for the fabrication of its products. A staff of more than 30 valve specialists offers a complete service program (repairs, customization, on-site service) for products from Phönix, Strack, Daume Regelarmaturen and other suppliers.

Daume Regelarmaturen

Daume Regelarmaturen has 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 shut-down in close co-operation with our clients are within the scope of our performance.

POB

Founded in 1998, POB GmbH has latest in machining technology for the manufacturing of valves. A staff of more than 30 well-qualified and dedicated employees complements the production capacities for Phönix-, Strack- and Daume Regelarmaturen products using high performance CNC-machining equipment.

Our certificates and approvals

ISO 9001, HPO, PED 97/23, TPED 2010/35/EG, VdTÜV 1065, Fire Safe, GOST-R, Euro Chlor, API, KTA 1401, Rostechnadzor, UOP, EDF

Type	350	350 EC.1 and EC.2	350 EC.4 and EC.5	390	365	355 HS	899 HS
Design							
Description	Globe valve with encapsulated superlong bellows and emergency gland	Globe valve for chlorine service with encapsulated superlong bellows in the bonnet	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	Globe valve with encapsulated superlong bellows and emergency gland	Excess flow valve (pipe break valve)
DIN PN DIN DN	10 - 250 15 - 500	40 15 - 150	40 15 - 350	10 - 40 15 - 150	10 - 40 15 - 100	325 6 - 120	325 6 - 120
ANSI Class ANSI NPS	150 - 1500 1/2 - 20	300 1/2 - 6	300 1/2 - 14	150 - 300 1/2 - 6	150 - 300 1/2 - 4		
Temperature rating	-196°C up to +800°C	-40°C up to +120°C	-40°C up to +120°C	-196°C up to +450°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	Straight pattern body Angle pattern body	Straight pattern body	Straight pattern body Y-pattern body Angle pattern body	Straight pattern body	Angle pattern body	Straight pattern body
Basic shell material	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel Stainless steel Hastelloy Other special alloys	Low temperature carbon steel Carbon steel Stainless steel Hastelloy Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Carbon steel High temperature carbon steel	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys
Connections	Flanged ends Butt welding ends Socket welding ends Threaded ends Other requirements	Flanged ends Other requirements	Flanged 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	Threaded flanges and other requirements	Threaded flanges and other requirements
Operation	Handwheel Lever Chainwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Handwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator	Handwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator	Handwheel Chainwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Handwheel Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Handwheel Lever Chainwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	
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 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, hydrocarbons et.) 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, hydrocarbons et.) under consideration of the material resistance
Approvals	Fire safe VdTÜV Prototype	Euro Chlor approval 97/03; 01/01	Euro Chlor approval 97/04; 01/02 DGM 29823805.5	Fire safe VdTÜV Prototype		DGM 29809524.6	

Type	834	359	350 EC.8 and EC.9	370 / 320	374/324	420	820	829
Design								
Description	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	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 filtering area and low pressure drop	Strainer Y- type
DIN PN DIN DN	10 - 160 15 - 800	10 - 250 15 - 250	40 15 - 350	10 - 250 15 - 500	10 - 160 15 - 500	10 - 160 15 - 250	10 - 40 15 - 250	10 - 40 15 - 150
ANSI Class ANSI NPS	150 - 900 1/2 - 30	150 - 1500 1/2 - 10	300 1/2 - 14	150 - 1500 1/2 - 20	150 - 900 1/2 - 20	150 - 900 1/2 - 10	150 - 300 1/2 - 10	150 - 300 1/2 - 6
Temperature rating	-196°C up to +800°C	-196°C up to +650°C	-40°C up to +120°C	-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	Straight pattern body	Straight pattern body Angle pattern body	Straight pattern body	Three-way-type		Straight pattern body Y-pattern Angle pattern body	Straight pattern body	Y-pattern
Basic shell material	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel Stainless steel Hastelloy Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy 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	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 Electric actuator	Handwheel Chainwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Pneumatic piston actuator Pneumatic diaphragm 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 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)	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	US Patent US 6.202.984 B1 Fire safe	Fire safe VdTÜV Prototype	Euro Chlor approval 03/01			VdTÜV Prototype		

Type	925	919	941	935	309.40 and 309.50	440-Refrigerant valve	385-Refrigerant valve	P57-Coke Oven Gas valve
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 quickclosing valve with bellows and a spring-loaded ball check valve	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
DIN PN DIN DN	10 - 40 15 - 150	25 40	10 - 40 15 - 150	10 - 40 15 - 400	10 - 40 65 - 300			
ANSI Class ANSI NPS	150 - 300 1/2 - 6	150 1 1/2	150 - 300 1/2 - 6	150 - 300 1/2 - 16	150 - 300 2 1/2 - 12			
Temperature rating	-260°C up to +400°C	- 50°C up to +70°C	-196°C up to +450°C	-196°C up to +450°C	+20 °C up to +80°C			
Body forms	Straight pattern body Y-pattern Angle pattern body	Angle pattern type	Straight pattern body Y-pattern body Angle pattern body	Straight pattern body Y-pattern body Angle pattern body	Straight pattern body			
Basic shell material	Stainless steel Aluminum body	Stainless steel Aluminum body	Stainless steel Aluminum body	Stainless steel Aluminum body	Low temperature carbon steel Stainless steel other materials on request	Low temperature carbon steel Carbon steel Stainless steel Hastelloy	Low temperature carbon steel Carbon steel Stainless steel Hastelloy	Founding - Spheroidal graphite cast irons for example: EN-GJS-400-15 (GGG-40) A 536 Grade 60-40-18
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	Flanged 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 Threaded ends Other requirements
Operation	Handwheel Chainwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Pneumatic diaphragm 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	Wrench Lever special coke oven plant operation system			
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	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
Approvals					Prototype 06D2, BAM approved, Euro Chlor approval 96/01; 96/02; 96/03; 96/07, EG 99/36 (TPED)			Stem sealing system approved in accordance with VDI 2440/ TA-Luft

Type	661	506 / 525	662	570 / 535	580 / 582 / 584	664	587
Design							
Description	Globe valve with stuffing box seal, coupled divided stem, integral seat	Globe valve with stuffing box seal, coupled divided stem, renewable disc and seat	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	Pressure gauge valve with test connection, stuffing box seal, coupled divided stem, renewable disc and seat
DIN PN DIN DN	160 8	400 / 630 8	100 8	250 / 400 8	400 3,5	100 3,5	400 3,5
ANSI Class ANSI NPS	900 1/4	2500 1/4	600 1/4	1500 / 2500 1/4	2500 1/8	600 1/8	2500 1/8
Temperature rating	-196°C up to +450°C	-196°C up to +650°C	-196°C up to +450°C	-196°C up to +650°C	-40°C up to +120°C	-196°C up to +450°C	-196°C up to +450°C
Body forms	Straight pattern body Angle pattern body	Straight pattern body Angle pattern body	Straight pattern body Angle pattern body	Straight pattern body Angle pattern body	Straight pattern body	Straight pattern body Angle pattern body	Straight pattern body
Basic shell material	Carbon steel Stainless steel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Carbon steel Stainless steel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Carbon steel Stainless steel Brass Other special alloys	Carbon steel Stainless steel Other special alloys	Low temperature carbon steel Carbon steel Stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys
Connections	Butt welding ends Socket welding ends Threaded ends Flanged ends Other requirements	Butt welding ends Socket welding ends Threaded ends Flanged ends Other requirements	Butt welding ends Socket welding ends Threaded ends Flanged ends Other requirements	Butt welding ends Socket welding ends Threaded ends Flanged ends Other requirements	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	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	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	Handwheel T-handle Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Handwheel T-handle Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	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	Handwheel T-handle
Application	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	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	For liquids, gases and vapours under consideration of the material resistance
Approvals		VdTÜV approved in accordance with WB 35		VdTÜV approved in accordance with WB 35, DGM 297 21 782.8			VdTÜV approved in accordance with WB 35

Type	597	589	599	626	659	630	631
Design							
Description	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	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
DIN PN DIN DN	250 3,5	400 3,5	250 3,5	400 8	250 8	400 8	250 8
ANSI Class ANSI NPS	1500 1/8	2500 1/8	1500 1/8	2500 1/4	1500 1/4	2500 1/4	1500 1/4
Temperature 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	Straight pattern body	Straight pattern body	Straight pattern body	Straight pattern body	Straight pattern body	Straight pattern body
Basic shell material	Low temperature carbon steel Carbon steel Stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel Stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel Stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys
Connections	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	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	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	Inlet: Butt and socket welding ends, threaded ends Outlet: Directly flanged to transducer (acc. to DIN 19213) Test: Male plug M 20x1,5	Inlet: Butt and socket welding ends, threaded ends Outlet: Directly flanged to transducer (acc. to DIN 19213) Test: Male plug M 20x1,5	Inlet: Butt and socket welding ends, threaded ends Outlet: Directly flanged to transducer (acc. to DIN 19213) Test: Male plug M 20x1,5 Drain valve: Male plug G 1/2	Inlet: Butt and socket welding ends, threaded ends Outlet: Directly flanged to transducer (acc. to DIN 19213) Test: Male plug M 20x1,5 Drain valve: Male plug G 1/2
Operation	Handwheel T-handle	Handwheel T-handle	Handwheel T-handle	T-handle	T-handle	T-handle	T-handle
Application	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	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			

Type	S 20 / S 24	S 04 / S 03	S 21	S 27	S 29	S 02	S 17
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	Gate valve API 600	Gate valve with stuffing box seal
DIN PN DIN DN	10 - 160 15 - 300	10 - 160 15 - 600	630 10 - 50	630 10 - 65	630 10 - 250		16 - 400 15 - 50
ANSI Class ANSI NPS	150 - 2500 1/2 - 18	150 - 2500 2 - 40	4500 1/2 - 2 1/2	4500 1/2 - 2 1/2	4500 1/2 - 10	150 - 2500 2 - 48	150 - 2500 1/2 - 2
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			
Body forms	Straight pattern body Y-pattern body Angle pattern body	Circular and flat types Straight pattern body	Straight pattern body	Straight pattern body	Straight pattern body Y-pattern body	Straight pattern body	Straight pattern body
Basic shell material	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Other special alloys	Low and high temp. carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Monel 6Mo Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel 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 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	Flanged ends Butt welding ends Socket welding ends Other requirements
Operation	Handwheel Lever Chainwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Handwheel Lever Chainwheel Gear operator Electric actuator Pneumatic Piston actuator	Handwheel Chainwheel Pneumatic piston actuator Electric actuator			Handwheel Lever Chainwheel Gear operator Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator	Handwheel 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	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
Approvals	Fire safe, VdTÜV-Prototype	Fire safe	VdTÜV-Prototype	VdTÜV-Prototype		API 6D, Fire safe	Fire safe

Type	S 22	S 15	S 16	S601 & S603	S 72	S 70 / S 25	S 40
Design							
Description	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	Forged - high pressure Preheater valve with pressure sealed bonnet	Forged - high pressure Swing check valve with pressure sealed bonnet	Check valve	Bottom valve
DIN PN DIN DN	160 - 630 50 - 250	160 - 630 50 - 600	160 - 400 50 - 600	160 - 400 150 - 600	160 - 400 50 - 600	16 - 100 50 - 500	10 - 40 15 - 250
ANSI Class ANSI NPS	900 - 4500 2 - 12	900 - 4500 2 - 24	900 - 4500 2 - 24	900 - 2500 2 - 24	900 - 4500 2 - 24	150 - 2500 2 - 40	150 - 300 1/2 - 10
Temperature rating	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C	up to +550°C	-196°C up to +650°C	-196°C up to +650°C	-196°C up to +650°C
Body forms	Straight pattern body Y-pattern body Angle pattern body	Straight pattern body	Straight pattern body	Quick Closing 3-way valve and T- or Angel Quick Closing Check valve	Straight pattern body	Swing and Piston check types	Disc opens into tank and opens into valve
Basic shell material	Low temp. carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Other special alloys	Carbon steel High temperature carbon steel	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Other special alloys	Low and high temp. carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Monel 6Mo Other special alloys	Low and high temp. carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Monel 6Mo 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 Butt welding ends Socket welding ends Threaded ends Other requirements	Butt welding ends	Flanged ends Butt welding ends Socket welding ends Threaded ends Other requirements	Flanged ends Butt welding ends Socket welding ends Other requirements	Flanged ends Other requirements
Operation	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				Handwheel Chainwheel Pneumatic piston actuator Pneumatic diaphragm actuator Electric actuator
Application	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	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
Approvals						API 6D	

Type	S 50	S 51	S 97 / S 98	S 96	S 06		
Design							
Description	Lift plug valve, non-lubricated	Three way lift plug valve special design, non lubricated	Globe and check valves for HF-service	Gate valve for HF-service	Flat plate gate valve with special seat rings	TA-LUFT - special services Gate and globe valves with stuffing box packing with additional spring loading	Repairing and services Own and external gate, globe and check valves
DIN PN DIN DN	10 - 160 15 - 500	10 - 100 25 - 300	10 - 250 15 - 350	10 - 250 15 - 350	16 - 40 50 - 350		10 - 400 15 - 800
ANSI Class ANSI NPS	300 - 1500 1/2 - 20	300 1 - 12	300 - 2500 1/2 - 12	300 - 2500 1/2 - 12			150 - 2500 1/2 - 32
Temperature rating	-196°C up to +800°C	-196°C up to +650°C	-10°C up to +450°C	-10°C up to +450°C	-120°C up to +450°C	-120°C up to +650°C	
Body forms	Straight pattern body	Three way and four way design	Straight pattern body Y-pattern body Angle pattern body	Straight pattern body	Flat type	Springs on both packing stud bolts (decentralized)	
Basic shell material	Low and high temp. carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Monel 6Mo Other special alloys	Low temperature carbon steel Carbon steel High temperature carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Titanium Other special alloys	Cast carbon steel combination with monel and other special alloys	Cast carbon steel combination with monel and other special alloys	Carbon steel Low and high temp. carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Monel 6Mo Other special alloys	All kinds of materials	Carbon steel Low and high temp. carbon steel Stainless steel High temperature stainless steel High chromium stainless steel Hastelloy Inconel Pure nickel Monel 6Mo Other special alloys
Connections	Flanged ends Butt welding ends Socket welding ends Other requirements	Flanged ends Butt welding ends Other requirements	Flanged ends Butt welding ends Socket welding ends Other requirements	Flanged ends Butt welding ends Socket welding ends Other requirements	Flanged ends		Flanged ends Butt welding ends Socket welding ends Other requirements
Operation	Handwheel and lever or automatic mechanism with Pneumatic- and electric actuators	Handwheel and lever or automatic mechanism with Pneumatic- and electric actuators	Handwheel Pneumatic- and electric actuators	Handwheel Pneumatic- and electric actuators	Handwheel Gear operator Pneumatic- and electric actuators		Handwheel, lever, Electric-, hydraulic- and pneumatic operators
Application	Valves for special services, abrasive, synthetic media and Off-Shore	High demanding valves for special services abrasive, synthetic media	Alkylation plants	Alkylation plants	Chemical- and petrochemical plants, power plants		All kind of plants
Approvals							

Type	390-1	390-6	190-6	186-6	189-6	189-1	189-1
Design							
Description	Feed-water control valve	Bypass control valve	Injection control valve	Condensate control valve	discharge valve	Steam conditioning valve	Steam start up valve
DIN PN DIN DN	10 - 500 15 - 600	10 - 40 15 - 125	10 - 500 15 - 200	10 - 160 15 - 600	10 - 500 15 - 600	10 - 500 15 - 600	10 - 500 15 - 600
ANSI Class ANSI NPS	150 - 2500 1/2 - 24	150 - 2500 1/2 - 24	150 - 2500 1/2 - 8	150 - 900 1/2 - 24	150 - 2500 1/2 - 24	150 - 2500 1/2 - 24	150 - 2500 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 +450°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 Z-Style	Straight pattern body	Straight pattern body and Angle pattern body	Straight pattern body and Angle pattern body	Straight pattern body and Angle pattern body
Basic shell material	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel	Cast Carbon steel Low and high temp. Cast carbon steel Cast Stainless steel High chromium Cast stainless steel	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel
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	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	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, middle 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							

Type	189 + VKR	189 + 900	187-6	50-2A	50-2A	186-6	
Design							
Description	Steam conditioning valve	Steam conditioning valve	distribution and mixing Three-Way control valve	natural gas control valve	oxygen control valve	control valve	Repairing and services own and external valves
DIN PN DIN DN	10 - 500 15 - 600	10 - 500 15 - 600	10 - 500 15 - 600	10 - 160 15 - 600	10 - 160 15 - 600	10 - 160 15 - 600	10 - 500 15 - 600
ANSI Class ANSI NPS	150 - 2500 1/2 - 24	150 - 2500 1/2 - 24	150 - 2500 1/2 - 24	150 - 900 1/2 - 24		150 - 900 1/2 - 24	150 - 2500 1/2 - 24
Temperature rating	-60°C up to +650°C	-60°C up to +650°C	-60°C up to +540°C	-10°C up to +200°C	-10°C up to +60°C	-60°C up to +450°C	
Body forms	Straight pattern body and Angle pattern body	Straight pattern body and Angle pattern body	Three way	Straight pattern body	Straight pattern body	Straight pattern body	
Basic shell material	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel	Cast Carbon steel Low and high temp. Cast carbon steel Cast Stainless steel High chromium Cast stainless steel	Cast Carbon steel Low and high temp. Cast carbon steel Cast Stainless steel High chromium Cast stainless steel	Cast Carbon steel Low and high temp. Cast carbon steel Cast Stainless steel High chromium Cast stainless steel	Cast Carbon steel Low and high temp. Cast carbon steel Cast Stainless steel High chromium Cast stainless steel	Cast or Forged Carbon steel Low and high temp. Cast or Forged carbon steel Cast or Forged Stainless steel High chromium Cast or Forged stainless steel
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 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	automatic mechanism with 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	in gas distribution stations, city supply, steam generator equipment, power plants, process steam for the industry	steelworks and piping	industrial applications, middle pressure and temperature service in power plants, petrochemical plants	All kind of plants
Approvals							



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