Prices 2024

US Order and Pricing Information valid from April 1, 2024 until March 31, 2025

LESER

The-Safety-Valve.com

Contents

Compact Performance

API

High Efficiency

High Performance

Contents

Clean Service

Critical Service

Modulate Action

Change-over Valve

Valve Finder
Product group

High operating to set pressure ratio, high backpressure or low total height?

Yes → **High Efficiency**

No

Clean Service application?

Yes → **Clean Service**

No

Critical Service / highly corrosive application?

Yes → **Critical Service**

No

API specified application?

Yes → **API**

No

Steam, gas and liquid application with low capacity in relation to valve size?

Yes → **Modulate Action**

No

Required Orifice letter?

Orifice ≥ F → **High Performance**

Orifice ≤ F → **Compact Performance**

High plant availability important?

Yes → **Best Availability**

Medium-controlled

Spring loaded

Safety Relief Valves

Change-over valves

Bursting disc

How to use

High Performance

Type 441, 442 ANSI

Valve size		1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
Actual Orifice diameter d_0 [mm]		23	29	37	46	60	92
Actual Orifice area A_0 [inch²]		0.644	1.024	1.667	2.576	4.383	10.304
API Orifice designation		F	G	H	K	L	P
API Orifice area A_0 [inch²]		0.307	0.503	0.785	1.838	2.853	6.380
Weight [lb]		22	29	35	49	73	165
Body material: WCB							
				Class 300			
Bonnet closed	**H2**	Art. No. **4412.**	**4812** $1,850	**4822** $2,085	**4832** $2,511	**4842** $3,383	**4862** $4,503	**4872** $7,387
	H3	Art. No. **4412.**	**4813** $1,922	**4823** $2,219	**4833** $2,644	**4843** $3,511	**4863** $4,684	**4873** $7,568
	H4	Art. No. **4412.**	**4814** $2,012	**4824** $2,350	**4834** $2,776	**4844** $3,645	**4864** $4,920	**4874** $7,806
Bonnet open	**H3**	Art. No. **4422.**	**4815** $1,922	**4825** $2,219	**4835** $2,644	**4845** $3,511	**4865** $4,684	**4875** $7,568
	p [psig]	S/G/L	**3 – 710 (740)**	**3 – 695**	**3 – 665**	**3 – 715**	**3 – 580**	**3 – 350**

Options

			Type 441, 442 ANSI					
Special machining of flange		per flange	$250	$250	$250	$250	$398	$398
Disc	316L	L44	$90	$125	$125	$125	$198	$250
O-ring disc	NBR "N"	J30	$173	$224	$224	$224	$398	$647
	CR "K"	J21	$173	$224	$224	$224	$398	$647
	EPDM "D"	J22	$173	$224	$224	$224	$398	$647

Explanations

Type 441, 442 ANSI

No.	Description	Example
1	**Type (without material identification no.)**	441
2	**Valve size**	1" x 2"
3	**Actual Orifice diameter d_0 [mm]**	23
4	**Actual Orifice area A_0 [inch²]**	0.644
5	**Weight [lb]**	22
6	**Body material**	WCB
7	**Bonnet**	closed
8	**Lifting device**	H4
	– H2 Screwed cap **– H3 Plain lever** **– H4 Packed lever** **– (H8 Pneumatic lifting device)**	

No.	Description	Example
9	**Valve code**	4814
10	**Price (in US-Dollar)**	$2,012
11	**Pressure range/Set pressure**	3 – 710 (740)
	3 – **Minimum set pressure** **710 (740) 710: Maximum set pressure** **(740): Maximum set pressure with special spring** **(additional price and longer delivery time)**	
12	**Approval (S: Steam, G: Gases, L: Liquids)**	S/G/L
13	**Option**	O-ring disc
14	**Option code**	J21
15	**Price for option (in US-Dollar)**	$173
16	**Material code**	2
17	**Article Number** 1 + 16 + 9	4412.4814

Order code

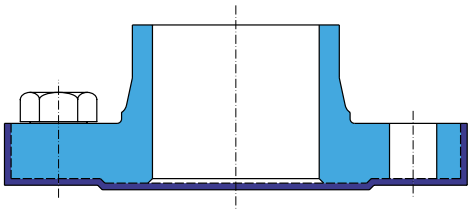
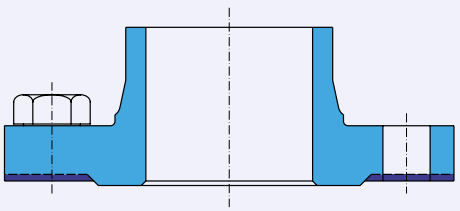
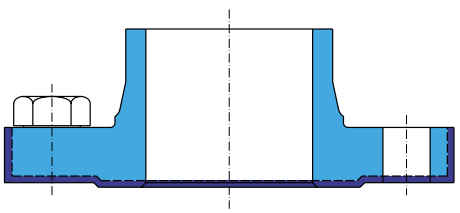
Article Number	Set pressure[1)]	Connections	Options	Documentation		Code and Medium
17 4412.4814	70 psig	H64	J21	H01	L30	1.1

[1)] For minimum and maximum set pressure refer to API Catalog.

How to use
Signs and symbols

General signs and symbols for options	
*	This option is covered by standard design
x	Not applicable
✓	Possible
–	Not possible

Sign and symbols for flange drillings and facings	
*	Standard design, no option code required
–	Flange drilling / Flange facing is not possible
(*)	Flange dimensions except flange thickness are in accordance with flange standard (e. g. ASME B16.5). Flange thickness is smaller (max. 2 mm), see “Multiple pressure rating”.

Option code for flange drilling and dimension, e. g. H50		
		Flange standard: light blue LESER: light blue + dark blue
H50	Flange drilling as specified in flange standard. Outer flange diameter, flange thickness and height of flange facing may be larger, see “Dimensions”.	
		Flange standard: light blue + dark blue LESER: light blue
(H50)	Flange dimensions except flange thickness are in accordance with standard. Flange thickness is smaller (max. 2 mm), see “Multiple pressure rating”.	
		Flange standard: light blue + dark blue LESER: light blue
[H50]	Flange drilling as specified in standard. Flange thickness may be smaller. Outer flange diameter is smaller than required, but complete back side facing for nut is assured.	

Option code for flange facing, e. g. L36	
L36	Flange facing as specified in flange standard

How to use
Glossary – LESER Option codes

For ordering and technical specification of LESER safety valves so-called “Option codes” are used. Materials, connections, accessories and documentations (certificates and inspections) can be specified quick and comfortable. Therefore the order transaction can be reduced. Option codes are mentioned in several different documents. These documents are among others:

- Order confirmation and shipping documents (Fig. 1)
- Master agreement
- LESER Product catalogs
- VALVESTAR® sizing software
- Inspection certificate
- LESER Work standards
- Price list
  - How to order (Fig. 2)
  - Option pages of each safety valve
  - Option icons – available options of each product group

Technical specification:

Ordercode output, line 1:	M33X00H88H84H51H45H20
Body material:	(H20) 0.6025 (GG25)
Nominal diameter inlet	DN 25
Nominal diameter outlet	DN 40
d_0 [mm]	23,0
Pressure rating inlet	(H45) PN 16 acc. to DIN EN 1092
Pressure rating outlet	(H51) PN 16 acc. to DIN EN 1092
Flange facing inlet	(H84) Form B1 acc. to DIN EN 1092
Flange facing outlet	(H88)

Fig. 1: Extraction of order confirmation

Type 441, 442, 444		**Option code**
• O-ring disc		
CR	„K“	**J21**
EPDM	„D“	**J22**
FKM	„L“	**J23**
FFKM	„C“	**J20**
• Disc 1.4404 / 316L		**L44**
• Disc 1.4404 / 316L stellited		**J25**
• Elastomer bellows		**J79**
• Stainless steel bellows		
– Bonnet open	(Type 442)	**J68**

Fig. 2: Extraction of How to order

LESER Option codes

The following listing shows the most common option codes at a glance. The option codes are sorted alphabetically. In general the LESER Option codes apply for all product groups. If an option code is dedicated to a product group, this is shown in the column “Product group”.

Option code	Designation		Product group
A16	Nominal diameter outlet: 48X	DN 25	Clean Service
A17	Nominal diameter outlet: 48X	DN 40	
A18	Nominal diameter outlet: 48X	DN 50	
A19	Nominal diameter outlet: 48X	DN 65	
A20	Nominal diameter outlet: 48X	DN 80	
A21	Nominal diameter outlet: 48X	DN 100	
A22	Nominal diameter outlet: 48X	DN 125	
A23	Nominal diameter outlet: 48X	DN 150	
A24	Nominal diameter outlet: 48X	NPS 2 1/2	
A25	Nominal diameter outlet: 48X	NPS 3	
A26	Nominal diameter outlet: 48X	NPS 3 1/2	
A27	Nominal diameter outlet: 48X	NPS 4	
A28	Nominal diameter outlet: 48X	NPS 4 1/2	
A29	Nominal diameter outlet: 48X	NPS 5	
A30	Nominal diameter outlet: 48X	NPS 6	

How to use
LESER Option Codes

Option code		Designation	Product group
A66	Special assembled version:	SKD Kit	
A77	Special assembled version:	LA Supply	
A79	Nominal diameter outlet:48X	NPS 1	
A80	Nominal diameter outlet:48X	NPS 1 1/2	
A81	Nominal diameter outlet:48X	NPS 2	
A84	Pipe standard outlet:	ASME BPE & DIN 11866 row C	Clean Service
A85	Pipe standard outlet:	DIN 11850 & DIN 11866 row A	
A86	Pipe standard outlet:	ISO 1127 & DIN 11866 row B	
A87	Pipe standard outlet:	ISO 2037 / ASME BPE	
B50	LESER Surface package:	Clean Finish 481	
B51	LESER Surface package:	HyClean Finish 481	
B52	LESER Surface package:	Sterile Finish 481	
B53	LESER Surface package:	Clean Finish 483	
B54	LESER Surface package:	HyClean Finish 483	
B55	LESER Surface package:	Sterile Finish 483	
B56	LESER Surface package:	Clean Finish 484	
B57	LESER Surface package:	HyClean Finish 484	
B58	LESER Surface package:	Sterile Finish 484	
B59	LESER Surface package:	Clean Finish 5034 / 484	
B60	LESER Surface package:	HyClean Finish 5034 / 484	Clean Service
B61	LESER Surface package:	Sterile Finish 5034 / 484	
B62	LESER Surface package:	Clean Finish 485	
B63	LESER Surface package:	HyClean Finish 485	
B64	LESER Surface package:	Sterile Finish 485	
B65	LESER Surface package:	Clean Finish 5034 / 485	
B66	LESER Surface package:	HyClean Finish 5034 / 485	
B67	LESER Surface package:	Sterile Finish 5034 / 485	
B68	LESER Surface package:	Clean Finish 488	
B69	LESER Surface package:	HyClean Finish 488	
B70	LESER Surface package:	Sterile Finish 488	
F28	Functional tightness:	FET acc. MESC SPE 77/312 Class A	
F29	Functional tightness:	FET acc. MESC SPE 77/312 Class B	
H01	Material certification for:	Body: EN10204-3.1	
H02	Body material:	1.4404 / 316L	
H03	Documentation:	LESER - 3.1	
H04	Body material:	1.4435 / 316L	
H07	Body material:	LCB / LCC	API
H09	Material certification for:	Body: EN10204-3.2	API, Series 458
H1A	Body material:	CF3M (special S01)	
H1B	Body material:	MONEL 400 (M-35-1) SPECIAL	
H1C	Body material:	Hast. C-22 (CX2MW) SPECIAL	
H1D	Body material:	Duplex (CD3MN) SPECIAL	
H1E	Body material:	Inconel 625 (CW-6MC) SPECIAL	API
H1F	Body material:	SuperDuplex (CD3MWCuN) SPECIAL	
H1G	Body material:	CG8M SPECIAL	
H1H	Body material:	CF8C SPECIAL	
H1J	Body material:	C5 SPECIAL	
H10	Pressure rating inlet:	PN 63 DIN EN 1092	
H11	Pressure rating inlet:	PN 160 DIN EN 1092	
H12	Pressure rating inlet:	PN 250 DIN EN 1092	
H13	Pressure rating inlet:	PN 320 DIN EN 1092	

How to use
LESER Option Codes

Option code		Designation	Product group
H14	Pressure rating inlet:	PN 400 DIN EN 1092	
H15	Pressure rating outlet:	PN 40 DIN EN 1092	
H16	Pressure rating outlet:	PN 63 DIN EN 1092	
H17	Pressure rating inlet:	PN 100 DIN EN 1092	
H18	Body material:	1.0305 / 1.0640 (A106B / A105)	
H19	Valve treatment:	Body in- & outside blasted	
H2A	Material certification for:	Body: Nace EN10204-3.1	API
H2B	Material certification for:	Disc: Nace EN10204-3.1	
H2C	Material certification for:	seat/nozzle: Nace EN10204-3.1	
H2M	Material certification for:	Adjusting ring: EN10204-3.1	
H2E	Material certification for:	bonnet spacer: EN10204-3.1	
H2F	Material certification for:	spring plate: EN10204-2.2	
H2G	Material certification for:	pressure srew: EN10204-2.2	
H2H	Material certification for:	sealing Item 60: EN10204-2.2	
H2J	Material certification for:	adjusting screw: EN10204-2.2	
H2K	Material certification for:	Spring Item59: EN10204-3.1	
H20	Body material:	0.6025 (GG 25)	
H21	Valve treatment:	Valve outside blasted	
H22	Body material:	1.0619 / WCB / WCC	
H23	Body material:	0.7043 (GGG 40.3)	
H24	Body material:	1.7357 / WC6	
H25	Body material:	1.4571 / 316Ti	
H26	Body material:	1.0460/1.0425 (C22.8/P 265 GH)	
H27	Seat:	according to Stoomwezen	
H28	Body material:	1.4408 / CF8M	
H29	Heating jacket:	Connection sleeve G3/8 DIN2986	
H3A	Body material:	inl.1.4571 outl.1.0460/1.0425	High Performance
H30	Heating jacket:	Connection sleeve G3/4 DIN2986	
H31	Heating jacket:	Connection flange DN 15, PN 40	
H32	Heating jacket:	Connection flange DN 25, PN 40	
H33	Heating jacket:	for Bonnet spacer	
H34	Inlet connection:	GS-Aseptik thread form A	Clean Service
H35	Outlet connection:	GS-Aseptik-thread Form A	
H36	Inlet connection:	BS-Aseptik-clamp+nut form A	
H37	Outlet connection:	BS-Aseptik-clamp+nut form A	
H38	Pressure rating inlet:	undrilled	
H39	Pressure rating outlet:	undrilled	
H42	Brackets:	drilled	
H44	Pressure rating inlet:	PN 10 DIN EN 1092	
H45	Pressure rating inlet:	PN 16 DIN EN 1092	
H46	Pressure rating inlet:	PN 25 DIN EN 1092	
H47	Pressure rating inlet:	PN 40 DIN EN 1092	
H50	Pressure rating outlet:	PN 10 DIN EN 1092	
H51	Pressure rating outlet:	PN 16 DIN EN 1092	
H52	Pressure rating outlet:	PN 25 DIN EN 1092	
H54	Inlet connection:	GT-Aseptic thread Form B	Clean Service
H55	Outlet connection:	GT-Aseptic thread Form B	
H56	Inlet connection:	BT-Aseptic-clamp+nut form B	
H57	Outlet connection:	BT-Aseptic clamp+nut form B	
H58	Inlet connection:	BD- NEUMO sterile clamp[1)]	
H59	Outlet connection:	BD - NEUMO sterile clamp[1)]	

[1)] BioConnect® is registered wordmark of NEUMO GmbH & Co. KG, D – 75438 Knittlingen

How to use
LESER Option Codes

Option code		Designation	Product group
H60	Inlet connection:	GD-NEUMO sterile clamp[1)]	
H61	Outlet connection:	GD- NEUMO sterile thread[1)]	
H62	Flange facing inlet	RTJ - Ring Joint Facing, B16.5	
H63	Flange facing outlet:	RTJ - Ring Joint Facing, B16.5	
H64	Pressure rating inlet:	150 lbs ASME B16.5	
H65	Pressure rating inlet:	300 lbs ASME B16.5	
H66	Pipe standard inlet:	ASME BPE & DIN 11866 row C	
H67	Pressure rating inlet:	600 lbs ASME B16.5	
H68	Pressure rating inlet:	900 lbs ASME B16.5	
H69	Pressure rating inlet:	1500 lbs ASME B16.5	
H70	Pressure rating inlet:	2500 lbs ASME B16.5	
H71	Inlet connection:	NF-flange, groove Form A	
H72	Outlet connection:	NF- flange, groove Form A	
H73	Inlet connection:	BF- flange, tongue form A	
H74	Outlet connection:	BF- flange, tongue form A	Clean Service
H75	Inlet connection:	NG-flange, groove Form B	
H76	Outlet connection:	NG- flange, groove Form B	
H77	Inlet connection:	BG- flange, tongue form B	
H78	Outlet connection:	BG- flange, tongue form B	
H79	Pressure rating outlet:	150 lbs ASME B16.5	
H80	Pressure rating outlet:	300 lbs ASME B16.5	
H81	Body material:	1.4581 / CF10M	
H82	Pressure rating outlet:	600 lbs ASME B16.5	
H83	Pressure rating outlet:	900 lbs ASME B16.5	
H84	Flange facing inlet	Form B1	
H85	Pipe standard inlet:	DIN 11850 & DIN 11866 row A	
H86	Pipe standard inlet:	ISO 1127 & DIN 11866 row B	
H87	Pipe standard inlet:	ISO 2037 / ASME BPE	
H88	Flange facing outlet:	Form B1	
H89	Flange facing inlet	Serr spiral finish, Ra=3,2-6,3	
H90	Flange facing outlet:	overwounded Rz=6,3µm	
H91	Flange facing outlet:	Form D: groove, DIN EN 1092	
H92	Flange facing outlet:	Form C: spring, DIN EN1092	
H93	Flange facing inlet	Form D: groove, DIN EN 1092	
H94	Flange facing inlet	Form C: spring, DIN EN1092	
H95	Flange facing inlet	overwounded Rz=6,3µm	
H96	Flange facing inlet	Form E: male, DIN EN1092	
H97	Flange facing inlet	Form F: female, DIN EN1092	
H98	Flange facing outlet:	Form E: male, DIN EN1092	
H99	Flange facing outlet:	Form F: female, DIN EN1092	
I05	Inspections:	Insp. before assly by Cust./TP	
I09	Inspections:	Final Inspection	
I11	Surface treatment type 316_317	free of oil and grease	Bursting disc
I13	Nominal diameter inlet: 48X	DN 50	
I14	Nominal diameter inlet: 48X	DN 15	
I16	Nominal diameter inlet: 48X	DN 25	Clean Service
I17	Nominal diameter inlet: 48X	DN 40	
I18	Nominal diameter inlet: 48X	DN 65	
I19	Nominal diameter inlet: 48X	DN 80	
I20	Add. Specification of Marking:	Plate: max. a-values stamped	
I21	Flanged inlet connection:	DN 15 PN 40, DIN EN 1092	Compact Performance

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How to use
LESER Option Codes

Option code		Designation	Product group
I22	Flanged inlet connection:	DN 15 PN 160, DIN EN 1092	Compact Performance
I23	Flanged inlet connection:	DN 15 PN 250, DIN EN 1092	
I24	Flanged inlet connection:	DN 15 PN 320, DIN EN 1092	
I25	Flanged inlet connection:	DN 15 PN 400, DIN EN 1092	Compact Performance
I26	Flanged inlet connection:	DN 20 PN 40, DIN EN 1092	
I27	Flanged inlet connection:	DN 20 PN 100, DIN EN 1092	
I28	Change nominal diameter inlet	to DN 40 / NPS 1 1/2	
I29	Change nominal diameter outlet	to DN 80 / NPS 3	High Performance
I30	Change nominal diameter outlet	to DN 150 / NPS 6	
I31	Flanged inlet connection:	DN 25 PN 40, DIN EN 1092	
I32	Flanged inlet connection:	DN 25 PN 160, DIN EN 1092	
I33	Flanged inlet connection:	DN 25 PN 250, DIN EN 1092	Compact Performance
I34	Flanged inlet connection:	DN 25 PN 320, DIN EN 1092	
I35	Flanged inlet connection:	DN 25 PN 400, DIN EN 1092	
I37	Nominal diameter inlet: 48X	DN 100	Clean Service
I38	Flanged inlet connection:	DN15 PN40, DIN EN 1092 85mm	
I39	Soft seal disc:	with sealing plate (PTFE+carb)	
I40	Flanged outlet connection:	DN 15 PN 40, DIN EN 1092	
I41	Flanged outlet connection:	DN 15 PN 160, DIN EN 1092	
I42	Flanged outlet connection:	DN 15 PN 250, DIN EN 1092	
I43	Flanged outlet connection:	DN 20 PN 40, DIN EN 1092	
I44	Flanged outlet connection:	DN 20 PN 100, DIN EN 1092	
I45	Flanged inlet connection:	DN15 PN160, DIN EN 1092 95mm	
I46	Flanged outlet connection:	DN 25 PN 40, DIN EN 1092	
I47	Flanged outlet connection:	DN 25 PN 160, DIN EN 1092	
I48	Flanged outlet connection:	DN 25 PN 250, DIN EN 1092	
I49	Flanged outlet connection:	DN 40 PN 40, DIN EN 1092	Compact Performance
I50	Flanged outlet connection:	DN 40 PN 160, DIN EN 1092	
I51	Flanged outlet connection:	DN 40 PN 250, DIN EN 1092	
I52	Flanged inlet connection:	DN25 PN40, DIN EN 1092 100mm	
I54	Flanged inlet connection:	DN25 PN160, DIN EN 1092 115mm	
I55	Flanged outlet connection:	DN25 PN40, DIN EN 1092 65mm	
I56	Flanged outlet connection:	DN25 PN160, DIN EN 1092 95mm	
I6B	Flange hole pattern Inlet:	8 hole pattern acc.DIN EN 1092	High Performance
I63	Guide material:	1.4404 / 316L	API
I71	Inlet connection:	FD-Flange PN 16 EN 1092	
I72	Outlet connection:	FD-Flange PN 16 EN 1092	
I73	Inlet connection:	DO - Clampconnection / ISO2852	
I74	Outlet connection:	DO - Clampconnection / ISO2852	
I75	Inlet connection:	BO - Clampconnection /ASME BPE	
I76	Outlet connection:	BO - Clampconnection /ASME BPE	
I78	Nominal diameter inlet: 48X	NPS 3/4	
I79	Nominal diameter inlet: 48X	NPS 1	Clean Service
I80	Nominal diameter inlet: 48X	NPS 1 1/2	
I81	Nominal diameter inlet: 48X	NPS 2	
I82	Inlet connection:	VG-DN 32 Varivent connection	

How to use
LESER Option Codes

Option code		Designation	Product group
I83	Inlet connection:	VH - DN 50 Varivent connection	
I84	Nominal diameter inlet: 48X	NPS 2 1/2	
I88	Flange facing inlet	Form N: groove DIN 2512 (08/99	
I89	Flange facing outlet:	Form N: groove DIN 2512 (08/99)	
I90	Nominal diameter inlet: 48X	NPS 3	
I91	Nominal diameter inlet: 48X	NPS 3 1/2	
I92	Nominal diameter inlet: 48X	NPS 4	
I93	Nominal diameter inlet: 48X	NPS 4 1/2	
I94	Flange facing outlet:	Form E: male,DIN EN1092	Clean Service
I95	Flange facing outlet:	Form F: female,DIN EN1092	
I96	Flange facing outlet:	Form H: O-ring-groove	
I97	Flange facing outlet:	Form G: O-ring-male	
I98	Flange facing outlet:	Form C: tongue,DIN EN1092	
I99	Flange facing outlet:	Form D: groove,DIN EN1092	
J01	Flange facing inlet	Form G: O-ring-male	
J02	Flange facing outlet:	Form G: O- ring-male	
J03	Flange facing inlet	Form H: O-ring-groove	
J04	Flange facing outlet:	Form H: O- ring-groove	
J05	Flange facing inlet	Form V48A: Linde-V-groove	
J06	Flange facing outlet:	Form V48A: Linde-V-groove	
J07	Flange facing inlet	Form V48: Linde-V-groove	
J08	Flange facing outlet:	Form V48: Linde-V-groove	
J11	Flange facing inlet	Form L: lenticular seal	
J12	Flange facing outlet:	Form L: lenticular seal	
J13	Change nominal diameter inlet	to DN 80 / NPS 3	
J17	Add. Specification of Marking:	Plate: Spirax Sarco	
J18	Drain hole:	G 1/4 with lock screw(1.4401)	
J19	Drain hole:	G 1/2 with lock screw(1.4401)	
J20	Soft seal disc:	with soft seal FFKM "C"	
J21	Soft seal disc:	with soft seal CR "K"	
J22	Soft seal disc:	with soft seal EPDM "D"	
J23	Soft seal disc:	with soft seal FKM "L"	
J24	Metal disc / mat.:	turnable,removable lifting aid	
J25	Metal disc / mat.:	turnable,rem.lifting aid,stel.	
J26	Metal disc / mat.:	lifting aid, detachable	
J30	Soft seal disc:	with soft seal NBR "N"	
J31	Bonnet, Yoke:	with vent hole 11,5 mm	
J32	Bonnet, Yoke:	with control connection G 1/4	
J34	Bonnet, Yoke:	bonnet without vent hole	
J35	Bonnet, Yoke:	lock screw (1.440) f. G1/4	
J36	Bonnet material:	0.7043 (GGG 40.3)	
J37	Bonnet material:	LCB / LCC	
J38	Proximity switch:	FH with adapter M12 x 1	
J39	Proximity switch:	H4 with adapter M12x1/ M18x1	
J40	Proximity switch:	H8 with adapter M12x1	
J41	Lifting device / cap:	H8 in double piston design	
J42	Bonnet material:	1.4408/1.4571/1.4404	
J44	Soft seal disc:	with sealing plate (PTFE-FDA)	
J45	Adjusting screw:	adjusting screw with collar	
J46	Adjusting screw:	adjg screw+collar+splited ring	
J47	Adjusting screw:	adjg screw+collar+unsplit.ring	
J48	Soft seal disc:	with sealing plate (PCTFE)	

How to use
LESER Option Codes

Option code		Designation	Product group
J49	Soft seal disc:	with sealing plate VESPEL-SP1	
J50	Lift stopper:	with actuate screw LWN 324.01	
J51	Lift stopper:	with ring	
J52	Lift stopper:	with actuate screw LWN 324.01	
J55	Bellows:	for high set pressure	
J56	Lever:	notched, secured	
J62	Lifting device / cap:	H2, open bonnet	
J63	Bellows:	for low set pressure	
J64	Lifting device / cap:	H4, type 544	
J65	Lifting device / cap:	H2 with O-ring-damper	
J66	Lifting device / cap:	H4 with O-ring-damper	
J67	Lifting device / cap:	H4 with spring-vibration damp.	
J68	Bellows:	stainl.steel 1.4571/316Ti o.b.	
J69	Lifting device / cap:	H4 with lock screw(Test Gag)	
J70	Lifting device / cap:	H2 with lock screw(Test Gag)	
J71	Lifting device / cap:	H4 - transport locking device	
J72	Lifting device / cap:	H2 - transport locking device	
J75	Add. Specification of Marking:	with name plate of customer	
J78	Bellows:	stainless steel 1.4571 / 316Ti	
J79	Bellows:	Elastomer EPDM	
J80	Bellows:	Elastomer bellows: not applic.	
J81	Bellows:	Hastelloy C276 / 2.4819	
J82	Bellows:	Inconel 625 / 2.4856	
J83	Bellows:	Inconel 625/ conn.Parts 316L	
J85	Valve treatment:	free of oil and grease	
J87	Bellows:	Elastomer NBR	
J88	Bellows:	high temperature design	
J89	Stud & nut material:	1.4401 (A4-70)	
J91	Valve treatment:	screws, free of oil	
J92	Valve treatment:	free of oil, grease incr. req.	
J93	Proximity switch:	"N" M12x1/ M18x1 (DC)	
J95	Bonnet, Yoke:	with control connect. NPT 1/2	
J96	Scope of supply:	chamber/condens.vessel not ass	
J97	Scope of supply:	spring not assembled	
J98	Scope of supply:	without condensate vessel	
J99	Bonnet material::	1.0619/ WCB/ WCC	
JA1	Bonnet material::	1.0305/ SA-106	
JA2	Bonnet material::	1.0619/ WCB/ WCC/ LCB/ LCC	
JA3	Bonnet material::	1.4571/ 316Ti	
JA4	Bonnet material::	1.7357/ WC6	
JA7	Bonnet material::	0.7040/ 60-40-18	
JA8	Bonnet material::	1.4571/ 316Ti + 1.4404/ 316L	
K01	Lifting device / cap:	H2 with bolted capH1	
K02	Operating condition:	suspended assembly	
K03	Soft seal disc:	with soft seal EPDM "D"90 IRHD	
K04	Bonnet, Yoke:	w. control connection NPT 1/8	
K05	Lifting device / cap:	H2 with bolted capH1(Test Gag)	
K06	Lifting device / cap:	H4 bolted lifting dev.H6	
K07	Lifting device / cap:	H2 material 1.4404 (BASF)	
K1A	Nozzle material	Duplex SS, S31803, 1.4462	API
K1B	Nozzle material	Super DUPLEX, S32760, 1.4501	
K1C	Nozzle material	1.4571 / 316Ti	

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Option code		Designation	Product group
K1D	Nozzle material	1.4571 / 316Ti stellited	
K1E	Nozzle material	1.4408 / CF8M	
K1F	Nozzle material	1.4408 / CF8M stellited	
K1G	Nozzle material	CF3M	
K1H	Nozzle material	Duplex 1.4470 / CD3MN	
K1J	Nozzle material	Monel M35-1	
K1K	Nozzle material	Hastelloy CX2MW	
K1L	Nozzle material	Inconel CW6MC	
K1M	Adjusting ring material:	Monel 400, N04400, 2.4360	API
K1N	Adjusting ring material:	Hast. C-4, N06455, 2.4610	
K1O	Adjusting ring material:	INC. 625, N06625, 2.4856	
K1P	Adjusting ring material:	DUPLEX SS, S31803, 1.4462	
K1Q	Adjusting ring material:	Super DUPLEX, S32760, 1.4501	
K1R	Nozzle material:	CG8M SPECIAL	
K1S	Nozzle material:	CF8C SPECIAL	
K1T	Nozzle material:	317L SPECIAL	
K1U	Nozzle material:	347 SPECIAL	
K1V	Nozzle material:	Super Duplex CD3MWCuN	
K1X	Nozzle material:	PTFE TFM with 25% glass	
K1Y	Nozzle material:	PTFE	
K1Z	Nozzle material:	PTFE with 25% coal	
K10	Nozzle material:	Balanced piston design	API
K2A	Metal disc / mat.:	Super DUPLEX, S32760, 1.4501	
K2C	Soft seal disc:	with sealing plate glass	
K2D	Mat. bellows pos. 15	PTFE	
K2M	Lock srew material:	Monel 400, N04400, 2.4360	
K2N	Lock srew material:	Hast. C-4, N06455, 2.4610	
K2O	Lock srew material:	INC. 625, N06625, 2.4856	API
K2P	Lock srew material:	DUPLEX SS, S31803, 1.4462	
K2Q	Lock srew material:	Super DUPLEX, S32760, 1.4501	
K27	Lifting device / cap:	H4 bolted lifting dev. H6 / Test Gag	
K3A	Guide material:	Monel 400, N04400, 2.4360	
K3B	Guide material:	Hastelloy C-4, N06455, 2.4610	
K3C	Guide material:	Inconel 625, N06625, 2.4856	
K3D	Guide material:	Duplex SS, S31803, 1.4462	API
K3E	Guide material:	Super Duplex, S32760, 1.4501	
K3R	Bonnet material:	Duplex (CD3MN) Special	
K3S	Bonnet material:	Super Duplex (CD3MWCuN) Special	
K31	Heating jacket:	Connection flange NPS 1/2 ANSI	
K32	Heating jacket:	Connection flange NPS 1 ANSI	
K39	Add. Specification of Marking:	Plate: a-values only for S/G	
K4A	Spindle material:	Monel 400, N04400, 2.4360	
K4B	Spindle material:	Hastelloy C-4, N06455, 2.4610	
K4C	Spindle material:	Inconel 625, N06625, 2.4856	API
K4D	Spindle material:	Duplex SS, S31803, 1.4462	
K4E	Spindle material:	Super DUPLEX,S32760, 1.4501	
K4Z	Spindle material:	1.4404 / 316L	
K40	Add. Specification of Marking:	Plate: a-values for fluids	
K5K	Bonnet spacer material:	1.0460 / SA 105	
K5L	Bonnet spacer material:	1.4408 / CF8M, casted design	
K5M	Bonnet spacer material:	Monel 400, N04400, 2.4360	
K5N	Bonnet spacer material:	Hast. C-4, N06455, 2.4610	

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Option code		Designation	Product group
K5O	Bonnet spacer material:	INC. 625, N06625, 2.4856	
K5P	Bonnet spacer material:	DUPLEX SS, S31803, 1.4462	
K5Q	Bonnet spacer material:	Super DUPLEX, S32760, 1.4501	
K7M	Adjusting screw material:	Monel 400, N04400, 2.4360	
K7N	Adjusting screw material:	Hast. C-4, N06455, 2.4610	
K7O	Adjusting screw material:	INC. 625, N06625, 2.4856	
K7P	Adjusting screw material:	DUPLEX SS, S31803, 1.4462	
K7Q	Adjusting screw material:	Super DUPLEX, S32760, 1.4501	
K7R	Adjusting screw material:	1.4104	
K7S	Adjusting screw material:	1.4404/ 316L	
K7T	Adjusting screw material:	1.4104/ 430F + PTFE/ glass	
K7U	Adjusting screw material:	1.4401/1.4404/316/316L+PTFE/glass	
K8M	Lifting device / cap material:	Monel 400, N04400, 2.4360	
K8N	Lifting device / cap material:	Hast. C-4, N06455, 2.4610	
K8O	Lifting device / cap material:	INC. 625, N06625, 2.4856	
K8P	Lifting device / cap material:	DUPLEX SS, S31803, 1.4462	
K8Q	Lifting device / cap material:	Super DUPLEX, S32760, 1.4501	
K8R	Lifting device / cap material:	1.0460/ SA-105	
K8S	Lifting device / cap material:	1.4408/ CF8M	
K8T	Lifting device / cap material:	1.4404/ 316L	
K8W	Lifting device / cap material:	0.7040/ 60-40-18	
K8V	Lifting device / cap material:	1.4404/ 316L + 1.4408/ CF8M	
L02	Surface treatment:	pickled version lifting dev.H4	
L05	Painting:	color from customer	
L06	Painting:	without coloring	
L08	Surface treatment:	pickled version	
L09	Metal disc / mat.:	317L SPECIAL	API
L1C	Painting:	2 Coating systems	
L11	Painting:	RAL 3002, carmine red	
L13	Painting:	SPECIAL - valve coating	
L16	Surface treatment:	medium contact.parts Ra<0,8 µm	
L18	inlet body- & disc-material:	1.4404 (316L) for t < -10°C	
L19	Metal disc / mat.:	347 SPECIAL	API
L20	Seat:	stellited sealing surface	
L22	Material certification for:	Inlet flange: EN10204-3.1	
L23	Material certification for:	Disc: EN10204-3.1	
L25	Documentation:	Material-3.1 stay at LESER	
L30	Material certification for:	Bonnet: EN10204-3.1	
L31	Material certification for:	Cap/Lifting device: 3.1	
L34	Material certification for:	Outlet body: EN10204-3.1	
L36	Flange facing inlet	Form B2: "smooth finish"	
L38	Flange facing outlet:	Form B2: "smooth finish"	
L39	Flange facing outlet:	Serr spiral finish, Ra=3,2-6,3	
L40	Metal disc / mat.:	Monel 400, N04400, 2.4360	API
L41	Metal disc / mat.:	Hastelloy C-4, N06455, 2.4610	
L42	Metal disc / mat.:	Inconel 625, N06625, 2.4856	
L43	Metal disc / mat.:	Duplex SS, S31803, 1.4462	
L44	Metal disc / mat.:	1.4404 / 1.4571	
L45	Lever:	shortened to	
L46	Lever:	colored red to L1:... mm	
L47	Lever:	extended	
L48	Metal disc / mat.:	1.4404/ 316L, turnable	

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Option code		Designation	Product group
L49	Metal disc / mat.:	1.4122	
L50	Pressure setting:	set, not stamped at nameplate	
L52	Flange facing inlet	Smooth finish, Rz 25 µm	
L53	Flange facing outlet:	Smooth finish, Rz 25 µm	
L54	Gasket material:	KLINGERsil C-4400	
L55	Flange facing inlet	groove Form D, EN 1092	
L58	Flange facing inlet	RTJ Nozzle B16.5 Standard	
L59	Material certification for:	Seat/ Nozzle: EN10204-3.1	
L60	Material certification for:	spring: EN10204-3.1	
L61	Seat:	stellited sealing surface	
L62	Nozzle material	stellited sealing surface	
L63	Nozzle material	dim. acc. to PN 40, EN 1092	
L64	Nozzle material	Material 1.4404/316L	API
L65	Nozzle material	Mat. 1.4404 / 316L stellited	
L66	Nozzle material	Monel 400, N04400, 2.4360	
L67	Nozzle material	Hasteloy C-4, N06455, 2.4610	
L68	Gasket material:	PTFE Compound	
L69	Nozzle material	Inconel 625, N06625, 2.4856	API
L70	Inlet connection:	VC-Varivent connection 80	Clean Service
L75	Inlet connection:	GO-SC-Clamp DIN 11851	
L76	Inlet connection:	KO-SD-Clamp DIN 11851	
L77	Inlet connection:	00-Welded connection	
L78	Inlet connection:	TN-Tuchenhagen-Flange	
L79	Inlet connection:	SO - Clamp connection /DIN32676	
L8A	Mat. Stud bolts pos. 55	1.4401	
L8B	Mat. Stud bolts pos. 55	1.7709	
L8C	Mat. Stud bolts pos. 55	SA-193 B7	
L8D	Mat. Stud bolts pos. 55	SA-193 B7M	
L8E	Mat. Stud bolts pos. 55	SA-193 B8M	
L8F	Mat. Stud bolts pos. 55	1.1181	
L80	Inlet connection:	VD-Varivent connection 100	Clean Service
L81	Outlet connection:	GO-SC-screwed socket DIN 11851	
L82	Outlet connection:	KO-SD-clamp DIN 11851	
L83	Outlet connection:	00-Welded connection	
L84	Outlet connection:	TN-Tuchenhagen-flange	
L86	Outlet connection:	SO - Clamp connection /DIN32676	
L9A	Mat. nuts pos. 56	1.4401	
L9B	Mat. nuts pos. 56	1.7258	
L9C	Mat. nuts pos. 56	SA-194 2H	
L9D	Mat. nuts pos. 56	SA-194 2HM	
L9E	Mat. nuts pos. 56	SA-194 8M	
L9G	Mat. nuts pos. 56	1.0501	
L90	Inlet connection:	AF-APV-FG1 Flange	Clean Service
L91	Outlet connection:	AF-APV-FG1 flange	
L92	Inlet connection:	AN-APV-FN1 flange	
L93	Outlet connection:	AN-APV-FN1 flange	
L94	Inlet connection:	FA-Flange ANSI 150 lbs RF	
L95	Outlet connection:	FA-Flange ANSI 150 lbs RF	
L96	Inlet connection:	CO - Clamp connection / ISO2852	
L97	Outlet connection:	CO - Clamp connection / ISO2852	
M01	Documentation:	Cert 3.1 Hydrost test customer	
M03	Documentation:	Cert 3.1 Dye penetrant test	

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Option code		Designation	Product group
M04	Pressure setting:	with correction back pressure	
M05	Pressure setting:	with correction high temp.	
M06	Pressure setting:	with set presure + 0,5 bar	
M07	Pressure setting:	with steam	
M08	Lifting device / cap:	Lifting device turned 180°	
M09	Pressure setting:	with water	
M10	Pressure setting:	with correction for fluids	
M11	Bonnet, Yoke:	Control bore 180° to outlet	
M16	Specification of 3rd Marking:	Marking World name plate 1.Row	
M17	Specification of 3rd Marking:	Marking World name plate LLC 1.R	
M18	Documentation:	Cert 3.1 Shell tightness	
M19	Documentation:	Seat-Ø, weight movable parts	
M21	Documentation:	Cert 3.1 Flurescent penetrant	
M22	Documentation:	Cert 3.1 Seat tight air leak	
M23	Documentation:	list of material f.inner parts	
M24	Specification of TAG-Marking:	plate, stainless steel	
M25	Specification of TAG-Marking:	with tag (foil / paper)	
M26	Specification of TAG-Marking:	stamped letters,outlet fl. top	
M27	Specification of TAG-Marking:	stamped letters, inlet body	
M28	Documentation:	Cert 3.1 Back tight test fluid	
M29	Specification of TAG-Marking:	with stainless steel tag	
M30	Add. Specification of Marking:	Plate fixed with nails	
M31	Specification of TAG-Marking:	stamped letters, E-Fl	
M32	Specification of TAG-Marking:	stamped letters 10 mm HÜLS, outlet flange	
M33	Inspections:	TÜV- certification	
M34	Specification of TAG-Marking:	stamped letters 10 mm HÜLS, inlet flange	
M35	Inspections:	TÜV-test rec.tightness	
M37	Switch cabinet	Start-up & maint. at customer	
M38	Inspections:	ABS - American Bureau of Ship.	
M39	Specification of TAG-Marking:	stamped letters,outlet fl.let.	
M41	Add. Specification of Marking:	assembler stamp	
M42	Specification of TAG-Marking:	stamped letters,outlet fl.bot.	
M43	Inspections:	BV - Bureau Veritas	
M44	Documentation:	Cert 3.1 Magnetic particle test	
M45	Inspections:	DNV GL	
M48	Inspections:	Lloyd`s Regsiter EMEA	
M49	Inspections:	by:	
M50	Inspections:	RINA-Registro Italiano Navale	
M52	Inspections:	by Q-Officer	
M53	Documentation:	Cert 3.1 Free of oil + grease	
M55	Inspections:	GUS-Russ. Maritime Reg. of Ship.	
M56	Documentation:	Cert 3.1 Ultrasonic test	
M57	Documentation:	Meetbrief acc. to Stoomwezen	
M58	Documentation:	Docu. acc. to WI_3621.24	
M59	Documentation:	Set Pressure Characteris. Curve	
M63	Packing:	packing into foil	
M64	Seal:	doubled and twisted	
M65	Documentation:	TÜV insp. on type test cert.	
M66	Documentation:	test report seat tightness	
M67	Documentation:	Assembly Kit Certificate	
M68	Documentation:	APZ 3.1 Hydrost. Test LGS 0209	
M69	Lifting device / cap:	H2 / H4 with E-CTFE sealing	

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Option code		Designation	Product group
M70	Bonnet, Yoke:	with bug screen	
M77	Documentation:	Cert3.1 Seat tight helium sniff	
M78	Documentation:	Cert 3.1 Back tight dipping	
M80	Documentation:	Cert 3.1 Seat tight helium cryogenic cond.	
M81	Documentation:	Cert3.1 Seat tight helium vacu	
M82	Documentation:	Cert 3.1 Back tight helium	
M86	Functional tightness:	Helium leakage test vacuum	
M87	Heating for control unit	standard heating with thermostat	
M89	Remote lifting:	EEX mII T5 Solenoid valve 24 V	
M90	SLS adaption:	Spindle:ThreadConnection	
M91	SLS adaption:	Bonnet: hole circle	
M92	SLS adaption:	Adjusting screw, special	
M93	Control system:	limit switch	Supplementary loading system
M94	Electrical heating:	with EX-protection Zone 1	
M95	Weather protection:	IP 65 by protection case (box in box)	
M96	Remote lifting:	Solenoid valve 230 V	
M97	Remote lifting:	Solenoid valve 24 V	
M98	Remote lifting:	EEX mII T5 - Solenoid valve 230V	
MA2	Mat. Outlet body pos.2:	1.0619/ WCB/ WCC	
MA3	Mat. Outlet body pos.2:	1.4408/ CF8M	
MA5	Mat. Outlet body pos.2:	1.4401/1.4404/316/316L	
MB1	Gasket material:	Graphite / 1.4401	
MB5	Test gag material:	1.4401	
MB6	Test gag material:	8.8	
MB7	Outlet body material::	1.0619/ WCB/ WCC + PTFE	
MB8	Outlet body material::	1.4104/430F	
N03	Documentation:	SS-bellows - 3.1 (He- test)	
N04	Documentation:	Docu. special surfaces	
N05	Documentation:	Cert 3.1 cdtp test	
N07	Material certification for:	Studs: EN10204-3.1	
N08	Material certification for:	Nuts: EN10204-3.1	
N09	Add. Specification of Marking:	with plate "Thies"	
N10	Add. Specification of Marking:	with plate "Protego-LESER"	
N11	Specification of TAG-Marking:	SS plate, outlet fl., nailed	
N1A	Documentation:	PMI spindle	
N1B	Documentation:	PMI guide	
N1C	Documentation:	PMI bonnet	
N1D	Documentation:	PMI spring	
N1E	Documentation:	PMI bellows	
N1F	Documentation:	PMI cap/lifting device	
N1G	Documentation	PMI top plate (POSV)	
N1H	Documentation	PMI piston guide (POSV)	
N1J	Documentation	PMI spring (POSV Item59)	
N1R	Documentation	3.1 Test Report Visual Inspec.	
N1S	Documentation:	2.2 Test Report Dim. Insp.	
N1T	Documentation:	Cert 3.1 Torques	
N1U	Documentation:	PMI lower spring plate	
N1W	Documentation:	Spring data sheet	
N2A	Documentation:	X-ray body crit. ar. ASME	
N2B	Documentation:	X-ray bonnet crit. ar. ASME	
N2C	Documentation:	Ferrite test body SPECIAL	
N2D	Documentation:	Hydrotest customer body SPECIAL	

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Option code		Designation	Product group
N2E	Documentation:	Hydrotest customer bonnet SPECIAL	
N2F	Documentation:	Hydrotest custom nozzl SPECIAL	
N2G	Documentation:	IGC ASTM A 262-E body	
N2H	Documentation:	IGC ASTM A 262-E bonnet	
N2I	Documentation:	IGC ASTM A 262-E nozzle	
N2J	Documentation:	IGC ASTM A 262-E disc	
N2K	Documentation:	X-ray body compl. ASME	
N2L	Documentation:	X-ray bonnet compl. ASME	
N2M	Documentation:	X-ray body compl. DIN_EN	
N2N	Documentation:	X-ray bonnet compl. DIN_EN	
N2O	Documentation:	X-ray body crit. ar. DIN_EN	
N2P	Documentation:	X-ray bonnet crit. ar. DIN_EN	
N22	Add. Specification of Marking:	with plate "Sauer & Sohn"	
N31	Inspections:	USCG - U.S. Coast Guard	
N35	Add. Specification of Marking:	Plate: a-value(s) add to	
N3A	Material certification for:	Outlet adaptor: EN10204-3.1	
N3B	Material certification for:	Outlet flange: EN10204-3.1	
N4A	Documentation:	PMI outlet body	
N4B	Documentation:	PMI outlet connection	
N4C	Documentation:	PMI outlet flange	
N4D	Documentation PMI:	PMI SPA spindle	
N4E	Documentation PMI:	PMI SPA guide	
N4F	Documentation PMI:	PMI SPA bonnet	
N4G	Documentation PMI:	PMI SPA compression spring	
N4H	Documentation PMI:	PMI SPA bellow	
N4I	Documentation PMI:	PMI SPA cap/lifting device	
N4J	Documentation PMI:	PMI SPA top plate (POSV)	
N4K	Documentation PMI:	PMI SPA piston guide (POSV)	
N4L	Documentation PMI:	PMI SPA dom spring	
N4M	Documentation PMI:	PMI SPA spring plate	
N4N	Documentation PMI:	PMI SPA outlet body	
N4O	Documentation PMI:	PMI SPA outlet adaptor	
N4P	Documentation PMI:	PMI SPA outlet flange	
N4Q	Documentation PMI:	PMI SPA disc	
N4R	Documentation PMI:	PMI SPA seat/nozzle	
N4S	Documentation PMI:	PMI SPA body	
N4T	Documentation PMI:	PMI SPA stud	
N4U	Documentation PMI:	PMI SPA nut	
N4V	Documentation PMI:	PMI SPA inlet flange	
N4Y	Photo documentation:	light	
N4Z	Photo documentation:	advanced	
N50	Functional tightness:	high tightness, (intern)	
N51	Functional tightness:	Max. tightness, only BASF	
N52	Documentation:	Surface crack test disc	
N53	Documentation:	Surface crack test seat/nozzle	
N54	Documentation:	Surface Crack test body	
N55	Documentation:	PMI disc	
N56	Documentation:	PMI seat/nozzle	
N57	Documentation:	PMI body	
N58	Documentation:	Surface crack test bonnet	
N5A	Documentation SCT:	DPT (R-W) Body/Inlet body Pos.	
N5B	Documentation SCT:	DPT (R-W) Outlet body Pos. 2	

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Option code		Designation	Product group
N5C	Documentation SCT:	DPT (R-W) Nozzle Pos. 5	
N5D	Documentation SCT:	DPT (R-W) Disc Pos. 7	
N5E	Documentation SCT:	DPT (R-W) Bonnet Pos. 9	
N62	Functional tightness:	Helium leakage test	
N64	Body tightness:	SV He-test 1x10-5 mbar l/s	
N65	Body tightness:	SV-tightness tet outside	
N68	Design specification:	acc. to ASME Sec. XIII and ASME Sec. VIII (UD Stamp)	
N69	Specification of TAG-Marking:	SS plate,outlet fl.spot welded	
N6A	Documentation SCT:	FPT Body/Inlet body Pos. 1	
N6B	Documentation SCT:	FPT Outlet body Pos. 2	
N6C	Documentation SCT:	FPT Nozzle Pos. 5	
N6D	Documentation SCT:	FPT Disc Pos. 7	
N6E	Documentation SCT:	FPT Bonnet Pos. 9	
N70	Design specification:	acc. to ASME Sec. VIII, XIII / AD2000	
N71	Design specification:	acc. to UDT (VR Polen)	
N73	Design specification:	acc. to CSBQTS (VR China)	
N74	Design specification:	acc. KOSHA, WI_3612.14 (Korea)	
N75	Design specification:	acc. to Cert. for Canada	
N76	Design specification:	acc. GOSPROMNADZOR (Belarus)	
N77	Design specification:	acc. NACE Standard MR0103-2012	
N78	Design specification:	acc. NACE Standard MR0175-2003	
N79	Design specification:	acc. to EMPG	
N7A	Design specification:	analysis restriction body	
N7B	Design specification:	analysis restriction bonnet	
N7D	Design specification:	Design for oxygen service	
N7E	Documentation SCT:	MPT Bonnet Pos. 9	
N7H	Documentation:	Notch bar impact value for bar stock -196 °C	
N80	Design specification:	Solar valve / collectorfield	Compact Performance
N84	Design specification:	Flanged connection welded	
N85	Design specification:	acc. to ASME Sec. XIII for ASME VIII DIV. 1 (UV Stamp)	
N89	Design specification:	EAC Approval	
N8B	Documentation SCT:	FPT Outlet body Pos. 2	
N8D	Add. Specification of Marking:	LESER Digital ID QR Code	
N90	Material certification for:	Low. spring plate EN10204-3.1	
N91	Material certification for:	Bonnet: EN10204-3.2	
N92	Material certification for:	Disc: EN10204-3.2	
N93	Material certification for:	Seat / Nozzle: EN10204-3.2	
N94	Material certification for:	Spindle: EN10204-3.1	
N95	Material certification for:	Guide: EN10204-3.1	
N99	Add. Specification of Marking:	Marking "PN160" on outlet chamber	Compact Performance
P2A	Painting:	RAL 5005 LESER blue	
P2C	Painting:	RAL 5005 LESER blue, min. 80µm	
P2D	Painting:	RAL 3002, carmine red, min. 80	
P79	Documentation:	Anticorrosive certif. Frosio 3rd party	
P80	Documentation:	corro.certifi.Frosio III inter	
P81	Documentation:	Adherence test X-Cut	
P82	Documentation:	Adherence test Pulloff	
P83	Documentation:	Holiday Test	
P84	Documentation:	Dry film thickness (DFT)	
P85	Painting:	anticorrosive high temp. WCB	

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Option code		Designation	Product group
P86	Painting:	anticorrosive C5M for WCB	
P87	Painting:	anticorrosive high temp. CF8M	
P88	Painting:	anticorrosive C5M for CF8M	
P89	Painting:	anticorrosive cryogenic	
P90	Painting:	3-layer coating system RAL5005	
P91	Painting:	4-layer coating system RAL5005	
P92	Painting:	2-layer coating system alu	
P93	Painting:	3-layers painting RAL 3002	
R01	O-Ring, inner top plate seal	soft seal FKM "L"	
R01	O-Ring, outer top plate seal	with soft seal FKM "L"	
R02	O-Ring, inner top plate seal	soft seal EPDM "D"	
R02	O-Ring, outer top plate seal	with soft seal EPDM "D"	
R03	O-Ring, inner top plate seal	soft seal FFKM "C"	
R03	O-Ring, outer top plate seal	with soft seal FFKM "C"	
R04	O-ring, seals	soft seal FKM "L"	
R05	O-ring, seals	soft seal EPDM "D"	
R06	O-ring, seals	soft seal FFKM "C"	
R07	O-Ring (Pop Action)	soft seal FKM "L"	
R08	O-Ring (Pop Action)	soft seal EPDM "D"	
R09	O-Ring (Pop Action)	soft seal FFKM "C"	
R10	O-Ring (Modulate Action)	soft seal FKM "L"	
R11	O-Ring (Modulate Action)	soft seal EPDM "D"	
R12	O-Ring (Modulate Action)	soft seal FFKM "C"	
R13	O-Ring Item 73 PL-Mod MB	Diaphragm FKM	
R14	O-Ring Item 73 PL-Mod MB	Diaphragm EPDM	
R15	O-Ring Item 73 PL-Mod MB	Diaphragm FFKM	
R16	O-Ring Item 73 PL-Mod MB	Diaphragm FKM/shield PTFE	
R17	O-Ring, piston	with soft seal FKM "L"	
R18	O-Ring, piston	with soft seal EPDM "D"	
R19	O-Ring, piston	with soft seal FFKM "C"	
R1A	O-Ring (Pop Action)	FKM "ED" conform design	
R1B	O-Ring (Pop Action)	FFKM "ED" conform design	
R20	O-Ring, piston	PTFE piston seal, spring energ.	
R22	Pilot lifting lever	manually with Test-Gag	Series 810, 820
R23	Fitting according to:	Swagelok	
R24	Manual Blowdown	into body	
R25	Pilot lifting lever	manually	
R26	Field Test Connector	included	
R27	Manual Blowdown	to atmosphere	
R28	Remote Sensing	with Remote Sensing (RS)	
R2A	O-Ring Dichtungen (Modulate Action)	FKM "ED" conform design	
R2B	O-Ring Dichtungen (Modulate Action)	FFKM "ED" conform design	
R30	Pilot Supply Filter	included	
R33	Pilot lifting lever	Cap with Test Gag	
R44	Blowdown adjustment Input:	interactiv	
R46	Cover material	1.4404/316L	
R48	Drain hole:	NPT 1/2 w. lock screw (1.4401)	
R64	Overlap of Mod. Action design	Piston Size 1, 28 - 30 bar-g	
R70	Design specification:	acc NACE Standard MR0175-2003	
R71	Metal disc / mat.:	Mat. 1.4571 / 1.4404	
R75	Material certification for:	piston device: EN10204-3.1	
R76	Material certification for:	cover: EN10204-3.1	

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Option code		Designation	Product group
R77	Material certification for:	piston guide: EN10204-3.1	
R78	Material certification for:	body pilot: EN10204-3.1	
R79	Material certification for:	bonnet pilot: EN10204-3.1	
R84	Material certification for:	manifold: EN10204-3.1	
R88	Material certification for:	field test connector: 3.1	
R89	Material certification for:	Pilot Supply Filter: 3.1	
R93	Design specification:	acc. NACE Standard MR0103-2012	
R94	Specification of Pilot TAG-No.	with tag (foil / paper)	
R95	Specification of Pilot TAG-No.	with stainless steel tag	Series 810, 820
R98	Documentation:	Cert 3.1 Testing leack Pr.seal	
S00	Specials:	Special process	
S01	Specials:	Special body	
S02	Specials:	Special outlet body	
S03	Specials:	Special flange bend	
S05	Specials:	Special nozzle	
S06	Specials:	Special adjusting ring	
S07	Specials:	Special disc	
S08	Specials:	Special guide	
S09	Specials:	Special bonnet	
S10	Specials:	Special handwheel-/chain-act	
S11	Specials:	Special bonnet spacer	
S12	Specials:	Special spindle	
S14	Specials:	Special split ring	
S15	Specials:	Special bellows	
S16	Specials:	Special spring plate, upper	
S17	Specials:	Special spring plate, lower	
S18	Specials:	Special adjusting screw	
S19	Specials:	Special lock nut	
S34	Specials:	Special lever	
S37	Specials:	Special weight	
S40	Specials:	Special cap/lifting device	
S48	Specials:	Special body connection inlet	
S49	Specials:	Special body connection outlet	
S50	Specials:	Special typetestapproval plate	
S54	Specials:	Special spring	
S55	Specials:	Special studs	
S56	Specials:	Special hex. nuts	
S57	Specials:	Special pin	
S60	Specials:	Special gasket item 60	
S63	Specials:	Special gasket item 63	
S64	Specials:	Special plug-screw bonnet	
S67	Specials:	Special gasket item 67	
S69	Specials:	Special axial needle bearing	
S70	Specials:	Special elastomer bellows	
S73	Specials:	Special lock screw	
S80	Specials:	Special packing	
S81	Specials:	Special packing gland	
S82	Specials:	special-O-R-D	
S87	Specials:	Special locking screw, gasket	
S93	Specials:	Special test gag / lift stop	
S94	Specials:	Special lift indicator	
S96	Specials:	Special plain coil chain	

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Option code		Designation	Product group
V01	Flanged inlet connection:	NPS 1/2 Cl 150, B16.5	Compact Performance
V02	Flanged inlet connection:	NPS 1/2 Cl 300/600, B16.5	
V03	Flanged inlet connection:	NPS 1/2 Cl 900/1500, B16.5	
V04	Flanged inlet connection:	NPS 1/2 Cl 2500, B16.5	
V05	Flanged inlet connection:	NPS 3/4 Cl 150, B16.5	
V06	Flanged inlet connection:	NPS 3/4 Cl 300/600, B16.5	
V07	Flanged inlet connection:	NPS 3/4 Cl 900/1500, B16.5	
V08	Flanged inlet connection:	NPS 3/4 Cl 2500, B16.5	
V09	Flanged inlet connection:	NPS 1 Cl 150, B16.5	
V10	Flanged inlet connection:	NPS 1 Cl 300/600, B16.5	
V11	Flanged inlet connection:	NPS 1 Cl 900/1500, B16.5	
V12	Flanged inlet connection:	NPS 1 Cl 2500, B16.5	
V13	Flanged outlet connection:	NPS 1/2 Cl300/600, B16.5	
V14	Flanged outlet connection:	NPS 1/2 Cl900, B16.5	
V15	Flanged outlet connection:	NPS 3/4 Cl150, B16.5	
V16	Flanged outlet connection:	NPS 3/4 Cl300/600, B16.5	
V17	Flanged outlet connection:	NPS 3/4 Cl900, B16.5	
V18	Flanged outlet connection:	NPS 1 Cl150, B16.5	
V19	Flanged outlet connection:	NPS 1 Cl 300/600, B16.5	
V20	Flanged outlet connection:	NPS 1 Cl 900, B16.5	
V21	Flanged outlet connection:	NPS 1 1/2 Cl 150, B16.5	
V22	Flanged outlet connection:	NPS 1 1/2 Cl 300/600, B16.5	
V23	Flanged outlet connection:	NPS 1 1/2 Cl 900, B16.5	
V24	Flanged outlet connection:	NPS 1/2 Cl150, B16.5	
V25	Threaded inlet connection:	cutting ring screw fitting	
V26	Threaded outlet connection:	cutting ring screw fitting	
V30	Threaded inlet connection:	male thread R / BSPT 1/2	
V31	Threaded inlet connection:	male thread R / BSPT 3/4	
V32	Threaded inlet connection:	male thread R / BSPT 1	
V33	Threaded inlet connection:	male thread R / BSPT 1 1/2	Compact Performance
V34	Threaded outlet connection:	female thread Rc / BSPT 1/2	
V35	Threaded outlet connection:	female thread Rc / BSPT 3/4	
V36	Threaded outlet connection:	female thread Rc / BSPT 1	
V37	Threaded outlet connection:	female thread Rc / BSPT 1 1/2	
V38	Threaded inlet connection:	female thread Rc / BSPT 1/2	
V39	Threaded inlet connection:	female thread Rc / BSPT 3/4	
V40	Threaded inlet connection:	female thread Rc / BSPT 1	
V41	Threaded inlet connection:	female thread Rc / BSPT 1 1/2	
V42	Threaded outlet connection:	male thread R / BSPT 1	
V43	Threaded outlet connection:	male thread R / BSPT 1 1/2	
V44	Threaded inlet connection:	SWAGELOK - screw fitting	
V46	Threaded inlet connection:	cuttingring screwfitting heavy	
V47	Threaded inlet connection:	cuttingring screwfitting light	
V49	Threaded inlet connection:	male thread G 3/8, ISO228-1	
V50	Threaded inlet connection:	female thread G 1/2, ISO228-1	
V51	Threaded inlet connection:	female thread G 3/4, ISO228-1	
V52	Threaded inlet connection:	female thread G 1, ISO228-1	
V53	Threaded inlet connection:	female thread G 1 1/2, ISO228-	
V54	Threaded inlet connection:	male thread G 1/2, ISO228-1	
V55	Threaded inlet connection:	male thread G 3/4, ISO228-1	
V56	Threaded inlet connection:	male thread G 1, ISO228-1	
V57	Threaded inlet connection:	male thread G 1 1/2,ISO228-1	

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Option code	Designation		Product group
V58	Threaded inlet connection:	female thread NPT 1/2, B1.20.	
V59	Threaded inlet connection:	female thread NPT 3/4,B1.20.1	
V60	Threaded inlet connection:	female thread NPT 1,B1.20.1	
V61	Threaded inlet connection:	male thread NPT 1/2,B1.20.1	
V62	Threaded inlet connection:	male thread NPT 3/4,B1.20.1	
V63	Threaded inlet connection:	male thread NPT 1 ,B1.20.1	
V64	Threaded inlet connection:	male thread NPT 11/2, B1.20.1	
V65	Threaded outlet connection:	female thread G 1/2, ISO228-1	
V66	Threaded outlet connection:	female thread G 1, ISO228-1	
V67	Threaded outlet connection:	female thread G 1 1/2,ISO228-	
V68	Threaded outlet connection:	male thread G 1, ISO228-1	
V69	Threaded outlet connection:	male thread G 1 1/2,ISO228-1	
V70	Threaded outlet connection:	female thread NPT 1/2, B1.20.1	
V71	Threaded outlet connection:	female thread NPT 1,B1.20.1	
V72	Threaded outlet connection:	female thread NPT 1 1/2,B1.20.	
V73	Threaded outlet connection:	male thread NPT 1, B1.20.1	
V74	Threaded outlet connection:	male thread NPT1 1/2 ,B1.20.1	
V75	Threaded inlet connection:	female thread NPT 1 1/2B1.20.	
V76	Threaded outlet connection:	female thread G 3/4, ISO228-1	
V77	Threaded outlet connection:	female thread NPT 3/4,B1.20.1	
V79	Threaded outlet connection:	male thread G 1 1/4,ISO228-1	
V80	Threaded outlet connection:	female thread NPT 1 1/4,B1.20.	
V81	Threaded outlet connection:	female thread G 1 1/4, ISO228-	Compact Performance
V82	Threaded outlet connection:	male thread NPT 1 1/4, B1.20.1	
V83	Threaded inlet connection:	male thread G 1 1/4,ISO228-1	
V84	Threaded inlet connection:	female thread G 1 1/4,ISO228-	
V85	Threaded inlet connection:	male thread NPT 1 1/4, B1.20.1	
V86	Threaded inlet connection:	male thread NPT 2, B1.20.1	
V87	Threaded inlet connection:	female thread NPT 1 1/4, B1.20.	
V88	Threaded outlet connection:	female thread NPT 2, B1.20.1	
V90	Flanged outlet connection:	NPS 1 Class 150, B16.5 G	
V91	Flanged outlet connection:	NPS 1 Class 300/600, B16.5 G	
V92	Flanged outlet connection:	NPS 1 1/2 Class 150, B16.5 G	
V93	Flanged outlet connection:	NPS 1 1/2 Class 300/600, B16.5 G	
W01	High-press. flanged inlet connection:	IG-Flange NPS $^{3}/_{8}$, PR 325	
W02	High-press. flanged inlet connection:	IG-Flange NPS $^{3}/_{4}$, PR 325	
W03	High-press. flanged inlet connection:	IG-Flange NPS 1, PR 325	
W05	High-press. flanged inlet connection:	IG-Flange NPS $1^{1}/_{2}$, PR 325	
W12	High-press. flanged inlet connection:	IG-Flange NPS $^{3}/_{4}$, PR 700	
W17	High-press. flanged outlet connection:	IG-Flange NPS $^{3}/_{4}$, PR 325	
W18	High-press. flanged outlet connection:	IG-Flange NPS 1, PR 325	
W19	High-press. flanged outlet connection:	IG-Flange NPS $1^{1}/_{4}$, PR 325	
W20	High-press. flanged outlet connection:	IG-Flange NPS $1^{1}/_{2}$, PR 325	
W21	High-press. flanged outlet connection:	IG-Flange NPS $^{3}/_{8}$, PR 500	
W26	High-press. flanged outlet connection:	IG-Flange NPS $^{3}/_{8}$, PR 700	
W50		Weld-on end inlet ≤ 25 mm	
W51		Weld-on end inlet ≥ 33 mm	
W52		Weld-on end outlet ≥ 33 mm	
X01	Spring / spring material:	warmsolid	
X03	Spring / spring material:	1.8159/1.7102	
X04	Spring / spring material:	1.4310	
X06	Spring / spring material:	1.1200	

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Option code		Designation	Product group
X07	Spring / spring material:	2.4610 (Hastelloy C4)	
X08	Spring / spring material:	2.4669 (Inconel X750)	
X09	Spring / spring material:	2.4360 (Monel 400)	Change-over valve
Y09	Flange facing side 1:	Form B2, "smooth" DIN EN 1092	
Y10	Flange facing side 1:	Form C, "tongue" DIN EN 1092	
Y11	Flange facing side 1:	Form D, "groove" DIN EN 1092	
Y12	Flange facing side 1:	Form E, "male" DIN EN 1092	
Y15	Flange facing side 1:	Form F, "female" DIN EN 1092	
Y18	Flange facing side 1:	Form G,O-ring female DINEN1092	
Y19	Flange facing side 1:	Form H,O-ring groove DINEN1092	Change-over valve
Y21	Flange facing side 2:	Form B2, "smooth" DIN EN 1092	
Y22	Flange facing side 2:	Form C, "tongue" DIN EN 1092	
Y25	Flange facing side 2:	Form D, "groove" DIN EN 1092	
Y28	Flange facing side 2:	Form E, "male" DIN EN 1092	
Y29	Flange facing side 2:	Form F, "female" DIN EN 1092	
Y30	Flange facing side 2:	Form G, O-ring female EN 1092	
Y50	Pressure gauge:	Without pressure gauge	
Y51	Documentation:	Inspection certificate 3.1	
Y57	Pressure gauge:	Std. pressure gauge d=63, G 1/	Bursting disc
Y58	Pressure gauge:	Contact pressure gauge d=100,	
Y59	Pressure gauge:	Maximum pointer d=100, G 1/2	
Y60	Documentation:	Inspection certificate 3.2 TÜV	
Y61	Flange facing side 1:	Form A, "flat" DIN EN 1092	
Y62	Flange facing side 2:	Form A, "flat" DIN EN 1092	
Y63	Flange facing side 1:	Form B1, "rough" DIN EN 1092	
Y64	Flange facing side 2:	Form B1, "rough" DIN EN 1092	
Y65	Flange facing side 1:	Form "Stf", ASME B16.5	
Y66	Flange facing side 1:	Form "Sgf", ASME B16.5	
Y67	Flange facing side 1:	Form "Ltf", ASME B16.5	
Y68	Flange facing side 1:	Form "Lgf", ASME B16.5	
Y69	Flange facing side 1:	Form "Smf", ASME B16.5	
Y70	Flange facing side 1:	Form "Sff", ASME B16.5	
Y71	Flange facing side 1:	Form "Lmf", ASME B16.5	
Y72	Flange facing side 1:	Form "Lff", ASME B16.5	
Y73	Flange facing side 2:	Form "Stf", ASME B16.5	
Y74	Flange facing side 2:	Form "Sgf", ASME B16.5	
Y75	Flange facing side 2:	Form "Ltf", ASME B16.5	Change-over valve
Y76	Flange facing side 2:	Form "Lgf", ASME B16.5	
Y77	Flange facing side 2:	Form "Smf", ASME B16.5	
Y78	Flange facing side 2:	Form "Sff", ASME B16.5	
Y79	Flange facing side 2:	Form "Lmf", ASME B16.5	
Y80	Flange facing side 2:	Form "Lff", ASME B16.5	
Y81	Flange facing side 1:	Form "FF", ASME B16.5	
Y82	Flange facing side 2:	Form "FF", ASME B16.5	
Y83	Flange facing side 1:	Form "RF", ASME B16.5	
Y84	Flange facing side 2:	Form "RF", ASME B16.5	
Y85	Flange facing side 1:	Form "Rtj", ASME B16.5	
Y86	Flange facing side 2:	Form "Rtj", ASME B16.5	
Y87	Flange surface side 1:	"SF" ASME B16.5	
Y88	Flange surface side 2:	"SF" ASME B16.5	
Y89	Flange surface side 1:	"NSF" ASME B16.5	
Y90	Flange surface side 2:	"NSF" ASME B16.5	

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Option code		Designation	Product group
Y91	Flange surface side 1:	"StF" ASME B16.5	
Y92	Flange surface side 2:	"StF" ASME B16.5	
Y93	Space monitoring device:	for std. pressure gauge G 1/4	
Y94	Space monitoring device:	for max. pointer/cont.pr.gauge	Bursting disc
Y95	Space monitoring device:	for DN>150,long vers. G 1/2	
Z90	Pressure range	High pressure design	API
202	Material buckling pin dome:	1.4401 - special	
203	Material buckling pin dome:	1.4435 - special	
204	Material buckling pin dome:	Nickel - special	
205	Material buckling pin dome:	Inconel - special	
206	Material buckling pin dome:	Monel - special	
207	Material buckling pin dome:	Hastelloy C - special	
302	Material smooth process side:	1.4404	
303	Material smooth process side:	1.4435	
304	Material smooth process side:	Nickel	Bursting disc
305	Material smooth process side:	Inconel	
306	Material smooth process side:	Monel	
307	Material smooth process side:	Hastelloy 2.4819	
400	Connection space mon. device:	w/o port f. space mon. device	
401	Connection space mon. device:	G 1/4	
402	Connection space mon. device:	G 1/2 - Special	
403	Connection space mon. device:	NPT 1/4	
404	Connection space mon. device:	NPT 1/2 - Special	

Option codes for Change-over Valves Type 330 Compact, 320 Flow

Option code		Designation	Product group
Q03	Type of construction:	COV combi, Inlet COV	
Q04	Type of construction:	COV combi, outlet COV	
Q05	Flange rating SV-side:	PN 250, DIN EN 1092	
Q06	Flange rating SV-side:	1500 lbs ASME B16.5	
Q07	Flange rating piping side	PN 250, DIN EN 1092	
Q08	Flange rating piping side	1500 lbs ASME B16.5	
Q09	Base Construction Material COV	WCB 3-fold|stainless steel|316	
Q10	Base Construction Material COV	LCB 5-fold|stainless st.|316	
Q11	Base Construction Material COV	CF8M|stainless steel|316L	
Q12	Mat. Inlet body pos. 1	1.0619 / WCB / WCC	Change-over valves Type 330, 320
Q13	Mat. Inlet body pos. 1	1.0619 / WCB / WCC / LCB / LCC	
Q14	Mat. Inlet body pos. 1	1.4408 / CF8M	
Q15	Mat. Body pos. 2	1.0619 / WCB / WCC	
Q16	Mat. Body pos. 2	1.0619 / WCB / WCC / LCB / LCC	
Q17	Mat. Body pos. 2	1.4408 / CF8M	
Q18	Mat. Elbows pos. 3/4	1.0619 / WCB / WCC	
Q19	Mat. Elbows pos. 3/4	1.0619 / WCB / WCC / LCB / LCC	
Q1A	Documentation PMI:	PMI SPA body pos. 2	
Q1B	Documentation PMI:	PMI SPA elbows pos. 3/4	
Q1C	Documentation PMI:	PMI SPA inlet body pos. 1	
Q1D	Documentation PMI:	PMI SPA spindle pos. 12	
Q1E	Documentation X-ray insp.:	X-ray test body pos. 2	
Q1F	Documentation X-ray insp.:	X-ray test elbows pos. 3/4	
Q1G	Documentation X-ray insp.:	X-ray test inlet body pos. 1	

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Option codes for Change-over Valves Type 330 Compact, 320 Flow

Option code	Designation		Product group
Q1H	Documentation X-ray insp.:	X-ray test disc pos. 7	
Q1I	Documentation:	APZ 3.1 Hydrost. Test LGS 0209	
Q1J	Differing test duration	Hydrostatic test COV compl.	
Q1K	Product certification acc. to	EAC Approval	
Q1L	Material certification for:	Seat/Nozzle Pos.5 : EN10204-3.1	
Q1N	Mat. lock ring/screw pos. 9	A4-70	
Q20	Mat. Elbows pos. 3/4	1.4408 / CF8M	
Q21	Mat. Disc pos. 7	1.4404/316L	
Q22	Mat. seat pos. 5	1.4404 / 316L	
Q23	Mat. Disc pos. 7	1.4408/CF8M	
Q25	Mat. lock ring/screw pos. 9	1.4104	
Q26	Mat. lock ring/screw pos. 9	1.4404/316L	
Q27	Mat. Rod pos. 6	1.4408/CF8M	
Q28	Mat. rod bolt pos. 23	1.4104	
Q29	Mat. rod bolt pos. 23	1.4404/316L	
Q2A	Flange rating SV-side:	PN 10, DIN EN 1092	
Q2B	Flange rating SV-side:	PN 16, DIN EN 1092	
Q2C	Flange rating SV-side:	PN 25, DIN EN 1092	
Q2D	Flange rating SV-side:	PN 40, DIN EN 1092	
Q2E	Flange rating SV-side:	PN 63, DIN EN 1092	
Q2F	Flange rating SV-side:	PN 100, DIN EN 1092	Change-over valves Type 330, 320
Q2G	Flange rating SV-side:	PN 160, DIN EN 1092	
Q2H	Flange rating SV-side:	150 lbs ASME B16.5	
Q2I	Flange rating SV-side:	300 lbs ASME B16.5	
Q2J	Flange rating SV-side:	600 lbs ASME B16.5	
Q2K	Flange rating SV-side:	900 lbs ASME B16.5	
Q2L	Flange rating piping side	PN 10, DIN EN 1092	
Q2M	Flange rating piping side	PN 16, DIN EN 1092	
Q2N	Flange rating piping side	PN 25, DIN EN 1092	
Q2O	Flange rating piping side	PN 40, DIN EN 1092	
Q2P	Flange rating piping side	PN 63, DIN EN 1092	
Q2Q	Flange rating piping side	PN 100, DIN EN 1092	
Q2R	Flange rating piping side	PN 160, DIN EN 1092	
Q2S	Flange rating piping side	150 lbs ASME B16.5	
Q2T	Flange rating piping side	300 lbs ASME B16.5	
Q2U	Flange rating piping side	600 lbs ASME B16.5	
Q2V	Flange rating piping side	900 lbs ASME B16.5	
Q2W	Drain	Drain G1/4 with plug screw	
Q2X	Drain	Drain NPT 1/4 with plug screw	
Q2Y	Drain	Drain G 1/2 with plug screw	
Q2Z	Drain	Drain NPT 1/2 with plug screw	
Q30	Mat. tappet pos. 61	1.4104	
Q31	Mat. tappet pos. 61	1.4404/316L	
Q32	Mat. disc srew pos. 13	1.4404/316L	
Q33	Mat. lock screw pos. 21	1.4104	
Q34	Mat. lock screw pos. 21	1.4404/316L	
Q35	Design/sizing standard	acc. to ASME B16.34 & DGRL2014/68/EU	
Q36	Mat. gland pos. 201	1.4404/316L	
Q37	Mat. gland packing pos. 204	1.4541 / Graphite	
Q38	Mat. Spindle pos. 12	1.4021	
Q39	Mat. Spindle pos. 12	1.4404/316L	
Q3A	Flushing/manometer connection	Flushing/manometer conn. NPT 1/2	

How to use

Option codes for Change-over Valves Type 330 Compact, 320 Flow

Option code	Designation		Product group
Q3B	Flushing/manometer connection	Flushing/manometer conn. G 1/2	
Q3C	Locking device	Blocking of hand wheel	
Q3D	Type of construction:	Change-over valve	
Q3H	Mat. Stud bolts pos. 55	SA-453 Gr. 660 B	
Q3I	Mat. Disc insert pos. 10	1.4404/316L	
Q40	Mat. yoke pos. 401/404	1.0619 / WCB / WCC	
Q41	Mat. yoke pos. 401/404	1.4408 / CF8M	
Q42	Product certification acc. to	PED (CE-stamp)	
Q43	Design/sizing standard acc. to	PED 2014/68/EU	
Q44	Mat. Stud bolts pos. 55	1.7225 / SA- 193 B7	
Q46	Mat. Stud bolts pos. 55	1.4980/SA-453 Gr. 660 B	
Q47	Mat. Stud bolts pos. 55	A4-70/SA-193 B8M Cl.1 o. 2	
Q48	Mat. Stud bolts pos. 55	1.7225/SA-194 Gr.7	
Q49	Design/sizing standard acc. to	ASME B 16.34	
Q4B	Mat. nuts pos. 56	1.4980/SA-453 Gr. 660 B	
Q4C	Mat. nuts pos. 56	SA-453 Gr. 660 B	
Q4D	Mat. disc lock pos. 8	1.4404/316L	Change-over valves Type 330, 320
Q4E	Mat. nuts pos. 56	A4-70 / SA-194 8M	
Q4F	Mat. disc lock pos. 8	2.4856/N06625 Gr. 1	
Q50	Material certification for:	Disc Pos. 7: EN10204-3.1	
Q53	Material certification for:	Body Pos. 2.2: EN10204-3.1	
Q54	Material certification for:	Elbows Pos. 3/4: EN10204-3.1	
Q55	Material certification for:	Inlet body Pos. 1: EN10204-3.1	
Q5A	Nominal size piping-side	NPS 1	
Q5B	Nominal size piping-side	NPS 1 1/4	
Q5C	Nominal size piping-side	NPS 1 1/2	
Q5D	Nominal size piping-side	NPS 2	
Q5E	Nominal size piping-side	NPS 2 1/2	
Q5F	Nominal size piping-side	NPS 3	
Q5G	Nominal size piping-side	NPS 4	
Q5H	Nominal size piping-side	NPS 5	
Q5I	Nominal size piping-side	NPS 6	
Q5J	Nominal size piping-side	NPS 8	
Q5K	Nominal size piping-side	NPS 10	
Q5L	Nominal size piping-side	NPS 12	
Q5M	Nominal size piping-side	NPS 14	
Q5N	Nominal size piping-side	NPS 16	
Q5O	Nominal size piping-side	DN 25	
Q5P	Nominal size piping-side	DN 32	
Q5Q	Nominal size piping-side	DN 40	
Q5R	Nominal size piping-side	DN 50	
Q5S	Nominal size piping-side	DN 65	
Q5T	Nominal size piping-side	DN 80	
Q5U	Nominal size piping-side	DN 100	
Q5V	Nominal size piping-side	DN 125	
Q5W	Nominal size piping-side	DN 150	
Q5X	Nominal size piping-side	DN 200	
Q5Y	Nominal size piping-side	DN 250	
Q5Z	Nominal size piping-side	DN 300	
Q61	Specification of TAG-Marking:	stamped letters, fl SV-s. front	
Q62	Specification of TAG-Marking:	stamped letters, fl SV-s. back	
Q63	Specification of TAG-Marking:	stamped letters, fl SV-s. side	

How to use

Option codes for Change-over Valves Type 330 Compact, 320 Flow

Option code		Designation	Product group
Q64	Specification of TAG-Marking:	stamped letters, fl pip-s front	
Q65	Specification of TAG-Marking:	stamped letters, fl pip-s. back	
Q66	Specification of TAG-Marking:	stamped letters, fl pip-s .side	
Q67	Seat surface	stellited	
Q68	Disc surface	stellited	
Q69	Valve design	TA-Luft	
Q6A	Nominal size piping-side	DN 350	
Q6B	Nominal size piping-side	DN 400	
Q70	Pressure balancing pos.37	with needle valve for 10mm pip	
Q71	Pressure discharge pos. 95	Needle valve for 10mm pipe	
Q72	Pressure discharge pos. 95	Flanged globe valve DN15 PN40	
Q73	Remote Sensing conn. pos. 35	in the inlet body for POSV	
Q74	Remote Sensing conn. pos. 35	Remote sensing for 12 mm pipe	
Q75	Pressure discharge pos. 95	Needle valve, threaded NPT1/2	
Q76	Proximity switch:	with adapter M12 x 1	Change-over valves Type 330, 320
Q77	Surface treatment:	pickled version COV	
Q78	Documentation SCT:	DPT Inlet body pos. 1	
Q79	Documentation SCT:	DPT body pos. 2	
Q7A	Pressure discharge pos. 95	Flanged globe valve DN15 PN250	
Q7B	Pressure discharge pos. 95	Flanged glob.val.1/2" Class 300/600	
Q80	Documentation SCT:	DPT elbows pos. 3/4	
Q81	Documentation SCT:	DPT disc pos. 7	
Q82	Documentation SCT:	DPT seat pos. 5	
Q83	Documentation SCT:	FPT Inlet body pos. 1	
Q84	Documentation SCT:	FPT body pos. 2	
Q85	Documentation SCT:	FPT elbows pos. 3/4	
Q86	Documentation SCT:	FPT disc pos. 7	
Q87	Documentation SCT:	FPT seat pos. 5	
Q88	Documentation PMI:	PMI RFA spindle pos. 12	
Q89	Documentation SCT:	MPT inlet body pos.1	
Q90	Documentation SCT:	MPT seat pos. 5	
Q91	Documentation SCT:	MPT body pos. 2	
Q92	Documentation SCT:	MPT elbows pos. 3/4	
Q93	Documentation PMI:	PMI RFA disc pos. 7	
Q94	Documentation PMI:	PMI RFA seat pos. 5	
Q95	Documentation PMI:	PMI RFA body pos. 2	
Q96	Documentation PMI:	PMI RFA elbows pos. 3/4	
Q97	Documentation PMI:	PMI RFA inlet body pos. 1	
Q98	Documentation PMI:	PMI SPA disc pos. 7	
Q99	Documentation PMI:	PMI SPA seat pos. 5	

How to use

How to order – Type 441 – Example for numbering system

1 Article Number	2 Set Pressure	3 Connections			
4412.4512	70 psig	H64			

1	2	3	4
441	2	451	2

1 Valve Type 441, 442, 444

Type	Page
441, 442 ANSI	126
441, 442 DIN	130
444 ANSI	134

2 Material code

Code	Body material
2	WCB Carbon steel
4	316L / CF8M / 316Ti
5	Gr. 60-40-18

3 Valve code

Identifies valve size and body material.

4

Code	Lifting device	
2	Screwed cap	H2
3	Plain lever	H3
4	Packed lever	H4
5	Plain lever with open bonnet	H3

Please state unit (in gauge)!

Please do not exceed the pressure range defined in the spring charts.

Please include Operating Temperature, Superimposed Constant Backpressure, Superimposed Variable Backpressure, and Built-Up backpressure details as well.

Available flange drillings and flange facings please refer to each product catalog.

4 Options

J23			

Type 441, 442, 444			Option code
• O-ring disc			
CR	Neoprene®	"K"	**J21**
EPDM	Buna-EP®	"D"	**J22**
FPM/FKM	Viton®	"L"	**J23**
FFKM	Kalrez®	"C"	**J20**
• Disc 316L			**L44**
• Disc 316L stellited			**J25**
• Stainless steel bellows			
- Bonnet open	(Type 442)		**J68**
- Bonnet closed	(Type 441)		**J78**
• Elastomer bellows			**J79**
• High temperature alloy spring			**X01**
• Stainless steel spring			**X04**
• Adaptor for lift indicator		H4	**J39**
• Lift indicator			**J93**
• Test gag			
- Cap		H2	**J70**
- Packed lever		H4	**J69**
• Heating jacket for body			
- Couplings NPT			**H30**
- Lap joint flanges			**H32**
• Drain hole		$^1/_4$"	**J18**
		$^1/_2$"	**J19**
• Free of oil and grease			
- Standard			**J85**
- increased requirement			**J92**
• Materials			
- NACE MR0175			**N78**
- NACE MR0103			**N77**
• Marking with stainless steel tag			**M29**

Option code applies only if not standard

5 Documentation

H01	L30	

Please select required documentation:

Inspections, tests:	Option code
LESER CGA (Certificate for Global Application)	**H03**
- Inspection certificate 3.1 acc. to DIN EN 10204	
- Declaration of conformity acc. to PED 2014/68/EU	

Material test certificate:
DIN EN 10204-3.1

Part	Option code
Body	**H01**
Bonnet	**L30**
Cap / Lever cover	**L31**
Disc	**L23**
Studs	**N07**
Nuts	**N08**

6 Code and Medium

1.1

1	2
1	1

1 Code

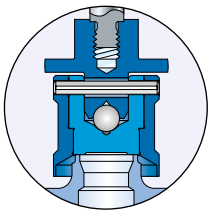
1. Certified in accordance with ASME Section XIII UV and design. for Sec. VIII service
2. CE / VdTUEV
3. ASME Section XIII UV and design. for Sec. VIII service + CE / VdTUEV

2 Medium

.1 Gases
.2 Liquids
.3 Steam
.0 Steam / Gases / Liquids (valid only for CE / VdTUEV)

Compact Performance
Safety Relief Valves

Compact Performance



Metal seat

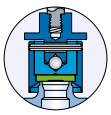
All prices in $

For soft seal selection please refer to page 53
Delivery time depends on type of connection

Type 437

				Standard	Long Version – for high pressures
Actual Orifice diameter d_0 [mm]				10	10
Actual Orifice area A_0 [inch^2]				0.122	0.122
Weight threaded [lb]				2.6	3.1
Weight flanged [lb]				15.5	15.5
4373: Chrome steel					
Base / Inlet body	**316L**	**H2**	Art. No. **4373.**	**2602** $493	**2612** $719
Trim	**316L**				
Outlet body / bonnet	**316L**	**H3** p_{max} = 145 psig	Art. No. **4373.**	**2603** $562	
		H4	Art. No. **4373.**	**2604** $646	**2614** $869
		p [psig] S/G/L		**1.5 – 1348**	**1349 – 2610**
4374: Stainless steel					
All parts	**316L**	**H2**	Art. No. **4374.**	**3142** $948	**3152** $1,315
		H4	Art. No. **4374.**	**3144** $1,168	**3154** $1,538
		p [psig] S/G/L		**1.5 – 986**	**987 – 2610**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

Options					
Base / Inlet body stellited			L20	$250	*
Disc stellited			J25	$250	$250
Disc[1]		316L	L44	$51	$51
Plastic seat[2]		PTFE-FDA	J44	$250	$250
		PCTFE	S07J48	$498	$498
		Vespel-SP1	J49	$746	$746
Test gag		H4	J69	–	–
		H2	J70	$198	$198
Heating jacket for body			H29	$1,245	$1,245
Spring		High temperature alloy spring	X01	$51	$51
		1.4310	X04	$51	$51
		Inconel	X08	$447	$447
Marking with stainless steel tag			M29	$40	$40
Free of oil and grease (for gas medium only)	Standard		J85	$90	$125
	increased requirement		J92	$125	$150
Oxygen service[3]		4374	N7D	$125	$150
Connections				Available connections see page 37	

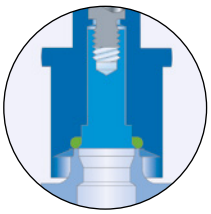
[1] Valid for 4373 chrome steel
[2] See page 53 for plastic material limitations
[3] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.

Compact Performance

All prices in $

Please state O-ring material

Delivery time depends on type of connection



O-ring disc

Type 438

				Standard		Long Version – for high pressures	
Actual Orifice diameter d_0 [mm]				10	10	10	10
Actual Orifice area A_0 [inch^2]				0.122	0.122	0.122	0.122
Weight threaded [lb]				2.6	2.6	3.1	3.1
Weight flanged [lb]				15.5	15.5	15.5	15.5
O-ring-material				NBR "N" J30 Buna-N®		NBR "N" J30 Buna-N®	
				CR "K" J21 Neoprene®		CR "K" J21 Neoprene®	
				EPDM "D" J22 Buna-EP®		EPDM "D" J22 Buna-EP®	
				FPM/FKM "L" J23 Viton®	FFKM "C" J20[1] Kalrez®	FPM/FKM "L" J23 Viton®	FFKM "C" J20[1] Kalrez®
4383: Chrome steel							
Base / Inlet body	**316L**	**H2**	Art. No. **4383.**	**2862** $746	**2862** $1,249	**2872** $969	**2872** $1,458
Trim	**316L**						
Outlet body / bonnet	**316L**	**H3**	Art. No. **4383.** p_{max} = 232 psig	**2863** $814	**2863** $1,311		
		H4	Art. No. **4383.**	**2864** $898	**2864** $1,390	**2874** $1,124	**2874** $1,603
		p [psig] S/G/L		**73 – 1348**	**73 – 1348**	**1349 – 2610**	**1349 – 2610**
4384: Stainless steel							
All parts	**316L**	**H2**	Art. No. **4384.**	**2982** $1,199	**2982** $1,673	**2992** $1,568	**2992** $2,020
		H4	Art. No. **4384.**	**2984** $1,424	**2984** $1,886	**2994** $1,789	**2994** $2,228
		p [psig] S/G/L		**73 – 986**	**73 – 986**	**987 – 2610**	**987 – 2610**

Options							
Test gag		H4	J69	–	–	–	–
		H2	J70	$198	$198	$198	$198
Heating jacket for body			H29	$1,245	$1,245	$1,245	$1,245
Spring		High temperature alloy	X01	$51	$51	$51	$51
		Stainless steel	X04	$51	$51	$51	$51
		Inconel	X08	$447	$447	$447	$447
Marking with stainless steel tag			M29	$40	$40	$40	$40
Free of oil and grease (for gas medium only)	Standard		J85	$90	$90	$125	$125
	increased requirement		J92	$125	$125	$150	$150
Connections				Available connections see page 37			

[1] O-ring 90 Shore for set pressure > 580 psig (40 bar)

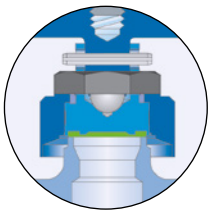
Compact Performance

All prices in $

Vulcanized soft seal
for highest tightness requirements
at low set pressure

Please state soft seal material

Delivery time depends
on type of connection



Vulcanized soft seal

Type 439

Actual Orifice diameter d_0 [mm]					10			10	
Actual Orifice area A_0 [inch^2]					0.122			0.122	
Weight threaded [lb]					2.6			2.6	
Weight flanged [lb]					15.5			15.5	
Soft seal material				NBR	Buna-N®	"N"	J30		
				CR	Neoprene®	"K"	J21		
				EPDM	Buna-EP®	"D"	J22		
				FPM/FKM	Viton®	"L"	J23	FFKM	Kalrez® "C" J20
4393: Chrome steel									
Base / Inlet body	**316L**	**H2**	Art. No. **4393.**		**2882** $746			**2882** $1,249	
Trim	**316L**								
Outlet body / bonnet	**316L**	**H3** p_{max} = 145 psig	Art. No. **4393.**		**2883** $814			**2883** $1,311	
		H4	Art. No. **4393.**		**2884** $898			**2884** $1,390	
		p [psig] S/G/L			**1.5 – 230**			**1.5 – 230**	
4394: Stainless steel									
All parts	**316L**	**H2**	Art. No. **4394.**		**2892** $1,199			**2892** $1,673	
		H4	Art. No. **4394.**		**2894** $1,424			**2894** $1,886	
		p [psig] S/G/L			**1.5 – 230**			**1.5 – 230**	

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

Options				
Test gag	H4	J69	–	–
	H2	J70	$198	$198
Heating jacket for body		H29	$1,245	$1,245
Spring	High temperature alloy spring	X01	$51	$51
	1.4310	X04	$51	$51
	Inconel	X08	$447	$447
Marking with stainless steel tag		M29	$40	$40
Free of oil and grease (for gas medium only)	Standard	J85	$90	$90
	increased requirement	J92	$125	$125
Connections			Available connections see page 37	

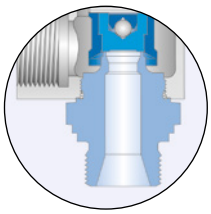
Compact Performance
Available connections Series 437

All prices in $

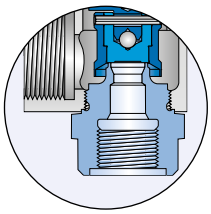
Threaded connections

	Valve size	d_0 10 mm / 0.122 inch²			
		Inlet		Outlet	
		Option code	Additional price	Option code	Additional price
Male thread ANSI/ASME B1.20.1					
NPT	1/2"	V61	$0	–	
	3/4"	V62	$0	–	
	1"	V63	$0	–	
Female thread ANSI/ASME B1.20.1					
NPT	1/2"	V58	$125	V70	$0
	3/4"	V59	$125	V77	$0
	1"	V60	$125	V71	$0
Male thread DIN ISO 228-1					
G / BSPP	3/8"	V49	$125	–	
	1/2 "	V54	$0	–	
	3/4"	V55	$0	–	
	1"	V56	$0	–	
Female thread DIN ISO 228-1					
G / BSPP	1/2"	V50	$125	V65	$0
	3/4"	V51	$125	V76	$173
	1"	V52	$125	V66	$173

How to find the price for threaded connections
Step 1: select orifice size column (ex. 10 mm)
Step 2: select inlet column
Step 3: select thread type section (ex. male thread NPT)
Step 4: select size row (ex. 1")
Step 5: repeat steps 1 to 4 for the outlet



Male thread

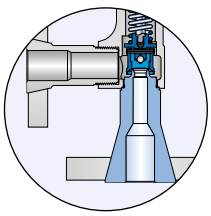


Female thread

Flanged connections

Flange size	Additional price	Class	d_0 10 mm / 0.122 inch²	
			Option code	
			Inlet	Outlet
ANSI/ASME B 16.5				
1/2"	$348	150	V01	V24
		300	V02	V13
		600	V02	V13
	$697	900	V03	V14
		1500[1)]	V03	–
		2500[1)]	V04	–
3/4"	$348	150	V05	V15
		300	V06	V16
		600	V06	V16
	$697	900	V07	V17
		1500[1)]	V07	–
		2500[1)]	V08	–
1"	$348	150	V09	V18
		300	V10	V19
		600	V10	V19
	$697	900	V11	V20
		1500[1)]	V11	–
		2500[1)]	V12	–

How to find the price for flanged connections
Step 1: select orifice size column (ex. 10 mm)
Step 2: select inlet column
Step 3: select size row (ex. 1")
Step 4: select pressure class row (ex. Class 150)
Step 5: repeat steps 1 to 4 for the outlet



Flanged version

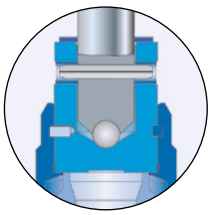
Flanged and threaded connections can be combined.
Threads and flanges according to other standards, e.g. ISO, BSP, DIN, JIS are available. Please specify in writing (diameter, pressure rating, standard).
LESER standard flange material is SA 479 316L therefore pressure x temperature limitation will apply.
[1)] Check delivery time with LESER LLC.

Please note: Only certain connection combinations are kept in Charlotte stock.
Please see page 199 "Availability from Charlotte stock".

Compact Performance

All prices in $

Delivery time depends on type of connection



Metal seat

Type 459

Actual Orifice diameter d_0 [mm]			9	13	17.5
Actual Orifice area A_0 [inch^2]			0.099	0.206	0.373
Weight threaded [lb]			6.8	6.8	8.6
Weight flanged [lb]			18.7	18.7	18.7
4592: Carbon Steel					
Base / Inlet body	**316L**	**H2** Art. No. **4592.**	**2472** $788	**2482** $788	**2492** $1,055
Trim	**316L**				
Outlet body	**WCB**	**H3** Art. No. **4592.**	**2473** $861	**2483** $861	**2493** $1,127
Bonnet	**WCB**				
		H4 Art. No. **4592.**	**2474** $941	**2484** $941	**2494** $1,205
		p [psig] S/G/L	**22 – 3625**	**3 – 2900**	**3 – 1450**
4594: Stainless steel – outlet body investment casted					
Base / Inlet body	**316L**	**H2** Art. No. **4594.**	**2162** $1,293	**2172** $1,293	**2182** $1,882
Outlet body, casted	**CF8M**				
Bonnet	**CF8M**	**H4** Art. No. **4594.**	**2164** $1,746	**2174** $1,746	**2184** $2,329
		p [psig] S/G/L	**22 – 3625**	**3 – 2900**	**3 – 1450**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

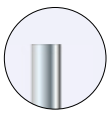
Type 459 Obsolete models

Obsolete models replaced in 2015

Actual Orifice diameter d_0 [mm]	9		13		17.5	
Actual Orifice area A_0 [mm^2]	63.6		133		241	
Replacement deep-drawn [from 01.04.2015]	**old**	**replaced by**	**old**	**replaced by**	**old**	**replaced by**
Outlet body	deep-drawn	Investment casting	deep-drawn	Investment casting	deep-drawn	Investment casting
Art. No. **4594.**	**255X**	**216X**	**256X**	**217X**	**257X**	**218X**
p [bar$_g$] S/G/L	**1.5 – 250**	**1.5 – 250**	**0.2 – 200**	**0.2 – 200**	**0.2 – 100**	**0.2 – 100**
Replacement ductil [from the end of 2015]	**old**	**replaced by**	**old**	**replaced by**	**old**	**replaced by**
Outlet body	Ductile	Cast steel	Ductile	Cast steel	Ductile	Cast steel
Art. No.	4593.250**X**	4592.247**X**	4593.251**X**	4592.248**X**	4593.252**X**	4592.249**X**
p [bar$_g$] S/G/L	**1.5 – 250**	**1.5 – 250**	**0.2 – 200**	**0.2 – 200**	**0.2 – 100**	**0.2 – 100**

Compact Performance

All prices in $

Options			Type 459		
Actual Orifice diameter d_0 [mm]			9	13	17.5
Actual Orifice area A_0 [inch^2]			0.099	0.206	0.373
Weight threaded [lb]			6.8	6.8	8.6
Base / Inlet body stellited		L20	$250	$250 [4]	$250
Disc stellited		J25	$250	$250	–
Disc[1]	316L	L44	$51	$51	$51
Plastic seat[2] 	PTFE-FDA	J44	$250	$250	$250
	PCTFE	J48	$498	$498	$498
	Vespel-SP1	J49	$746	$746	$746
Test gag	H4	J69	$198	$198	$198
	H2	J70	$198	$198	$198
Stainless steel bellows[5]	p ≤ 580 psig	J78	$447	$447	$447
	p > 580 psig	J55J78	$697	$697	$697
Elastomer bellows		J79	$250	$250	$250
Heating jacket for body		H29	$1,245	$1,245	$1,245
Spring	High temperature alloy spring	X01	$51	$51	$51
	1.4310	X04	$51	$51	$51
	Inconel	X08	$447	$447	$447
Adaptor for lift indicator[3]	H4	J39[7]	$250	$250	$250
Lift indicator[3]		J93[7]	$746	$746	$746
Marking with stainless steel		M29	$40	$40	$40
Free of oil and grease (for gas medium only)	Standard	J85	$150	$150	$198
	increased requirement	J92	$198	$198	$250
Oxygen service[6]	4594	N7D	$198	$198	$250
Gasket GYLON® (filled PTFE)		L68	$150	$150	$150
Solar valve – Type 4592 d_0 = 13 mm The Compact Performance Safety Valve Type 4592 d_0 = 13 mm has among others following options: • Inconel bellows and Inconel spring • Inlet and outlet as welding end • Sigraflex high pressure gasket • High temperature coating	4592.2482 4592.2482	N80	–	$1,740	–
Connections				Available connections see page 44 and 46	

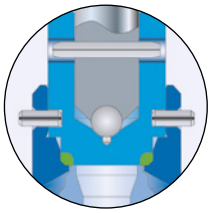
[1] Valid for carbon steel
[2] See page 53 for plastic material limitations
[3] Adaptor and lift indicator are available from Charlotte with stainless steel lifting device
[4] Standard for set pressures 2320 psig an above
[5] For superimposed variable back pressure LESER recommends to use a 13 mm orifice diameter.
[6] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.
[7] In case a gastight valve is needed (closed bonnet and cap), bellows must be used as well.

Compact Performance

All prices in $

Please state O-ring material

Delivery time depends on type of connection



O-ring disc

Type 462

Actual Orifice diameter d_0 [mm]				9	13	17.5	9	13	17.5
Actual Orifice area A_0 [inch^2]				0.099	0.206	0.373	0.099	0.206	0.373
Weight threaded [lb]				6.8	6.8	8.6	6.8	6.8	8.6
Weight flanged [lb]				18.7	18.7	18.7	18.7	18.7	18.7
O-ring material	NBR	Buna-N®	"N"	J30	J30	J30			
	CR	Neoprene®	"K"	J21	J21	J21			
	EPDM	Buna-EP®	"D"	J22	J22	J22			
	FPM/FKM	Viton®	"L"	J23	J23	J23	FFKM	Kalrez®	"C" J20[1)]
4622: Carbon Steel									
Base / Inlet body	**316L**	**H2**	Art. No. **4622.**	**3772**	**3782**	**3792**	**3772**	**3782**	**3792**
Trim	**316L**			$1,088	$1,088	$1,354	$1,570	$1,570	$1,820
Outlet body	**WCB**	**H3**	Art. No. **4622.**	**3773**	**3783**	**3793**	**3773**	**3783**	**3793**
Bonnet	**WCB**			$1,157	$1,157	$1,424	$1,634	$1,634	$1,886
		H4	Art. No. **4622.**	**3774**	**3784**	**3794**	**3774**	**3784**	**3794**
				$1,238	$1,238	$1,506	$1,711	$1,711	$1,961
		p [psig] S/G/L		**7 – 3625**	**7 – 2610**	**7 – 1340**	**7 – 1480**	**7 – 1480**	**7 – 1340**
4624: Stainless steel – outlet body investment casted									
Base / Inlet body	**316L**	**H2**	Art. No. **4624.**	**2192**	**2202**	**2212**	**2192**	**2202**	**2212**
Outlet body casted	**CF8M**			$1,589	$1,589	$2,177	$2,042	$2,042	$2,593
Bonnet	**CF8M**	**H4**	Art. No. **4624.**	**2194**	**2204**	**2214**	**2194**	**2204**	**2214**
				$2,039	$2,039	$2,628	$2,464	$2,464	$3,017
		p [psig] S/G/L		**7 – 3625**	**7 – 2610**	**7 – 1340**	**7 – 1480**	**7 – 1480**	**7 – 1340**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

[1)] O-ring 90 Shore for set pressure > 580 psig (40 bar)

Type 462 Obsolete models

Obsolete models replaced in 2015

Actual Orifice diameter d_0 [mm]	9		13		17.5	
Actual Orifice area A_0 [mm^2]	63.6		133		241	
Replacement deep-drawn [from 01.04.2015]	**old**	**replaced by**	**old**	**replaced by**	**old**	**replaced by**
Outlet body	deep-drawn	Investment casting	deep-drawn	Investment casting	deep-drawn	Investment casting
Art. No. **4624.**	**295X**	**219X**	**296X**	**220X**	**297X**	**221X**
p [bar$_g$] S/G/L	**0.5 – 250**	**0.5 – 250**	**0.5 – 180**	**0.5 – 180**	**0.5 – 92.5**	**0.5 – 92.5**
Replacement ductil [from the end of 2015]	**old**	**replaced by**	**old**	**replaced by**	**old**	**replaced by**
Outlet body	Ductile	Cast steel	Ductile	Cast steel	Ductile	Cast steel
Art. No.	4623.290X	4622.377X	4623.291X	4622.378X	4623.292X	4622.379X
p [bar$_g$] S/G/L	**0.5 – 250**	**0.5 – 250**	**0.5 – 180**	**0.5 – 180**	**0.5 – 92.5**	**0.5 – 92.5**

Compact Performance

All prices in $

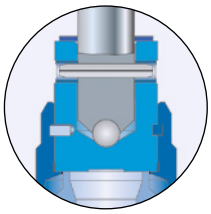
Options				Type 462					
Actual Orifice diameter d_0 [mm]				9	13	17.5	9	13	17.5
Actual Orifice area A_0 [inch^2]				0.099	0.206	0.373	0.099	0.206	0.373
Weight threaded [lb]				6.8	6.8	6.8	6.8	6.8	6.8
O-ring material See page 57 for elastomer limitations	NBR	Buna-N®	"N"	J30	J30	J30			
	CR	Neoprene®	"K"	J21	J21	J21			
	EPDM	Buna-EP®	"D"	J22	J22	J22			
	FPM/FKM	Viton®	"L"	J23	J23	J23	FFKM	Kalrez®	"C" J20[2]
Test gag	H4		J69	$198	$198	$198	$198	$198	$198
	H2		J70	$198	$198	$198	$198	$198	$198
Stainless steel bellows	p ≤ 580 psig		J78	$447	$447	$447	$447	$447	$447
	p > 580 psig		J55, J78[1]	$697	$697	$697	$697	$697	$697
Elastomer bellows			J79	$250	$250	$250	$250	$250	$250
Heating jacket for body			H29	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245
Spring	High temperature alloy spring		X01	$51	$51	$51	$51	$51	$51
	1.4310		X04	$51	$51	$51	$51	$51	$51
	Inconel[1]		X08	$447	$447	$447	$447	$447	$447
Adaptor for lift indicator	H4		J39[3]	$250	$250	$250	$250	$250	$250
Lift indicator			J93[3]	$746	$746	$746	$746	$746	$746
Marking with stainless steel tag			M29	$40	$40	$40	$40	$40	$40
Free of oil and grease (for gas medium only)	Standard		J85	$150	$150	$198	$150	$150	$198
	increased requirement		J92	$198	$198	$250	$198	$198	$250
Gasket GYLON® (filled PTFE)			L68	$150	$150	$150	$150	$150	$150
Connections				Available connections see page 44 and 46					

[1] Delivery time: 5 weeks
[2] O-ring 90 Shore for set pressure > 580 psig (40 bar)
[3] In case a gastight valve is needed (closed bonnet and cap), bellows must be used as well.

Compact Performance

All prices in $

Delivery time depends on type of connection



Metal seat, stellited

Type 459 Heavy duty design

Actual Orifice diameter d_0 [mm]				6	9
Actual Orifice area A_0 [inch^2]				0.044	0.099
Weight threaded [lb]				6.8	6.8
4954: Stainless steel – outlet body investment casted					
Base / Inlet body **Outlet body** **Bonnet**	**316L** **CF8M** **316L or CF8M**	**H2**	Art. No. **4594.**	**2132** $1,633	**2142** $1,633
		H4	Art. No. **4594.**	**2134** $2,083	**2144** $2,083
			p [psig] S/G/L	**6091 – 12325**	**3626 – 6090**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

Type 459 Heavy duty design — Obsolete models replaced in 2015

Actual Orifice diameter d_0 [mm]			6		9		13	
Actual Orifice area A_0 [mm^2]			28.3		63.6		133	
Changes in HDD [from 01.04.2015]			old	new	old	new	old	new
	Outlet body		Solid	Investment casting	Solid	Investment casting	Solid	Type 459 Investment casting
	Art. No. **4594.**		**253X**	**213X**	**258X**	**214X**	**259X**	**217X**
	p [bar$_g$] S/G/L		**420.01 – 850**	**420.01 – 850**	**1.5 – 420**	**250.01 – 420**	**0.2 – 200**	**0.2 – 200**

Compact Performance

All prices in $

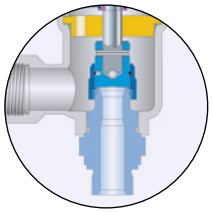
Options			Type 459 Heavy duty design	
Actual Orifice diameter d_0 [mm]			6	9
Actual Orifice area A_0 [inch^2]			0.044	0.099
Weight threated [lb]			6.8	6.8
Test gag	H4	J69	$198	$198
	H2	J70	$198	$198
Stainless steel bellows		J78	x	$697
Elastomer bellows		J79	x	$250
Heating jacket for body		H29	$1,245	$1,245
Adaptor for lift indicator	H4	J39[2)]	$250	$250
Lift indicator		J93[2)]	$746	$746
Marking with stainless steel tag		M29	$40	$40
Free of oil and grease (for gas medium only)	Standard	J85	$150	$150
	increased requirement	J92	$198	$198
Oxygen service[1)]		N7D	$198	$198
Gasket GYLON® (filled PTFE)		L68	$150	$150
Spring Inconel Delivery time: 5 weeks		X08	$447	$447
Connections			Available connections see page 45 and 47	

[1)] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.
[2)] In case a gastight valve is needed (closed bonnet and cap), bellows must be used as well.

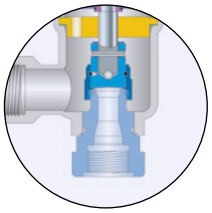
Compact Performance
Available threaded connections Type 459, 462 standard

All prices in $

How to find the price for threaded connections
Step 1: select orifice size column (ex. 13 mm)
Step 2: select inlet column
Step 3: select thread type section (ex. male thread NPT)
Step 4: select size row (ex. 1")
Step 5: repeat steps 1 to 4 for the outlet



Male thread



Female thread

Threaded connections

	Valve size	Option code threaded connections for Type 459, 462 standard											
		d_0 9 mm - 0.099 inch				d_0 13 mm - 0.206 inch				d_0 17.5 mm - 0.373 inch			
		Inlet	Additional price	Outlet	Additional price	Inlet	Additional price	Outlet	Additional price	Inlet	Additional price	Outlet	Additional price
Male thread ANSI/ASME B1.20.1 (Outlet rating PN40)													
NPT	1/2	V61[4]	$0	–		V61[1]	$0	–		–		–	
	3/4	V62[4]	$0	–		V62	$0	–		–		–	
	1	V63[4]	$0	–		V63	$0	V73	$173	V63	$0	–	
	1 1/4	–		–		–		–		V85	$125	–	
	1 1/2	–		V74	$173	–		V74	$173	V64	$125	V74	$173
	2	–		–		–		–		V86	$125	–	
Female thread ANSI/ASME B1.20.1													
NPT	1/2	V58[4]	$125	–		V58	$125	–		–		–	
	3/4	V59[4]	$125	–		V59	$125	–		V59	$125	–	
	1	V60[4]	$125	V71	$0	V60	$125	V71	$0	V60	$125	–	
	1 1/4	–		V80	$173	–		V80	$173	V87	$125	–	
	1 1/2	–		V72	$173	–		V72	$173	V75	$125	V72	$0
	2	–		–		–		–		–		V88[5]	$173
Male thread DIN ISO 228-1 (Outlet rating PN40)													
G / BSPP	1/2	V54[4]	$0	–				–		–		–	
	3/4	V55[4]	$0	–		V55	$0	–		–		–	
	1	V56[4]	$0	V68	$173	V56	$0	V68	$173	V56	$0	–	
	1 1/4	–		–		–		–		V83	$125	–	
	1 1/2	–		V69	$173	–		V69	$173	V57	$125	V69	$173
Female thread DIN ISO 228-1													
G / BSPP	1/2	V50[4]	$125	–		V50	$125	–		–		–	
	3/4	V51[4]	$125	–		V51	$125	–		V51	$125	–	
	1	V52[1]	$125	V66	$0	V52[3]	$125	V66	$0	V52	$125	–	
	1 1/4	–		V81	$173	–		V81	$173	V84	$125	–	
	1 1/2	–		V67	$173	–		V67	$173	V53	$125	V67	$0

[1] d_0 13 mm: up to 1813 psig and 851 °F.
[2] Only for d_0 9 mm
[3] d_0 9 mm: up to PN 420 / 6090 psig (420 bar)
[4] Max. PN 700 / 10150 psig (700 bar). For higher set pressures a special inlet body is necessary. (See LDeS 1001.19).
[5] Welded connection. Delivery time 6 weeks.

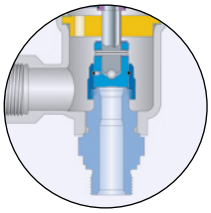
Flanged and threaded connections can be combined.
Threads according to other standards, e.g. ISO, DIN, BSP are available.
Please specify in writing (diameter, pressure rating and standard).

Please note: Only certain connection combinations are kept in Charlotte stock.
Please see page 199 "Availability from Charlotte stock".

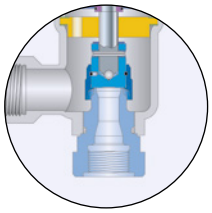
Compact Performance
Available threaded connections Type 459 Heavy duty design

All prices in $

How to find the price for threaded connections
Step 1: select orifice size column (ex. 13 mm)
Step 2: select inlet column
Step 3: select thread type section (ex. male thread NPT)
Step 4: select size row (ex. 1")
Step 5: repeat steps 1 to 4 for the outlet



Male thread



Female thread

Threaded connections

	Valve size	Option code threaded connections for Type 459-HDD							
		d_0 6 mm (PN 700)				d_0 9 mm - 0.099 inch^2			
		Inlet	Additional price	Outlet	Additional price	Inlet	Additional price	Outlet	Additional price
Male thread ANSI/ASME B1.20.1 (Outlet rating PN40)									
NPT	1/2	V61[4]	$0	–		–	–	–	
	3/4	V62[4]	$0	–		V62	$0	–	
	1	V63[4]	$0	–		V63	$0	V73	$173
	1 1/2	–		V74	$173	–		V74	$173
Female thread ANSI/ASME B1.20.1									
NPT	1/2	V58[4]	$125	–		V58	$125	–	
	3/4	V59[4]	$125	–		V59	$125	–	
	1	V60[4]	$125	V71	$0	V60	$125	V71	$0
	1 1/4	–		V80	$173	–		V80	$173
	1 1/2	–		V72	$173	–		V72	$173
Male thread DIN ISO 228-1 (Outlet rating PN40)									
G / BSPP	1/2	V54[4]	$0	–		V54[2]	$0	–	
	3/4	V55[4]	$0	–		V55	$0	–	
	1	V56[4]	$0	–		V56	$0	V68	$173
	1 1/4	–		–		–		–	
	1 1/2	–		V69	$173	–		V69	$173
Female thread DIN ISO 228-1									
G / BSPP	1/2	V50[4]	$125	–		V50	$125	–	
	3/4	V51[4]	$125	–		V51	$125	–	
	1	–		V66	$0	V52[3]	$125	V66	$0
	1 1/4	–		V81	$173	–		V81	$173
	1 1/2	–		V67	$173	–		V67	$173

[1] d_0 13 mm: up to 1813 psig and 851 °F.
[2] Only for d_0 9 mm
[3] d_0 9 mm: up to PN 420 / 6090 psig (420 bar)
[4] Max. PN 700 / 10150 psig (700 bar). For higher set pressures a special inlet body is necessary. (See LDeS 1001.19).
[5] Welded connection. Delivery time 6 weeks.

Flanged and threaded connections can be combined.
Threads according to other standards, e.g. ISO, DIN, BSP are available.
Please specify in writing (diameter, pressure rating and standard).

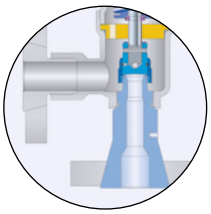
Please note: Only certain connection combinations are kept in Charlotte stock.
Please see page 199 "Availability from Charlotte stock".

Compact Performance
Available flanged connections Type 459, 462 standard

All prices in $

Please note that LESER standard flange material is SA 479 316L therefore pressure x temperature limitaiom will apply.

How to find the price for flanged connections
Step 1: select orifice size column (ex. 13 mm)
Step 2: select inlet column
Step 3: select size row (ex. 1")
Step 4: select pressure class row (ex. Class 150)
Step 5: repeat steps 1 to 4 for the outlet



Flanged version

Flanged connections

Option Code for flange connections for Type 459, 462 standard

Nominal size	Price	Pressure rating	d_0 9 mm 0.099 inch²		d_0 13 mm 0.206 inch²		d_0 17.5 mm 0.373 inch²	
ANSI/ASME B 16.5								
			Option code		Option code		Option code	
NPS	Additional price	Class	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
1/2	$348	150	V01	–	V01	–	–	–
		300	V02	–	V02	–	–	–
		600	V02	–	V02	–	–	–
	$697	900	V03	–	V03	–	–	–
		1500	V03	–	V03	–	–	–
		2500	V04	–	V04	–	–	–
3/4	$348	150	V05	–	V05	–	V05	–
		300	V06	–	V06	–	V06	–
		600	V06	–	V06	–	V06	–
	$697	900	V07	–	V07	–	V07	–
		1500	V07	–	V07	–	V07	–
		2500	V08	–	V08	–	V08	–
1	$348	150	V09	V18/V90	V09	V18/V90	V09	–
		300	V10	V19/V91	V10	V19/V91	V10	–
		600	V10	V19/V91	V10	V19/V91	V10	–
	$697	900	V11	–	V11	–	V11	–
		1500	V11	–	V11	–	V11	–
		2500	V12	–	V12	–	V12	–
1 1/2	$348	150	–	V21/V92	–	V21/V92	–	V21/V92
		300	–	V22/V93	–	V22/V93	–	V22/V93
		600	–	V22/V93	–	V22/V93	–	V22/V93

Flanged and threaded connections can be combined.
Threads according to other standards, e.g. ISO, DIN, BSP are available.
Please specify in writing (diameter, pressure rating and standard).

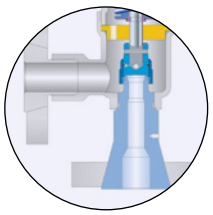
Please note: Only certain connection combinations are kept in Charlotte stock.
Please see page 199 "Availability from Charlotte stock".

Compact Performance
Available flanged connections Type 459 Heavy duty design

All prices in $

Please note that LESER standard flange material is SA 479 316L therefore pressure x temperature limitaiom will apply.

How to find the price for flanged connections
Step 1: select orifice size column (ex. 13 mm)
Step 2: select inlet column
Step 3: select size row (ex. 1")
Step 4: select pressure class row (ex. Class 150)
Step 5: repeat steps 1 to 4 for the outlet



Flanged version

Flanged connections

Option code for flange connections for Type 459-HDD

Nominal size	Price	Pressure rating	d_0 9 mm - 0.099 inch	
ANSI/ASME B 16.5				
NPS	**Additional price**	**Class**	**Inlet**	**Outlet**
$^3/_4$	$697	2500	V08	–
1	$348	150	–	–
		300	–	V19
		600	–	V19
	$697	2500	V12	–
$1^1/_2$	$348	150	–	–
		300	–	V22
		600	–	V22

Flanged and threaded connections can be combined.
Threads according to other standards, e.g. ISO, DIN, BSP are available.
Please specify in writing (diameter, pressure rating and standard).

Please note: Only certain connection combinations are kept in Charlotte stock.
Please see page 199 "Availability from Charlotte stock".

Compact Performance
Spare parts

All prices in $

Series 437

Valve size	Orifice [inch²]		Type 4373 Hardened stainless steel		Type 4374 Stainless steel 316L		
Disc – Type 437 metal to metal seat (Item 7)							
all	0.122		205.3339.9000 $73		205.3349.9000 $73		
Disc – Type 438 soft seal with O-ring, disc material: 316L (Item 7)							
Valve size	**Orifice [inch²]**	**O-ring size ARP-no.**	**CR Neoprene® "K"**	**EPDM Buna-EP® "D"**	**FPM (FKM) Viton® "L"**	**NBR Buna-N® "N"**	**FFKM Kalrez® "C"**
all (standard version)	0.122	$^{7}/_{16}$ x $^{3}/_{32}$ ARP 111	200.8349.9751 $210	200.8349.9741 $210	200.8349.9771 $210	200.8349.9781 $210	200.8349.9791 200.8349.9793[1)] $547
all (long version)	0.122	$^{7}/_{16}$ x $^{3}/_{32}$ ARP 111	200.9949.9053 $198	200.9949.9042 $198	200.9949.9073 $210	200.9949.9083 $198	200.9949.9091 200.9949.9093[1)] $547
O-ring – Type 438 soft seal (Item 7.3)							
all	0.122	$^{7}/_{16}$ x $^{3}/_{32}$ ARP 111	502.0107.2651 $32	502.0107.2641 $32	502.0107.2671 $43	502.0107.2681 $105	502.0107.2691 502.0107.2693[1)] $370
Disc – Type 439 with vulcanized soft seal (Item 7)							
Valve size	**Orifice [inch²]**		**CR Neoprene® "K"**	**EPDM Buna-EP® "D"**	**FPM (FKM) Viton® "L"**	**NBR Buna-N® "N"**	**FFKM ISOLAST® "C"**
all	0.122		200.9049.9051 $250	200.9049.9041 $265	200.9049.9071 $265	200.9049.9081 $265	200.9049.9091 $688

Rollpin – Disc (Item 57)			
all	Type 437	Stainless steel	480.2405.0000 $8
all	Type 439	Stainless steel	480.0305.0000 $8
Ball – Disc (Item 61)			
all		Stainless steel	510.0104.0000 $21

[1)] O-ring 90 Shore for set pressure > 580 psig (40 bar)

All prices in $

Series 437

Size	Orifice [inch²]	Male NPT		Female NPT	
Inlet Bodies Type 437 Threaded connections – Material 316L (Item 1)					
1/2"	0.122	V61	136.4449.9204 $531	V58	136.4449.9211 $531
3/4"		V62	136.4549.9204 $531	V59	136.4549.9211 $531
1"		V63	136.5849.9204 $531	V60	136.5849.9211 $531
Inlet Bodies Types 438 / 439 Threaded connections – Material 316L (Item 1)					
Size	**Orifice [inch²]**	**Male NPT**		**Female NPT**	
1/2"	0.122	V61	136.4949.9204 $531	V58	136.4949.9211 $531
3/4"		V62	136.5449.9204 $531	V59	136.5449.9211 $498
1"		V63	136.6849.9204 $498	V60	136.6849.9211 $498

Size	Orifice [inch²]	Class 150		Class 300 – Class 2500	
Inlet Bodies Type 437 Flanged connections – Material 316L (Item 1)					
1/2"	0.122	V01	136.4449.9202[1] $531	V02 – V04	136.6349.9208 $498
3/4"		V05	136.4549.9208 $531	V06 – V08	136.4549.9208 $531
1"		V09	136.4449.9208 $531	V10 – V12	136.4449.9208 $531
Inlet Bodies Type 438 / 439 Flanged connections – Material 316L (Item 1)					
Size	**Orifice [inch²]**	**Class 150**		**Class 300 – 2500**	
1/2"	0.122	V01	136.4949.9202[1] $498	V02 – V04	136.4949.9208 $498
3/4"		V05	136.5449.9208 $498	V06 – V08	136.5449.9208 $498
1"		V09	136.6449.9208 $498	V10 – V12	136.6449.9208 $498

[1] Subassembly consisting of: inlet body, sealing part, slip on flange.

Please note: Inlet bodies listed above are valid for the standard versions only. Please contact LESER for part numbers and pricing of the long versions.

Compact Performance
LESER Original Spare Parts Kits – Type 459, 462, 462 HDD

All prices in $

The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER safety valve

Contents — Type 459

Item	Component	Material	Quantity
7	Disc	1.4404 / 316L	1
14	Split ring	1.4404 / 316L	2
40.3	Spacer	1.4571 / 316Ti	3
57	Pin	1.4310 / Edelstahl	1
59	Securing ring (split ring)	1.4571 / 316Ti	1
60	Gasket	Graphite / 1.4401 Graphite / 316	2
61	Ball	1.4401 / 316	1
63	Gasket	Graphite / 1.4401 Graphite / 316	1

Contents — Type 462, 462 HDD

Item	Component	Material	Quantity
7.1	O-ring disc body	1.4404 / 316L	1
7.2	Lifting aid	1.4404 / 316L	1
7.4	O-ring	FKM 70/75 Shore A, FKM 90 Shore A EPDM 70 Shore A, EPDM 90 Shore A	4
7.5	Pin	1.4310 / Stainless steel	1
14	Split ring	1.4404 / 316L	2
40.3	Spacer	1.4571 / 316Ti	3
57	Pin	1.4310 / Stainless steel	1
59	Securing ring (split ring)	1.4571 / 316Ti	1
60	Gasket	Graphite / 1.4401 Graphite / 316	2
61	Ball	1.4401 / 316	1
63	Gasket	Graphite / 1.4401 Graphite / 316	1

Spare Parts Kits

	d_0	6	9	13	17.5
Type 459		–	**5012.1230**	**5012.1231**	**5012.1232**
			$238	$238	$238
Type 462		–	**5012.1233**	**5012.1234**	**5012.1235**
Type 462 HDD			$317	$317	$317

Compact Performance
Spare parts

All prices in $

Series 459

Orifice [inch²]	Type 4592 / 4593 Hardened stainless steel	Type 4594 316L
Disc – Type 459 metal to metal seat (Item 7)		
0.044	–	200.3969.9118 $348
0.099	200.2039.9000 $210	200.2049.9000 $198
0.206	200.2139.9000 $198	200.2149.9000 $198
0.373	200.2239.9000 $198	200.2249.9000 $198
Disc – Type 459 plastic seat (Item 7)		
Orifice [inch²]	**PTFE**	**PCTFE**
0.099	200.2049.9005 $447	200.2049.9006 $697
0.206	200.2149.9005 $447	200.2149.9006 $697
0.373	200.2249.9005 $447	200.2249.9006 $697

Orifice [inch²]	O-ring size ARP-no.	CR Neoprene® "K"	EPDM Buna-EP® "D"	FPM (FKM) Viton® "L"	NBR Buna-N® "N"	FFKM Kalrez® "C"
Disc – Type 462 soft seal, disc material: 316L (Item 7)						
0.099	1/2 x 3/32 ARP 112	200.9349.9051 $250	200.9349.9041 $250	200.9349.9071 $250	200.9349.9081 $250	200.9349.9091 200.9349.9093[2] $797
0.206	9/16 x 3/32 ARP 113	220.4549.9051 $250	220.4549.9041 $250	220.4549.9071 $250	220.4549.9081 $250	220.4549.9091 220.4549.9093[2] $797
0.373	13/16 x 3/32 ARP 117	220.4649.9051 $250	220.4649.9041 $250	220.4649.9071 $250	220.4649.9081 $250	220.4649.9091 220.4649.9093[2] $797
O-ring – Type 462 soft seal (Item 7.4)						
0.099	1/2 x 3/32 ARP 112	502.0123.2651 $30	502.0123.2641 $30	502.0123.2671 $40	502.0123.2681 $30	502.0123.2691 502.0123.2693[2] $547
0.206	9/16 x 3/32 ARP 113	502.0139.2651 $30	502.0139.2641 $30	502.0139.2671 $40	502.0139.2681 $30	502.0139.2691 502.0139.2693[2] $547
0.373	13/16 x 3/32 ARP 117	502.0202.2651 $30	502.0202.2641 $30	502.0202.2671 $40	502.0202.2681 $30	502.0202.2691 502.0202.2693[2] $547

Valve size	Set pressure	Bellows	Conversion Kit
Bellows and Bellows Conversion Kits – Material 316Ti (Item 15)			
all	p ≤ 580 psig (40 bar)	400.7949.0000[1] $475	5021.1050 $447
all	p > 580 psig (40 bar)	400.6349.0000 $697	5021.1051 $697

Valve size	Material	Gasket
Gaskets Body – Bonnet (Item 60)		
all	Graphite + 316 SS	500.2407.0000 $20
all	Gylon (filled PTFE)	500.2405.0000 $80
Rollpin – Disc (Item 57)		
all	Stainless steel	480.0505.0000 $7
Ball – Disc (Item 61)		
all	Stainless steel	510.0104.0000 $20

[1] The bellows is not completely back pressure compensating. Correction factor d_0 9, $d_0$13 and d_0 17.5 see LDeS 1001.19
[2] O-ring 90 Shore for set pressure > 580 psig (40 bar)

Compact Performance
Spare parts

All prices in $

Series 459

Size	Orifice [inch²]	Male NPT		Female NPT	
Inlet bodies Type 459 / 462 Threaded connections – Material 316L (Item 1)					
1/2"	0.044	V61	**136.6969.9204** $945	V58	**136.6969.9211** $945
3/4"		V62	**136.7069.9204** $945	V59	**136.7069.9211** $945
1"		V63	**136.7169.9204** $945	V60	**136.7169.9211** $945
3/4"	0.099	V62	**136.7549.9204** $746	V59	**136.7549.9211** $746
1"		V63	**136.7649.9204** $746	V60	**136.7649.9211** $746
1 1/2"		V64	**136.7849.9204** $746	V75	**136.7849.9211** $746
3/4"	0.206	V62	**136.8049.9204** $746	V59	**136.8049.9211** $746
1"		V63	**136.8149.9204** $746	V60	**136.8149.9211** $746
1 1/2"		V64	**136.8349.9204** $746	V75	**136.8349.9211** $746
1"	0.373	V63	**136.3649.9204** $945	V60	**136.3649.9211** $945
1 1/2"		V64	**136.8649.9204** $945	V75	**136.8649.9211** $945

Series 459

Size	Orifice [inch²]	Class 150		Class 300 – 2500	
Inlet bodies Type 459 / 462 Flanged connections – Material 316L (Item 1)					
1/2"	0.044	–	–	V02 – V04	**136.6969.9208** $795
3/4"		V05	**136.7069.9208** $795	V06 – V08	**136.7069.9208** $795
1"		V09	**136.7169.9208** $795	V10 – V12	**136.7169.9208** $795
1/2"	0.099	–	–	V02 – V04	**136.7449.9208** $795
3/4"		V05	**136.3949.9208** $795	V06 – V08	**136.3949.9208** $795
1"		V09	**136.3449.9208** $795	V10 – V12	**136.3449.9208** $795
1/2"	0.206	V01	**136.7949.9202**[1)] $849	V02 – V04	**136.7949.9208** $795
3/4"		V05	**136.5049.9208** $795	V06 – V08	**136.5049.9208** $795
1"		V09	**136.3549.9208** $795	V10 – V12	**136.3549.9208** $795
3/4"	0.373	V05	**136.8449.9208** $1,056	V06 – V08	**136.8449.9208** $1,056
1"		V09	**136.3649.9208** $1,056	V10 – V12	**136.3649.9208** $1,056

[1)] Subassembly consisting of: inlet body, sealing part, slip on flange.

Compact Performance
Soft seal selection

Soft seal selection

Code	Trademarks (Designation)	Company	Code-letter[1]	Option Code	T_{min} [°F]	T_{min} [°C]	T_{max} [°F]	T_{max} [°C]	Application[2]
O-ring									
CR	Neoprene®	DuPont	K	J21	-40	-40	212	100	Parafin oil, silicone oil and grease, water and waterbased solvents, refrigerants, ozone
NBR	Buna-N® (Nitrile-Butadiene)	DuPont	N	J30	-13	-25	230	110	Hydraulic oil, vegetable and animal grease and oil
EPDM	Buna-EP® (Ethylene-Propylene-Diene)	Bayer	D	J22	-49	-45	302	150	Hot water and superheated steam up to 302° F, several organic and inorganic acids, silicone oil and grease, FDA compliant
FPM (FKM)	Viton® (Fluorocarbon)	DuPont	L	J23	5[3]	-15[3]	356	180	High temperature service (no steam or hot water), mineral oil and grease, silicone oil and grease, vegetable and animal grease and oil, ozone, FDA compliant compound
FFKM	Kalrez® (Perfluoro)	DuPont	C	J20	32	0	482	250	Nearly all chemicals, standard compound is Kalrez® 6230 or ISOLAST® J9515, FDA and USP VI compliant compound
Sealing plate									
SP	VESPEL SP-1® (Polyimide)	DuPont	T	J49	-454	-270	572	300	High temperature and high pressure applications (no steam), for chemical resitance refer to manufactures guide
PCTFE	KEL-F® (Polychlorotrifluor-ethylene)	3M	G	J48	-427	-255	302	100	Cyrogenic and refrigeration applications flammable media, gaseous oxygene application up to 725 psig at 140 °F
PTFE	Teflon® (Polytetrafluorethylene)	DuPont	A	J44	-328	-200	302	150	Nearly all chemicals
Other than listed			X	For other materials please contact **LESER LLC**					

[1] The code letters will be stamped on the disc.
[2] Pressure and temperature service must be considered in any case.
Chemical resistance and the temperature limits depend on O-ring manufacturer information. LESER can not take any warranty.
[3] From Charlotte: Minimum temperature 5 °F / -15 °C
-4 °F / -20 °C is possible through a special process (Consult LESER US).

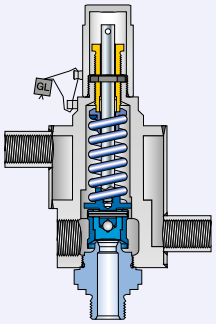
Set pressure limits

Sealing plate disc

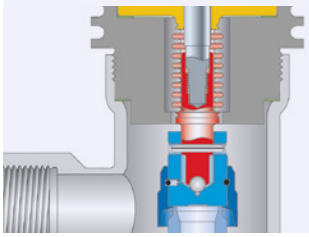
Material		Pressure range			
		[psig]	[bar]	[psig]	[bar]
Series 437	d_0	min.		max.	
VESPEL SP-1®	6	145	10	4786	330
	10	145	10	2611	180
Kel-F®	10	3	0.2	1697	117
Teflon®	10	3	0.2	145	10
Series 459	d_0	min.		max.	
VESPEL SP-1®	9	145	10	2756	190
	13	145	10	2248	155
	17.5	145	10	1450	100
Kel-F®	9	1	0.1	1276	88.4
	13	1	0.1	1044	71.8
	17.5	1	0.1	885	61.3
Teflon®	9	1	0.1	145	10
	13	1	0.1	145	10
	17.5	1	0.1	145	10

Compact Performance
Available options

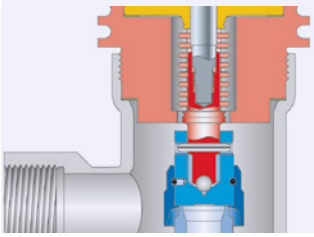
Heating jacket



Stainless steel bellows
J78: Closed bonnet
p ≤ 580 psig
J55J78: Closed bonnet
p > 580 psig



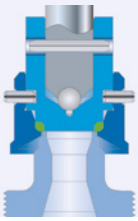
Conversion kit for stainless steel bellows
On request



Solar valve
N80

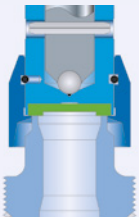
O-ring disc

J30: NBR	Buna-N®	“N”
J21: CR	Neoprene®	“K”
J22: EPDM	Buna-EP®	“D”
J23: FPM/FKM	Viton®	“L”
J20: FFKM	Kalrez®	“C”



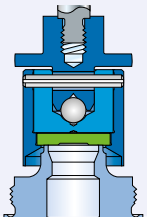
Series 459
Disc with inserted sealing plate

J44: PTFE	“A”
J48: PCTFE	“G”
J49: SP	“T”



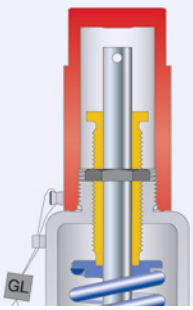
Series 437
Disc with inserted sealing plate

J44: PTFE	“A”
J48: PCTFE	“G”
J49: SP	“T”

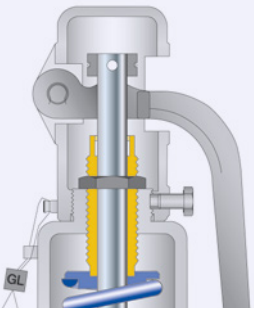


Inconel X-750 Spring
X08

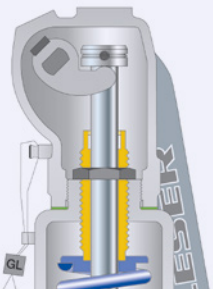
Screwed cap H2
H2



Plain lever H3
H3

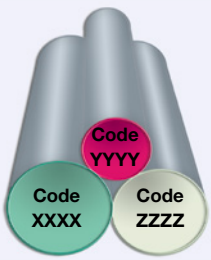


Packed lever H4
H4

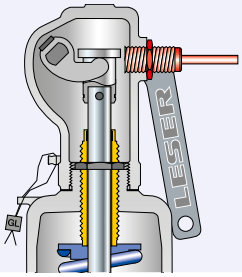


Special material

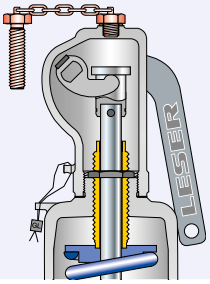
2.4610	Hastelloy® C4
2.4360	Monel® 400
1.4462	Duplex



Lift indicator
J39: Adaptor for lift indicator H4
J93: Lift indicator



Test gag
J69: H4
J70: H2



API
Flanged Safety Relief Valves

All prices in $

Type 5262 WCB

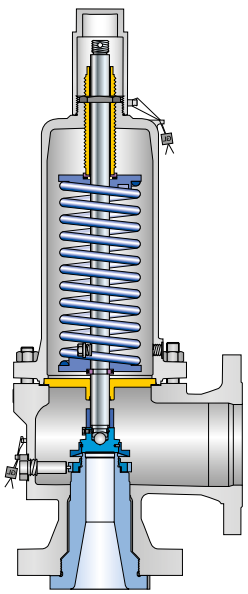
Bonnet		closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		1 D 2				1 D 2				1 D 2			
D	Art. No. **5262.**	**0012**	**0013**	**0014**	**0015**	**0022**	**0023**	**0024**	**0025**	**0022**	**0023**	**0024**	**0025**
		$3,031	$3,163	$3,296	$3,163	$3,031	$3,163	$3,296	$3,163	$3,031	$3,163	$3,296	$3,163
Valve size		1 E 2				1 E 2				1 E 2			
E	Art. No. **5262.**	**0152**	**0153**	**0154**	**0155**	**0162**	**0163**	**0164**	**0165**	**0162**	**0163**	**0164**	**0165**
		$3,031	$3,163	$3,296	$3,163	$3,031	$3,163	$3,296	$3,163	$3,031	$3,163	$3,296	$3,163
Valve size		$1^1/_2$ F 2				$1^1/_2$ F 2				$1^1/_2$ F 2			
F	Art. No. **5262.**	**0292**	**0293**	**0294**	**0295**	**0302**	**0303**	**0304**	**0305**	**0312**	**0313**	**0314**	**0315**
		$3,159	$3,291	$3,422	$3,291	$3,159	$3,291	$3,422	$3,291	$3,159	$3,291	$3,422	$3,291
Valve size		$1^1/_2$ G 3				$1^1/_2$ G 3				$1^1/_2$ G 3			
G	Art. No. **5262.**	**0452**	**0453**	**0454**	**0455**	**0462**	**0463**	**0464**	**0465**	**0472**	**0473**	**0474**	**0475**
		$3,232	$3,364	$3,497	$3,364	$3,232	$3,364	$3,497	$3,364	$3,232	$3,364	$3,497	$3,364
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		$1^1/_2$ H 3				$1^1/_2$ H 3				2 H 3			
H	Art. No. **5262.**	**1422**	**1423**	**1424**	**1425**	**1432**	**1433**	**1434**	**1435**	**1442**	**1443**	**1444**	**1445**
		$3,538	$3,669	$3,805	$3,669	$3,538	$3,669	$3,805	$3,669	$3,942	$4,126	$4,365	$4,126
Valve size		2 J 3				2 J 3				3 J 4			
J	Art. No. **5262.**	**1622**	**1623**	**1624**	**1625**	**1632**	**1633**	**1634**	**1635**	**1642**	**1643**	**1644**	**1645**
		$4,444	$4,631	$4,869	$4,631	$4,444	$4,631	$4,869	$4,631	$5,559	$5,741	$5,979	$5,741
Valve size		3 K 4				3 K 4				3 K 4			
K	Art. No. **5262.**	**2022**	**2023**	**2024**	**2025**	**2032**	**2033**	**2034**	**2035**	**2032**	**2033**	**2034**	**2035**
		$5,559	$5,741	$5,979	$5,741	$5,559	$5,741	$5,979	$5,741	$5,559	$5,741	$5,979	$5,741
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		3 L 4				3 L 4				4 L 6			
L	Art. No. **5262.**	**2322**	**2323**	**2324**	**2325**	**2332**	**2333**	**2334**	**2335**	**2342**	**2343**	**2344**	**2345**
		$5,559	$5,741	$5,979	$5,741	$5,559	$5,741	$5,979	$5,741	$8,586	$8,769	$9,007	$8,769
Valve size		4 M 6				4 M 6				4 M 6			
M	Art. No. **5262.**	**5802**	**5803**	**5804**	**5805**	**5812**	**5813**	**5814**	**5815**	**5812**	**5813**	**5814**	**5815**
		$8,586	$8,769	$9,007	$8,769	$8,586	$8,769	$9,007	$8,769	$8,586	$8,769	$9,007	$8,769
Valve size		4 N 6				4 N 6				4 N 6			
N	Art. No. **5262.**	**5902**	**5903**	**5904**	**5905**	**5912**	**5913**	**5914**	**5915**	**5912**	**5913**	**5914**	**5915**
		$8,838	$9,024	$9,260	$9,024	$8,838	$9,024	$9,260	$9,024	$8,838	$9,024	$9,260	$9,024
Valve size		4 P 6				4 P 6				4 P 6			
P	Art. No. **5262.**	**6452**	**6453**	**6454**	**6455**	**6462**	**6463**	**6464**	**6465**	**6472**	**6473**	**6474**	**6475**
		$10,503	$10,689	$10,929	$10,689	$10,503	$10,689	$10,929	$10,689	$14,713	$15,294	$15,503	$15,294
Valve size		6 Q 8				6 Q 8				6 Q 8			
Q	Art. No. **5262.**	**6572**	**6573**	**6574**	**6575**	**6582**	**6583**	**6584**	**6585**	**6582**	**6583**	**6584**	**6585**
		$15,151	$15,731	$15,943	$15,731	$15,151	$15,731	$15,943	$15,731	$15,151	$15,731	$15,943	$15,731
Valve size		6 R 8				6 R 8				6 R 10			
R	Art. No. **5262.**	**6652**	**6653**	**6654**	**6655**	**6662**	**6663**	**6664**	**6665**	**6672**	**6673**	**6674**	**6675**
		$15,151	$15,731	$15,943	$15,731	$15,151	$15,731	$15,943	$15,731	$20,452	$21,035	$21,246	$21,035
Valve size		8 T 10				8 T 10				8 T 10			
T	Art. No. **5262.**	**6752**	**6753**	**6754**	**6755**	**6762**	**6763**	**6764**	**6765**	**6762**	**6763**	**6764**	**6765**
		$27,525	$28,106	$28,321	$28,106	$27,525	$28,106	$28,321	$28,106	$27,525	$28,106	$28,321	$28,106

API
Type 5262 WCB

All prices in $

Type 5262 WCB

Bonnet		closed			open	closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		600 x 150				900 x 300				1500 x 300				2500 x 300			
Valve size		1 D 2				1 1/2 D 2				1 1/2 D 2				1 1/2 D 3			
D	Art. No. **5262.**	**0032** $3,282	**0033** $3,415	**0034** $3,549	**0035** $3,415	Please use 1500 lbs dimensions for this size				**0042** $3,507	**0043** $3,640	**0044** $3,773	**0045** $3,640	**0052** $4,391	**0053** $4,526	**0054** $4,659	**0055** $4,526
		1 E 2				1 1/2 E 2				1 1/2 E 2				1 1/2 E 3			
E	Art. No. **5262.**	**0172** $3,282	**0173** $3,415	**0174** $3,549	**0175** $3,415	Please use 1500 lbs dimensions for this size				**0182** $3,507	**0183** $3,640	**0184** $3,773	**0185** $3,640	**0192** $4,391	**0193** $4,526	**0194** $4,659	**0195** $4,526
		1 1/2 F 2				1 1/2 F 3				1 1/2 F 3				1 1/2 F 3			
F	Art. No. **5262.**	**0322** $3,507	**0323** $3,640	**0324** $3,773	**0325** $3,640	Please use 1500 lbs dimensions for this size				**0332** $3,837	**0333** $3,971	**0334** $4,103	**0335** $3,971	**0342** $5,683	**0343** $5,816	**0344** $5,949	**0345** $5,816
		1 1/2 G 3				1 1/2 G 3				2 G 3				2 G 3			
G	Art. No. **5262.**	**0482** $3,837	**0483** $3,971	**0484** $4,103	**0485** $3,971	**0492** $3,837	**0493** $3,971	**0494** $4,103	**0495** $3,971	**0502** $6,210	**0503** $6,394	**0504** $6,634	**0505** $6,394	**0512** $7,374	**0513** $7,558	**0514** $7,796	**0515** $7,558
Flange class		600 x 150				900 x 150				1500 x 300							
Valve size		2 H 3				2 H 3				2 H 3							
H	Art. No. **5262.**	**1452** $4,900	**1453** $5,082	**1454** $5,321	**1455** $5,082	**1462** $6,210	**1463** $6,394	**1464** $6,634	**1465** $6,394	**1472** $7,374	**1473** $7,558	**1474** $7,796	**1475** $7,558				
		3 J 4				3 J 4				3 J 4							
J	Art. No. **5262.**	**1652** $6,315	**1653** $6,497	**1654** $6,735	**1655** $6,497	**1662** $7,323	**1663** $7,510	**1664** $7,752	**1665** $7,510	**1672** $8,382	**1673** $8,565	**1674** $8,803	**1675** $8,565				
		3 K 4				3 K 6				3 K 6							
K	Art. No. **5262.**	**2042** $6,315	**2043** $6,497	**2044** $6,735	**2045** $6,497	**2052** $8,438	**2053** $8,621	**2054** $8,857	**2055** $8,621	**2062** $10,503	**2063** $10,689	**2064** $10,929	**2065** $10,689				
Flange class		600 x 150				900 x 150				1500 x 150							
Valve size		4 L 6				4 L 6				4 L 6							
L	Art. No. **5262.**	**2352** $9,546	**2353** $9,728	**2354** $9,969	**2355** $9,728	**2362** $11,114	**2363** $11,299	**2364** $11,535	**2365** $11,299	**2372** $11,114	**2373** $11,299	**2374** $11,535	**2375** $11,299				
		4 M 6				4 M 6											
M	Art. No. **5262.**	**5822** $9,546	**5823** $9,728	**5824** $9,969	**5825** $9,728	**5832** $11,114	**5833** $11,299	**5834** $11,535	**5835** $11,299								
		4 N 6				4 N 6											
N	Art. No. **5262.**	**5922** $11,114	**5923** $11,299	**5924** $11,535	**5925** $11,299	**5932** $11,114	**5933** $11,299	**5934** $11,535	**5935** $11,299								
		4 P 6				4 P 6											
P	Art. No. **5262.**	**6482** $15,151	**6483** $15,731	**6484** $15,943	**6485** $15,731	**6492** $15,151	**6493** $15,731	**6494** $15,943	**6495** $15,731								
		6 Q 8															
Q	Art. No. **5262.**	**6592** $17,170	**6593** $17,754	**6594** $17,964	**6595** $17,754												
		6 R 10															
R	Art. No. **5262.**	**6682** $20,452	**6683** $21,035	**6684** $21,246	**6685** $21,035												
		8 T 10															
T	Art. No. **5262.**	–	–	–	–												



All prices in $

Type 5264 CF8M

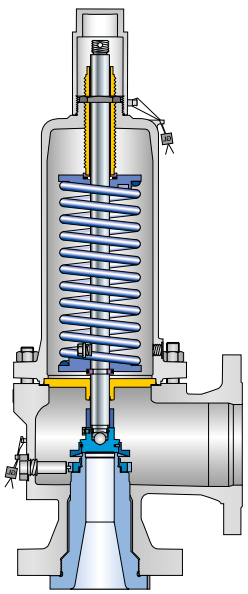
Bonnet		closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		1 D 2				1 D 2				1 D 2			
D	Art. No. **5264.**	**0102** $6,970	–	**0104** $7,659	–	**0112** $6,970	–	**0114** $7,659	–	**0112** $6,970	–	**0114** $7,659	–
Valve size		1 E 2				1 E 2				1 E 2			
E	Art. No. **5264.**	**0242** $6,970	–	**0244** $7,659	–	**0252** $6,970	–	**0254** $7,659	–	**0252** $6,970	–	**0254** $7,659	–
Valve size		$1^1/_2$ F 2				$1^1/_2$ F 2				$1^1/_2$ F 2			
F	Art. No. **5264.**	**0392** $7,261	–	**0394** $7,945	–	**0402** $7,261	–	**0404** $7,945	–	**0412** $7,261	–	**0414** $7,945	–
Valve size		$1^1/_2$ G 3				$1^1/_2$ G 3				$1^1/_2$ G 3			
G	Art. No. **5264.**	**1102** $7,431	–	**1104** $8,122	–	**1112** $7,431	–	**1114** $8,122	–	**1122** $7,431	–	**1124** $8,122	–
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		$1^1/_2$ H 3				$1^1/_2$ H 3				2 H 3			
H	Art. No. **5264.**	**1522** $8,129	–	**1524** $8,820	–	**1532** $8,129	–	**1534** $8,820	–	**1542** $8,273	–	**1544** $9,226	–
Valve size		2 J 3				2 J 3				3 J 4			
J	Art. No. **5264.**	**1962** $9,334	–	**1964** $10,289	–	**1972** $9,334	–	**1974** $10,289	–	**1982** $11,996	–	**1984** $12,949	–
Valve size		3 K 4				3 K 4				3 K 4			
K	Art. No. **5264.**	**2112** $12,201	–	**2114** $13,151	–	**2122** $12,201	–	**2124** $13,151	–	**2122** $12,201	–	**2124** $13,151	–
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		3 L 4				3 L 4				4 L 6			
L	Art. No. **5264.**	**2422** $12,201	–	**2424** $13,151	–	**2432** $12,201	–	**2434** $13,151	–	**2442** $16,309	–	**2444** $17,262	–
Valve size		4 M 6				4 M 6				4 M 6			
M	Art. No. **5264.**	**5872** $16,309	–	**5874** $17,262	–	**5882** $16,309	–	**5884** $17,262	–	**5882** $16,309	–	**5884** $17,262	–
Valve size		4 N 6				4 N 6				4 N 6			
N	Art. No. **5264.**	**5972** $17,677	–	**5974** $18,630	–	**5982** $17,677	–	**5984** $18,630	–	**5982** $17,677	–	**5984** $18,630	–
Valve size		4 P 6				4 P 6				4 P 6			
P	Art. No. **5264.**	**6532** $21,010	–	**6534** $21,958	–	**6542** $21,010	–	**6544** $21,958	–	**6552** $25,756	–	**6554** $27,082	–
Valve size		6 Q 8				6 Q 8				6 Q 8			
Q	Art. No. **5264.**	**6622** $28,790	–	**6624** $30,114	–	**6632** $28,790	–	**6634** $30,114	–	**6632** $28,790	–	**6634** $30,114	–
Valve size		6 R 8				6 R 8				6 R 10			
R	Art. No. **5264.**	**6712** $28,790	–	**6714** $30,114	–	**6722** $28,790	–	**6724** $30,114	–	**6732** $32,723	–	**6734** $34,050	–
Valve size		8 T 10				8 T 10				8 T 10			
T	Art. No. **5264.**	**6782** $49,548	–	**6784** $50,873	–	**6792** $49,548	–	**6794** $50,873	–	**6792** $49,548	–	**6794** $50,873	–

Type 5264 CF8M 1.4408

All prices in $

Type 5264 CF8M

Bonnet		closed			open	closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		600 x 150				900 x 300				1500 x 300				2500 x 300			
Valve size		1 D 2				$1^1/_2$ D 2				$1^1/_2$ D 2				$1^1/_2$ D 3			
D	Art. No. **5264.**	**0122** $7,388	–	**0124** $8,076	–	Please use 1500 lbs dimensions for this size				**0132** $7,546	–	**0134** $8,235	–	**0142** $8,573	–	**0144** $9,260	–
		1 E 2				$1^1/_2$ E 2				$1^1/_2$ E 2				$1^1/_2$ E 3			
E	Art. No. **5264.**	**0262** $7,388	–	**0264** $8,076	–	Please use 1500 lbs dimensions for this size				**0272** $7,546	–	**0274** $8,235	–	**0282** $8,573	–	**0284** $9,260	–
		$1^1/_2$ F 2				$1^1/_2$ F 3				$1^1/_2$ F 3				$1^1/_2$ F 3			
F	Art. No. **5264.**	**0422** $7,899	–	**0424** $8,586	–	Please use 1500 lbs dimensions for this size				**0432** $8,065	–	**0434** $8,750	–	**0442** $11,076	–	**0444** $11,767	–
		$1^1/_2$ G 3				$1^1/_2$ G 3				2 G 3				2 G 3			
G	Art. No. **5264.**	**1132** $8,065	–	**1134** $8,750	–	**1142** $8,065	–	**1144** $8,750	–	**1152** $10,563	–	**1154** $11,516	–	**1162** $11,796	–	**1164** $12,750	–
Flange class		600 x 150				900 x 150				1500 x 300							
Valve size		2 H 3				2 H 3				2 H 3							
H	Art. No. **5264.**	**1552** $10,289	–	**1554** $11,242	–	**1562** $10,563	–	**1564** $11,516	–	**1572** $11,796	–	**1574** $12,750	–				
		3 J 4				3 J 4				3 J 4							
J	Art. No. **5264.**	**1992** $11,996	–	**1994** $12,949	–	**2002** $12,449	-	**2004** $13,405	–	**2012** $13,413	–	**2014** $14,368	–				
		3 K 4				3 K 6				3 K 6							
K	Art. No. **5264.**	**2132** $12,201	–	**2134** $13,151	–	**2142** $14,334	-	**2144** $15,290	–	**2152** $16,807	–	**2154** $17,760	–				
Flange class		600 x 150				900 x 150				1500 x 150							
Valve size		4 L 6				4 L 6				4 L 6							
L	Art. No. **5264.**	**2452** $18,136	–	**2454** $19,093	–	**2462** $18,889	–	**2464** $19,841	–	–	–	–	–				
		4 M 6				4 M 6											
M	Art. No. **5264.**	**5892** $18,136	–	**5894** $19,093	–	–	–	–	–								
		4 N 6				4 N 6											
N	Art. No. **5264.**	**5992** $18,889	–	**5994** $19,841	–	–	–	–	–								
		4 P 6				4 P 6											
P	Art. No. **5264.**	**6562** $25,756	–	**6564** $27,082	–	–	–	–	–								
		6 Q 8															
Q	Art. No. **5264.**	**6642** $28,790	–	**6644** $30,114	–												
		6 R 10															
R	Art. No. **5264.**	**6742** $32,723	–	**6744** $34,050	–												
		8 T 10															
T	Art. No. **5264.**	–	–	–	–												



All prices in $

Type 5267 WC6[1)]

Bonnet		closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		1 D 2				1 D 2				1 D 2			
D	Art. No. **5267.**	–	–	–	–	–	–	–	–	**0062** $5,576	**0063** $5,711	**0064** $5,841	**0065** $5,711
Valve size		1 E 2				1 E 2				1 E 2			
E	Art. No. **5267.**	–	–	–	–	–	–	–	–	**0202** $5,576	**0203** $5,711	**0204** $5,841	**0205** $5,711
Valve size		$1^1/_2$ F 2				$1^1/_2$ F 2				$1^1/_2$ F2			
F	Art. No. **5267.**	–	–	–	–	–	–	–	–	**0352** $5,807	**0353** $5,940	**0354** $6,071	**0355** $5,940
Valve size		$1^1/_2$ G 3				$1^1/_2$ G 3				$1^1/_2$ G 3			
G	Art. No. **5267.**	–	–	–	–	–	–	–	–	**0522** $5,949	**0523** $6,082	**0524** $6,215	**0525** $6,082
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		$1^1/_2$ H 3				$1^1/_2$ H 3				2 H 3			
H	Art. No. **5267.**	–	–	–	–	–	–	–	–	**1482** $6,618	**1483** $6,802	**1484** $7,038	**1485** $6,802
Valve size		2 J 3				2 J 3				3 J 4			
J	Art. No. **5267.**	–	–	–	–	–	–	–	–	**1682** $9,596	**1683** $9,781	**1684** $10,017	**1685** $9,781
Valve size		3 K 4				3 K 4				3 K 4			
K	Art. No. **5267.**	–	–	–	–	–	–	–	–	**2072** $9,756	**2073** $9,942	**2074** $10,180	**2075** $9,942
Flange class		150 x 150				300L x 150				300 x 150			
Valve size		3 L 4				3 L 4				4 L 6			
L	Art. No. **5267.**	–	–	–	–	–	–	–	–	**2382** $13,049	**2383** $13,236	**2384** $13,471	**2385** $13,236
Valve size		4 M 6				4 M 6				4 M 6			
M	Art. No. **5267.**	–	–	–	–	–	–	–	–	**5842** $13,049	**5843** $13,236	**5844** $13,471	**5845** $13,236
Valve size		4 N 6				4 N 6				4 N 6			
N	Art. No. **5267.**	–	–	–	–	–	–	–	–	**5942** $14,141	**5943** $14,325	**5944** $14,563	**5945** $14,325
Valve size		4 P 6				4 P 6				4 P 6			
P	Art. No. **5267.**	–	–	–	–	–	–	–	–	**6502** $20,606	**6503** $21,187	**6504** $21,400	**6505** $21,187
Valve size		6 Q 8				6 Q 8				6 Q 8			
Q	Art. No. **5267.**	–	–	–	–	–	–	–	–	**6602** $23,032	**6603** $23,610	**6604** $23,825	**6605** $23,610
Valve size		6 R 8				6 R 8				6 R 10			
R	Art. No. **5267.**	–	–	–	–	**6692** $26,184	**6693** $26,763	**6694** $26,976	**6695** $26,763	–	–	–	–
Valve size		8 T 10				8 T 10				8 T 10			
T	Art. No. **5267.**	–	–	–	–	–	–	–	–	**6772** $39,638	**6773** $40,219	**6774** $40,430	**6775** $40,219

[1)]H01 Inlet body certificate is not available for the 5267. Please see option pricing for H09 on page 65.

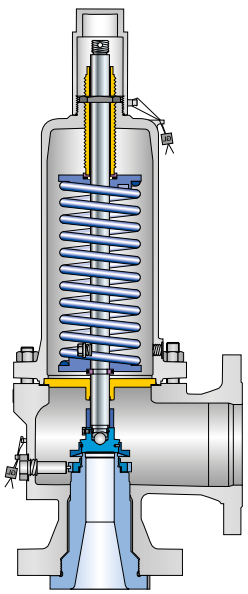
API
Type 5267 WC6 1.7357

All prices in $

Type 5267 WC6[1)]

Bonnet		closed			open	closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		**600 x 150**				**900 x 300**				**1500 x 300**				**2500 x 300**			
Valve size		1 D 2				1 1/2 D 2				1 1/2 D 2				1 1/2 D 3			
D	Art. No. **5267.**	**0072** $5,911	**0073** $6,045	**0074** $6,175	**0075** $6,045	Please use 1500 lbs dimensions for this size				**0082** $6,034	**0083** $6,164	**0084** $6,296	**0085** $6,164	**0092** $6,855	**0093** $6,984	**0094** $7,121	**0095** $6,984
		1 E 2				1 1/2 E 2				1 1/2 E 2				1 1/2 E 3			
E	Art. No. **5267.**	**0212** $5,911	**0213** $6,045	**0214** $6,175	**0215** $6,045	Please use 1500 lbs dimensions for this size				**0222** $6,034	**0223** $6,164	**0224** $6,296	**0225** $6,164	**0232** $6,855	**0233** $6,984	**0234** $7,121	**0235** $6,984
		1 1/2 F 2				1 1/2 F 3				1 1/2 F 3				1 1/2 F 3			
F	Art. No. **5267.**	**0362** $6,318	**0363** $6,451	**0364** $6,582	**0365** $6,451	Please use 1500 lbs dimensions for this size				**0372** $6,451	**0373** $6,582	**0374** $6,718	**0375** $6,582	**0382** $8,864	**0383** $8,995	**0384** $9,130	**0385** $8,995
		1 1/2 G 3				1 1/2 G 3				2 G 3				2 G 3			
G	Art. No. **5267.**	**0532** $6,451	**0533** $6,582	**0534** $6,718	**0535** $6,582	**0542** $6,451	**0543** $6,582	**0544** $6,718	**0545** $6,582	**0552** $8,450	**0553** $8,633	**0554** $8,872	**0555** $8,633	**0562** $9,438	**0563** $9,620	**0564** $9,859	**0565** $9,620
Flange class		**600 x 150**				**900 x 150**				**1500 x 300**							
Valve size		2 H 3				2 H 3				2 H 3							
H	Art. No. **5267.**	**1492** $8,235	**1493** $8,417	**1494** $8,656	**1495** $8,417	**1502** $8,450	**1503** $8,633	**1504** $8,872	**1505** $8,633	**1512** $9,438	**1513** $9,620	**1514** $9,859	**1515** $9,620				
		3 J 4				3 J 4				3 J 4							
J	Art. No. **5267.**	**1692** $9,596	**1693** $9,781	**1694** $10,017	**1695** $9,781	**1702** $9,958	**1703** $10,143	**1704** $10,381	**1705** $10,143	**1712** $10,733	**1713** $10,918	**1714** $11,160	**1715** $10,918				
		3 K 4				3 K 6				3 K 6							
K	Art. No. **5267.**	**2082** $9,756	**2083** $9,942	**2084** $10,180	**2085** $9,942	**2092** $11,469	**2093** $11,655	**2094** $11,895	**2095** $11,655	**2102** $13,444	**2103** $13,631	**2104** $13,870	**2105** $13,631				
Flange class		**600 x 150**				**900 x 150**				**1500 x 150**							
Valve size		4 L 6				4 L 6				4 L 6							
L	Art. No. **5267.**	**2392** $14,510	**2393** $14,694	**2394** $14,930	**2395** $14,694	**2402** $15,110	**2403** $15,297	**2404** $15,534	**2405** $15,297	**2412** $15,110	**2413** $15,297	**2414** $15,534	**2415** $15,297				
		4 M 6				4 M 6											
M	Art. No. **5267.**	**5852** $14,510	**5853** $14,694	**5854** $14,930	**5855** $14,694	**5862** $15,110	**5863** $15,297	**5864** $15,534	**5865** $15,297								
		4 N 6				4 N 6											
N	Art. No. **5267.**	**5952** $15,110	**5953** $15,297	**5954** $15,534	**5955** $15,297	**5962** $15,110	**5963** $15,297	**5964** $15,534	**5965** $15,297								
		4 P 6				4 P 6											
P	Art. No. **5267.**	**6512** $20,606	**6513** $21,187	**6514** $21,400	**6515** $21,187	**6522** $20,606	**6523** $21,187	**6524** $21,400	**6525** $21,187								
		6 Q 8															
Q	Art. No. **5267.**	**6612** $23,032	**6613** $23,610	**6614** $23,825	**6615** $23,610												
		6 R 10															
R	Art. No. **5267.**	**6702** $26,190	**6703** $26,771	**6704** $26,984	**6705** $26,771												
		8 T 10															
T	Art. No. **5267.**	–	–	–	–												

[1)]H01 Inlet body certificate is not available for the 5267. Please see option pricing for H09 on page 65.



All prices in $

Type 5263 LCB

Bonnet		closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		**150 x 150**				**300L x 150**				**300 x 150**			
Valve size		1 D 2				1 D 2				1 D 2			
D	Art. No. **5263.**	**5002** $3,330	**5003** $3,467	**5004** $3,597	**5005** $3,467	**5012** $3,330	**5013** $3,467	**5014** $3,597	**5015** $3,467	**5012** $3,330	**5013** $3,467	**5014** $3,597	**5015** $3,467
Valve size		1 E 2				1 E 2				1 E 2			
E	Art. No. **5263.**	**5052** $3,330	**5053** $3,467	**5054** $3,597	**5055** $3,467	**5062** $3,330	**5063** $3,467	**5064** $3,597	**5065** $3,467	**5062** $3,330	**5063** $3,467	**5064** $3,597	**5065** $3,467
Valve size		$1^1/_2$ F 2				$1^1/_2$ F 2				$1^1/_2$ F 2			
F	Art. No. **5263.**	**5102** $3,476	**5103** $3,609	**5104** $3,741	**5105** $3,609	**5112** $3,476	**5113** $3,609	**5114** $3,741	**5115** $3,609	**5122** $3,476	**5123** $3,609	**5124** $3,741	**5125** $3,609
Valve size		$1^1/_2$ G 3				$1^1/_2$ G 3				$1^1/_2$ G 3			
G	Art. No. **5263.**	**5162** $3,558	**5163** $3,690	**5164** $3,822	**5165** $3,690	**5172** $3,558	**5173** $3,690	**5174** $3,822	**5175** $3,690	**5182** $3,558	**5183** $3,690	**5184** $3,822	**5185** $3,690
Flange class		**150 x 150**				**300L x 150**				**300 x 150**			
Valve size		$1^1/_2$ H 3				$1^1/_2$ H 3				2 H 3			
H	Art. No. **5263.**	**5232** $3,892	**5233** $4,024	**5234** $4,156	**5235** $4,024	**5242** $3,892	**5243** $4,024	**5244** $4,156	**5245** $4,024	**5252** $4,336	**5253** $4,519	**5254** $4,755	**5255** $4,519
Valve size		2 J 3				2 J 3				3 J 4			
J	Art. No. **5263.**	**5292** $4,890	**5293** $5,075	**5294** $5,312	**5295** $5,075	**5302** $4,890	**5303** $5,075	**5304** $5,312	**5305** $5,075	**5312** $6,113	**5313** $6,295	**5314** $6,535	**5315** $6,295
Valve size		3 K 4				3 K 4				3 K 4			
K	Art. No. **5263.**	**5352** $6,113	**5353** $6,295	**5354** $6,535	**5355** $6,295	**5362** $6,113	**5363** $6,295	**5364** $6,535	**5365** $6,295	**5362** $6,113	**5363** $6,295	**5364** $6,535	**5365** $6,295
Flange class		**150 x 150**				**300L x 150**				**300 x 150**			
Valve size		3 L 4				3 L 4				4 L 6			
L	Art. No. **5263.**	**5402** $6,113	**5403** $6,295	**5404** $6,535	**5405** $6,295	**5412** $6,113	**5413** $6,295	**5414** $6,535	**5415** $6,295	**5422** $9,449	**5423** $9,633	**5424** $9,870	**5425** $9,633
Valve size		4 M 6				4 M 6				4 M 6			
M	Art. No. **5263.**	**5462** $9,449	**5463** $9,633	**5464** $9,870	**5465** $9,633	**5472** $9,449	**5473** $9,633	**5474** $9,870	**5475** $9,633	**5472** $9,449	**5473** $9,633	**5474** $9,870	**5475** $9,633
Valve size		4 N 6				4 N 6				4 N 6			
N	Art. No. **5263.**	**5502** $9,721	**5503** $9,907	**5504** $10,145	**5505** $9,907	**5512** $9,721	**5513** $9,907	**5514** $10,145	**5515** $9,907	**5512** $9,721	**5513** $9,907	**5514** $10,145	**5515** $9,907
Valve size		4 P 6				4 P 6				4 P 6			
P	Art. No. **5263.**	**5542** $11,557	**5543** $11,741	**5544** $11,979	**5545** $11,741	**5552** $11,557	**5553** $11,741	**5554** $11,979	**5555** $11,741	**5562** $16,184	**5563** $16,765	**5564** $16,977	**5565** $16,765
Valve size		6 Q 8				6 Q 8				6 Q 8			
Q	Art. No. **5263.**	**5592** $16,664	**5593** $17,248	**5594** $17,460	**5595** $17,248	**5602** $16,664	**5603** $17,248	**5604** $17,460	**5605** $17,248	**5602** $16,664	**5603** $17,248	**5604** $17,460	**5605** $17,248
Valve size		6 R 8				6 R 8				6 R 10			
R	Art. No. **5263.**	**5622** $16,664	**5623** $17,248	**5624** $17,460	**5625** $17,248	**5632** $16,664	**5633** $17,248	**5634** $17,460	**5635** $17,248	**5642** $22,498	**5643** $23,082	**5644** $23,293	**5645** $23,082
Valve size		8 T 10				8 T 10				8 T 10			
T	Art. No. **5263.**	**5662** $30,277	**5663** $30,861	**5664** $31,074	**5665** $30,861	**5672** $30,277	**5673** $30,861	**5674** $31,074	**5675** $30,861	**5672** $30,277	**5673** $30,861	**5674** $31,074	**5675** $30,861

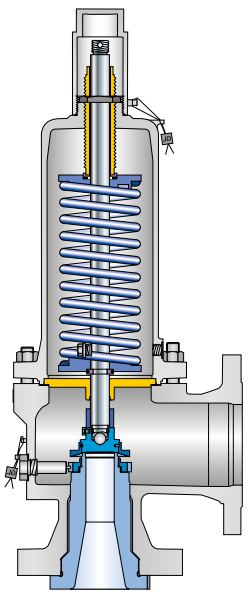
All prices in $

Type 5263 LCB

Bonnet		closed			open	closed			open	closed			open	closed			open
Lifting device		H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3	H2	H3	H4	H3
Flange class		600 x 150				900 x 300				1500 x 300				2500 x 300			
Valve size		1 D 2				1 1/2 D 2				1 1/2 D 2				1 1/2 D 3			
D	Art. No. **5263.**	**5022** $3,613	**5023** $3,742	**5024** $3,877	**5025** $3,742	Please use 1500 lbs dimensions for this size				**5032** $3,860	**5033** $3,991	**5034** $4,126	**5035** $3,991	**5042** $4,834	**5043** $4,966	**5044** $5,098	**5045** $4,966
Valve size		1 E 2				1 1/2 E 2				1 1/2 E 2				1 1/2 E 3			
E	Art. No. **5263.**	**5072** $3,613	**5073** $3,742	**5074** $3,877	**5075** $3,742	Please use 1500 lbs dimensions for this size				**5082** $3,860	**5083** $3,991	**5084** $4,126	**5085** $3,991	**5092** $4,834	**5093** $4,966	**5094** $5,098	**5095** $4,966
Valve size		1 1/2 F 2				1 1/2 F 3				1 1/2 F 3				1 1/2 F 3			
F	Art. No. **5263.**	**5132** $3,860	**5133** $3,991	**5134** $4,126	**5135** $3,991	Please use 1500 lbs dimensions for this size				**5142** $4,219	**5143** $4,353	**5144** $4,483	**5145** $4,353	**5152** $6,253	**5153** $6,386	**5154** $6,517	**5155** $6,386
Valve size		1 1/2 G 3				1 1/2 G 3				2 G 3				2 G 3			
G	Art. No. **5263.**	**5192** $4,219	**5193** $4,353	**5194** $4,483	**5195** $4,353	**5202** $4,219	**5203** $4,353	**5204** $4,483	**5205** $4,353	**5212** $6,831	**5213** $7,016	**5214** $7,254	**5215** $7,016	**5222** $8,111	**5223** $8,294	**5224** $8,531	**5225** $8,294

Flange class		600 x 150				900 x 150				1500 x 300			
Valve size		2 H 3				2 H 3				2 H 3			
H	Art. No. **5263.**	**5262** $5,390	**5263** $5,573	**5264** $5,811	**5265** $5,573	**5272** $6,831	**5273** $7,016	**5274** $7,254	**5275** $7,016	**5282** $8,111	**5283** $8,294	**5284** $8,531	**5285** $8,294
Valve size		3 J 4				3 J 4				3 J 4			
J	Art. No. **5263.**	**5322** $6,944	**5323** $7,129	**5324** $7,366	**5325** $7,129	**5332** $8,058	**5333** $8,241	**5334** $8,479	**5335** $8,241	**5342** $9,220	**5343** $9,402	**5344** $9,642	**5345** $9,402
Valve size		3 K 4				3 K 6				3 K 6			
K	Art. No. **5263.**	**5372** $6,944	**5373** $7,129	**5374** $7,366	**5375** $7,129	**5382** $9,278	**5383** $9,460	**5384** $9,702	**5385** $9,460	**5392** $11,557	**5393** $11,741	**5394** $11,979	**5395** $11,741

Flange class		600 x 150				900 x 150				1500 x 150			
Valve size		4 L 6				4 L 6				4 L 6			
L	Art. No. **5263.**	**5432** $10,499	**5433** $10,686	**5434** $10,925	**5435** $10,686	**5442** $12,223	**5443** $12,408	**5444** $12,647	**5445** $12,408	**5452** $12,223	**5453** $12,408	**5454** $12,647	**5455** $12,408
Valve size		4 M 6				4 M 6							
M	Art. No. **5263.**	**5482** $10,499	**5483** $10,686	**5484** $10,925	**5485** $10,686	**5492** $12,223	**5493** $12,408	**5494** $12,647	**5495** $12,408				
Valve size		4 N 6				4 N 6							
N	Art. No. **5263.**	**5522** $12,223	**5523** $12,408	**5524** $12,647	**5525** $12,408	**5532** $12,223	**5533** $12,408	**5534** $12,647	**5535** $12,408				
Valve size		4 P 6				4 P 6							
P	Art. No. **5263.**	**5572** $16,664	**5573** $17,248	**5574** $17,460	**5575** $17,248	**5582** $16,664	**5583** $17,248	**5584** $17,460	**5585** $17,248				
Valve size		6 Q 8											
Q	Art. No. **5263.**	**5612** $18,887	**5613** $19,470	**5614** $19,682	**5615** $19,470								
Valve size		6 R 10											
R	Art. No. **5263.**	**5652** $22,498	**5653** $23,082	**5654** $23,293	**5655** $23,082								
Valve size		8 T 10											
T	Art. No. **5263.**	–	–	–	–								



API
Product solution: Urea Synthesis design

All prices in $

Application-oriented valve configuration for urea synthesis section and other applications with corrosive and sticky media. Due to the steam-purged design the crystallization of the carbamat gas is prevented.

Design features:
– block body design in Safurex (subject to licensor approval) or other corrosion-resistant materials
– steam-purged design

For detailed information please see specification sheet LID_DE_1352.03 or Sales brief Urea Plants (0777.5744).

UREA Synthesis section safety valve		
	Valve size	3 x 4
	Standard Orifice acc. to API 526	J
	Weight	
Body material: SAFUREX		
Flange rating class		
PN 325 x Class 300	Art. No. **526X.**	**9052**
		on request
Body material: other materials		
Flange rating class		
PN 325 x Class 300	Art. No. **526X.**	XXXX
		on request

All prices in $

Type 526 Options

		Special machining of flange			Material test certificate	Heating jacket for body Delivery time: 9 – 13 weeks			Spring	
		RTJ-groove	DIN-drilling[3]		Body 5267	5262, 5267	5264	Bonnet spacer[1]		
Valve size	Flange class Inlet	Inlet L58[7]	Inlet	Outlet	EN 10204 – 3.2 H09			H33	1.4310 X04	Inconel X08[5]
1 D 2	150 – 300L	$250	$250	$250	–	$3,481	$2,736	$1,740	$224	$845
1 D 2	300 – 600	$250	$250	$250	$498	$3,481	$2,736	$1,740	$224	$845
1 1/2 D 2	900 – 1500	$250	$250	$250	$498	–	–	–	$250	$1,194
1 1/2 D 3	2500	$250	$250	$250	$498	–	–	–	$250	$1,194
1 E 2	150 – 300L	$250	$250	$250	–	$3,481	$2,736	$1,740	$224	$845
1 E 2	300 – 600	$250	$250	$250	$498	$3,481	$2,736	$1,740	$224	$845
1 1/2 E 2	900 – 1500	$250	$250	$250	$498	–	–	$1,740	$250	$1,194
1 1/2 E 3	2500	$250	$250	$250	$498	–	–	–	$250	$1,194
1 1/2 F 2	150 – 300L	$250	$250	$250	–	$3,481	$2,736	$1,740	$250	$896
1 1/2 F 2	300 – 600	$250	$250	$250	$498	$3,481	$2,736	$1,740	$250	$896
1 1/2 F 3	900 – 2500	$250	$250	$250	$498	–	–	–	$250	$1,194
1 1/2 G 3	150 – 300L	$250	$250	$250	–	$4,477	$3,481	$1,740	$250	$896
1 1/2 G 3	300 – 900	$250	$250	$250	$498	$4,477	$3,481	$1,740	$250	$896
2 G 3	1500 – 2500	$250	$250	$250	$498	–	–	$2,983	$250	$1,194
1 1/2 H 3	150 – 300L	$250	$250	$250	–	$4,477	$3,481	$1,740	$250	$896
2 H 3	300	$250	$250	$250	$498	$4,477	$3,481	$2,983	$250	$845
2 H 3	600 – 1500	$250	$250	$250	$498	$4,477	$3,481	$2,983	$250	$1,194
2 J 3	150 – 300L	$398	$398	$398	–	$4,477	$3,481	$2,983	$250	$1,143
3 J 4	300	$398	$398	$398	$746	$4,972	$4,972	$2,983	$398	$1,194
3 J 4	600 – 1500	$398	$398	$398	$746	$4,972	$4,972	$2,983	$398	$1,245
3 K 4	150 – 300L	$398	$398	$398	–	$4,972	$4,972	$2,983	$398	$1,194
3 K 4	300 – 600	$398	$398	$398	$746	$4,972	$4,972	$2,983	$398	$1,245
3 K 6	900 – 1500	$398	$398	$398	$746	$6,464	$6,464	$2,983[2]	$993	$4,722
3 L 4	150 – 300L	$398	$398	$398	–	$4,972	$4,972	$2,983	$398	$1,194
4 L 6	300	$398	$398	$398	$746	$6,464	$6,464	$2,983	$993	$2,238
4 L 6	600 – 1500	$398	$398	$398	$746	–	–	$2,983	$993	$4,722
4 M 6	150 – 300L	$398	$398	$398	–	$6,464	$6,464	$2,983	$993	$4,477
4 M 6	300 – 900	$398	$398	$398	$746	$6,464[4]	$6,464[4]	$2,983	$993	$4,722
4 N 6	150 – 300L	$398	$398	$398	–	$6,464	$6,464	$2,983	$993	$4,477
4 N 6	300 – 900	$398	$398	$398	$746	$6,464	$6,464	$2,983	$993	$4,722
4 P 6	150 – 300L	$398	$398	$398	–	$6,464	$6,464	$2,983	$993	$4,477
4 P 6	300 – 900	$398	$398	$398	$746	$6,464	$6,464	$2,983	$1,991	$4,722
6 Q 8	150 – 300L	$746	$746	$746	–	$9,946	$9,946	$2,983	$1,991	$3,980
6 Q 8	300 – 600	$746	$746	$746	$993	$9,946	$9,946	$2,983	$1,991	$5,468
6 R 8	150	$746	$746	$746	–	$9,946	$9,946	$2,983	$1,991	$4,972
6 R 8	300L	$746	$746	$746	$993	$9,946	$9,946	$2,983	$1,991	$4,972
6 R 10	300	$746	$746	$746	–	–	–	–	on request	$6,464
6 R 10	600	$746	$746	$746	$993	–	–	–		$6,464
8 T 10	150 – 300L	$746	$746	$746	–	$13,924	$13,924	–	on request	$7,707
8 T 10	300	$746	$746	$746	$993	$13,924	$13,924	–		$7,707

[1] Required if safety valve is fitted with bellows
[2] Bonnet spacer only required for: 3K6, WC6, Class 900
[3] For option code please refer to page 74
[4] For class 300 only
[5] Delivery time 5 weeks
[6] High temperature bellows (J88) available only with an open bonnet
[7] RTJ inlets Class 150 only available as "Design to Order"-version with longer delivery time on request.
RTJ inlets available from Charlotte only in Class 300 and 600

All prices in $

Type 526 Options

		Disc			Nozzle stellited		Balanced bellows			Balanced piston
		O-ring disc[1]		316L stellited	5262 5263 5264	5267	Inconel		High temp.	
Valve size	Flange class Inlet	CR "K" J21 EPDM "D" J22 FKM "L" J23	FFKM "C" J20	J25	K1F		J82	J83	Type 5267 J88[2]	K10
1 D 2	150 – 300L	$173	$547	$90	$250	–	$2,238	$697	–	$2,113
1 D 2	300 – 600	$173	$547	$90	$250	*	$2,238	$697	$945	$2,113
1 1/2 D 2	900 – 1500	$173	$547	$90	*	*	$2,736	$1,366	$1,865	$2,113
1 1/2 D 3	2500	$173	$547	$90	*	*	$2,736	$1,366	$1,865	$2,113
1 E 2	150 – 300L	$173	$547	$90	$250	–	$2,238	$697	–	$2,113
1 E 2	300 – 600	$173	$547	$90	$250	*	$2,238	$697	$945	$2,113
1 1/2 E 2	900 – 1500	$173	$547	$90	*	*	$2,736	$1,366	$1,865	$2,113
1 1/2 E 3	2500	$173	$547	$90	*	*	$2,736	$1,366	$1,865	$2,113
1 1/2 F 2	150 – 300L	$224	$896	$125	$498	–	$2,736	$1,366	–	$2,364
1 1/2 F 2	300 – 600	$224	$896	$125	$498	*	$2,736	$1,366	$1,865	$2,364
1 1/2 F 3	900 – 2500	$224	$896	$125	*	*	$2,736	$1,366	$1,865	$2,364
1 1/2 G 3	150 – 300L	$224	$896	$125	$498	–	$2,736	$1,366	–	$2,486
1 1/2 G 3	300 – 900	$224	$896	$125	$498	*	$2,736	$1,366	$1,865	$2,486
2 G 3	1500 – 2500	$224	$896	$125	*	*	$3,232	$1,865	$2,486	$2,486
1 1/2 H 3	150 – 300L	$224	$896	$125	$498	–	$2,736	$1,366	–	$2,486
2 H 3	300	$224	$896	$125	$498	*	$3,232	$1,865	$2,486	$2,486
2 H 3	600 – 1500	$224	$896	$125	*	*	$3,232	$1,865	$2,486	$2,486
2 J 3	150 – 300L	$398	$1,991	$125	$498	–	$3,731	$1,865	–	$2,983
3 J 4	300	$398	$1,991	$125	*	*	$3,980	$2,238	$2,983	$2,983
3 J 4	600 – 1500	$398	$1,991	$125	*	*	$3,980	$2,238	$2,983	$2,983
3 K 4	150 – 300L	$398	$1,991	$173	$746	–	$3,980	$2,238	–	$3,481
3 K 4	300 – 600	$398	$1,991	$173	$746	*	$3,980	$2,238	$2,983	$3,481
3 K 6	900 – 1500	$398	$1,991	$173	*	*	$5,220	$3,731	$4,972	$3,481
3 L 4	150 – 300L	$647	$3,232	$173	$746	–	$3,980	$2,238	–	$3,980
4 L 6	300	$647	$3,232	$173	*	*	$5,220	$3,731	$4,972	$3,980
4 L 6	600 – 1500	$647	$3,232	$173	*	*	$5,220	$3,731	$4,972	$3,980
4 M 6	150 – 300L	$647	$3,232	$224	*	–	$6,215	$3,731	–	$4,228
4 M 6	300 – 900	$647	$3,232	$224	*	*	$6,215	$3,731	$4,972	$4,228
4 N 6	150 – 300L	$647	$3,232	$224	*	–	$6,215	$3,731	–	$4,228
4 N 6	300 – 900	$647	$3,232	$224	*	*	$6,215	$3,731	$4,972	$4,228
4 P 6	150 – 300L	$647	$3,232	$224	*	–	$6,215	$3,731	–	$5,220
4 P 6	300 – 900	$647	$3,232	$224	*	*	$7,707	$5,718	$7,707	$5,220
6 Q 8	150 – 300L	$647	$3,232	$250	*	–	$9,449	$5,718	–	$5,718
6 Q 8	300 – 600	$647	$3,232	$250	*	*	$7,707	$5,718	$7,707	$5,718
6 R 8	150	$647	$3,232	$250	*	–	$12,927	$5,718	–	$6,215
6 R 8	300L	$647	$3,232	$250	*	*	$12,927	$5,718	$7,707	$6,215
6 R 10	300	$647	$3,232	$250	*	*	$14,420	$7,957	–	$6,215
6 R 10	600	$647	$3,232	$250	*	*	$14,420	$7,957	$10,444	$6,215
8 T 10	150 – 300L	$1,194	$4,477	$298	*	–	$14,420	$7,957	–	$10,444
8 T 10	300	$1,194	$4,477	$298	*	*	$14,420	$7,957	$10,444	$10,444

[1] See page 91 for elastomer limitations
[2] J88 available only with open bonnet

All prices in $

Type 526 Options

Valve size	Flange class Inlet	Bolted cap H1		Bolted lifting device H6		Adaptor for lift indicator	Lift indicator	Test gag	
		Carbon steel	Stainless steel	Carbon steel	Stainless steel			H2	H4
		K01		K06		J39[3]	J93[3]	J70	J69
1 D 2	150 – 300L	$198	$250	$498	$598	$250	$746	$198	$198
1 D 2	300 – 600	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 D 2	900 – 1500	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 D 3	2500	$198	$250	$498	$598	$250	$746	$198	$198
1 E 2	150 – 300L	$198	$250	$498	$598	$250	$746	$198	$198
1 E 2	300 – 600	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 E 2	900 – 1500	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 E 3	2500	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 F 2	150 – 300L	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 F 2	300 – 600	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 F 3	900 – 2500	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 G 3	150 – 300L	$198	$250	$498	$598	$250	$746	$198	$198
1 1/2 G 3	300 – 900	$198	$250	$498	$598	$250	$746	$198	$198
2 G 3	1500 – 2500	$298	$398	$845	$945	$250	$746	$198	$198
1 1/2 H 3	150 – 300L	$198	$250	$498	$598	$250	$746	$198	$198
2 H 3	300	$298	$398	$845	$945	$250	$746	$198	$198
2 H 3	600 – 1500	$298	$398	$845	$945	$250	$746	$198	$198
2 J 3	150 – 300L	$298	$398	$845	$945	$250	$746	$198	$198
3 J 4	300	$298	$398	$845	$945	$250	$746	$198	$198
3 J 4	600 – 1500	$298	$398	$845	$945	$250	$746	$198	$198
3 K 4	150 – 300L	$298	$398	$845	$945	$250	$746	$198	$198
3 K 4	300 – 600	$298	$398	$845	$945	$250	$746	$198	$198
3 K 6	900 – 1500	$298	$398	$845	$945	$250	$746	$198	$198
3 L 4	150 – 300L	$298	$398	$845	$945	$250	$746	$198	$198
4 L 6	300	$298	$398	$845	$945	$250	$746	$198	$198
4 L 6	600 – 1500	$298	$398	$845	$945	$250	$746	$198	$198
4 M 6	150 – 300L	$298	$398	$845	$945	$250	$746	$198	$198
4 M 6	300 – 900	$298	$398	$845	$945	$250	$746	$198	$198
4 N 6	150 – 300L	$298	$398	$845	$945	$250	$746	$198	$198
4 N 6	300 – 900	$298	$398	$845	$945	$250	$746	$198	$198
4 P 6	150 – 300L	$298	$398	$845	$945	$250	$746	$198	$198
4 P 6	300 – 900	$598	$697	$1,194	$1,366	$250	$746	$198	$198
6 Q 8	150 – 300L	$598	$697	$1,194	$1,366	$250	$746	$198	$198
6 Q 8	300 – 600	$598	$697	$1,194	$1,366	$250	$746	$198	$198
6 R 8	150	$598	$697	$1,194	$1,366	$250	$746	$198	$198
6 R 8	300L	$598	$697	$1,194	$1,366	$250	$746	$198	$198
6 R 10	300	$598	$697	$1,194	$1,366	$250	$746	$198	$198
6 R 10	600	$598	$697	$1,194	$1,366	$250	$250	$198	$198
8 T 10	150 – 300L	*	$697	*	$1,366	$250	$746	$198	$198
8 T 10	300	*	$697	*	$1,366	$250	$746	$198	$198

[1] See page 91 for elastomer limitations
[2] J88 available only with open bonnet
[3] In case a gastight valve is needed (closed bonnet and cap), bellows must be used as well.

All prices in $

Type 526 Options

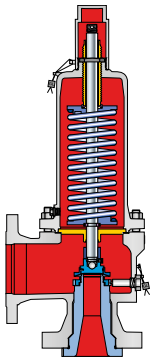
Valve size	Flange class Inlet	Marking with additional steel tag	Bug screen	NACE[1]	High pressure design[2]	Free of oil and grease standard	Free of oil and grease upgraded	Oxygen cleaning[3]
		M29	M70	N77, N78	Z90	J85	J92	N7D
1 D 2	150 – 300L	$40	$84	$69	–	$398	$447	$447
1 D 2	300 – 600	$40	$84	$69	–	$398	$447	$447
1 1/2 D 2	900 – 1500	$40	$84	$69	–	$398	$498	$498
1 1/2 D 3	2500	$40	$84	$69	–	$398	$498	$498
1 E 2	150 – 300L	$40	$84	$69	–	$398	$447	$447
1 E 2	300 – 600	$40	$84	$69	–	$398	$447	$447
1 1/2 E 2	900 – 1500	$40	$84	$69	–	$398	$498	$498
1 1/2 E 3	2500	$40	$84	$69	–	$398	$498	$498
1 1/2 F 2	150 – 300L	$40	$84	$69	–	$398	$498	$498
1 1/2 F 2	300 – 600	$40	$84	$69	–	$398	$498	$498
1 1/2 F 3	900 – 2500	$40	$84	$69	–	$398	$498	$498
1 1/2 G 3	150 – 300L	$40	$84	$69	–	$398	$498	$498
1 1/2 G 3	300 – 900	$40	$84	$69	–	$398	$498	$498
2 G 3	1500 – 2500	$40	$84	$69	–	$447	$598	$598
1 1/2 H 3	150 – 300L	$40	$84	$69	–	$398	$498	$498
2 H 3	300	$40	$84	$69	–	$447	$598	$598
2 H 3	600 – 1500	$40	$84	$69	–	$447	$598	$598
2 J 3	150 – 300L	$40	$84	$69	–	$447	$598	$598
3 J 4	300	$40	$84	$69	–	$547	$697	$697
3 J 4	600 – 1500	$40	$84	$69	–	$547	$697	$697
3 K 4	150 – 300L	$40	$84	$69	–	$547	$697	$697
3 K 4	300 – 600	$40	$84	$69	–	$547	$697	$697
3 K 6	900 – 1500	$40	$84	$69	–	$547	$697	$697
3 L 4	150 – 300L	$40	$84	$69	–	$547	$697	$697
4 L 6	300	$40	$84	$69	–	$746	$845	$845
4 L 6	600 – 1500	$40	$84	$69	–	$746	$845	$845
4 M 6	150 – 300L	$40	$84	$69	–	$746	$845	$845
4 M 6	300 – 900	$40	$84	$69	–	$746	$845	$845
4 N 6	150 – 300L	$40	$84	$69	–	$746	$845	$845
4 N 6	300 – 900	$40	$84	$69	–	$746	$845	$845
4 P 6	150 – 300L	$40	$84	$69	–	$746	$845	$845
4 P 6	300 – 900	$40	$84	$69	–	$746	$845	$845
6 Q 8	150 – 300L	$40	$84	$69	–	$746	$845	$845
6 Q 8	300 – 600	$40	$84	$69	Class 600: $2,983	$746	$845	$845
6 R 8	150	$40	$84	$69	–	$746	$845	$845
6 R 8	300L	$40	$84	$69	–	$746	$845	$845
6 R 10	300	$40	$84	$69	–	$746	$845	$845
6 R 10	600	$40	$84	$69	$3,481	$746	$845	$845
8 T 10	150 – 300L	$40	$84	$69	–	$746	$845	$845
8 T 10	300	$40	$84	$69	$3,481	$746	$845	$845

[1] Material test certificate 3.1 according to EN 10204. Testing of nozzle and disc. Maximum hardness 22 HRC.
NACE charges depend on required options. Please see charts on next page for required options. Option code N77 is not available from Charlotte stock.
[2] Delivery times 10 weeks ex works Hohenwestedt
[3] For oxygen cleaning, the option code J92 is automatically used for order control, but without additional charge.

API
Sour gas service – NACE MR0175 (Option code N78)
NACE MR0103 (Option code N77)

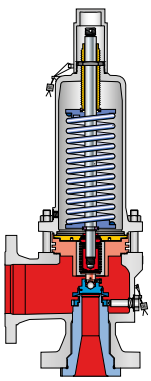
The charts below show the parts that must be considered for NACE sour gas service depending on the valve construction. LESER recommends bellows construction for all NACE applications because Inconel springs are not carried in stock.

Conventional construction



Medium contact parts	Item	Component	Standard Service Type 5262		Corrosive Service Type 5264		Material test certificate DIN EN 10204-3.1
			Option code	Material	Option code	Material	
	1	Body	–	SA 216 WCB	–	CF8M	H01
	5	Nozzle	–	CF8M	–	CF8M	L59
	7	Disc	L44	316L	–	316L stellited	L23
			J25	316L stellited			
	9	Bonnet	–	SA 216 WCB	–	SA 479 316L	L30
	54	Spring	X08	Inconel	X08	Inconel	–

Bellows construction



Medium contact parts	Item	Component	Standard Service Type 5262		Corrosive Service Type 5264		Material test certificate DIN EN 10204-3.1
			Option code	Material	Option code	Material	
	1	Body	–	SA 216 WCB	–	CF8M	H01
	5	Nozzle	–	CF8M	–	CF8M	L59
	7	Disc	L44	316L	–	316L stellited	L23
			J25	316L stellited			
	15	Bellows	J83	Inconel 625 / 316L	J83	Inconel 625 / 316L	–

Special materials

MONEL®	MONEL®	Hastelloy®	Hastelloy®	Duplex	Duplex
Grade MA[1)]	Grade MB[2)]	Grade HA[1)]	Grade HB[2)]	Grade DA[1)]	Grade DB[2)]
on request					

[1)] Grade MA, HA, DA: Disc and nozzle
[2)] Grade MB, HB, DB: Disc, nozzle and bellows

API
Outlet flange rating class 300

All prices in $

API valves with class 150 and class 300L inlet are not considered for class 300 outlet design. For Class 900, Class 2500 (Orifice D – G) and Class 1500 (Orifice D – K) inlet please see standard valves with outlet flange class 300 acc. to API standard 526.

Flange drillings — Type 526 acc. to ASME B16.5 – outlet flange rating class 300

Valve size	Center to face		Material				300 x 300	600 x 300	900 x 300		1500 x 300	
	Inlet a [inch]	Outlet b [inch]	WCB 5262.	LCB 5263.	WC6 5267.	CF8M 5264.	Option code	Option code	Option code		Option code	
1 D 2	$4^1/_8$	$4^1/_2$	002[x]	501[x]	006[x]	011[x]	H65, H80	–	–		–	
							$498					
			003[x]	502[x]	007[x]	012[x]	–	H67, H80	–		–	
								$498				
$1^1/_2$ D 2	$4^1/_8$	$5^1/_2$	004[x]	503[x]	008[x]	013[x]	H65, H80	H67, H80	*	*	*	*
							$498	$498	–	–	–	–
1 E 2	$4^1/_8$	$4^1/_2$	016[x]	506[x]	020[x]	025[x]	H65, H80	–	–		–	
							$498					
			017[x]	507[x]	021[x]	026[x]	–	H67, H80	–		–	
								$498				
$1^1/_2$ E 2	$4^1/_8$	$5^1/_2$	018[x]	508[x]	022[x]	027[x]	H65, H80	H67, H80	*	*	*	*
							$498	$498	–	–	–	–
$1^1/_2$ F 2	$4^7/_8$	6	031[x]	512[x]	035[x]	041[x]	H65, H80	–	*	*	*	*
							$498		–	–	–	–
			032[x]	513[x]	036[x]	042[x]	–	H67, H80	*	*	*	*
								$498	–	–	–	–
$1^1/_2$ G 3	$4^7/_8$	$6^1/_2$	049[x]	520[x]	054[x]	114[x]	H65, H80	H67, H80	*	*	*	*
							$498	$498	–	–	–	–
2 H 3	$6^1/_{16}$	$6^3/_8$	146[x]	527[x]	150[x]	156[x]	H65, H80	H67, H80	see below			
							$498	$498	Class 1500 x 300			
			147[x]	528[x]	151[x]	157[x]	–		see Class 1500 x 300		*	*
							–				–	–
3 J 4	$7^1/_4$	$7^1/_8$	166[x]	533[x]	170[x]	200[x]	H65, H80	H67, H80	H68, H80		*	*
							$797	$797	$797		–	–
3 K 4	$7^1/_4$	$7^1/_8$	204[x]	537[x]	208[x]	213[x]	H65, H80	H67, H80	H68, H80		*	*
							$797	$797	$797		–	–
4 L 6	$7^3/_4$	$8^1/_2$	235[x]	543[x]	–	–	H65, H80	H67, H80	5262.236x Inlet Class 900 WCB 5263.544x Inlet Class 900 LCB S01 Outlet flange welded		5262.237x Inlet Class 900 WCB 5263.545x Inlet Class 900 LCB S01 Outlet flange welded	
							$797	$797	$1,492		$1,492	
			–	–	239[x]	–	H65, H80	H67, H80	5267.240x Inlet Class 900 S01 Outlet flange welded		5267.241x Inlet Class 900 S01 Outlet flange welded	
							$797	$797	$13,425		$13,425	
			–	–	–	245[x]	H65, H80	H67, H80	5264.246x Inlet Class 900 S01 Outlet flange welded			
							$797	$797	$1,740			

* Outlet flange rating class 300 is standard flange rating class according to API Standard 526.
[x] Please add code for cap or lifting device.

API
Outlet flange rating class 300

All prices in $

Flange drillings — Type 526 acc. to ASME B16.5 – outlet flange rating class 300

Valve size	Center to face		Material				300 x 300	600 x 300	900 x 300	1500 x 300
	Inlet a [inch]	Outlet b [inch]	WCB 5262.	LCB 5263.	WC6 5267.	CF8M 5264.	Option code	Option code	Option code	Option code
4 M 6	$7^3/_4$	$8^1/_2$	582[x]	548[x]	–	–	H65, H80	H67, H80	S01 Outlet flange welded	
							$797	$797	$1,492	
			–	–	585[x]	–	H65, H80	H67, H80	S01 Outlet flange welded	
							$797	$797	$13,425	
			–	–	–	589[x]	H65, H80	H67, H80		
							$797	$797		
4 N 6	$7^3/_4$	$8^1/_2$	592[x]	552[x]	–	–	H65, H80	H67, H80	5262.593x Inlet Class 900 WCB 5263.553x Inlet Class 900 LCB S01 Outlet flange welded	
							$797	$797	$1,492	
			–	–	595[x]	–	H65, H80	H67, H80	5267.596x Inlet Class 900 WC6 S01 Outlet flange welded	
							$797	$797	$13,425	
			–	–	–	599[x]	H65, H80	H67, H80		
							$797	$797		
4 P 6 Outlet flange welded	$8^7/_8$	$11^5/_8$	647[x]	556[x]	–	–	S01	S01	S01	
							$1,492	$1,492	$1,492	
			–	–	650[x]	–	S01	S01	S01	
							$13,924	$13,924	$13,924	
			–	–	–	655[x]	S01	S01		
							$1,740	$1,740		
6 Q 8 Outlet flange welded	$9^7/_{16}$	12	658[x]	560[x]	–	–	S01	S01		
							$1,740	$1,740		
			–	–	660[x]	–	S01	S01		
							on request	on request		
			–	–	–	663[x]	S01	S01		
							$1,991	$1,991		
6 R 10 Outlet flange welded	$9^7/_{16}$	$13^1/_5$	667[x]	564[x]	–	–	S01	S01		
							$1,991	$1,991		
			–	–	670[x]	–	S01	S01		
							on request	on request		
			–	–	–	673[x]	S01	S01		
							$2,238	$2,238		
8 T 10 Outlet flange welded	$10^7/_8$	$13^1/_5$	676[x]	567[x]	–	–	S01	S01		
							$1,991	$1,991		
			–	–	677[x]	–	S01			
							on request			
			–	–	–	679[x]	S01			
							$2,238			

* Outlet flange rating class 300 is standard flange rating class according to API Standard 526.

[x] Please add code for cap or lifting device.

API
Type 526 – Flange facings

Flange facings

Indication	Standard	Inlet	Outlet	Remark
General				
Flange undrilled	–	H38	H39	
Linde-V-Nut, Form V48	Linde Standard 420-08 LDeS 3313.36	J07	J08	Groove: Rz 16
Linde-V-Nut, Form V48A		J05	J06	Groove: Rz 4, e.g. with hydrogen
Lens seal form L (without sealing lens)	DIN 2696 LDeS 3313.35	J11	J12	

Acc. to DIN EN 1092						
		Inlet		**Outlet**		**Remark**
Flange facing (see also LDeS 3313.40)		PN 10 – PN 40	PN 63 – PN 400	PN 10 – PN 40	PN 63	Rz-data according to DIN EN 1092 in µm
Raised face	Type B1	*	–	*	–	Facing: Rz = 12.5 – 50
	Type B2	L36	*	L38	*	Facing: Rz = 3.2 – 12.5
Tongue face C[1)]		S05		H92		
Groove face D[1)]		S05		H91		
Male face E		S05		H98		
Female face F		S05		H99		
O-ring male face G		S05		S01		
O-ring female face H		S05		S01		

Acc. to ASME B16.5														
Body material	**Inlet**	**Outlet**	**Smooth finish[2)]**		**Serrated finish**		**RTJ-groove**							
			Inlet	**Outlet**	**Inlet**	**Outlet**	**Inlet**					**Outlet**		
			Option code		**Option code**		**Class 300**	**Class 600**	**Class 900**	**Class 1500**	**Class 2500**	**Class 150**	**Class 300**	
all	all	all	L52	L53	*	*	L58					H63		

[1)] LESER manufactures the groove at flanged valves by milling. If a customer demands a turned surface in the soil of the groove according to DIN EN 1092-1 an additional option code is necessary: “S01: bottom of the groove drilled”.
[2)] Smooth finish is not defined in the effective standards.

For signs and symbols refer to page 6.
Note: Flange drillings and facings meet always the requirements of mentioned flange standards. Flange thickness and outer diameter may vary from flange standard.

Stud-bolts length for flange connection inlet and outlet

All LESER safety valves Type 526 need at the inlet side longer stud-bolts for the flange connections as stated in ASME B16.5, due to the full nozzle design. Furthermore, due to the actual castings the stud bolts at the outlet can differ from ASME B16.5 as well.
LESER state the stud-bolt length in LDeS **3001.29-E. For calculation of stud-bolts length the measure “s” stated in API Catalog can be used.**

Connection acc. to API Standard 526 – 1984

Orifice	Valve size		Flange rating class	Option code
	Inlet	Outlet	Inlet	
D / E	1 1/2"	3" drilled 2 1/2"	Class 2500	S01
F	1 1/2"	3" drilled 2 1/2"	Class 900	S01
G	1 1/2"	3" drilled 2 1/2"	Class 150 – 900	S01
J	2 1/2"	4"	Class 900 – 1500	S01
K	2 1/2"	6"	Class 900 – 1500	S01

API
Type 526 – Weights

US Units

Bonnet					all			
Lifting device					all			
Flange class		150 x 150	300L x 150	300 x 150	600 x 150	900 x 300	1500 x 300	2500 x 300
Valve size		1 D 2	1 D 2	1 D 2	1 D 2	1 1/2 D 2	1 1/2 D 2	1 1/2 D 3
D	Weight [lbs]	34.2	34.2	34.6	39.5	64.4	64.4	91.5
	with bellows [lbs]	36.2	36.2	36.6	41.5	67.5	67.5	91.9
Valve size		1 E 2	1 E 2	1 E 2	1 E 2	1 1/2 E 2	1 1/2 E 2	1 1/2 E 3
E	Weight [lbs]	34.2	34.2	34.6	39.5	64.4	64.4	91.5
	with bellows [lbs]	36.2	36.2	36.6	41.5	67.5	67.5	91.9
Valve size		1 1/2 F 2	1 1/2 F 2	1 1/2 F 2	1 1/2 F 2	1 1/2 F 3	1 1/2 F 3	1 1/2 F 3
F	Weight [lbs]	58.9	58.9	61.1	61.1	83.6	83.6	94.2
	with bellows [lbs]	62.0	62.0	64.2	64.2	84.0	84.0	94.6
Valve size		1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	2 G 3	2 G 3
G	Weight [lbs]	59.5	59.5	62.0	62.0	78.7	120.8	120.8
	with bellows [lbs]	64.4	64.4	66.8	66.8	81.8	124.6	124.6
Flange class		150 x 150	300L x 150	300 x 150	600 x 150	900 x 150	1500 x 300	
Valve size		1 1/2 H 3	1 1/2 H 3	2 H 3	2 H 3	2 H 3	2 H 3	
H	Weight [lbs]	71.2	71.2	86.9	134.5	134.5	134.5	
	with bellows [lbs]	76.1	76.1	93.1	140.7	140.7	140.7	
Valve size		2 J 3	2 J 3	3 J 4	3 J 4	3 J 4	3 J 4	
J	Weight [lbs]	88.9	88.9	153.2	153.2	200.7	220.1	
	with bellows [lbs]	97.9	97.9	163.6	163.6	211.0	230.4	
Valve size		3 K 4	3 K 4	3 K 4	3 K 4	3 K 6	3 K 6	
K	Weight [lbs]	145.3	145.3	145.3	155.7	269.0	269.0	
	with bellows [lbs]	155.9	155.9	155.9	166.5	270.6	270.6	
Flange class		150 x 150	300L x 150	300 x 150	600 x 150	900 x 150	1500 x 150	
Valve size		3 L 4	3 L 4	4 L 6	4 L 6	4 L 6	4 L 6	
L	Weight [lbs]	146.9	146.9	224.5	239.0	239.0	239.0	
	with bellows [lbs]	158.1	158.1	245.0	259.5	259.5	259.5	
Valve size		4 M 6	4 M 6	4 M 6	4 M 6	4 M 6		
M	Weight [lbs]	226.0	226.0	226.0	251.6	251.6		
	with bellows [lbs]	245.4	245.4	245.4	271.2	271.2		
Valve size		4 N 6	4 N 6	4 N 6	4 N 6	4 N 6		
N	Weight [lbs]	234.2	234.2	229.5	236.8	236.8		
	with bellows [lbs]	253.8	253.8	249.2	256.4	256.4		
Valve size		4 P 6	4 P 6	4 P 6	4 P 6	4 P 6		
P	Weight [lbs]	239.9	239.9	389.2	402.0	402.0		
	with bellows [lbs]	255.1	255.1	430.4	443.2	443.2		
Valve size		6 Q 8	6 Q 8	6 Q 8	6 Q 8			
Q	Weight [lbs]	451.4	451.4	458.0	458.0			
	with bellows [lbs]	516.4	516.4	523.0	523.0			
Valve size		6 R 8	6 R 8	6 R 10	6 R 10			
R	Weight [lbs]	460.6	460.6	830.4	830.4			
	with bellows [lbs]	529.0	529.0	856.9	856.9			
Valve size		8 T 10	8 T 10	8 T 10				
T	Weight [lbs]	891.9	891.9	891.9				
	with bellows [lbs]	909.6	909.6	909.6				

Type 526 – Flange drillings

Type 526 – Flange drillings according to DIN EN 1092-1

Standard API 526		Article No.					Flange drillings														
Valve size	Flange class	Material				Inlet	Inlet									Outlet	Outlet				
		WCB 5262.	LCB 5263.	WC6 5267.	CF8M 5264.	NPS [DN]	PN 10/16	PN 25	PN 40	PN 63	PN 100	PN 160	PN 250	PN 320	PN 400	NPS [DN]	PN 10	PN 16	PN 25	PN 40	PN 63
1 D 2	300 x 150[1)]	002*	501*	006*	011*	25	H47	H47	H47	–	–	–	–	–	–	50	H15	H15	H15	H15	–
1 D 2	600 x 150	003*	502*	007*	012*	25	–	–	–	H17	H17	–	–	–	–	50	H15	H15	H15	H15	–
1 1/2 D 2	1500 x 300	004*	503*	008*	013*	40	–	–	–	–	–	H11	H12	–	–	50	H15	H15	H15	H15	–
1 1/2 D 3	2500 x 300	005*	504*	009*	014*	40	–	–	–	–	–	–	H12	H13	–	80	H15	H15	H15	H15	H16
1 E 2	300 x 150[1)]	016*	506*	020*	025*	25	H47	H47	H47	–	–	–	–	–	–	50	H15	H15	H15	H15	–
1 E 2	600 x 150	017*	507*	021*	026*	25	–	–	–	H17	H17	–	–	–	–	50	H15	H15	H15	H15	–
1 1/2 E 2	1500 x 300	018*	508*	022*	027*	40	–	–	–	–	–	H11	H12	–	–	50	H15	H15	H15	H15	–
1 1/2 E 3	2500 x 300	019*	509*	023*	028*	40	–	–	–	–	–	–	H12	H13	–	80	H15	H15	H15	H15	H16
1 1/2 F 2	300L x 150	030*	511*	–	040*	40	H47	–	–	–	–	–	–	–	–	50	H15	H15	H15	H15	–
1 1/2 F 2	300 x 150	031*	512*	035*	041*	40	–	H47	H47	–	–	–	–	–	–	50	H15	H15	H15	H15	–
1 1/2 F 2	600 x 150	032*	513*	036*	042*	40	–	H47	H47	–	–	–	–	–	–	50	H15	H15	H15	H15	–
1 1/2 F 3	1500 x 300	033*	514*	037*	043*	40	–	–	–	H11	H11	H11	H12	–	–	80	H15	H15	H15	H15	H16
1 1/2 F 3	2500 x 300	034*	515*	038*	044*	40	–	–	–	–	–	–	H12	H13	–	80	H15	H15	H15	H15	H16
1 1/2 G 3	300L x 150	046*	517*	–	111*	40	H47	–	–	–	–	–	–	–	–	50	H15	H15	H15	H15	–
1 1/2 G 3	300 x 150	047*	518*	052*	112*	40	–	H47	H47	H11	–	–	–	–	–	50	H15	H15	H15	H15	–
1 1/2 G 3	600 x 150	048*	519*	053*	113*	40	–	–	–	H11	H11	H11	–	–	–	50	H15	H15	H15	H15	–
1 1/2 G 3	900 x 300	049*	520*	054*	114*	40	–	–	–	–	H11	H11	–	–	–	80	H15	H15	H15	H15	H16
2 G 3	1500 x 300	050*	521*	055*	115*	40	–	–	–	–	–	–	H12	H13	–	80	H15	H15	H15	H15	H16
2 G 3	2500 x 300	051*	522*	056*	116*	40	–	–	–	–	–	–	–	–	H14	80	H15	H15	H15	H15	H16
1 1/2 H 3	300L x 150	143*	524*	–	153*	40	H47	H47	H47	–	–	–	–	–	–	50	H15	H15	H15	H15	–
2 H 3	300 x 150	144*	525*	148*	154*	50	–	–	H47	H10	–	–	–	–	–	50	H15	H15	H15	H15	–
2 H 3	600 x 150	–	–	149*	–	50	–	–	H47	H10	–	–	–	–	–	50	H15	H15	H15	H15	
2 H 3	600 x 150	145*	526*	–	155*	50	–	–	H47	H10	–	–	–	–	–	80	H15	H15	H15	H15	H16
2 H 3	900 x 150	146*	527*	150*	156*	50	–	–	–	–	H11	H11	–	–	–	80	H15	H15	H15	H15	H16
2 H 3	1500 x 300	147*	528*	151*	157*	50	–	–	–	–	–	H11	H12	–	–	80	H15	H15	H15	H15	H16
2 J 3	300L x 150	163*	530*	–	197*	50	H47	H47	H47	H10	–	–	–	–	–	80	H15	H15	H15	H15	–
3 J 4	600 x 150	165*	532*	169*	199 *	80	–	–	H47	H10	–	–	–	–	–	100	H51	H51	H51	H51	–
3 J 4	900 x 150	166*	533*	170*	200*	80	–	–	–	–	H11	H11	–	–	–	100	H51	H51	H15	H15	H16
3 J 4	1500 x 300	167*	534*	171*	201*	80	–	–	–	–	–	H11	H12	–	–	100	H51	H51	H15	H15	H16

[1)] 300L x 150 is available with the same Article No. Note: Flange drillings and facings meet always the requirements of mentioned flange standards. Flange thickness and outer diameter may be thicker and wider than flange standard. For correct selection of bolting please refer to LDeS 3007-01. The inlet pressure size Class 150 is not considered, please switch to inlet pressure size Class 300 or Class 300L.

API
Type 526 – Flange drillings

Type 526 – Flange drillings according to DIN EN 1092-1

Standard API 526		Article No.					Flange drillings														
Valve size	Flange class	Material				Inlet	Inlet									Outlet	Outlet				
		WCB 5262.	LCB 5263.	WC6 5267.	CF8M 5264.	NPS [DN]	PN 10/16	PN 25	PN 40	PN 63	PN 100	PN 160	PN 250	PN 320	PN 400	NPS [DN]	PN 10	PN 16	PN 25	PN 40	PN 63
3 K 4	300 x 150[1)]	203*	536*	207*	212*	80	H47	H47	H47	H10	–	–	–	–	–	100	H51	H51	H15	H15	–
3 K 4	600 x 150	204*	537*	208*	213*	80	–	–	H47	H10	–	–	–	–	–	100	H51	H51	H15	H15	–
3 K 6	900 x 150	–	–	209*	–	80	–	–	–	H10	H11	H11	H12	–	–	150	H51	H51	–	–	–
3 K 6	900 x 150	205*	538*	–	214*	80	–	–	–	H10	H11	H11	H12	–	–	150	H51	H51	H15	H15	–
3 K 6	1500 x 300	206*	539*	210*	215*	80	–	–	–	H10	H11	H11	H12	–	–	150	H51	H51	H15	H15	–
3 L 4	300L x 150	233*	541*	–	243*	80	H47	H47	H47	H10	–	–	–	–	–	100	H15	H15	H15	H15	–
4 L 6	300 x 150	234*	542*	238*	244*	100	H45	H47	H47	H10	–	–	–	–	–	150	H51	H51	–	–	–
4 L 6	600 x 150	235*	543*	239*	245*	100	–	–	–	H10	H11	H11	–	–	–	150	H51	H51	–	–	–
4 L 6	900 x 150	236*	544*	240*	246*	100	–	–	–	–	H11	H11	–	–	–	150	H51	H51	–	–	–
4 L 6	1500 x 300	237*	545*	241*	–	100	–	–	–	–	–	–	H12	–	–	150	H51	H51	–	–	–
4 M 6	300 x 150[1)]	581*	547*	584*	588*	100	H45	H47	H47	H10	–	–	–	–	–	150	H51	H51	–	–	–
4 M 6	600 x 150	582*	548*	585*	589*	100	–	–	–	H10	H11	H11	–	–	–	150	H51	H51	–	–	–
4 M 6	900 x 150	583*	549*	586*	–	100	–	–	–	–	H11	H11	H12	–	–	150	H51	H51	–	–	–
4 N 6	300L x 150[1)]	591*	551*	594*	598*	100	H45	H47	H47	H10	–	–	–	–	–	150	H51	H51	–	–	–
4 N 6	600 x 150	592*	552*	595*	599*	100	–	–	–	–	H11	H11	–	–	–	150	H51	H51	–	–	–
4 N 6	900 x 150	593*	553*	596*	–	100	–	–	–	–	–	–	H12	–	–	150	H51	H51	–	–	–
4 P 6	300L x 150	646*	555*	–	654*	100	H45	H47	H47	–	–	–	–	–	–	150	H51	H51	–	–	–
4 P 6	300 x 150	647*	556*	550*	655*	100	–	H47	H47	–	–	–	–	–	–	150	H51	H51	–	–	–
4 P 6	600 x 300	648*	557*	551*	656*	100	–	–	–	H10	H11	–	–	–	–	150	H51	H51	–	–	–
4 P 6	900 x 300	649*	558*	552*	–	100	–	–	–	–	–	H11	H12	–	–	150	H51	H51	–	–	–
6 Q 8	300 x 150	658*	560*	660*	663*	150	H45	H47	H47	–	–	–	–	–	–	200	H50	H51	H52	–	–
6 Q 8	600 x 150	659*	561*	661*	664*	150	–	–	–	H10	H11	H11	–	–	–	200	H50	H51	H52	–	–
6 R 8	300L x 150	666*	563*	669*	672*	150	H45	H47	H47	H10	–	–	–	–	–	200	H50	H51	H52	–	–
6 R 10	300 x 150	667*	564*	–	673*	150	–	–	H47	H10	–	–	–	–	–	250	H50	H51	–	–	–
6 R 10	600 x 150	668*	565*	670*	674*	150	–	–	H47	H10	–	–	–	–	–	250	H50	H51	–	–	–
8 T 10	300 x 150[1)]	676*	567*	677*	679*	200	–	H46	H47	–	–	–	–	–	–	250	H50	H51	–	–	–

[1)] 300L x 150 is available with the same Article No. Note: Flange drillings and facings meet always the requirements of mentioned flange standards. Flange thickness and outer diameter may be thicker and wider than flange standard. For correct selection of bolting please refer to LDeS 3007-01. The inlet pressure size Class 150 is not considered, please switch to inlet pressure size Class 300 or Class 300L.

API
LESER Original Spare Parts Kits

All prices in $

The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER Safety Valve

The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER safety valve

Contents

Item	Component	Material	Quantity
7.5	Securing ring (Disc)	1.4571 / 316Ti	1
14	Split ring	1.4404 / 316L	2
57	Ball	1.4401 / 316	15
59	Securing ring[1)]	1.4571 / 316Ti	1
60	Gasket[2)]	Graphite / 1.4401 – Graphite / 316	3
61	Ball	1.4401 / 316	1
66	Screw	1.4401 / 316	1
73.2	Gasket (Lock screw)	1.4401 / 316	1

[1)] Kit 5012.1118 and 5012.1119: Kits don't contain securing ring due to re-usable ring bush in the safety valve.
[2)] Kit 5012.1109: Three additional gaskets are enclosed for use in type 5267 (WC6).

Spare Parts Kits

All prices in $

Orifice	Safety valve flange class inlet						
	Class 150	Class 300L	Class 300	Class 600	Class 900	Class 1500	Class 2500
D / E	**5012.1101** $96				**5012.1102** $96		
F	**5012.1103** $96						
G	**5012.1104** $96					**5012.1121** $96	
H	**5012.1105** $134		**5012.1106** $134				
J	**5012.1107** $160		**5012.1108** $160				
K	**5012.1109** $160				**5012.1110** $265		
L	**5012.1111** $160		**5012.1112** $265				
M	**5012.1113** $265						
N	**5012.1114** $265						
P	**5012.1115** $317		**5012.1116** $475				
Q	**5012.1117** $531						
R	**5012.1118** $531		**5012.1119** $795				
T	**5012.1120** $795						

Type 526 Spare parts – Orifice D

All prices in $

Orifice D

Item	Part	Body material	Flange class 150	300L	300	600	900 / 1500	2500
			Material-No. / Art. No.					
5	**Nozzle**	WCB, LCB	207.2049.9000 CF8M $635	207.2049.9000 CF8M $635	207.2049.9000 CF8M $635	207.2069.9000 CF8M stellited $788	207.2269.9000 CF8M stellited $1,000	207.2769.9000 CF8M stellited $1,000
		WC6	–	–	207.2069.9000 CF8M stellited $788	207.2069.9000 CF8M stellited $788	207.2269.9000 CF8M stellited $1,000	207.2769.9000 CF8M stellited $1,000
		CF8M	207.2049.9000 CF8M $635	207.2049.9000 CF8M $635	207.2049.9000 CF8M $635	207.2049.9000 CF8M $635	207.2269.9000 CF8M stellited $1,000	207.2769.9000 CF8M stellited $1,000
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.0439.9000 $184	225.0439.9000 $184	225.0439.9000 $184	225.0439.9000 $184	225.0539.9000 $166	225.0639.9000 $166
	Disc 316L stellited	CF8M	225.0469.9000 $398	225.0469.9000 $398	225.0469.9000 $398	225.0469.9000 $398	225.0569.9000 $398	225.0669.9000 $398
7	**O-ring disc**[1]	all	205.0149.90X1 $447	205.0149.90X1 $447	205.0149.90X1 $447	205.0149.90X1 $447	205.0249.90X1 $447	205.0249.90X1 $447
	CR Neoprene® "K" X: 5							
	EPDM Buna-EP® "D" X: 4		$447	$447	$447	$447	$447	$447
	FKM Viton® "L" X: 7		$447	$447	$447	$447	$447	$447
	FFKM Kalrez® "C" X: 9		$746	$746	$746	$746	$746	$746
7.4	**O-ring**[1]	all	502.0171.26X1 $30	502.0171.26X1 $30	502.0171.26X1 $30	502.0171.26X1 $30	502.0171.26X1 $30	502.0171.26X1 $30
	CR Neoprene® "K" X: 5							
	EPDM Buna-EP® "D" X: 4		$30	$30	$30	$30	$30	$30
	FKM Viton® "L" X: 7		$40	$40	$40	$40	$40	$40
	FFKM Kalrez® "C" X: 9		$348	$348	$348	$348	$348	$348
8	**Guide**	WCB, LCB	260.6459.0000 $85	260.6459.0000 $85	260.6459.0000 $85	260.6459.0000 $85	260.6559.0000 $91	263.0149.0000 $183
		CF8M, WC6	261.1249.0000 $250	261.1249.0000 $250	261.1249.0000 $250	261.1249.0000 $250	261.2249.0000 $348	263.0149.0000 $183
12	**Spindle** Conventional design	WCB, LCB, WC6	242.7339.0000 $265	242.7339.0000 $265	242.7339.0000 $265	242.7339.0000 $265	242.7439.0000 $265	242.7639.0000 $250
		CF8M	242.7349.0000 $423	242.7349.0000 $423	242.7349.0000 $423	242.7349.0000 $423	242.7449.0000 $423	242.7649.0000 $423
	Spindle Balanced bellows design	WCB, LCB, WC6	244.8639.0000 $265	244.8639.0000 $265	244.8639.0000 $265	244.8639.0000 $265	244.8739.0000 $250	244.8739.0000 $250
		CF8M	244.8649.0000 $423	244.8649.0000 $423	244.8649.0000 $423	244.8649.0000 $423	244.8749.0000 $423	244.8749.0000 $423
14	**Split rings**	all	251.0249.0000 $7	251.0249.0000 $7	251.0249.0000 $7	251.0249.0000 $7	251.0249.0000 $7	251.0249.0000 $7
15	**Bellows** Inconel	all	400.8379.0421 $697	400.8379.0421 $697	400.8379.0421 $697	400.8379.0400 $896	400.8379.0400 $896	400.8379.0400 $896
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20
60	**Gaskets**	all	500.0807.0000 $20	500.0807.0000 $20	500.0807.0000 $20	500.0807.0000 $20	500.1207.0000 $20	500.1207.0000 $20
61	**Ball** ø 9 mm	all	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20
69	**Axial needle bearing**	all	250.0749.0000 $80	250.0749.0000 $80	250.0749.0000 $80	250.0749.0000 $80	250.0749.0000 $80	250.0749.0000 $80
	Bellows conversion kit[2]	all	5021.1340 $741	5021.1340 $741	5021.1340 $741	5021.1341 $697	5021.1342 $1,366	5021.1343 $1,366

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice E

All prices in $

Orifice E

Item	Part	Body material	Flange class					
			150	300L	300	600	900 / 1500	2500
			Material-No. / Art. No.					
5	**Nozzle**	WCB, LCB	**207.2049.9000** CF8M $635	**207.2049.9000** CF8M $635	**207.2049.9000** CF8M $635	**207.2069.9000** CF8M stellited $788	**207.2269.9000** CF8M stellited $1,000	**207.2769.9000** CF8M stellited $1,000
		WC6	–	–	**207.2069.9000** CF8M stellited $788	**207.2069.9000** CF8M stellited $788	**207.2269.9000** CF8M stellited $1,000	**207.2769.9000** CF8M stellited $1,000
		CF8M	**207.2049.9000** CF8M $635	**207.2049.9000** CF8M $635	**207.2049.9000** CF8M $635	**207.2049.9000** CF8M $635	**207.2269.9000** CF8M stellited $1,000	**207.2769.9000** CF8M stellited $1,000
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	**225.0439.9000** $184	**225.0439.9000** $184	**225.0439.9000** $184	**225.0439.9000** $184	**225.0539.9000** $194	**225.0639.9000** $194
	Disc 316L stellited	CF8M	**225.0469.9000** $398	**225.0469.9000** $398	**225.0469.9000** $398	**225.0469.9000** $398	**225.0569.9000** $398	**225.0669.9000** $398
7	**O-ring disc**[1]	all	**205.0149.90X1**	**205.0149.90X1**	**205.0149.90X1**	**205.0149.90X1**	**205.0249.90X1**	**205.0249.90X1**
	CR Neoprene® "K" X: 5		$447	$447	$447	$447	$447	$447
	EPDM Buna-EP® "D" X: 4		$447	$447	$447	$447	$447	$447
	FKM Viton® "L" X: 7		$447	$447	$447	$447	$447	$447
	FFKM Kalrez® "C" X: 9		$746	$746	$746	$746	$746	$746
7.4	**O-ring**[1]	all	**502.0171.26X1**	**502.0171.26X1**	**502.0171.26X1**	**502.0171.26X1**	**502.0171.26X1**	**502.0171.26X1**
	CR Neoprene® "K" X: 5		$30	$30	$30	$30	$30	$30
	EPDM Buna-EP® "D" X: 4		$30	$30	$30	$30	$30	$30
	FKM Viton® "L" X: 7		$40	$40	$40	$40	$40	$40
	FFKM Kalrez® "C" X: 9		$348	$348	$348	$348	$348	$348
8	**Guide**	WCB, LCB	**260.6459.0000** $85	**260.6459.0000** $85	**260.6459.0000** $85	**260.6459.0000** $85	**260.6559.0000** $91	**263.0149.0000** $183
		CF8M, WC6	**261.1249.0000** $250	**261.1249.0000** $250	**261.1249.0000** $250	**261.1249.0000** $250	**261.2249.0000** $348	**263.0149.0000** $183
12	**Spindle** Conventional design	WCB, LCB, WC6	**242.7339.0000** $250	**242.7339.0000** $265	**242.7339.0000** $265	**242.7339.0000** $265	**242.7439.0000** $265	**242.7639.0000** $250
		CF8M	**242.7349.0000** $423	**242.7349.0000** $423	**242.7349.0000** $423	**242.7349.0000** $423	**242.7449.0000** $423	**242.7649.0000** $423
	Spindle Balanced bellows design	WCB, LCB, WC6	**244.8639.0000** $265	**244.8639.0000** $265	**244.8639.0000** $265	**244.8639.0000** $265	**244.8739.0000** $250	**244.8739.0000** $250
		CF8M	**244.8649.0000** $423	**244.8649.0000** $423	**244.8649.0000** $423	**244.8649.0000** $423	**244.8749.0000** $423	**244.8749.0000** $423
14	**Split rings**	all	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7
15	**Bellows** Inconel	all	**400.8379.0421** $697	**400.8379.0421** $697	**400.8379.0421** $697	**400.8379.0400** $896	**400.8379.0400** $896	**400.8379.0400** $896
57	**Balls** ø 3 mm, Quantity	all	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20
60	**Gaskets**	all	**500.0807.0000** $20	**500.0807.0000** $20	**500.0807.0000** $20	**500.0807.0000** $20	**500.1207.0000** $20	**500.1207.0000** $20
61	**Ball** ø 9 mm	all	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20
69	**Axial needle bearing**	all	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80
	Bellows conversion kit[2]	all	**5021.1340** $741	**5021.1340** $741	**5021.1340** $741	**5021.1341** $697	**5021.1342** $1,366	**5021.1343** $1,366

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice F

All prices in $

Orifice F

Item	Part	Body material	Flange class					
			150	300L	300	600	900 / 1500	2500
			Material-No. / Art. No.					
5	**Nozzle**	WCB, LCB	**207.2349.9000** CF8M $800	**207.2349.9000** CF8M $800	**207.2349.9000** CF8M $800	**207.2369.9000** CF8M stellited $1,018	**207.2369.9000** CF8M stellited $1,018	**207.2869.9000** CF8M stellited $1,018
		WC6	–	–	**207.2369.9000** CF8M stellited $1,018	**207.2369.9000** CF8M stellited $1,018	**207.2369.9000** CF8M stellited $1,018	**207.2869.9000** CF8M stellited $1,018
		CF8M	**207.2349.9000** CF8M $800	**207.2349.9000** CF8M $800	**207.2349.9000** CF8M $800	**207.2369.9000** CF8M stellited $1,018	**207.2369.9000** CF8M stellited $1,018	**207.2869.9000** CF8M stellited $1,018
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	**225.0739.9000** $198	**225.0739.9000** $198	**225.0739.9000** $198	**225.0739.9000** $198	**225.0739.9000** $198	**225.0839.9000** $198
	Disc 316L stellited	CF8M	**225.0769.9000** $474	**225.0769.9000** $474	**225.0769.9000** $474	**225.0769.9000** $474	**225.0769.9000** $474	**225.0869.9000** $474
7	**O-ring disc**[1)] CR Neoprene® "K" X: 5	all	**205.0349.90X1** $598	**205.0349.90X1** $598	**205.0349.90X1** $598	**205.0349.90X1** $598	**205.0349.90X1** $598	**205.0349.90X1** $598
	EPDM Buna-EP® "D" X: 4		$598	$598	$598	$598	$598	$598
	FKM Viton® "L" X: 7		$598	$598	$598	$598	$598	$598
	FFKM Kalrez® "C" X: 9		$896	$896	$896	$896	$896	$896
7.4	**O-ring**[1)] CR Neoprene® "K" X: 5	all	**502.0202.26X1** $30	**502.0202.26X1** $30	**502.0202.26X1** $30	**502.0202.26X1** $30	**502.0202.26X1** $30	**502.0202.26X1** $30
	EPDM Buna-EP® "D" X: 4		$30	$30	$30	$30	$30	$30
	FKM Viton® "L" X: 7		$40	$40	$40	$40	$40	$40
	FFKM Kalrez® "C" X: 9		$348	$348	$348	$348	$348	$348
8	**Guide**	WCB, LCB	**260.6559.0000** $91	**260.6559.0000** $91	**260.6559.0000** $91	**260.6559.0000** $91	**263.0149.0000** $183	**263.0149.0000** $183
		CF8M, WC6	**261.2249.0000** $348	**261.2249.0000** $348	**261.2249.0000** $348	**261.2249.0000** $348	**263.0149.0000** $183	**263.0149.0000** $183
12	**Spindle** Conventional design	WCB, LCB, WC6	**242.7539.0000** $265	**242.7539.0000** $265	**242.7539.0000** $265	**242.7539.0000** $265	**242.7739.0000** $250	**242.7739.0000** $250
		CF8M	**242.7549.0000** $423	**242.7549.0000** $423	**242.7549.0000** $423	**242.7549.0000** $423	**242.7749.0000** $423	**242.7749.0000** $423
	Spindle Balanced bellows design	WCB, LCB, WC6	**244.8839.0000** $250	**244.8839.0000** $250	**244.8839.0000** $250	**244.8839.0000** $250	**244.8839.0000** $250	**244.8839.0000** $250
		CF8M	**244.8849.0000** $423	**244.8849.0000** $423	**244.8849.0000** $423	**244.8849.0000** $423	**244.8849.0000** $423	**244.8849.0000** $423
14	**Split rings**	all	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7
15	**Bellows** Inconel	all	**400.8479.0421** $896	**400.8479.0421** $896	**400.8479.0421** $896	**400.8479.0400** $896	**400.8479.0400** $896	**400.8479.0400** $896
57	**Balls** ø 3 mm, Quantity	all	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20	**510.0604.0000** 12 pieces $20
60	**Gaskets**	all	**500.1207.0000** $20	**500.1207.0000** $20	**500.1207.0000** $20	**500.1207.0000** $20	**500.1207.0000** $20	**500.1207.0000** $20
61	**Ball** ø 9 mm	all	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20	**510.0204.0000** 1 $20
69	**Axial needle bearing**	all	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80	**250.0749.0000** $80
	Bellows conversion kit[2)]	all	**5021.1344** $1,366	**5021.1344** $1,366	**5021.1344** $1,366	**5021.1345** $1,366	**5021.1346** $1,366	**5021.1346** $1,366

[1)] Material FFKM "C" is only available as special design (without material number)
[2)] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

API
Type 526 Spare parts – Orifice G

All prices in $

Orifice G

Item	Part	Body material	Flange class						
			150	300L	300	600	900	1500	2500
			Material-No. / Art. No.						
5	**Nozzle**	WCB, LCB	207.2449.9000 CF8M $800	207.2449.9000 CF8M $800	207.2449.9000 CF8M $800	207.2469.9000 CF8M stellited $1,018	207.2469.9000 CF8M stellited $1,018	207.3269.9000 CF8M stellited $1,991	207.3269.9000 CF8M stellited $1,991
		WC6	–	–	207.2469.9000 CF8M stellited $1,018	207.2469.9000 CF8M stellited $1,018	207.2469.9000 CF8M stellited $1,018	207.3269.9000 CF8M stellited $1,991	207.3269.9000 CF8M stellited $1,991
		CF8M	207.2449.9000 CF8M $800	207.2449.9000 CF8M $800	207.2449.9000 CF8M $800	207.2449.9000 CF8M $800	207.2469.9000 CF8M stellited $1,018	207.3269.9000 CF8M stellited $1,991	207.3269.9000 CF8M stellited $1,991
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.1139.9000 $198	225.1139.9000 $198	225.1139.9000 $198	225.1139.9000 $198	225.1139.9000 $198	225.1439.9000 $198	225.1439.9000 $198
	Disc 316L stellited	CF8M	225.1169.9000 $474	225.1169.9000 $474	225.1169.9000 $474	225.1169.9000 $474	225.1169.9000 $474	225.1469.9000 $474	225.1469.9000 $474
7	**O-ring disc**[1]	all	205.0649.90X1	205.0649.90X1	205.0649.90X1	205.0649.90X1	205.0649.90X1	205.0649.90X1	205.0649.90X1
	CR Neoprene® "K" X: 5		$598	$598	$598	$598	$598	$598	$598
	EPDM Buna-EP® "D" X: 4		$598	$598	$598	$598	$598	$598	$598
	FKM Viton® "L" X: 7		$598	$598	$598	$598	$598	$598	$598
	FFKM Kalrez® "C" X: 9		$896	$896	$896	$896	$896	$896	$896
7.4	**O-ring**[1]	all	502.0249.35X1	502.0249.35X1	502.0249.35X1	502.0249.35X1	502.0249.35X1	502.0249.35X1	502.0249.35X1
	CR Neoprene® "K" X: 5		$30	$30	$30	$30	$30	$30	$30
	EPDM Buna-EP® "D" X: 4		$30	$30	$30	$30	$30	$30	$30
	FKM Viton® "L" X: 7		$40	$40	$40	$40	$40	$40	$40
	FFKM Kalrez® "C" X: 9		$348	$348	$348	$348	$348	$348	$348
8	**Guide**	WCB, LCB	260.6559.0000 $91	260.6559.0000 $91	260.6559.0000 $91	260.6559.0000 $91	263.0149.0000 $105	260.6659.0000 $105	260.6659.0000 $105
		CF8M, WC6	261.2249.0000 $348	261.2249.0000 $348	261.2249.0000 $348	261.2249.0000 $348	263.0149.0000 $348	262.6249.0000 $447	262.6249.0000 $447
12	**Spindle** Conventional design	WCB, LCB, WC6	242.7539.0000 $265	242.7539.0000 $265	242.7539.0000 $265	242.7539.0000 $265	242.7739.0000 $250	242.8039.0000 $398	242.8039.0000 $398
		CF8M	242.7549.0000 $423	242.7549.0000 $423	242.7549.0000 $423	242.7549.0000 $423	242.7749.0000 $423	242.8049.0000 $582	242.8049.0000 $582
	Spindle Balanced bellows design	WCB, LCB, WC6	244.8939.0000 $265	244.8939.0000 $265	244.8939.0000 $265	244.8939.0000 $265	244.8939.0000 $265	244.9039.0000 $398	244.9039.0000 $398
		CF8M	244.8949.0000 $423	244.8949.0000 $423	244.8949.0000 $423	244.8949.0000 $423	244.8949.0000 $423	244.9049.0000 $582	244.9049.0000 $582
14	**Split rings**	all	251.0249.0000 $7	251.0249.0000 $7	251.0249.0000 $7	251.0249.0000 $7	251.0249.0000 $7	251.0349.0000 $20	251.0349.0000 $20
15	**Bellows** Inconel	all	400.8579.0421 $896	400.8579.0421 $896	400.8579.0421 $896	400.8579.0400 $896	400.8579.0400 $896	400.8579.0400 $896	400.8579.0400 $896
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20
60	**Gaskets**	all	500.1207.0000 $20	500.1207.0000 $20	500.1207.0000 $20	500.1207.0000 $20	500.1207.0000 $20	500.1607.0000 $51	500.1607.0000 $51
61	**Ball** ø 9 mm	all	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20
69	**Axial needle bearing**	all	250.0749.0000 $80	250.0749.0000 $80	250.0749.0000 $80	250.0749.0000 $80	250.0749.0000 $80	250.0849.0000 $99	250.0849.0000 $99
	Bellows conversion kit[2]	all	5021.1350 $1,366	5021.1350 $1,366	5021.1350 $1,366	5021.1351 $1,366	5021.1352 $1,366	5021.1353 $1,865	5021.1353 $1,865

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

API
Type 526 Spare parts – Orifice H

All prices in $

Orifice H

Item	Part	Body material	Flange class					
			150	300L	300	600	900	1500
			Material-No. / Art. No.					
5	**Nozzle**	WCB, LCB, CF8M	207.2549.9000 CF8M $800	207.2549.9000 CF8M $800	207.2949.9000 CF8M $1,162	207.3169.9000 CF8M stellited $1,162	207.3169.9000 CF8M stellited $1,162	207.3169.9000 CF8M stellited $1,162
		WC6	–	–	207.2969.9000 CF8M stellited $1,162	207.2969.9000 CF8M stellited $1,162	207.3169.9000 CF8M stellited $1,162	207.3169.9000 CF8M stellited $1,162
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.1539.9000 $278	225.1539.9000 $278	225.1639.9000 $278	225.1639.9000 $278	225.1639.9000 $278	225.1639.9000 $278
	Disc 316L stellited	CF8M	225.1569.9000 $598	225.1569.9000 $598	225.1669.9000 $598	225.1669.9000 $598	225.1669.9000 $598	225.1669.9000 $598
7	**O-ring disc**[1]	all	205.0849.90X1 $647	205.0849.90X1 $647	205.0949.90X1 $647	205.0949.90X1 $647	205.1049.90X1 $647	205.1049.90X1 $647
	CR Neoprene® "K" X: 5							
	EPDM Buna-EP® "D" X: 4		$647	$647	$647	$647	$647	$647
	FKM Viton® "L" X: 7		$647	$647	$647	$647	$647	$647
	FFKM Kalrez® "C" X: 9		$1,143	$1,143	$1,143	$1,143	$1,143	$1,143
7.4	**O-ring**[1]	all	502.0313.35X1 $30	502.0313.35X1 $30	502.0313.35X1 $30	502.0313.35X1 $30	502.0313.35X1 $30	502.0313.35X1 $30
	CR Neoprene® "K" X: 5							
	EPDM Buna-EP® "D" X: 4		$30	$30	$30	$30	$30	$30
	FKM Viton® "L" X: 7		$40	$40	$40	$40	$40	$40
	FFKM Kalrez® "C" X: 9		$598	$598	$598	$598	$598	$598
8	**Guide**	WCB, LCB	260.6559.0000 $91	260.6559.0000 $91	260.6659.0000 $105	260.6659.0000 $105	260.6659.0000 $105	260.6659.0000 $105
		CF8M, WC6	261.2249.0000 $348	261.2249.0000 $348	262.6249.0000 $447	262.6249.0000 $447	262.6249.0000 $447	262.6249.0000 $447
12	**Spindle** Conventional design	WCB, LCB, WC6	242.7539.0000 $265	242.7539.0000 $265	242.7839.0000 $423	242.7839.0000 $423	242.7839.0000 $423	242.7839.0000 $423
		CF8M	242.7549.0000 $423	242.7549.0000 $423	242.7849.0000 $582	242.7849.0000 $582	242.7849.0000 $582	242.7849.0000 $582
	Spindle Balanced bellows design	WCB, LCB, WC6	244.8939.0000 $265	244.8939.0000 $265	244.9139.0000 $398	244.9139.0000 $398	244.9139.0000 $398	244.9139.0000 $398
		CF8M	244.8949.0000 $423	244.8949.0000 $423	244.9149.0000 $582	244.9149.0000 $582	244.9149.0000 $582	244.9149.0000 $582
14	**Split rings**	all	251.0249.0000 $7	251.0249.0000 $7	251.0349.0000 $20	251.0349.0000 $20	251.0349.0000 $20	251.0349.0000 $20
15	**Bellows** Inconel	all	400.8579.0421 $896	400.8579.0421 $896	400.8779.0400 $1,366	400.8779.0400 $1,366	400.8779.0400 $1,366	400.8779.0400 $1,366
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 12 pieces $20	510.0604.0000 12 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.1207.0000 $51	500.1207.0000 $51	500.1607.0000 $51	500.1607.0000 $51	500.1607.0000 $51	500.1607.0000 $51
61	**Ball** ø 9 mm	all	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20	510.0204.0000 1 $20
69	**Axial needle bearing**	all	250.0749.0000 $80	250.0749.0000 $80	250.0849.0000 $99	250.0849.0000 $99	250.0849.0000 $99	250.0849.0000 $99
	Bellows conversion kit[2]	all	5021.1354 $1,366	5021.1354 $1,366	5021.1355 $1,865	5021.1355 $1,865	5021.1355 $1,865	5021.1355 $1,865

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice J

All prices in $

Orifice J

Item	Part	Body material	Flange class					
			150	300L	300	600	900	1500
			Material-No. / Art. No.					
5	**Nozzle**	WCB, LCB, WC6, CF8M	207.3049.9000 CF8M $900	207.3049.9000 CF8M $900	207.3569.9000 CF8M stellited $1,720	207.3569.9000 CF8M stellited $1,720	207.3569.9000 CF8M stellited $1,720	207.3569.9000 CF8M stellited $1,720
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.1839.9000 $317	225.1839.9000 $317	225.1939.9000 $317	225.1939.9000 $317	225.1939.9000 $317	225.1939.9000 $317
	Disc 316L stellited	CF8M	225.1869.9000 $598	225.1869.9000 $598	225.1969.9000 $598	225.1969.9000 $635	225.1969.9000 $635	225.1969.9000 $635
7	**O-ring disc**[1]	all	205.1149.90X1	205.1149.90X1	205.1249.90X1	205.1249.90X1	205.1249.90X1	205.1249.90X1
	CR Neoprene® "K" X: 5		$647	$647	$647	$647	$647	$647
	EPDM Buna-EP® "D" X: 4	WCB, LCB	$647	$647	$647	$647	$647	$647
	FKM Viton® "L" X: 7		$647	$647	$647	$647	$647	$647
	FFKM Kalrez® "C" X: 9		$1,194	$1,194	$1,194	$1,194	$1,194	$1,194
7.4	**O-ring**[1]	all	502.0408.35X1	502.0408.35X1	502.0408.35X1	502.0408.35X1	502.0408.35X1	502.0408.35X1
	CR Neoprene® "K" X: 5		$30	$30	$30	$30	$30	$30
	EPDM Buna-EP® "D" X: 4		$30	$30	$30	$30	$30	$30
	FKM Viton® "L" X: 7		$60	$60	$60	$60	$60	$60
	FFKM Kalrez® "C" X: 9		$697	$697	$697	$697	$697	$697
8	**Guide**	WCB, LCB	260.6659.0000 $131	260.6659.0000 $131	260.6759.0000 $131	260.6759.0000 $131	260.6759.0000 $131	260.6759.0000 $131
		CF8M, WC6	262.6249.0000 $447	262.6249.0000 $447	261.2449.0000 $797	261.2449.0000 $797	261.2449.0000 $797	261.2449.0000 $797
12	**Spindle** Conventional design	WCB, LCB, WC6	242.7939.0000 $423	242.7939.0000 $423	242.8139.0000 $531	242.8139.0000 $531	242.8139.0000 $531	242.8139.0000 $531
		CF8M	242.7949.0000 $582	242.7949.0000 $582	242.8149.0000 $741	242.8149.0000 $741	242.8149.0000 $741	242.8149.0000 $741
	Spindle Balanced bellows design	WCB, LCB, WC6	244.9139.0000 $398	244.9139.0000 $398	244.9239.0000 $531	244.9239.0000 $531	244.9239.0000 $531	244.9239.0000 $531
		CF8M	244.9149.0000 $582	244.9149.0000 $582	244.9249.0000 $741	244.9249.0000 $741	244.9249.0000 $741	244.9249.0000 $741
14	**Split rings**	all	251.0349.0000 $20	251.0349.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20
15	**Bellows** Inconel	all	400.8879.0400 $1,366	400.8879.0400 $1,366	400.8879.0400 $1,366	400.8879.0400 $1,366	400.8879.0400 $1,366	400.8879.0400 $1,366
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.1607.0000 $51	500.1607.0000 $51	500.1907.0000 $51	500.1907.0000 $51	500.1907.0000 $51	500.1907.0000 $51
61	**Ball** ø 15 mm	all	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51
69	**Axial needle bearing**	all	250.0849.0000 $99	250.0849.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99
	Bellows conversion kit[2]	all	5021.1356 $1,865	5021.1356 $1,865	5021.1357 $2,238	5021.1357 $2,238	5021.1357 $2,238	5021.1357 $2,238

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice K

All prices in $

Orifice K

Item	Part	Body material	Flange class					
			150	300L	300	600	900	1500
			Material-No. / Art. No.					
5	**Nozzle**	WCB, LCB, CF8M	**207.3349.9000** CF8M $1,329	**207.3349.9000** CF8M $1,329	**207.3349.9000** CF8M $1,329	**207.3669.9000** CF8M stellited $1,572	**207.4169.9000** 316 L stellited $1,572	**207.4269.9000** 316 L stellited $1,572
		WC6	–	–	**207.3369.9000** CF8M stellited $1,572	**207.3669.9000** CF8M stellited $1,572	**207.3669.9000** CF8M stellited $1,572	**207.4269.9000** 316 L stellited $1,572
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	**225.2139.9000** $298	**225.2139.9000** $298	**225.2139.9000** $298	**225.2139.9000** $298	**225.2139.9000** $298	**225.2139.9000** $298
	316L stellited	CF8M	**225.2169.9000** $809	**225.2169.9000** $809	**225.2169.9000** $809	**225.2169.9000** $809	**225.2169.9000** $809	**225.2169.9000** $809
7	**O-ring disc**[1]	all	**205.1349.90X1**	**205.1349.90X1**	**205.1349.90X1**	**205.1349.90X1**	**205.1349.90X1**	**205.1349.90X1**
	CR Neoprene® "K" X: 5		$746	$746	$746	$746	$746	$746
	EPDM Buna-EP® "D" X: 4		$746	$746	$746	$746	$746	$746
	FKM Viton® "L" X: 7		$746	$746	$746	$746	$746	$746
	FFKM Kalrez® "C" X: 9		$1,991	$1,991	$1,991	$1,991	$1,991	$1,991
7.4	**O-ring**[1]	all	**502.0472.35X1**	**502.0472.35X1**	**502.0472.35X1**	**502.0472.35X1**	**502.0472.35X1**	**502.0472.35X1**
	CR Neoprene® "K" X: 5		$30	$30	$30	$30	$30	$30
	EPDM Buna-EP® "D" X: 4		$30	$30	$30	$30	$30	$30
	FKM Viton® "L" X: 7		$99	$99	$99	$99	$99	$99
	FFKM Kalrez® "C" X: 9		$1,366	$1,366	$1,366	$1,366	$1,366	$1,366
8	**Guide**	WCB, LCB	**260.6759.0000** $131	**260.6759.0000** $131	**260.6759.0000** $131	**260.6759.0000** $131	**263.0249.0000** $551	**263.0249.0000** $551
		CF8M, WC6	**261.2449.0000** $797	**261.2449.0000** $797	**261.2449.0000** $797	**261.2449.0000** $797	**263.0249.0000** $551	**263.0249.0000** $551
12	**Spindle** Conventional design	WCB, LCB, WC6	**242.8139.0000** $531	**242.8139.0000** $531	**242.8139.0000** $531	**242.8139.0000** $531	**242.8339.0000** $498	**242.8339.0000** $498
		CF8M	**242.8149.0000** $741	**242.8149.0000** $741	**242.8149.0000** $741	**242.8149.0000** $741	**242.8349.0000** $741	**242.8349.0000** $741
	Spindle Balanced bellows design	WCB, LCB, WC6	**244.9339.0000** $498	**244.9339.0000** $498	**244.9339.0000** $498	**244.9339.0000** $498	**244.9439.0000** $498	**244.9439.0000** $498
		CF8M	**244.9349.0000** $741	**244.9349.0000** $741	**244.9349.0000** $741	**244.9349.0000** $741	**244.9449.0000** $741	**244.9449.0000** $741
14	**Split rings**	all	**251.0449.0000** $20	**251.0449.0000** $20	**251.0449.0000** $20	**251.0449.0000** $20	**251.0449.0000** $20	**251.0449.0000** $20
15	**Bellows** Inconel	all	**400.8979.0421** $1,366	**400.8979.0421** $1,366	**400.8979.0421** $1,366	**400.8979.0400** $1,366	**400.8979.0400** $1,366	**400.8979.0400** $1,366
57	**Balls** ø 3 mm, Quantity	all	**510.0604.0000** 15 pieces $20	**510.0604.0000** 15 pieces $20	**510.0604.0000** 15 pieces $20	**510.0604.0000** 15 pieces $20	**510.0604.0000** 15 pieces $20	**510.0604.0000** 15 pieces $20
60	**Gaskets**	all	**500.1907.0000** $51	**500.1907.0000** $51	**500.1907.0000** $51	**500.1907.0000** $51	**500.2107.0000** $69	**500.2107.0000** $69
61	**Ball** ø 15 mm	all	**510.0404.0000** 1 $51	**510.0404.0000** 1 $51	**510.0404.0000** 1 $51	**510.0404.0000** 1 $51	**510.0404.0000** 1 $51	**510.0404.0000** 1 $51
69	**Axial needle bearing**	all	**250.0949.0000** $99	**250.0949.0000** $99	**250.0949.0000** $99	**250.0949.0000** $99	**250.0949.0000** $99	**250.0949.0000** $99
	Bellows conversion kit[2]	all	**5021.1360** $2,238	**5021.1360** $2,238	**5021.1360** $2,238	**5021.1361** $2,238	**5021.1362** $3,731	**5021.1362** $3,731

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

API
Type 526 Spare parts – Orifice L

All prices in $

Orifice L

Item	Part	Body material	Flange class					
			150	300L	300	600	900	1500
			Material-No. / Art. No.					
5	**Nozzle**	WCB, LCB	207.3449.9000 CF8M $1,329	207.3449.9000 CF8M $1,329	207.3769.9000 CF8M stellited $2,416	207.3769.9000 CF8M stellited $2,416	207.4369.9000 CF8M stellited $2,416	207.4369.9000 CF8M stellited $2,416
		WC6	207.3449.9000 CF8M $1,329	207.3449.9000 CF8M $1,329	207.3769.9000 CF8M stellited $2,416	207.3969.9000 CF8M stellited $2,416	207.4369.9000 CF8M stellited $2,416	207.4369.9000 CF8M stellited $2,416
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.2539.9000 $298	225.2539.9000 $298	225.2639.9000 $298	225.2639.9000 $298	225.2639.9000 $298	225.2639.9000 $298
	Disc 316L stellited	CF8M	225.2569.9000 $809	225.2569.9000 $809	225.2669.9000 $809	225.2669.9000 $809	225.2669.9000 $809	225.2669.9000 $809
7	**O-ring disc**[1]	all	205.1649.90X1 $746	205.1649.90X1 $746	205.1749.90X1 $746	205.1749.90X1 $746	205.1749.90X1 $746	205.1749.90X1 $746
	CR Neoprene® "K" X: 5		$746	$746	$746	$746	$746	$746
	EPDM Buna-EP® "D" X: 4		$746	$746	$746	$746	$746	$746
	FKM Viton® "L" X: 7		$746	$746	$746	$746	$746	$746
	FFKM Kalrez® "C" X: 9		$2,364	$2,364	$2,364	$2,364	$2,364	$2,364
7.4	**O-ring**[1]	all	502.0567.35X1 $40	502.0567.35X1 $40	502.0567.35X1 $40	502.0567.35X1 $40	502.0567.35X1 $40	502.0567.35X1 $40
	CR Neoprene® "K" X: 5		$40	$40	$40	$40	$40	$40
	EPDM Buna-EP® "D" X: 4		$198	$198	$198	$198	$198	$198
	FKM Viton® "L" X: 7		$1,740	$1,740	$1,740	$1,740	$1,740	$1,740
	FFKM Kalrez® "C" X: 9							
8	**Guide**	WCB, LCB	260.6759.0000 $131	260.6759.0000 $131	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183
		CF8M, WC6	261.2449.0000 $797	261.2449.0000 $797	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042
12	**Spindle** Conventional design	WCB, LCB, WC6	242.8139.0000 $531	242.8139.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531
		CF8M	242.8149.0000 $741	242.8149.0000 $741	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741
	Spindle Balanced bellows design	WCB, LCB, WC6	244.9339.0000 $498	244.9339.0000 $498	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498
		CF8M	244.9349.0000 $741	244.9349.0000 $741	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741
14	**Split rings**	all	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20
15	**Bellows** Inconel	all	400.9079.0400 $1,308	400.9079.0400 $1,308	400.9179.0400 $2,288	400.9179.0400 $2,288	400.9179.0400 $2,288	400.9179.0400 $2,288
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.1907.0000 $51	500.1907.0000 $51	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69
61	**Ball** ø 15 mm	all	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51
69	**Axial needle bearing**	all	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99
	Bellows conversion kit[2]	all	5021.1363 $2,238	5021.1363 $2,238	5021.1364 $3,731	5021.1364 $3,731	5021.1364 $3,731	5021.1364 $3,731

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

API
Type 526 Spare parts – Orifice M

All prices in $

Orifice M

Item	Part	Body material	Flange class				
			150	300L	300	600	900
			Material-No. / Art. No.				
5	**Nozzle**	WCB, LCB WC6, CF8M	207.3869.9000 $2,756	207.3869.9000 $2,756	207.3869.9000 $2,756	207.3869.9000 $2,756	207.4469.9000 $2,756
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.2939.9000 $477	225.2939.9000 $477	225.2939.9000 $477	225.2939.9000 $477	225.2939.9000 $477
	Disc 316L stellited	CF8M	225.2969.9000 $547	225.2969.9000 $547	225.2969.9000 $547	225.2969.9000 $547	–
7	**O-ring disc**[1]	all	205.1949.90X1	205.1949.90X1	205.1949.90X1	205.1949.90X1	205.1949.90X1
	CR Neoprene® "K" X: 5		$993	$993	$993	$993	$993
	EPDM Buna-EP® "D" X: 4		$993	$993	$993	$993	$993
	FKM Viton® "L" X: 7		$993	$993	$993	$993	$993
	FFKM Kalrez® "C" X: 9		$2,736	$2,736	$2,736	$2,736	$2,736
7.4	**O-ring**[1]	all	502.0628.35X1	502.0628.35X1	502.0628.35X1	502.0628.35X1	502.0628.35X1
	CR Neoprene® "K" X: 5		$40	$40	$40	$40	$40
	EPDM Buna-EP® "D" X: 4		$40	$40	$40	$40	$40
	FKM Viton® "L" X: 7		$198	$198	$198	$198	$198
	FFKM Kalrez® "C" X: 9		$1,740	$1,740	$1,740	$1,740	$1,740
8	**Guide**	WCB, LCB	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183
		CF8M, WC6	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042
12	**Spindle** Conventional design	WCB, LCB, WC6	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531
		CF8M	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741
	Spindle Balanced bellows design	WCB, LCB, WC6	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498
		CF8M	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741
14	**Split rings**	all	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20
15	**Bellows** Inconel	all	400.9279.0421 $2,315	400.9279.0421 $2,315	400.9279.0421 $2,315	400.9279.0400 $2,315	400.9279.0400 $2,315
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69
61	**Ball** ø 15 mm	all	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51
69	**Axial needle bearing**	all	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99
	Bellows conversion kit[2]	all	5021.1365 $3,731	5021.1365 $3,731	5021.1365 $3,731	5021.1366 $3,731	5021.1366 $3,731

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice N

All prices in $

Orifice N

Item	Part	Body material	Flange class 150	300L	300	600	900
			Material-No. / Art. No.				
5	**Nozzle**	WCB, LCB WC6, CF8M	207.4069.9000 $2,756	207.4069.9000 $2,756	207.4069.9000 $2,756	207.4069.9000 $2,756	207.4069.9000 $2,756
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.3239.9000 $477	225.3239.9000 $477	225.3239.9000 $477	225.3239.9000 $477	225.3239.9000 $477
	Disc 316L stellited	CF8M	225.3269.9000 $547	225.3269.9000 $547	225.3269.9000 $547	225.3269.9000 $547	225.3269.9000 $547
7	**O-ring disc**[1]	all	205.2149.90X1	205.2149.90X1	205.2149.90X1	205.2149.90X1	205.2149.90X1
	CR Neoprene® "K" X: 5		$993	$993	$993	$993	$993
	EPDM Buna-EP® "D" X: 4		$993	$993	$993	$993	$993
	FKM Viton® "L" X: 7		$993	$993	$993	$993	$993
	FFKM Kalrez® "C" X: 9		$2,736	$2,736	$2,736	$2,736	$2,736
7.4	**O-ring**[1]	all	502.0692.53X1	502.0692.53X1	502.0692.53X1	502.0692.53X1	502.0692.53X1
	CR Neoprene® "K" X: 5		$40	$40	$40	$40	$40
	EPDM Buna-EP® "D" X: 4		$40	$40	$40	$40	$40
	FKM Viton® "L" X: 7		$198	$198	$198	$198	$198
	FFKM Kalrez® "C" X: 9		$1,740	$1,740	$1,740	$1,740	$1,740
8	**Guide**	WCB, LCB	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183	260.6859.0000 $183
		CF8M, WC6	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042	261.3849.0000 $1,042
12	**Spindle** Conventional design	WCB, LCB, WC6	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531
		CF8M	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741	242.8249.0000 $741
	Spindle Balanced bellows design	WCB, LCB, WC6	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498	244.9539.0000 $498
		CF8M	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741	244.9549.0000 $741
14	**Split rings**	all	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20
15	**Bellows** Inconel	all	400.9379.0421 $3,011	400.9379.0421 $3,011	400.9379.0421 $3,011	400.9379.0400 $3,011	400.9379.0400 $3,011
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69	500.2107.0000 $69
61	**Ball** ø 15 mm	all	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51
69	**Axial needle bearing**	all	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99	250.0949.0000 $99
	Bellows conversion kit[2]	all	5021.1370 $3,731	5021.1370 $3,731	5021.1370 $3,731	5021.1371 $3,731	5021.1371 $3,731

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice P

All prices in $

Orifice P

Item	Part	Body material	Flange class				
			150	300L	300	600	900
			Material-No. / Art. No.				
5	**Nozzle**	WCB, LCB WC6, CF8M	207.4569.9000 $2,756	207.4569.9000 $2,756	207.4669.9000 $2,756	207.4669.9000 $2,756	207.4669.9000 $2,756
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.3439.9000 $712	225.3439.9000 $712	225.3539.9000 $712	225.3539.9000 $712	225.3539.9000 $712
	Disc 316L stellited	CF8M	225.3469.9000 $1,492	225.3469.9000 $1,492	225.3569.9000 $1,492	225.3569.9000 $1,492	225.3569.9000 $1,492
7	**O-ring disc**[1]	all	205.2349.90X1	205.2349.90X1	205.2449.90X1	205.2449.90X1	205.2449.90X1
	CR Neoprene® "K" X: 5		$1,618	$1,618	$1,618	$1,618	$1,618
	EPDM Buna-EP® "D" X: 4		$1,618	$1,618	$1,618	$1,618	$1,618
	FKM Viton® "L" X: 7		$1,618	$1,618	$1,618	$1,618	$1,618
	FFKM Kalrez® "C" X: 9		$3,731	$3,731	$3,731	$3,731	$3,731
7.4	**O-ring**[1]	all	502.0850.35X1	502.0850.35X1	502.0850.35X1	502.0850.35X1	502.0850.35X1
	CR Neoprene® "K" X: 5		$40	$40	$40	$40	$40
	EPDM Buna-EP® "D" X: 4		$40	$40	$40	$40	$40
	FKM Viton® "L" X: 7		$250	$250	$250	$250	$250
	FFKM Kalrez® "C" X: 9		$2,238	$2,238	$2,238	$2,238	$2,238
8	**Guide**	WCB, LCB	260.6859.0000 $183	260.6859.0000 $183	260.6959.0000 $237	260.6959.0000 $237	260.6959.0000 $237
		CF8M, WC6	261.3849.0000 $1,042	261.3849.0000 $1,042	262.2249.0000 $1,194	262.2249.0000 $1,194	262.2249.0000 $1,194
12	**Spindle** Conventional design	WCB, LCB, WC6	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531	242.8239.0000 $531
		CF8M	242.8249.0000 $741	242.8249.0000 $741	242.8449.0000 $1,271	242.8449.0000 $1,271	242.8449.0000 $1,271
	Spindle Balanced bellows design	WCB, LCB, WC6	244.9539.0000 $498	244.9539.0000 $498	244.9639.0000 $896	244.9639.0000 $896	244.9639.0000 $896
		CF8M	244.9549.0000 $741	244.9549.0000 $741	244.9649.0000 $1,271	244.9649.0000 $1,271	244.9649.0000 $1,271
14	**Split rings**	all	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20	251.0449.0000 $20
15	**Bellows** Inconel	all	400.9479.0400 $3,011	400.9479.0400 $3,011	400.9579.0400 $3,011	400.9579.0400 $3,011	400.9579.0400 $3,011
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.2107.0000 $69	500.2107.0000 $69	500.2207.0000 $125	500.2207.0000 $125	500.2207.0000 $125
61	**Ball** ø 15 mm	all	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51
69	**Axial needle bearing**	all	250.0949.0000 $99	250.0949.0000 $99	250.1049.0000 $224	250.1049.0000 $224	250.1049.0000 $224
	Bellows conversion kit[2]	all	5021.1372 $3,731	5021.1372 $3,731	5021.1373 $5,718	5021.1373 $5,718	5021.1373 $5,718

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice Q

All prices in $

Orifice Q

Item	Part	Body material	Flange class			
			150	300L	300	600
			Material-No. / Art. No.			
5	**Nozzle**	WCB, LCB WC6, CF8M	207.4769.9000 $3,675	207.4769.9000 $3,675	207.4769.9000 $3,675	207.4769.9000 $3,675
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.3639.9000 $712	225.3639.9000 $712	225.3639.9000 $712	225.3639.9000 $712
	Disc 316L stellited	CF8M	225.3669.9000 $1,492	225.3669.9000 $1,492	225.3669.9000 $1,492	225.3669.9000 $1,492
7	**O-ring disc**[1]	all	205.2549.90X1	205.2549.90X1	205.2549.90X1	205.2549.90X1
	CR Neoprene® "K" X: 5		$1,618	$1,618	$1,618	$1,618
	EPDM Buna-EP® "D" X: 4		$1,618	$1,618	$1,618	$1,618
	FKM Viton® "L" X: 7		$1,618	$1,618	$1,618	$1,618
	FFKM Kalrez® "C" X: 9		$4,722	$4,722	$4,722	$4,722
7.4	**O-ring**[1]	all	502.1104.53X1	502.1104.53X1	502.1104.53X1	502.1104.53X1
	CR Neoprene® "K" X: 5		$40	$40	$40	$40
	EPDM Buna-EP® "D" X: 4		$40	$40	$40	$40
	FKM Viton® "L" X: 7		$348	$348	$348	$348
	FFKM Kalrez® "C" X: 9		$3,481	$3,481	$3,481	$3,481
8	**Guide**	WCB, LCB	260.6959.0000 $237	260.6959.0000 $237	260.6959.0000 $237	260.6959.0000 $237
		CF8M, WC6	262.2249.0000 $1,194	262.2249.0000 $1,194	262.2249.0000 $1,194	262.2249.0000 $1,194
12	**Spindle** Conventional design	WCB, LCB, WC6	242.8539.0000 $953	242.8539.0000 $953	242.8539.0000 $953	242.8539.0000 $953
		CF8M	242.8549.0000 $1,271	242.8549.0000 $1,271	242.8549.0000 $1,271	242.8549.0000 $1,271
	Spindle Balanced bellows design	WCB, LCB, WC6	244.9739.0000 $953	244.9739.0000 $953	244.9739.0000 $953	244.9739.0000 $953
		CF8M	244.9749.0000 $1,271	244.9749.0000 $1,271	244.9749.0000 $1,271	244.9749.0000 $1,271
14	**Split rings**	all	251.0549.0000 $40	251.0549.0000 $40	251.0549.0000 $40	251.0549.0000 $40
15	**Bellows** Inconel	all	400.9679.0400 $3,755	400.9679.0400 $3,755	400.9679.0400 $3,755	400.9679.0400 $3,755
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.2207.0000 $125	500.2207.0000 $125	500.2207.0000 $125	500.2207.0000 $125
61	**Ball** ø 15 mm	all	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51
69	**Axial needle bearing**	all	250.1049.0000 $224	250.1049.0000 $224	250.1049.0000 $224	250.1049.0000 $224
	Bellows conversion kit[2]	all	5021.1374 $5,718	5021.1374 $5,718	5021.1374 $5,718	5021.1374 $5,718

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

API
Type 526 Spare parts – Orifice R

All prices in $

Orifice R

Item	Part	Body material	Flange class			
			150	300L	300	600
			Material-No. / Art. No.			
5	**Nozzle**	WCB, LCB WC6, CF8M	207.4869.9000 $3,675	207.4869.9000 $3,675	207.5769.9000 $3,675	207.5769.9000 $3,675
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	225.3739.9000 $1,291	225.3739.9000 $1,291	225.3839.9000 $1,291	225.3839.9000 $1,291
	Disc 316L stellited	CF8M	225.3769.9000 $1,991	225.3769.9000 $1,991	225.3869.9000 $1,991	225.3869.9000 $1,991
7	**O-ring disc**[1]	all	**205.2649.90X1**	**205.2649.90X1**	**205.2649.90X1**	**205.2649.90X1**
	CR Neoprene® "K" X: 5		$2,238	$2,238	$2,238	$2,238
	EPDM Buna-EP® "D" X: 4		$2,238	$2,238	$2,238	$2,238
	FKM Viton® "L" X: 7		$2,238	$2,238	$2,238	$2,238
	FFKM Kalrez® "C" X: 9		$5,967	$5,967	$5,967	$5,967
7.4	**O-ring**[1]	all	**502.1327.35X1**	**502.1327.35X1**	**502.1327.35X1**	**502.1327.35X1**
	CR Neoprene® "K" X: 5		$40	$40	$40	$40
	EPDM Buna-EP® "D" X: 4		$40	$40	$40	$40
	FKM Viton® "L" X: 7		$447	$447	$447	$447
	FFKM Kalrez® "C" X: 9		$3,731	$3,731	$3,731	$3,731
8	**Guide**	WCB, LCB	260.6959.0000 $237	260.6959.0000 $237	260.7059.0000 $792	260.7059.0000 $792
		CF8M, WC6	262.2249.0000 $1,194	262.2249.0000 $1,194	263.0349.0000 $2,736	263.0349.0000 $2,736
12	**Spindle** Conventional design	WCB, LCB, WC6	242.8539.0000 $953	242.8539.0000 $953	242.8639.0000 $2,118	242.8639.0000 $2,118
		CF8M	242.8549.0000 $1,271	242.8549.0000 $1,271	242.8649.0000 $2,645	242.8649.0000 $2,645
	Spindle Balanced bellows design	WCB, LCB, WC6	244.9739.0000 $953	244.9739.0000 $953	244.9839.0000 $1,991	244.9839.0000 $1,991
		CF8M	244.9749.0000 $1,271	244.9749.0000 $1,271	244.9849.0000 $2,645	244.9849.0000 $2,645
14	**Split rings**	all	251.0549.0000 $40	251.0549.0000 $40	251.1949.0000 $60	251.1949.0000 $60
15	**Bellows** Inconel	all	400.9779.0421 $3,763	400.9779.0421 $3,763	400.9779.0400 $3,763	400.9779.0400 $3,763
57	**Balls** ø 3 mm, Quantity	all	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20	510.0604.0000 15 pieces $20
60	**Gaskets**	all	500.2207.0000 $125	500.2207.0000 $125	500.2807.0000 $250	500.2807.0000 $250
61	**Ball** ø 15 mm	all	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51	510.0404.0000 1 $51
69	**Axial needle bearing**	all	250.1049.0000 $224	250.1049.0000 $224	250.1049.0000 $224	250.1049.0000 $224
	Bellows conversion kit[2]	all	5021.1375 $5,718	5021.1375 $5,718	5021.1376 $7,957	5021.1376 $7,957

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Type 526 Spare parts – Orifice T

All prices in $

Orifice T

Item	Part	Body material	Flange class 150	300L	300
			Material-No. / Art. No.		
5	**Nozzle**	WCB, LCB WC6, CF8M	**207.5969.9000** $4,159	**207.5969.9000** $4,159	**207.5969.9000** $4,159
7	**Disc** Hardened stainless steel	WCB, LCB, WC6	**225.3939.9000** $2,154	**225.3939.9000** $2,154	**225.3939.9000** $2,154
	Disc 316L stellited	CF8M	**225.3969.9000** $3,481	**225.3969.9000** $3,481	**225.3969.9000** $3,481
7	**O-ring disc**[1]	all	**205.2849.90X1**	**205.2849.90X1**	**205.2849.90X1**
	CR Neoprene® "K" X: 5		$4,228	$4,228	$4,228
	EPDM Buna-EP® "D" X: 4		$4,228	$4,228	$4,228
	FKM Viton® "L" X: 7		$4,228	$4,228	$4,228
	FFKM Kalrez® "C" X: 9		$9,199	$9,199	$9,199
7.4	**O-ring**[1]	all	**502.1644.35X1**	**502.1644.35X1**	**502.1644.35X1**
	CR Neoprene® "K" X: 5		$40	$40	$40
	EPDM Buna-EP® "D" X: 4		$40	$40	$40
	FKM Viton® "L" X: 7		$647	$647	$647
	FFKM Kalrez® "C" X: 9		$5,468	$5,468	$5,468
8	**Guide**	WCB, LCB	**260.7059.0000** $792	**260.7059.0000** $792	**260.7059.0000** $792
		CF8M, WC6	**263.0349.0000** $2,736	**263.0349.0000** $2,736	**263.0349.0000** $2,736
12	**Spindle** Conventional design	WCB, LCB, WC6	**242.8639.0000** $2,118	**242.8639.0000** $2,118	**242.8639.0000** $2,118
		CF8M	**242.8649.0000** $2,645	**242.8649.0000** $2,645	**242.8649.0000** $2,645
	Spindle Balanced bellows design	WCB, LCB, WC6	**244.9839.0000** $1,991	**244.9839.0000** $1,991	**244.9839.0000** $1,991
		CF8M	**244.9849.0000** $2,645	**244.9849.0000** $2,645	**244.9849.0000** $2,645
14	**Split rings**	all	**251.1949.0000** $60	**251.1949.0000** $60	**251.1949.0000** $60
15	**Bellows** Inconel	all	**400.9879.0400** $5,236	**400.9879.0400** $5,236	**400.9879.0400** $5,236
57	**Balls** ø 3 mm, Quantity	all	**510.0604.0000** 15 pieces $20	**510.0604.0000** 15 pieces $20	**510.0604.0000** 15 pieces $20
60	**Gaskets**	all	**500.2807.0000** $250	**500.2807.0000** $250	**500.2807.0000** $250
61	**Ball** ø 15 mm	all	**510.0404.0000** 1 $51	**510.0404.0000** 1 $51	**510.0404.0000** 1 $51
69	**Axial needle bearing**	all	**250.1049.0000** $224	**250.1049.0000** $224	**250.1049.0000** $224
	Bellows conversion kit[2]	all	**5021.1377** $7,957	**5021.1377** $7,957	**5021.1377** $7,957

[1] Material FFKM "C" is only available as special design (without material number)
[2] A bellows conversion kit contains guide, bonnet spacer, spindle, bellows, studs, gaskets and installation instruction.

Soft seal selection

Soft seal selection

Code	Trademarks (Designation)	Company	Code-letter[1]	Option Code	T_{min} [°F]	T_{min} [°C]	T_{max} [°F]	T_{max} [°C]	Application[2]
O-ring									
CR	Neoprene®	DuPont	K	J21	-40	-40	212	100	Parafin oil, silicone oil and grease, water and waterbased solvents, refrigerants, ozone
NBR	Buna-N® (Nitrile-Butadiene)	DuPont	N	J30	-13	-25	212	100	Hydraulic oil, vegetable and animal grease and oil
EPDM	Buna-EP® (Ethylene-Propylene-Diene)	Bayer	D	J22	-49	-45	302	150	Hot water and superheated steam up to 302° F, several organic and inorganic acids, silicone oil and grease, FDA compliant
FPM (FKM)	Viton® (Fluorocarbon)	DuPont	L	J23	5[3]	-15[3]	356	180	High temperature service (no steam or hot water), mineral oil and grease, silicone oil and grease, vegetable and animal grease and oil, ozone, FDA compliant compound
FFKM	Kalrez® (Perfluoro)	DuPont	C	J20	32	0	482	250	Nearly all chemicals, standard compound is Kalrez® 6230 or ISOLAST® J9515, FDA and USP VI compliant compound
Sealing plate									
SP	VESPEL SP-1® (Polyimide)	DuPont	T	J49	-454	-270	500	260	High temperature and high pressure applications (no steam), for chemical resitance refer to manufactures guide
PCTFE	KEL-F® (Polychlorotrifluor-ethylene)	3M	G	J48	-400	-240	302	150	Cyrogenic and refrigeration applications flammable media, gaseous oxygene application up to 725 psig at 140 °F
PTFE	Teflon® (Polytetrafluorethylene)	DuPont	A	J44	-300	-200	392	200	Nearly all chemicals
Other than listed			X	For other materials please contact **LESER LLC**					

[1] The code letters will be stamped on the disc.
[2] Pressure and temperature service must be considered in any case.
Chemical resistance and the temperature limits depend on O-ring manufacturer information. LESER can not take any warranty.
[3] From Charlotte: Minimum temperature 5 °F / -15 °C
-4 °F / -20 °C is possible through a special process (Consult LESER US).

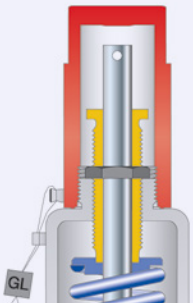
Soft seal disc

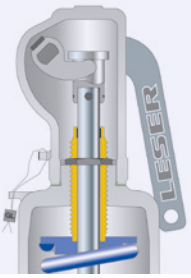
Set pressure and size limits

Material	Orifice	Pressure range min. [bar]	Pressure range min. [psig]	Pressure range max. [bar]	Pressure range max. [psig]
CR NBR EPDM FKM FFKM	**D – K**	0.3	4	102	1480
	L – M	0.3	4	75.8	1100
	N – P	0.3	4	68.9	1000
	Q	0.3	4	41.3	600
	R – T	0.3	4	20.6	300
VESPEL SP-1®	**D – G**	10	150	400	5800
Kel-F®	**D – T**	1	15	300	4350
Teflon®	**D – T**	1	15	10	145

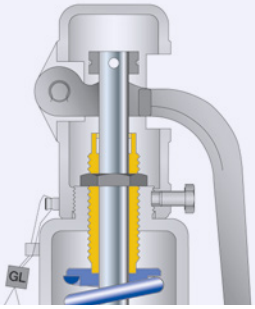
API
Available options

Screwed cap H2
H2



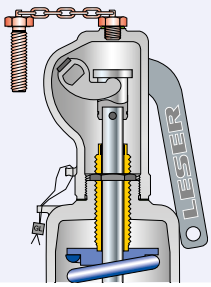


Plain lever H3
H3

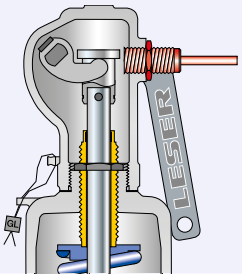


Open bonnet
See article number

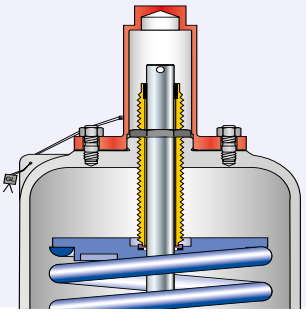
Test gag
J69: H4
J70: H2



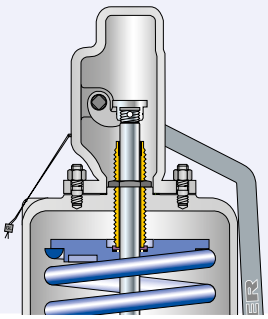
Lift indicator
J39: Adaptor for lift indicator H4
J93: Lift indicator



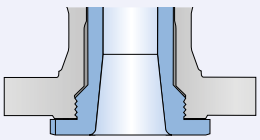
Bolted cap H1
K01



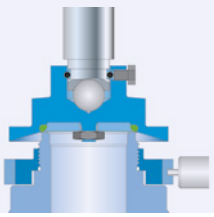
Bolted lifting device H6
K06



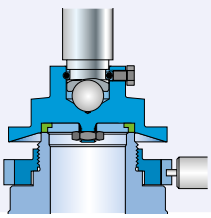
Flange drillings
acc. to DIN EN 1092-1



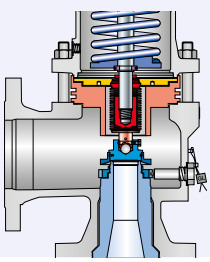
Outlet flange rating class 300



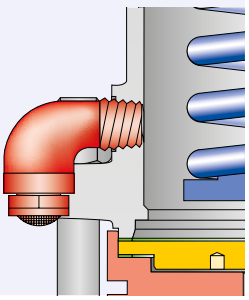
Disc with inserted sealing plate
J44+S07: PTFE-FDA “A”
J48+S07: PCTFE “G”
J49+S07: SP “T”



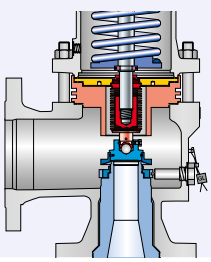
Balanced bellows
J83: Inconel



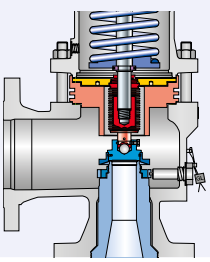
Bug screen
M70



Conversion kit for
balanced bellows
On request



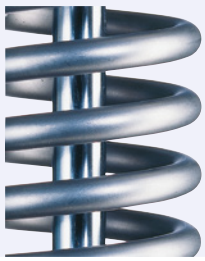
High temperature equipment
J88



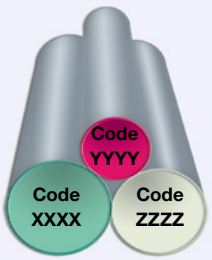
API
Available options

NACE-Compliant safety valves
N78: acc. to MR0175
N77: acc. to MR0103

Inconel X-750 spring
X08

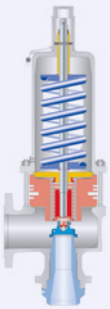


API Alloy Concept

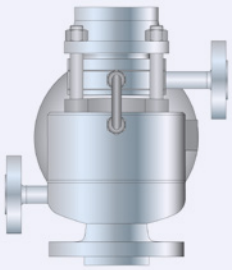


High pressure design for orifices Q, R, T
Z90

Butt-weld connection
S05

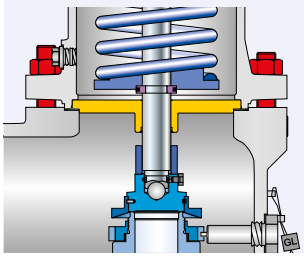


Heating jacket

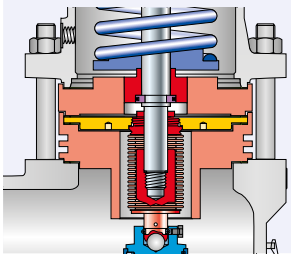


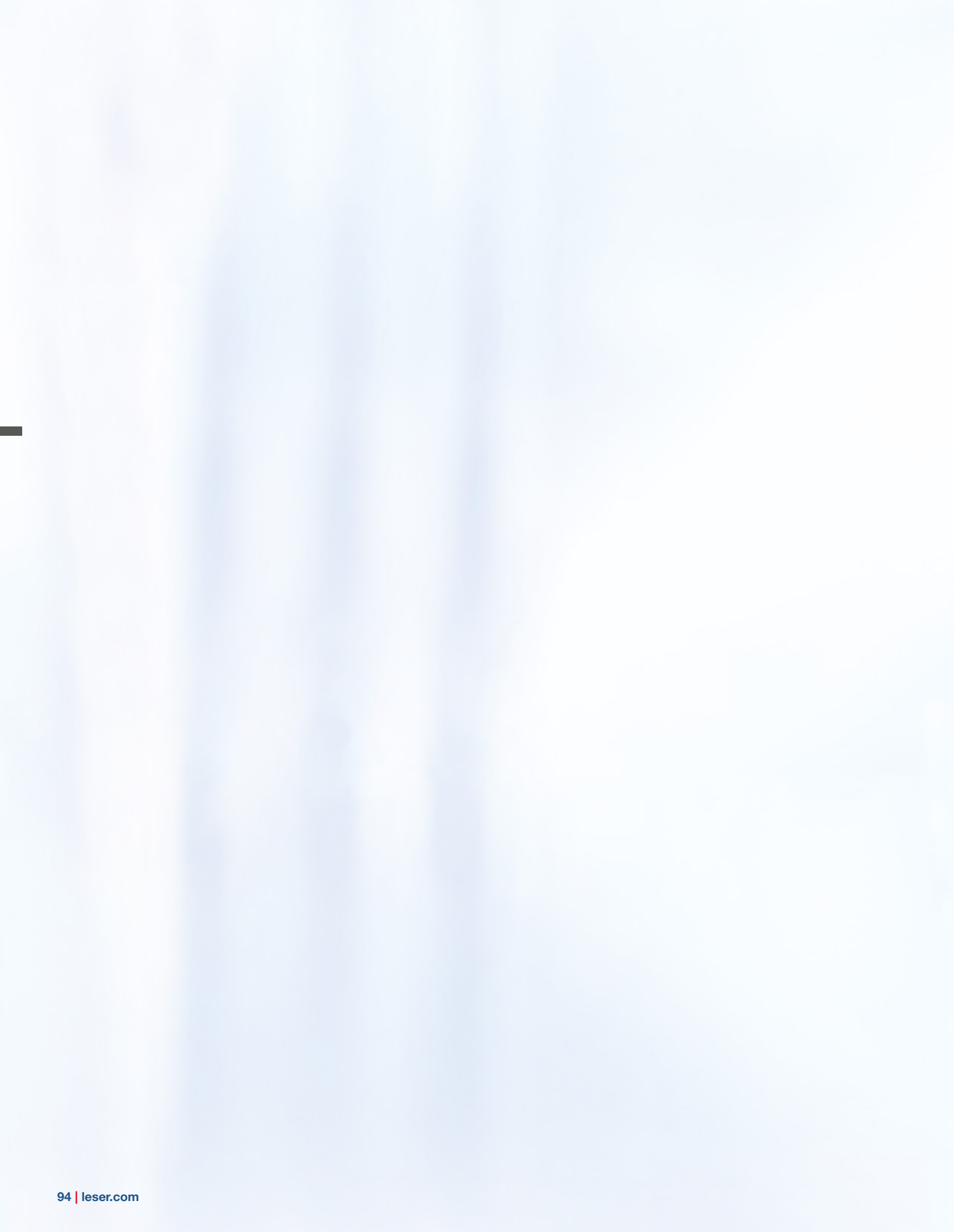
LESER Original Spare Parts Kits
See page 76

Studs and nuts
L8D: ASME SA-193 B7M
L9D: ASME SA-194 2HM



Auxiliary balanced piston design
K10





High Efficiency
Pilot Operated Safety Valves

High Efficiency

All prices in $

Available flange ratings and flange facings on page 118 and 119

POSV for high pressure

Type 811 WCB 1.0619 — Pop Action

Option Code				H65				H67			
Flange class	**150 x 150**		**300 x 150**		**300 x 300[1)]**		**600 x 150**		**600 x 300[1)]**		**900 x 300**	
Standard Orifice	**Valve Size**											
D Art. No. **8112.**	1 D 2 **0010[2)]** $3,185	1½ D 2 **0040** $3,185	1 D 2 **0220** $3,185	1½ D 2 **0250** $3,185	1 D 2 **1060** $5,670	1½ D 2 **1090** $6,183	1 D 2 **0640** $3,268	1½ D 2 **0670** $3,388	1 D 2 **1060** $5,670	1½ D 2 **1090** $6,183	1 D 2 **1060** $5,670	1½ D 2 **1090** $6,183
E Art. No. **8112.**	1 E 2 **0020[2)]** $3,185	1½ E 2 **0050** $3,185	1 E 2 **0230** $3,185	1½ E 2 **0260** $3,185	1 E 2 **1070** $5,670	1½ E 2 **1100** $6,183	1 E 2 **0650** $3,268	1½ E 2 **0680** $3,388	1 E 2 **1070** $5,670	1½ E 2 **1100** $6,183	1 E 2 **1070** $5,670	1½ E 2 **1100** $6,183
F Art. No. **8112.**	1 F 2 **0030[2)]** $3,185	1½ F 2 **0060** $3,185	1 F 2 **0240** $3,185	1½ F 2 **0270** $3,185	1 F 2 **1080** $5,670	1½ F 2 **1110** $6,183	1 F 2 **0660** $3,268	1½ F 2 **0690** $3,388	1 F 2 **1080** $5,670	1½ F 2 **1110** $6,183	1 F 2 **1080** $5,670	1½ F 2 **1110** $6,183
G Art. No. **8112.**	1½ G 3 **0070[2)]** $3,585	2 G 3 **0090** $4,114	1½ G 3 **0280** $3,585	2 G 3 **0300** $4,114	1½ G 3 **1120** $6,442	2 G 3 **1140** $7,040	1½ G 3 **0700** $3,876	2 G 3 **0720** $5,068	1½ G 3 **1120** $6,442	2 G 3 **1140** $7,040	1½ G 3 **1120** $6,442	2 G 3 **1140** $7,040
H Art. No. **8112.**	1½ H 3 **0080[2)]** $3,585	2 H 3 **0100** $4,114	1½ H 3 **0290** $3,585	2 H 3 **0310** $4,114	1½ H 3 **1130** $6,442	2 H 3 **1150** $7,040	1½ H 3 **0710** $3,876	2 H 3 **0730** $5,068	1½ H 3 **1130** $6,442	2 H 3 **1150** $7,040	1½ H 3 **1130** $6,442	2 H 3 **1150** $7,040
J Art. No. **8112.**	2 J 3 **0110** $4,114	3 J 4 **0120** $5,653	2 J 3 **0320** $4,114	3 J 4 **0330** $5,653	2 J 3 **1160** $7,040	3 J 4 **1170** $8,588	2 J 3 **0740** $5,068	3 J 4 **0750** $6,564	2 J 3 **1160** $7,040	3 J 4 **1170** $8,588	2 J 3 **1160** $7,040	3 J 4 **1170** $8,588
K Art. No. **8112.**	3 K 4 **0130** $5,653		3 K 4 **0340** $5,653		3 K 4 **1180** $8,588		3 K 4 **0760** $6,564		3 K 4 **1180** $8,588		3 K 4 **1180** $8,588	
L Art. No. **8112.**	3 L 4 **0140** $5,653	4 L 6 **0150** $9,032	3 L 4 **0350** $5,653	4 L 6 **0360** $9,032	3 L 4 **1190** $8,588	4 L 6 **1200** $12,282	3 L 4 **0770** $6,564	4 L 6 **0780** $9,957	3 L 4 **1190** $8,588	4 L 6 **1200** $12,282	3 L 4 **1190** $8,588	4 L 6 **1200** $12,282
M Art. No. **8112.**	4 M 6 **0160** $9,032		4 M 6 **0370** $9,032		4 M 6 **1210** $12,282		4 M 6 **0790** $9,957		4 M 6 **1210** $12,282		4 M 6 **1210** $12,282	
N Art. No. **8112.**	4 N 6 **0170** $9,032		4 N 6 **0380** $9,032		4 N 6 **1220** $12,282		4 N 6 **0800** $9,957		4 N 6 **1220** $12,282		4 N 6 **1210** $12,282	
P Art. No. **8112.**	4 P 6 **0180** $9,032		4 P 6 **0390** $9,032		4 P 6 **1230** $12,282		4 P 6 **0810** $9,957		4 P 6 **1230** $12,282		4 P 6 **1230** $12,282	
Q Art. No. **8112.**	6 Q 8 **0190** $13,433		6 Q 8 **0400** $13,433		6 Q 8 **1030[3)]** $19,004		6 Q 8 **0820** $15,605		6 Q 8 **1030[3)]** $19,004		6 Q 8 –	
R Art. No. **8112.**	6 R 8 **0200** $13,433		6 R 8 **0410** $13,433		6 R 8 **1040[3)]** $19,004		6 R 8 **0830** $15,605		6 R 8 **1040[3)]** $19,004		6 R 8 –	
T Art. No. **8112.**	8 T 10 **0210** $22,143		8 T 10 **0420** $22,143		8 T 10 **1050[3)]** $26,480		8 T 10 **0840** $23,133		8 T 10 **1050[3)]** $26,480		8 T 10 –	

High Efficiency

All prices in $

Type 811 WCB 1.0619		Pop Action	
Option Code			
Flange class		1500 x 300	
Standard Orifice		**Valve size**	
D	Art. No. **8112.**	1 D 2 **1240** $5,670	$1^1/_2$ D 2 **1270** $6,183
E	Art. No. **8112.**	1 E 2 **1250** $5,670	$1^1/_2$ E 2 **1280** $6,183
F	Art. No. **8112.**	1 F 2 **1260** $5,670	$1^1/_2$ F 2 **1290** $6,183
G	Art. No. **8112.**	$1^1/_2$ G 3 **1300** $6,442	2 G 3 **1320** $7,040
H	Art. No. **8112.**	$1^1/_2$ H 3 **1310** $6,442	2 H 3 **1330** $7,040
J	Art. No. **8112.**	2 J 3 **1340** $7,040	3 J 4 **1350** $8,588
K	Art. No. **8112.**	3 K 4 **1360** $8,588	
L	Art. No. **8112.**	3 L 4 **1370** $8,588	4 L 6 **1380** $12,282
M	Art. No. **8112.**	4 M 6 **1390** $12,282	
N	Art. No. **8112.**	4 N 6 **1400** $12,282	
P	Art. No. **8112.**	4 P 6 **1410** $12,282	

[1] Flange rating class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional Option Code.
[2] Only semi nozzle design available
[3] Delivery time 6 – 8 weeks

An additional $90 from Charlotte / $200 from Germany per each High Efficiency valve will be added to shipping charges per crating requirements.

High Efficiency

All prices in $

Available flange ratings and flange facings on page 118 and 119

POSV for high pressure

Type 811 CF8M 1.4408 — Pop Action

Type 811

Option Code					H65			H67		
Flange class	**150 x 150**		**300 x 150**		**300 x 300[1]**		**600 x 150**		**600 x 300[1]**		**900 x 300**	
Standard Orifice	**Valve size**											
D Art. No. **8114.**	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2
	0010[2]	**0040[2]**	**0220**	**0250**	**1060**	**1090**	**0640**	**0670**	**1060**	**1090**	**1060**	**1090**
	$6,415	$6,967	$6,415	$7,330	$10,477	$11,253	$6,967	$7,922	$10,477	$11,253	$10,477	$11,253
E Art. No. **8114.**	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2
	0020[2]	**0050[2]**	**0230**	**0260**	**1070**	**1100**	**0650**	**0680**	**1070**	**1100**	**1070**	**1100**
	$6,415	$6,967	$6,415	$7,330	$10,477	$11,253	$6,967	$7,922	$10,477	$11,253	$10,477	$11,253
F Art. No. **8114.**	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2
	0030[2]	**0060[2]**	**0240**	**0270**	**1080**	**1110**	**0660**	**0690**	**1080**	**1110**	**1080**	**1110**
	$6,415	$6,967	$6,415	$7,330	$10,477	$11,253	$6,967	$7,922	$10,477	$11,253	$10,477	$11,253
G Art. No. **8114.**	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3
	0070[2]	**0090**	**0280**	**0300**	**1120**	**1140**	**0700**	**0720**	**1120**	**1140**	**1120**	**1140**
	$7,330	$7,700	$7,330	$7,700	$11,767	$12,371	$7,922	$8,249	$11,767	$12,371	$11,767	$12,371
H Art. No. **8114.**	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3
	0080[2]	**0100**	**0290**	**0310**	**1130**	**1150**	**0710**	**0730**	**1130**	**1150**	**1130**	**1150**
	$7,330	$7,700	$7,330	$7,700	$11,767	$12,371	$7,922	$8,249	$11,767	$12,371	$11,767	$12,371
J Art. No. **8114.**	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4
	0110	**0120**	**0320**	**0330**	**1160**	**1170**	**0740**	**0750**	**1160**	**1170**	**1160**	**1170**
	$7,700	$10,173	$7,700	$10,173	$12,371	$13,484	$8,249	$11,180	$12,371	$13,484	$12,371	$13,484
K Art. No. **8114.**	3 K 4		3 K 4		3 K 4		3 K 4		3 K 4		3 K 4	
	0130		**0340**		**1180**		**0760**		**1180**		**1180**	
	$10,173		$10,173		$13,484		$11,180		$13,484		$13,484	
L Art. No. **8114.**	2 L 3	3 L 4	3 L 4	4 L 6	3 L 4	4 L 6	3 L 4	4 L 6	3 L 4	4 L 6	3 L 4	4 L 6
	0140	**0150**	**0350**	**0360**	**1190**	**1200**	**0770**	**0780**	**1190**	**1200**	**1190**	**1200**
	$10,173	$14,940	$10,173	$14,940	$13,484	$19,241	$11,180	$15,766	$13,484	$19,241	$13,484	$19,241
M Art. No. **8114.**	4 M 6		4 M 6		4 M 6		4 M 6		4 M 6		4 M 6	
	0160		**0370**		**1210**		**0790**		**1210**		**1210**	
	$14,940		$14,940		$19,241		$15,766		$19,241		$19,241	
N Art. No. **8114.**	4 N 6		4 N 6		4 N 6		4 N 6		4 N 6		4 N 6	
	0170		**0380**		**1220**		**0800**		**1220**		**1220**	
	$14,940		$14,940		$19,241		$15,766		$19,241		$19,241	
P Art. No. **8114.**	4 P 6		4 P 6		4 P 6		4 P 6		4 P 6		4 P 6	
	0180		**0390**		**1230**		**0810**		**1230**		**1230**	
	$14,940		$14,940		$19,241		$15,766		$19,241		$19,241	
Q Art. No. **8114.**	6 Q 8		6 Q 8		6 Q 8		6 Q 8		6 Q 8		6 Q 8	
	0190		**0400**		**1030[3]**		**0820**		**1030[3]**		–	
	$21,994		$21,994		$28,982		$23,829		$28,982			
R Art. No. **8114.**	6 R 8		6 R 8		6 R 8		6 R 8		6 R 8		6 R 8	
	0200		**0410**		**1040[3]**		**0830**		**1040[3]**		–	
	$21,994		$21,994		$28,982		$23,829		$28,982			
T Art. No. **8114.**	8 T 10		8 T 10		8 T 10		8 T 10		8 T 10		8 T 10	
	0210		**0420**		**1050[3]**		**0840**		**1050[3]**		–	
	$30,797		$30,797		$38,512		$33,357		$38,512			

High Efficiency

All prices in $

Type 811 CF8M 1.4408		Pop Action	
Option Code			
Flange class		1500 x 300	
Standard Orifice		**Valve size**	
D	Art. No. **8114.**	1 D 2 **1240** $10,477	$1^1/_2$ D 2 **1270** $11,253
E	Art. No. **8114.**	1 E 2 **1250** $10,477	$1^1/_2$ E 2 **1280** $11,253
F	Art. No. **8114.**	1 F 2 **1260** $10,477	$1^1/_2$ F 2 **1290** $11,253
G	Art. No. **8114.**	$1^1/_2$ G 3 **1300** $11,767	2 G 3 **1320** $12,371
H	Art. No. **8114.**	$1^1/_2$ H 3 **1310** $11,767	2 H 3 **1330** $12,371
J	Art. No. **8114.**	2 J 3 **1340** $12,371	3 J 4 **1350** $13,484
K	Art. No. **8114.**	3 K 4 **1360** $13,484	
L	Art. No. **8114.**	2 L 3 **1370** $13,484	3 L 4 **1380** $19,241
M	Art. No. **8114.**	4 M 6 **1390** $19,241	
N	Art. No. **8114.**	4 N 6 **1400** $19,241	
P	Art. No. **8114.**	4 P 6 **1410** $19,241	

[1] Flange rating class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional option code.
[2] Only semi nozzle design available
[3] Delivery time 6 – 8 weeks

An additional $90 from Charlotte / $200 from Germany per each High Efficiency valve will be added to shipping charges per crating requirements.

High Efficiency

All prices in $

Available flange ratings and flange facings on page 118 and 119

POSV for high pressure

Type 811 LCB — Pop Action

Option Code					H65				H67			
Flange class	**150 x 150**		**300 x 150**		**300 x 300[1]**		**600 x 150**		**600 x 300[1]**		**900 x 300**	
Standard Orifice	**Valve size**											
D Art. No. **8113.**	1 D 2 **0010[2]** $3,505	1½ D 2 **0040[2]** $3,505	1 D 2 **0220** $3,505	1½ D 2 **0250** $3,505	1 D 2 **1060** $6,238	1½ D 2 **1090** $6,802	1 D 2 **0640** $3,596	1½ D 2 **0670** $3,728	1 D 2 **1060** $6,238	1½ D 2 **1090** $6,802	1 D 2 **1060** $6,238	1½ D 2 **1090** $6,802
E Art. No. **8113.**	1 E 2 **0020[2]** $3,505	1½ E 2 **0050[2]** $3,505	1 E 2 **0230** $3,505	1½ E 2 **0260** $3,505	1 E 2 **1070** $6,238	1½ E 2 **1100** $6,802	1 E 2 **0650** $3,596	1½ E 2 **0680** $3,728	1 E 2 **1070** $6,238	1½ E 2 **1100** $6,802	1 E 2 **1070** $6,238	1½ E 2 **1100** $6,802
F Art. No. **8113.**	1 F 2 **0030[2]** $3,505	1½ F 2 **0060[2]** $3,505	1 F 2 **0240** $3,505	1½ F 2 **0270** $3,505	1 F 2 **1080** $6,238	1½ F 2 **1110** $6,802	1 F 2 **0660** $3,596	1½ F 2 **0690** $3,728	1 F 2 **1080** $6,238	1½ F 2 **1110** $6,802	1 F 2 **1080** $6,238	1½ F 2 **1110** $6,802
G Art. No. **8113.**	1½ G 3 **0070[2]** $3,947	2 G 3 **0090** $4,528	1½ G 3 **0280** $3,947	2 G 3 **0300** $4,528	1½ G 3 **1120** $7,085	2 G 3 **1140** $7,752	1½ G 3 **0700** $4,266	2 G 3 **0720** $5,575	1½ G 3 **1120** $7,085	2 G 3 **1140** $7,752	1½ G 3 **1120** $7,085	2 G 3 **1140** $7,752
H Art. No. **8113.**	1½ H 3 **0080[2]** $3,947	2 H 3 **0100** $4,528	1½ H 3 **0290** $3,947	2 H 3 **0310** $4,528	1½ H 3 **1130** $7,085	2 H 3 **1150** $7,752	1½ H 3 **0710** $4,266	2 H 3 **0730** $5,575	1½ H 3 **1130** $7,085	2 H 3 **1150** $7,752	1½ H 3 **1130** $7,085	2 H 3 **1150** $7,752
J Art. No. **8113.**	2 J 3 **0110** $4,528	3 J 4 **0120** $6,220	2 J 3 **0320** $4,528	3 J 4 **0330** $6,220	2 J 3 **1160** $7,752	3 J 4 **1170** $9,449	2 J 3 **0740** $5,575	3 J 4 **0750** $7,222	2 J 3 **1160** $7,752	3 J 4 **1170** $9,449	2 J 3 **1160** $7,752	3 J 4 **1170** $9,449
K Art. No. **8113.**	3 K 4 **0130** $6,220		3 K 4 **0340** $6,220		3 K 4 **1180** $9,449		3 K 4 **0760** $7,222		3 K 4 **1180** $9,449		3 K 4 **1180** $9,449	
L Art. No. **8113.**	3 L 4 **0140** $6,220	4 L 6 **0150** $9,931	3 L 4 **0350** $6,220	4 L 6 **0360** $9,931	3 L 4 **1190** $9,449	4 L 6 **1200** $13,512	3 L 4 **0770** $7,222	4 L 6 **0780** $10,953	3 L 4 **1190** $9,449	4 L 6 **1200** $13,512	3 L 4 **1190** $9,449	4 L 6 **1200** $13,512
M Art. No. **8113.**	4 M 6 **0160** $9,931		4 M 6 **0370** $9,931		4 M 6 **1210** $13,512		4 M 6 **0790** $10,953		4 M 6 **1210** $13,512		4 M 6 **1210** $13,512	
N Art. No. **8113.**	4 N 6 **0170** $9,931		4 N 6 **0380** $9,931		4 N 6 **1220** $13,512		4 N 6 **0800** $10,953		4 N 6 **1220** $13,512		4 N 6 **1220** $13,512	
P Art. No. **8113.**	4 P 6 **0180** $9,931		4 P 6 **0390** $9,931		4 P 6 **1230** $13,512		4 P 6 **0810** $10,953		4 P 6 **1230** $13,512		4 P 6 **1230** $13,512	
Q Art. No. **8113.**	6 Q 8 **0190** $14,779		6 Q 8 **0400** $14,779		6 Q 8 **1030[3]** $20,902		6 Q 8 **0820** $17,168		6 Q 8 **1030[3]** $20,902		6 Q 8 –	
R Art. No. **8113.**	6 R 8 **0200** $14,779		6 R 8 **0410** $14,779		6 R 8 **1040[3]** $20,902		6 R 8 **0830** $17,168		6 R 8 **1040[3]** $20,902		6 R 8 –	
T Art.-No. **8113.**	8 T 10 **0210** $24,355		8 T 10 **0420** $24,355		8 T 10 **1050[3]** $29,129		8 T 10 **0840** $25,447		8 T 10 **1050[3]** $29,129		8 T 10 –	

High Efficiency

All prices in $

Type 811 LCB		Pop Action	
Option Code			
Flange class		**1500 x 300**	
Standard Orifice		**Valve size**	
D	Art. No. **8113.**	1 D 2 **1240** $6,238	1 1/2 D 2 **1270** $6,802
E	Art. No. **8113.**	1 E 2 **1250** $6,238	1 1/2 E 2 **1280** $6,802
F	Art. No. **8113.**	1 F 2 **1260** $6,238	1 1/2 F 2 **1290** $6,802
G	Art. No. **8113.**	1 1/2 G 3 **1300** $7,085	2 G 3 **1320** $7,752
H	Art. No. **8113.**	1 1/2 H 3 **1310** $7,085	2 H 3 **1330** $7,752
J	Art. No. **8113.**	2 J 3 **1340** $7,752	3 J 4 **1350** $9,449
K	Art. No. **8113.**	3 K 4 **1360** $9,449	
L	Art. No. **8113.**	3 L 4 **1370** $9,449	4 L 6 **1380** $13,512
M	Art. No. **8113.**	4 M 6 **1390** $13,512	
N	Art. No. **8113.**	4 N 6 **1400** $13,512	
P	Art. No. **8113.**	4 P 6 **1410** $13,512	

[1] Flange rating class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional option code.
[2] Only semi nozzle design available
[3] Delivery time 6 – 8 weeks

An additional $90 from Charlotte / $200 from Germany per each High Efficiency valve will be added to shipping charges per crating requirements.

High Efficiency

All prices in €

Type 811 WCB 1.0619 — Pop Action

Option Code				H65		H67	
Flange class		**150 x 150**	**300 x 150**	**300 x 300[1]**	**600 x 150**	**600 x 300[1]**	**900 x 300**
Extra Orifice		**Valve size**					
G	Art. No. **8112.**	1 G 2 **1820[2]** $3,185	1 G 2 **1900[2]** $3,185	1 G 2 –	1 G 2 **2060[2]** $3,268	1 G 2 –	1 G 2 –
H	Art. No. **8112.**	1 1/2 H 2 **1830** $3,185	1 1/2 H 2 **1910** $3,185	1 1/2 H 2 –	1 1/2 H 2 **2070** $3,388	1 1/2 H 2 –	1 1/2 H 2 –
J	Art. No. **8112.**	1 1/2 J 3 **1840[2]** $3,585	1 1/2 J 3 **1920[2]** $3,585	1 1/2 J 3 –	1 1/2 J 3 **2080[2]** $3,876	1 1/2 J 3 –	1 1/2 J 3 –
K+	Art. No. **8112.**	2 K+ 3 **1850[2]** $4,114	2 K+ 3 **1930[2]** $4,114	2 K+ 3 –	2 K+ 3 **2090[2]** $5,068	2 K+ 3 –	2 K+ 3 –
N+	Art. No. **8112.**	3 N+ 4 **1860[2]** $5,653	3 N+ 4 **1940[2]** $5,653	3 N+ 4 –	3 N+ 4 **2100[2]** $6,564	3 N+ 4 –	3 N+ 4 –
P+	Art. No. **8112.**	4 P+ 6 **1870[2]** $9,032	4 P+ 6 **1950[2]** $9,032	4 P+ 6 –	4 P+ 6 **2110[2]** $9,957	4 P+ 6 –	4 P+ 6 –
R+	Art. No. **8112.**	6 R+ 8 **1880[2]** $13,433	6 R+ 8 **1960[2]** $13,433	6 R+ 8 –	6 R+ 8 **2120[2]** $15,605	6 R+ 8 –	6 R+ 8 –
T+	Art. No. **8112.**	8 T+ 10 **1890[2]** $22,143	8 T+ 10 **1970[2]** $22,143	8 T+ 10 –	8 T+ 10 **2130[2]** $23,133	8 T+ 10 –	8 T+ 10 –

Type 814 Dual Outlet — Pop Action

Option Code				
Flange class		**150 x 150**	**300 x 150**	**600 x 150**
Extra Orifice		**Valve size**		
P+	Art. No. **8142.**	4 P+ 6 Dual **1870[3]** $11,307	4 P+ 6 Dual **1950[3]** $11,307	4 P+ 6 Dual **2110[3]** $11,735
R+	Art. No. **8142.**	6 R+ 8 Dual **1880[3]** $14,740	6 R+ 8 Dual **1960[3]** $14,740	6 R+ 8 Dual **2120[3]** $16,462
T+	Art. No. **8142.**	8 T+ 10 Dual **1890[3]** $26,631	8 T+ 10 Dual **1970[3]** $26,631	8 T+ 10 Dual **2130[3]** $27,874

[1] Flange rating Class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional Option Code.

[2] Only semi nozzle design available

[3] Availability will be announced via LESER News.

An additional $90 from Charlotte / $200 from Germany per each High Efficiency valve will be added to shipping charges per crating requirements.

All prices in €

Type 811 CF8M 1.4408 — Pop Action

Option Code				H65		H67	
Flange class		**150 x 150**	**300 x 150**	**300 x 300[1)]**	**600 x 150**	**600 x 300[1)]**	**900 x 300**
Extra Orifice		**Valve size**					
G	Art. No. **8114.**	1 G 2 **1820[2)]** $6,415	1 G 2 **1900[2)]** $6,415	1 G 2 –	1 G 2 **2060[2)]** $6,967	1 G 2 –	1 G 2 –
H	Art. No. **8114.**	1 1/2 H 2 **1830[2)]** $6,967	1 1/2 H 2 **1910[2)]** $7,330	1 1/2 H 2 –	1 1/2 H 2 **2070[2)]** $7,922	1 1/2 H 2 –	1 1/2 H 2 –
J	Art. No. **8114.**	1 1/2 J 3 **1840[2)]** $7,330	1 1/2 J 3 **1920[2)]** $7,330	1 1/2 J 3 –	1 1/2 J 3 **2080[2)]** $7,922	1 1/2 J 3 –	1 1/2 J 3 –
K+	Art. No. **8114.**	2 K+ 3 **1850[2)]** $7,700	2 K+ 3 **1930[2)]** $7,700	2 K+ 3 –	2 K+ 3 **2090[2)]** $8,249	2 K+ 3 –	2 K+ 3 –
N+	Art. No. **8114.**	3 N+ 4 **1860[2)]** $10,173	3 N+ 4 **1940[2)]** $10,173	3 N+ 4 –	3 N+ 4 **2100[2)]** $11,180	3 N+ 4 –	3 N+ 4 –
P+	Art. No. **8114.**	4 P+ 6 **1870[2)]** $14,940	4 P+ 6 **1950[2)]** $14,940	4 P+ 6 –	4 P+ 6 **2110[2)]** $15,766	4 P+ 6 –	4 P+ 6 –
R+	Art. No. **8114.**	6 R+ 8 **1880[2)]** $21,994	6 R+ 8 **1960[2)]** $21,994	6 R+ 8 –	6 R+ 8 **2120[2)]** $23,829	6 R+ 8 –	6 R+ 8 –
T+	Art. No. **8114.**	8 T+ 10 **1890[2)]** $30,797	8 T+ 10 **1970[2)]** $30,797	8 T+ 10 –	8 T+ 10 **2130[2)]** $33,357	8 T+ 10 –	8 T+ 10 –

Type 814 Dual Outlet — Pop Action

Option Code				
Flange class		**150 x 150**	**300 x 150**	**600 x 150**
Extra Orifice		**Valve size**		
P+	Art. No. **8144.**	4 P+ 6 Dual **1870[3)]** $19,578	4 P+ 6 Dual **1950[3)]** $19,578	4 P+ 6 Dual **2110[3)]** $20,350
R+	Art. No. **8144.**	6 R+ 8 Dual **1880[3)]** $26,533	6 R+ 8 Dual **1960[3)]** $26,533	6 R+ 8 Dual **2120[3)]** $28,898
T+	Art. No. **8144.**	8 T+ 10 Dual **1890[3)]** $46,860	8 T+ 10 Dual **1970[3)]** $46,860	8 T+ 10 Dual **2130[3)]** $49,096

[1)] Flange rating Class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional Option Code.

[2)] Only semi nozzle design available

[3)] Availability will be announced via LESER News.

An additional $90 from Charlotte / $200 from Germany per each High Efficiency valve will be added to shipping charges per crating requirements.

High Efficiency

All prices in €

Type 811 LCB — Pop Action

Option Code				H65		H67	
Flange class		**150 x 150**	**300 x 150**	**300 x 300[1)]**	**600 x 150**	**600 x 300[1)]**	**900 x 300**
Extra Orifice		**Valve size**					
G	Art. No. **8113.**	1 G 2 **1820[2)]** $3,505	1 G 2 **1900[2)]** $3,505	1 G 2 – 	1 G 2 **2060[2)]** $3,596	1 G 2 – 	1 G 2 –
H	Art. No. **8113.**	1 1/2 H 2 **1830[2)]** $3,505	1 1/2 H 2 **1910[2)]** $3,505	1 1/2 H 2 – 	1 1/2 H 2 **2070[2)]** $3,728	1 1/2 H 2 – 	1 1/2 H 2 –
J	Art. No. **8113.**	1 1/2 J 3 **1840[2)]** $3,947	1 1/2 J 3 **1920[2)]** $3,947	1 1/2 J 3 – 	1 1/2 J 3 **2080[2)]** $4,266	1 1/2 J 3 – 	1 1/2 J 3 –
K+	Art. No. **8113.**	2 K+ 3 **1850[2)]** $4,528	2 K+ 3 **1930[2)]** $4,528	2 K+ 3 – 	2 K+ 3 **2090[2)]** $5,575	2 K+ 3 – 	2 K+ 3 –
N+	Art. No. **8113.**	3 N+ 4 **1860[2)]** $6,220	3 N+ 4 **1940[2)]** $6,220	3 N+ 4 – 	3 N+ 4 **2100[2)]** $7,222	3 N+ 4 – 	3 N+ 4 –
P+	Art. No. **8113.**	4 P+ 6 **1870[2)]** $9,931	4 P+ 6 **1950[2)]** $9,931	4 P+ 6 – 	4 P+ 6 **2110[2)]** $10,953	4 P+ 6 – 	4 P+ 6 –
R+	Art. No. **8113.**	6 R+ 8 **1880[2)]** $14,779	6 R+ 8 **1960[2)]** $14,779	6 R+ 8 – 	6 R+ 8 **2120[2)]** $17,168	6 R+ 8 – 	6 R+ 8 –
T+	Art. No. **8113.**	8 T+ 10 **1890[2)]** $24,355	8 T+ 10 **1970[2)]** $24,355	8 T+ 10 – 	8 T+ 10 **2130[2)]** $25,447	8 T+ 10 – 	8 T+ 10 –

Type 814 Dual Outlet — Pop Action

Option Code				
Flange class		**150 x 150**	**300 x 150**	**600 x 150**
Extra Orifice		**Valve size**		
P+	Art. No. **8143.**	4 P+ 6 Dual **1870[3)]** $12,547	4 P+ 6 Dual **1950[3)]** $12,547	4 P+ 6 Dual **2110[3)]** $13,028
R+	Art. No. **8143.**	6 R+ 8 Dual **1880[3)]** $16,509	6 R+ 8 Dual **1960[3)]** $16,509	6 R+ 8 Dual **2120[3)]** $18,313
T+	Art. No. **8143.**	8 T+ 10 Dual **1890[3)]** $29,667	8 T+ 10 Dual **1970[3)]** $29,667	8 T+ 10 Dual **2130[3)]** $31,057

[1)] Flange rating Class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional Option Code.
[2)] Only semi nozzle design available
[3)] Availability will be announced via LESER News.

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Notes

All prices in $

Options

Type 811 – Pop Action

				1" x 2"				$1^1/_2$" x 2"				$1^1/_2$" x 3"			2" x 3"			
Standard Orifice acc. to API 526				D	E	F		D	E	F		G	H		G	H	J	
Extra Orifice							G				H			J				K+
POSV complete																		
NACE sour gas application	acc. to MR0175		R70	$1,245	$1,245	$1,245	$1,245	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366
	acc. to MR0103		R93	$1,245	$1,245	$1,245	$1,245	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366
Soft sealing POSV complete		FKM	R04[4]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		EPDM	R05[4]	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		FFKM	R06[4]	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845
Explosive Decompression conform design	for POSV ≥ Class 900	FKM "ED"[3] >740 psig	R3A[4]	$298	$298	$298	–	$298	$298	$298	–	$298	$298	–	$398	$398	$398	–
		FFKM "ED"[3] >1480 psig	R3B[4]	$1,740	$1,740	$1,740	–	$1,740	$1,740	$1,740	–	$1,740	$1,740	–	$1,991	$1,991	$1,991	–
Design FKM-cold, -48 °C medium temperature		FKM-cold for ambient temp. up to -48°C	R3C	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,991	$1,991	$1,991	$1,991
		FKM-cold for ambient temp. up to -16°C	R3L	$647	$647	$647	$647	$647	$647	$647	$647	$647	$647	$647	$746	$746	$746	$746
Main valve																		
Special machining of flange	RTJ-groove	Inlet	H62	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
		Outlet	H63	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
	DIN-Flange facings	Inlet	[1]	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
		Outlet	[1]	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
Disc[4]	Metal sealing		R71	$198	$198	$198	$198	$198	$198	$198	$198	$250	$250	$250	$348	$348	$348	$348
Drain hole	G $^1/_2$		J19	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
	NPT $^1/_2$"		R48	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
PTFE piston seal, spring loaded[5]			R20	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$598	$598	$598	$598
PTFE-Compound piston sealing, spring-loaded	[5]	PTFE-compound	R66	$398	$398	$398	$398	$498	$498	$498	$498	$498	$498	$498	$598	$598	$598	$598
Top plate material 1.4404/316L[6]			R46	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Studs / Nuts 1.4401 (A4-70)			J89	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Nozzle		[2]	R69	$2,983	$2,983	$2,983	–	$3,731	$3,731	$3,731	–	$3,731	$3,731	–	$6,215	$6,215	$6,215	–
	RTJ-groove	[2]	L58	$250	$250	$250	–	$250	$250	$250	–	$250	$250	–	$398	$398	$398	–
Spring	for POSV	Inconel X750	X08	$498	$498	$498	–	$498	$498	$498	–	$498	$498	–	$498	$498	$498	–
Disc stellited	for POSV ≥ Class 900	Stellite 6	R65	$498	$498	$498	–	$746	$746	$746	–	$746	$746	–	$993	$993	$993	–
Disc with inserted sealing plate PEEK	for POSV > 435 psig depends on temperature	Sealing element FKM	R67 +R04	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697
		EPDM	R67 +R05	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697
		FFKM	R67 +R06	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697
Disc with inserted sealing plate PTFE	for POSV Inlet ≤ Class 300, ≤ 740 psig depends on temperature	FKM	I39 +R04	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697
		EPDM	I39 +R05	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697
		FFKM	I39 +R06	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697

[1] For available flange facings refer to page 119
[2] Dimension "a" 34 mm extended for full nozzle design
[3] Delivery time 8 weeks
[4] Depending on the pressure the main valve disc is designed as soft seal or metal disc without additional cost. The metal disc can be selected always as an option with additional cost.
[5] Selection depends on pressure and temperature
[6] For LCB Body material top plate material 1.4404/316L is standard

All prices in $

Options

Type 811 – Pop Action

Valve size				3" x 4"				4" x 6"					6" x 8"			8" x 10"	
Standard Orifice acc. to API 526				J	K	L		L	M	N	P		Q	R		T	
Extra Orifice							N+					P+			R+		T+
POSV complete																	
NACE sour gas application	acc. to MR0175		R70	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,618	$1,618
	acc. to MR0103		R93	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,492	$1,618	$1,618
Soft sealing POSV complete		FKM	R04[4]	*	*	*	*	*	*	*	*	*	*	*	*	*	*
		EPDM	R05[4]	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
		FFKM	R06[4]	$1,042	$1,042	$1,042	$1,042	$1,366	$1,366	$1,366	$1,366	$1,366	$1,991	$1,991	$1,991	$2,238	$2,238
Explosive Decompression conform design	for POSV ≥ Class 900	FKM "ED"[3] >740 psig	R3A[4]	$547	$547	$547	–	$746	$746	$746	$746	–	–	–	–	–	–
		FFKM "ED"[3] >1480 psig	R3B[4]	$2,238	$2,238	$2,238	–	$2,736	$2,736	$2,736	$2,736	–	$4,228	$4,228	–	$4,722	–
Design FKM-cold, -48 °C medium temperature.		FKM-cold for ambient temp. up to -48°C	R3C	$2,486	$2,486	$2,486	$2,486	$2,983	$2,983	$2,983	$2,983	$2,983	$3,232	$3,232	$3,232	$3,481	$3,481
		FKM-cold for ambient temp. up to -16°C	R3L	$797	$797	$797	$797	$993	$993	$993	$993	$993	$1,093	$1,093	$1,093	$1,194	$1,194
Main valve																	
Special machining of flange	RTJ-groove	Inlet	H62	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
		Outlet	H63	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
	DIN-Flange facings	Inlet	[1]	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
		Outlet	[1]	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
Disc[4]	Metal sealing		R71	$498	$498	$498	$498	$1,245	$1,245	$1,245	$1,245	$1,245	$1,618	$1,618	$1,618	$2,486	$2,486
Drain hole	G 1/2		J19	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
	NPT 1/2"		R48	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
PTFE piston seal, spring loaded[5]			R20	$598	$598	$598	$598	$598	$598	$598	$598	$598	$1,245	$1,245	$1,245	$1,245	$1,245
PTFE-Compound piston sealing, spring-loaded	[5]	PTFE-compound	R66	$746	$746	$746	$746	$993	$993	$993	$993	$993	$1,991	$1,991	$1,991	$4,228	$4,228
Top plate material 1.4404/316L[6]			R46	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
Studs / Nuts 1.4401 (A4-70)			J89	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Nozzle		[2]	R69	$7,458	$7,458	$7,458	–	$9,946	$9,946	$9,946	$9,946	–	$11,436	$11,436	–	$12,927	–
	RTJ-groove	[2]	L58	$398	$398	$398	–	$398	$398	$398	$398	–	$746	$746	–	$746	–
Spring	for POSV	Inconel X750	X08	$498	$498	$498	–	$498	$498	$498	$498	–	$498	$498	–	$498	–
Disc stellited	for POSV ≥ Class 900	Stellite 6	R65	$1,042	$1,042	$1,042	–	$1,194	$1,194	$1,194	$1,194	–	–	–	–	–	–
Disc with inserted sealing plate PEEK	for POSV > 435 psig depends on temperature	Sealing element FKM	R67 +R04	$845	$845	$845	–	$993	$993	$993	$993	–	–	–	–	–	–
		EPDM	R67 +R05	$845	$845	$845	–	$993	$993	$993	$993	–	$1,245	$1,245	–	$1,366	–
		FFKM	R67 +R06	$845	$845	$845	–	$993	$993	$993	$993	–	$1,245	$1,245	–	$1,366	–
Disc with inserted sealing plate PTFE	for POSV Inlet ≤ Class 300, ≤ 740 psig depends on temperature	FKM	I39 +R04	$845	$845	$845	$845	$993	$993	$993	$993	$993	$1,245	$1,245	$1,245	$1,366	$1,366
		EPDM	I39 +R05	$845	$845	$845	$845	$993	$993	$993	$993	$993	$1,245	$1,245	$1,245	$1,366	$1,366
		FFKM	I39 +R06	$845	$845	$845	$845	$993	$993	$993	$993	$993	$1,245	$1,245	$1,245	$1,366	$1,366

[1] For available flange facings refer to page 119
[2] Dimension "a" 34 mm extended for full nozzle design
[3] Delivery time 8 weeks
[4] Depending on the pressure the main valve disc is designed as soft seal or metal disc without additional cost. The metal disc can be selected always as an option with additional cost.
[5] Selection depends on pressure and temperature
[6] For LCB Body material top plate material 1.4404/316L is standard

All prices in $

Options

Type 811 – Pop Action

Valve size			1" x 2"				1 1/2" x 2"				1 1/2" x 3"			2" x 3"			
Standard Orifice acc. to API 526			D	E	F		D	E	F		G	H		G	H	J	
Extra Orifice						G				H			J				K+
Pilot (Pop Action)																	
Blowdown adjusted to x %[1]		R44	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pilot test gag		R33	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Pilot lifting device		R25	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797
Tag (foil/paper)		R94	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Stainless steel tag		R95	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40
Accessories																	
Backflow preventer			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Field test connection		R26	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348
Pilot supply filter		R30	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093
Manual blowdown	to atmosphere	R27	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348
	into main valve outlet	R24	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845
Remote sensing[2]		R28	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Swagelok Connection		R23	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Needle valve	for field test connection	R4A	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	–	$993	$993	$993	$993

[1] Blowdown adjusted: Closing pressure difference as a fixed value between 2 – 15%.
Standard adjustment between 3 – 7%.
[2] Not possible to use in combination with R26 or R30

All prices in $

Options

Type 811 – Pop Action

Valve size			3" x 4"				4" x 6"					6" x 8"			8" x 10"	
Standard Orifice acc. to API 526		J	K	L		L	M	N	P		Q	R		T	
Extra Orifice					N+					P+			R+		T+
Pilot (Pop Action)															
Blowdown adjusted to x %[1]	R44	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Pilot test gag	R33	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Pilot lifting device	R25	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797
Tag (foil/paper)	R94	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Stainless steel tag	R95	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40
Accessories															
Backflow preventer		*	*	*	*	*	*	*	*	*	*	*	*	*	*
Field test connection	R26	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$498	$348	$348	$348
Pilot supply filter	R30	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093
Manual blowdown – to atmosphere	R27	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$498	$348	$348	$348
Manual blowdown – into main valve outlet	R24	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845
Remote sensing[2]	R28	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Swagelok Connection	R23	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Needle valve for field test connection	R4A	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993

[1] Blowdown adjusted: Closing pressure difference as a fixed value between 2 – 15%.
Standard adjustment between 3 – 7%.
[2] Not possible to use in combination with R26 or R30

High Efficiency

All Prices in $

Available flange ratings
and flange facings
on page 118 and 119

POSV for high pressure

Type 821 WCB 1.0619 — Modulate Action

Option Code					H65				H67			
Flange class		**150 x 150**		**300 x 150**		**300 x 300[1]**		**600 x 150**		**600 x 300[1]**		**900 x 300**	
Standard Orifice		**Valve size**											
D	Art. No. **8212.**	1 D 2 **0010**[2] $4,560	1 1/2 D 2 **0040**[2] $4,560	1 D 2 **0220** $4,560	1 1/2 D 2 **0250** $4,560	1 D 2 **1060** $7,731	1 1/2 D 2 **1090** $8,244	1 D 2 **0640** $4,641	1 1/2 D 2 **0670** $4,763	1 D 2 **1060** $7,731	1 1/2 D 2 **1090** $8,244	1 D 2 **1060** $7,731	1 1/2 D 2 **1090** $8,244
E	Art. No. **8212.**	1 E 2 **0020**[2] $4,560	1 1/2 E 2 **0050**[2] $4,560	1 E 2 **0230** $4,560	1 1/2 E 2 **0260** $4,560	1 E 2 **1070** $7,731	1 1/2 E 2 **1100** $8,244	1 E 2 **0650** $4,641	1 1/2 E 2 **0680** $4,763	1 E 2 **1070** $7,731	1 1/2 E 2 **1100** $8,244	1 E 2 **1070** $7,731	1 1/2 E 2 **1100** $8,244
F	Art. No. **8212.**	1 F 2 **0030**[2] $4,560	1 1/2 F 2 **0060**[2] $4,560	1 F 2 **0240** $4,560	1 1/2 F 2 **0270** $4,560	1 F 2 **1080** $7,731	1 1/2 F 2 **1110** $8,244	1 F 2 **0660** $4,641	1 1/2 F 2 **0690** $4,763	1 F 2 **1080** $7,731	1 1/2 F 2 **1110** $8,244	1 F 2 **1080** $7,731	1 1/2 F 2 **1110** $8,244
G	Art. No. **8212.**	1 1/2 G 3 **0070**[2] $4,961	2 G 3 **0090** $5,489	1 1/2 G 3 **0280** $4,961	2 G 3 **0300** $5,489	1 1/2 G 3 **1120** $8,505	2 G 3 **1140** $9,105	1 1/2 G 3 **0700** $5,250	2 G 3 **0720** $6,443	1 1/2 G 3 **1120** $8,505	2 G 3 **1140** $9,105	1 1/2 G 3 **1120** $8,505	2 G 3 **1140** $9,105
H	Art. No. **8212.**	1 1/2 H 3 **0080**[2] $4,961	2 H 3 **0100** $5,489	1 1/2 H 3 **0290** $4,961	2 H 3 **0310** $5,489	1 1/2 H 3 **1130** $8,505	2 H 3 **1150** $9,105	1 1/2 H 3 **0710** $5,250	2 H 3 **0730** $6,443	1 1/2 H 3 **1130** $8,505	2 H 3 **1150** $9,105	1 1/2 H 3 **1130** $8,505	2 H 3 **1150** $9,105
J	Art. No. **8212.**	2 J 3 **0110** $5,489	3 J 4 **0120** $7,031	2 J 3 **0320** $5,489	3 J 4 **0330** $7,031	2 J 3 **1160** $9,105	3 J 4 **1170** $10,651	2 J 3 **0740** $6,443	3 J 4 **0750** $7,940	2 J 3 **1160** $9,105	3 J 4 **1170** $10,651	2 J 3 **1160** $9,105	3 J 4 **1170** $10,651
K	Art. No. **8212.**	3 K 4 **0130** $7,031		3 K 4 **0340** $7,031		3 K 4 **1180** $10,651		3 K 4 **0760** $7,940		3 K 4 **1180** $10,651		3 K 4 **1180** $10,651	
L	Art. No. **8212.**	3 L 4 **0140** $7,031	4 L 6 **0150** $10,407	3 L 4 **0350** $7,031	4 L 6 **0360** $10,407	3 L 4 **1190** $10,651	4 L 6 **1200** $14,345	3 L 4 **0770** $7,940	4 L 6 **0780** $11,333	3 L 4 **1190** $10,651	4 L 6 **1200** $14,345	3 L 4 **1190** $10,651	4 L 6 **1200** $14,345
M	Art. No. **8212.**	4 M 6 **0160** $10,407		4 M 6 **0370** $10,407		4 M 6 **1210** $14,345		4 M 6 **0790** $11,333		4 M 6 **1210** $14,345		4 M 6 **1210** $14,345	
N	Art. No. **8212.**	4 N 6 **0170** $10,407		4 N 6 **0380** $10,407		4 N 6 **1220** $14,345		4 N 6 **0800** $11,333		4 N 6 **1220** $14,345		4 N 6 **1220** $14,345	
P	Art. No. **8212.**	4 P 6 **0180** $10,407		4 P 6 **0390** $10,407		4 P 6 **1230** $14,345		4 P 6 **0810** $11,333		4 P 6 **1230** $14,345		4 P 6 **1230** $14,345	
Q	Art. No. **8212.**	6 Q 8 **0190** $14,808		6 Q 8 **0400** $14,808		6 Q 8 **1030**[3] $20,333		6 Q 8 **0820** $16,983		6 Q 8 **1030**[3] $20,333		6 Q 8 –	
R	Art. No. **8212.**	6 R 8 **0200** $14,808		6 R 8 **0410** $14,808		6 R 8 **1040**[3] $20,333		6 R 8 **0830** $16,983		6 R 8 **1040**[3] $20,333		6 R 8 –	
T	Art. No. **8212.**	8 T 10 **0210** $23,521		8 T 10 **0420** $23,521		8 T 10 **1050**[3] $27,860		8 T 10 **0840** $24,507		8 T 10 **1050**[3] $27,860		8 T 10 –	

All Prices in $

Type 821 WCB 1.0619 — Modulate Action

Option Code				H69/H82				H82	
Flange class		**1500 x 300**		**1500 x 600[1)]**		**2500 x 300**		**2500 x 600[1)]**	
Standard Orifice		**Valve size**							
D	Art. No. **8212.**	1 D 2 **1240** $7,731	1½ D 2 **1270** $8,244	1 D 2 **1600** $9,870	1½ D 2 **1630** $10,225	1 D 2 **1600** $9,870	1½ D 2 **1630** $10,225	1 D 2 **1600** $9,870	1½ D 2 **1630** $10,225
E	Art. No. **8212.**	1 E 2 **1250** $7,731	1½ E 2 **1280** $8,244	1 E 2 **1610** $9,870	1½ E 2 **1640** $10,225	1 E 2 **1610** $9,870	1½ E 2 **1640** $10,225	1 E 2 **1610** $9,870	1½ E 2 **1640** $10,225
F	Art. No. **8212.**	1 F 2 **1260** $7,731	1½ F 2 **1290** $8,244	1 F 2 **–**	1½ F 2 **1650** $10,225	1 F 2 **–**	1½ F 2 **1650** $10,225	1 F 2 **–**	1½ F 2 **1650** $10,225
G	Art. No. **8212.**	1½ G 3 **1300** $8,505	2 G 3 **1320** $9,105	1½ G 3 **–**	2 G 3 **1680** $12,478	1½ G 3 **–**	2 G 3 **1680** $12,478	1½ G 3 **–**	2 G 3 **1680** $12,478
H	Art. No. **8212.**	1½ H 3 **1310** $8,505	2 H 3 **1330** $9,105	1½ H 3 **–**	2 H 3 **1690** $12,478	1½ H 3 **–**	2 H 3 **1690** $12,478	1½ H 3 **–**	2 H 3 **1690** $12,478
J	Art. No. **8212.**	2 J 3 **1340** $9,105	3 J 4 **1350** $10,651	2 J 3 **1700** $12,478	3 J 4 **1530** $16,753	2 J 3 **1700** $12,478	3 J 4 **–**	2 J 3 **1700** $12,478	3 J 4 **–**
K	Art. No. **8212.**	3 K 4 **1360** $10,651		3 K 4 **1540** $16,753		3 K 4 **–**		3 K 4 **–**	
L	Art. No. **8212.**	3 L 4 **1370** $10,651	4 L 6 **1380** $14,345	3 L 4 **1550** $16,753	4 L 6 **1560** $20,314	3 L 4 **–**	4 L 6 **–**	3 L 4 **–**	4 L 6 **–**
M	Art. No. **8212.**	4 M 6 **1390** $14,345		4 M 6 **1570** $20,314		4 M 6 **–**		4 M 6 **–**	
N	Art. No. **8212.**	4 N 6 **1400** $14,345		4 N 6 **1580** $20,314		4 N 6 **–**		4 N 6 **–**	
P	Art. No. **8212.**	4 P 6 **1410** $14,345		4 P 6 **1590** $20,314		4 P 6 **–**		4 P 6 **–**	
Q	Art. No. **8212.**	6 Q 8 **–**		6 Q 8 **–**		6 Q 8 **–**		6 Q 8 **–**	
R	Art. No. **8212.**	6 R 8 **–**		6 R 8 **–**		6 R 8 **–**		6 R 8 **–**	
T	Art. No. **8212.**	8 T 10 **–**		8 T 10 **–**		8 T 10 **–**		8 T 10 **–**	

[1)] Flange rating class 300 and 600:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional option code.
[2)] Only semi nozzle design available
[3)] Delivery time 6 – 8 weeks

High Efficiency

All Prices in $

Available flange ratings and flange facings on page 118 and 119

POSV for high pressure

Type 821 CF8M 1.4408 — Modulate Action

Option Code					H65				H67			
Flange class		**150 x 150**		**300 x 150**		**300 x 300[1]**		**600 x 150**		**600 x 300[1]**		**900 x 300**	
Standard Orifice		**Valve size**											
D	Art. No. **8214.**	1 D 2 **0010[2]** $7,792	1 1/2 D 2 **0040[2]** $8,341	1 D 2 **0220** $7,792	1 1/2 D 2 **0250** $8,707	1 D 2 **1060** $12,542	1 1/2 D 2 **1090** $13,314	1 D 2 **0640** $8,341	1 1/2 D 2 **0670** $9,293	1 D 2 **1060** $12,542	1 1/2 D 2 **1090** $13,314	1 D 2 **1060** $12,542	1 1/2 D 2 **1090** $13,314
E	Art. No. **8214.**	1 E 2 **0020[2]** $7,792	1 1/2 E 2 **0260** $8,707	1 E 2 **0230** $7,792	1 1/2 E 2 **0260** $8,707	1 E 2 **1070** $12,542	1 1/2 E 2 **1100** $13,314	1 E 2 **0650** $8,341	1 1/2 E 2 **0680** $9,293	1 E 2 **1070** $12,542	1 1/2 E 2 **1100** $13,314	1 E 2 **1070** $12,542	1 1/2 E 2 **1100** $13,314
F	Art. No. **8214.**	1 F 2 **0030[2]** $7,792	1 1/2 F 2 **0060[2]** $8,341	1 F 2 **0240** $7,792	1 1/2 F 2 **0270** $8,707	1 F 2 **1080** $12,542	1 1/2 F 2 **1110** $13,314	1 F 2 **0660** $8,341	1 1/2 F 2 **0690** $9,293	1 F 2 **1080** $12,542	1 1/2 F 2 **1110** $13,314	1 F 2 **1080** $12,542	1 1/2 F 2 **1110** $13,314
G	Art. No. **8214.**	1 1/2 G 3 **0070[2]** $8,707	2 G 3 **0090** $9,073	1 1/2 G 3 **0280** $8,707	2 G 3 **0300** $9,073	1 1/2 G 3 **1120** $13,826	2 G 3 **1140** $14,428	1 1/2 G 3 **0700** $9,293	2 G 3 **0720** $9,621	1 1/2 G 3 **1120** $13,826	2 G 3 **1140** $14,428	1 1/2 G 3 **1120** $13,826	2 G 3 **1140** $14,428
H	Art. No. **8214.**	1 1/2 H 3 **0080[2]** $8,707	2 H 3 **0100** $9,073	1 1/2 H 3 **0290** $8,707	2 H 3 **0310** $9,073	1 1/2 H 3 **1130** $13,826	2 H 3 **1150** $14,428	1 1/2 H 3 **0710** $9,293	2 H 3 **0730** $9,621	1 1/2 H 3 **1130** $13,826	2 H 3 **1150** $14,428	1 1/2 H 3 **1130** $13,826	2 H 3 **1150** $14,428
J	Art. No. **8214.**	2 J 3 **0110** $9,073	3 J 4 **0120** $11,550	2 J 3 **0320** $9,073	3 J 4 **0330** $11,550	2 J 3 **1160** $14,428	3 J 4 **1170** $15,546	2 J 3 **0740** $9,621	3 J 4 **0750** $12,557	2 J 3 **1160** $14,428	3 J 4 **1170** $15,546	2 J 3 **1160** $14,428	3 J 4 **1170** $15,546
K	Art. No. **8214.**	3 K 4 **0130** $11,550		3 K 4 **0340** $11,550		3 K 4 **1180** $15,546		3 K 4 **0760** $12,557		3 K 4 **1180** $15,546		3 K 4 **1180** $15,546	
L	Art. No. **8214.**	3 L 4 **0140** $11,550	4 L 6 **0150** $16,313	3 L 4 **0350** $11,550	4 L 6 **0360** $16,313	3 L 4 **1190** $15,546	4 L 6 **1200** $21,300	3 L 4 **0770** $12,557	4 L 6 **0780** $17,139	3 L 4 **1190** $15,546	4 L 6 **1200** $21,300	3 L 4 **1190** $15,546	4 L 6 **1200** $21,300
M	Art. No. **8214.**	4 M 6 **0160** $16,313		4 M 6 **0370** $16,313		4 M 6 **1210** $21,300		4 M 6 **0790** $17,139		4 M 6 **1210** $21,300		4 M 6 **1210** $21,300	
N	Art. No. **8214.**	4 N 6 **0170** $16,313		4 N 6 **0380** $16,313		4 N 6 **1220** $21,300		4 N 6 **0800** $17,139		4 N 6 **1220** $21,300		4 N 6 **1220** $21,300	
P	Art. No. **8214.**	4 P 6 **0180** $16,313		4 P 6 **0390** $16,313		4 P 6 **1230** $21,300		4 P 6 **0810** $17,139		4 P 6 **1230** $21,300		4 P 6 **1230** $21,300	
Q	Art. No. **8214.**	6 Q 8 **0190** $23,368		6 Q 8 **0400** $23,368		6 Q 8 **1030[3]** $30,359		6 Q 8 **0820** $25,204		6 Q 8 **1030[3]** $30,359		6 Q 8 –	
R	Art. No. **8214.**	6 R 8 **0200** $23,368		6 R 8 **0410** $23,368		6 R 8 **1040[3]** $30,359		6 R 8 **0830** $25,204		6 R 8 **1040[3]** $30,359		6 R 8 –	
T	Art. No. **8214.**	8 T 10 **0210** $32,169		8 T 10 **0420** $32,169		8 T 10 **1050[3]** $39,889		8 T 10 **0840** $34,736		8 T 10 **1050[3]** $39,889		8 T 10 –	

All Prices in $

Type 821 CF8M 1.4408 — Modulate Action

Option Code				H69/H82				H82	
Flange class		1500 x 300		1500 x 600[1)]		2500 x 300		2500 x 600[1)]	
Standard Orifice		Valve size							
D	Art. No. **8214.**	1 D 2 **1240** $12,542	1 1/2 D 2 **1270** $13,314	1 D 2 **1600** $16,186	1 1/2 D 2 **1630** $16,814	1 D 2 **1600** $16,186	1 1/2 D 2 **1630** $16,814	1 D 2 **1600** $16,186	1 1/2 D 2 **1630** $16,814
E	Art. No. **8214.**	1 E 2 **1250** $12,542	1 1/2 E 2 **1280** $13,314	1 E 2 **1610** $16,186	1 1/2 E 2 **1640** $16,814	1 E 2 **1610** $16,186	1 1/2 E 2 **1640** $16,814	1 E 2 **1610** $16,186	1 1/2 E 2 **1640** $16,814
F	Art. No. **8214.**	1 F 2 **1260** $12,542	1 1/2 F 2 **1290** $13,314	1 F 2 **–**	1 1/2 F 2 **1650** $16,814	1 F 2 **–**	1 1/2 F 2 **1650** $16,814	1 F 2 **–**	1 1/2 F 2 **1650** $16,814
G	Art. No. **8214.**	1 1/2 G 3 **1300** $13,826	2 G 3 **1320** $9,105	1 1/2 G 3 **–**	2 G 3 **1680** $18,901	1 1/2 G 3 **–**	2 G 3 **1680** $18,901	1 1/2 G 3 **–**	2 G 3 **1680** $18,901
H	Art. No. **8214.**	1 1/2 H 3 **1310** $13,826	2 H 3 **1330** $14,428	1 1/2 H 3 **–**	2 H 3 **1690** $18,901	1 1/2 H 3 **–**	2 H 3 **1690** $18,901	1 1/2 H 3 **–**	2 H 3 **1690** $18,901
J	Art. No. **8214.**	2 J 3 **1340** $14,428	3 J 4 **1350** $15,546	2 J 3 **1700** $18,901	3 J 4 **1530** $25,994	2 J 3 **1700** $18,901	3 J 4 **–**	2 J 3 **1700** $18,901	3 J 4 **–**
K	Art. No. **8214.**	3 K 4 **1360** $15,546		3 K 4 **1540** $25,994		3 K 4 **–**		3 K 4 **–**	
L	Art. No. **8214.**	3 L 4 **1370** $15,546	4 L 6 **1380** $21,300	3 L 4 **1550** $25,994	4 L 6 **1560** $30,743	3 L 4 **–**	4 L 6 **–**	3 L 4 **–**	4 L 6 **–**
M	Art. No. **8214.**	4 M 6 **1390** $21,300		4 M 6 **1570** $30,743		4 M 6 **–**		4 M 6 **–**	
N	Art. No. **8214.**	4 N 6 **1400** $21,300		4 N 6 **1580** $30,743		4 N 6 **–**		4 N 6 **–**	
P	Art. No. **8214.**	4 P 6 **1410** $21,300		4 P 6 **1590** $30,743		4 P 6 **–**		4 P 6 **–**	

[1)] Flange rating class 300 and 600:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional option code.
[2)] Only semi nozzle design available
[3)] Delivery time 6 – 8 weeks

High Efficiency

All Prices in $

Available flange ratings
and flange facings
on page 118 and 119

POSV for high pressure

Type 821 LCB — Modulate Action

Option Code					H65			H67		
Flange class	150 x 150		300 x 150		300 x 300[1]		600 x 150		600 x 300[1]		900 x 300	
Standard Orifice	**Valve size**											
D	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2	1 D 2	1½ D 2
Art. No. **8213.**	**0010**[2]	**0040**[2]	**0220**	**0250**	**1060**	**1090**	**0640**	**0670**	**1060**	**1090**	**1060**	**1090**
	$5,017	$5,017	$5,017	$5,017	$9,129	$9,752	$5,109	$5,241	$9,129	$9,752	$9,129	$9,752
E	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2	1 E 2	1½ E 2
Art. No. **8213.**	**0020**[2]	**0050**[2]	**0230**	**0260**	**1070**	**1100**	**0650**	**0680**	**1070**	**1100**	**1070**	**1100**
	$5,017	$5,017	$5,017	$5,017	$9,129	$9,752	$5,109	$5,241	$9,129	$9,752	$9,129	$9,752
F	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2	1 F 2	1½ F 2
Art. No. **8213.**	**0030**[2]	**0060**[2]	**0240**	**0270**	**1080**	**1110**	**0660**	**0690**	**1080**	**1110**	**1080**	**1110**
	$5,017	$5,017	$5,017	$5,017	$9,129	$9,752	$5,109	$5,241	$9,129	$9,752	$9,129	$9,752
G	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3	1½ G 3	2 G 3
Art. No. **8213.**	**0070**[2]	**0090**	**0280**	**0300**	**1120**	**1140**	**0700**	**0720**	**1120**	**1140**	**1120**	**1140**
	$5,459	$6,042	$5,459	$6,042	$10,062	$10,790	$5,776	$7,088	$10,062	$10,790	$10,062	$10,790
H	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3	1½ H 3	2 H 3
Art. No. **8213.**	**0080**[2]	**0100**	**0290**	**0310**	**1130**	**1150**	**0710**	**0730**	**1130**	**1150**	**1130**	**1150**
	$5,459	$6,042	$5,459	$6,042	$10,062	$10,790	$5,776	$7,088	$10,062	$10,790	$10,062	$10,790
J	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4	2 J 3	3 J 4
Art. No. **8213.**	**0110**	**0120**	**0320**	**0330**	**1160**	**1170**	**0740**	**0750**	**1160**	**1170**	**1160**	**1170**
	$6,042	$7,733	$6,042	$7,733	$10,790	$12,660	$7,088	$8,736	$10,790	$12,660	$10,790	$12,660
K	3 K 4		3 K 4		3 K 4		3 K 4		3 K 4		3 K 4	
Art. No. **8213.**	**0130**		**0340**		**1180**		**0760**		**1180**		**1180**	
	$7,733		$7,733		$12,660		$8,736		$12,660		$12,660	
L	3 L 4	4 L 6	3 L 4	4 L 6	3 L 4	4 L 6	3 L 4	4 L 6	3 L 4	4 L 6	3 L 4	4 L 6
Art. No. **8213.**	**0140**	**0150**	**0350**	**0360**	**1190**	**1200**	**0770**	**0780**	**1190**	**1200**	**1190**	**1200**
	$7,733	$11,446	$7,733	$11,446	$12,660	$17,134	$8,736	$12,467	$12,660	$17,134	$12,660	$17,134
M	4 M 6		4 M 6		4 M 6		4 M 6		4 M 6		4 M 6	
Art. No. **8213.**	**0160**		**0370**		**1210**		**0790**		**1210**		**1210**	
	$11,446		$11,446		$17,134		$12,467		$17,134		$17,134	
N	4 N 6		4 N 6		4 N 6		4 N 6		4 N 6		4 N 6	
Art. No. **8213.**	**0170**		**0380**		**1220**		**0800**		**1220**		**1220**	
	$11,446		$11,446		$17,134		$12,467		$17,134		$17,134	
P	4 P 6		4 P 6		4 P 6		4 P 6		4 P 6		4 P 6	
Art. No. **8213.**	**0180**		**0390**		**1230**		**0810**		**1230**		**1230**	
	$11,446		$11,446		$17,134		$12,467		$17,134		$17,134	
Q	6 Q 8		6 Q 8		6 Q 8		6 Q 8		6 Q 8		6 Q 8	
Art. No. **8213.**	**0190**		**0400**		**1030**[3]		**0820**		**1030**[3]		–	
	$16,292		$16,292		$22,363		$18,680		$22,363			
R	6 R 8		6 R 8		6 R 8		6 R 8		6 R 8		6 R 8	
Art. No. **8213.**	**0200**		**0410**		**1040**[3]		**0830**		**1040**[3]		–	
	$16,292		$16,292		$22,363		$18,680		$22,363			
T	8 T 10		8 T 10		8 T 10		8 T 10		8 T 10		8 T 10	
Art. No. **8213.**	**0210**		**0420**		**1050**[3]		**0840**		**1050**[3]		–	
	$25,871		$25,871		$30,644		$26,958		$30,644			

All Prices in $

Type 821 LCB — Modulate Action

Option Code				H69/H82				H82	
Flange class		**1500 x 300**		**1500 x 600[1)]**		**2500 x 300**		**2500 x 600[1)]**	
Standard Orifice		**Valve size**							
D	Art. No. **8213.**	1 D 2 **1240** $9,129	1½ D 2 **1270** $9,752	1 D 2 **1600** $11,706	1½ D 2 **1630** $12,096	1 D 2 **1600** $11,706	1½ D 2 **1630** $12,096	1 D 2 **1600** $11,706	1½ D 2 **1630** $12,096
E	Art.-Nr. **8213.**	1 E 2 **1250** $9,129	1½ E 2 **1280** $9,752	1 E 2 **1610** $11,706	1½ E 2 **1640** $12,096	1 E 2 **1610** $11,706	1½ E 2 **1640** $12,096	1 E 2 **1610** $11,706	1½ E 2 **1640** $12,096
F	Art. No. **8213.**	1 F 2 **1260** $9,129	1½ F 2 **1290** $9,752	1 F 2 **–**	1½ F 2 **1650** $12,096	1 F 2 **–**	1½ F 2 **1650** $12,096	1 F 2 **–**	1½ F 2 **1650** $12,096
G	Art.-Nr. **8213.**	1½ G 3 **1300** $10,062	2 G 3 **1320** $10,790	1½ G 3 **–**	2 G 3 **1680** $14,819	1½ G 3 **–**	2 G 3 **1680** $14,819	1½ G 3 **–**	2 G 3 **1680** $14,819
H	Art. No. **8213.**	1½ H 3 **1310** $10,062	2 H 3 **1330** $10,790	1½ H 3 **–**	2 H 3 **1690** $14,819	1½ H 3 **–**	2 H 3 **1690** $14,819	1½ H 3 **–**	2 H 3 **1690** $14,819
J	Art.-Nr. **8213.**	2 J 3 **1340** $10,790	3 J 4 **1350** $12,660	2 J 3 **1700** $14,819	3 J 4 **1530** $20,123	2 J 3 **1700** $14,819	3 J 4 **–**	2 J 3 **1700** $14,819	3 J 4 **–**
K	Art. No. **8213.**	3 K 4 **1360** $12,660		3 K 4 **1540** $20,123		3 K 4 **–**		3 K 4 **–**	
L	Art.-Nr. **8213.**	3 L 4 **1370** $12,660	4 L 6 **1380** $17,134	3 L 4 **1550** $20,123	4 L 6 **1560** $23,683	3 L 4 **–**	4 L 6 **–**	3 L 4 **–**	4 L 6 **–**
M	Art. No. **8213.**	4 M 6 **1390** $17,134		4 M 6 **1570** $23,683		4 M 6 **–**		4 M 6 **–**	
N	Art.-Nr. **8213.**	4 N 6 **1400** $17,134		4 N 6 **1580** $23,683		4 N 6 **–**		4 N 6 **–**	
P	Art. No. **8213.**	4 P 6 **1410** $17,134		4 P 6 **1590** $23,683		4 P 6 **–**		4 P 6 **–**	

[1)] Flange rating class 300 and 600:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional option code.
[2)] Only semi nozzle design available
[3)] Delivery time 6 – 8 weeks

High Efficiency

All prices in €

Type 821 WCB 1.0619 — Modulate Action

Option Code				H65		H67	
Flange class		**150 x 150**	**300 x 150**	**300 x 300[1)]**	**600 x 150**	**600 x 300[1)]**	**900 x 300**
Extra Orifice		**Valve size**					
G	Art. No. **8212.**	1 G 2 **1820[2)]** $4,560	1 G 2 **1900[2)]** $4,560	1 G 2 –	1 G 2 **2060[2)]** $4,641	1 G 2 –	1 G 2 –
H	Art. No. **8212.**	1 1/2 H 2 **1830[2)]** $4,560	1 1/2 H 2 **1910[2)]** $4,560	1 1/2 H 2 –	1 1/2 H 2 **2070[2)]** $4,763	1 1/2 H 2 –	1 1/2 H 2 –
J	Art. No. **8212.**	1 1/2 J 3 **1840[2)]** $4,961	1 1/2 J 3 **1920[2)]** $4,961	1 1/2 J 3 –	1 1/2 J 3 **2080[2)]** $5,250	1 1/2 J 3 –	1 1/2 J 3 –
K+	Art. No. **8212.**	2 K+ 3 **1850[2)]** $5,489	2 K+ 3 **1930[2)]** $5,489	2 K+ 3 –	2 K+ 3 **2090[2)]** $6,443	2 K+ 3 –	2 K+ 3 –
N+	Art. No. **8212.**	3 N+ 4 **1860[2)]** $7,031	3 N+ 4 **1940[2)]** $7,031	3 N+ 4 –	3 N+ 4 **2100[2)]** $7,940	3 N+ 4 –	3 N+ 4 –
P+	Art. No. **8212.**	4 P+ 6 **1870[2)]** $10,407	4 P+ 6 **1950[2)]** $10,407	4 P+ 6 –	4 P+ 6 **2110[2)]** $11,333	4 P+ 6 –	4 P+ 6 –
R+	Art. No. **8212.**	6 R+ 8 **1880[2)]** $14,808	6 R+ 8 **1960[2)]** $14,808	6 R+ 8 –	6 R+ 8 **2120[2)]** $16,983	6 R+ 8 –	6 R+ 8 –
T+	Art. No. **8212.**	8 T+ 10 **1890[2)]** $23,521	8 T+ 10 **1970[2)]** $23,521	8 T+ 10 –	8 T+ 10 **2130[2)]** $24,507	8 T+ 10 –	8 T+ 10 –

Type 824 Dual Outlet — Modulate Action

Option Code				
Flange class		**150 x 150**	**300 x 150**	**600 x 150**
Extra Orifice		**Valve size**		
P+	Art. No. **8242.**	8 P+ 10 Dual **1870[3)]** $12,785	8 P+ 10 Dual **1950[3)]** $12,785	8 P+ 10 Dual **2110[3)]** $13,215
R+	Art. No. **8242.**	6 R+ 8 Dual **1880[3)]** $28,987	6 R+ 8 Dual **1960[3)]** $16,103	6 R+ 8 Dual **2120[3)]** $17,926
T+	Art. No. **8242.**	8 T+ 10 Dual **1890[3)]** $28,098	8 T+ 10 Dual **1970[3)]** $28,098	8 T+ 10 Dual **2130[3)]** $29,342

[1)] Flange rating Class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional Option Code.

[2)] Only semi nozzle design available

[3)] Availability will be announced via LESER News.

Type 821 CF8M 1.4408 — Modulate Action

Option Code				H65		H67	
Flange class		**150 x 150**	**300 x 150**	**300 x 300[1)]**	**600 x 150**	**600 x 300[1)]**	**900 x 300**
Extra Orifice		**Valve size**					
G	Art. No. **8214.**	1 G 2 **1820[2)]** $7,792	1 G 2 **1900[2)]** $7,792	1 G 2 –	1 G 2 **2060[2)]** $8,341	1 G 2 –	1 G 2 –
H	Art. No. **8214.**	1 1/2 H 2 **1830[2)]** $8,341	1 1/2 H 2 **1910[2)]** $8,707	1 1/2 H 2 –	1 1/2 H 2 **2070[2)]** $9,293	1 1/2 H 2 –	1 1/2 H 2 –
J	Art. No. **8214.**	1 1/2 J 3 **1840[2)]** $8,707	1 1/2 J 3 **1920[2)]** $8,707	1 1/2 J 3 –	1 1/2 J 3 **2080[2)]** $9,293	1 1/2 J 3 –	1 1/2 J 3 –
K+	Art. No. **8214.**	2 K+ 3 **1850[2)]** $9,073	2 K+ 3 **1930[2)]** $9,073	2 K+ 3 –	2 K+ 3 **2090[2)]** $9,621	2 K+ 3 –	2 K+ 3 –
N+	Art. No. **8214.**	3 N+ 4 **1860[2)]** $11,550	3 N+ 4 **1940[2)]** $11,550	3 N+ 4 –	3 N+ 4 **2100[2)]** $12,557	3 N+ 4 –	3 N+ 4 –
P+	Art. No. **8214.**	4 P+ 6 **1870[2)]** $16,313	4 P+ 6 **1950[2)]** $16,313	4 P+ 6 –	4 P+ 6 **2110[2)]** $17,139	4 P+ 6 –	4 P+ 6 –
R+	Art. No. **8214.**	6 R+ 8 **1880[2)]** $23,368	6 R+ 8 **1960[2)]** $23,368	6 R+ 8 –	6 R+ 8 **2120[2)]** $25,204	6 R+ 8 –	6 R+ 8 –
T+	Art. No. **8214.**	8 T+ 10 **1890[2)]** $32,169	8 T+ 10 **1970[2)]** $32,169	8 T+ 10 –	8 T+ 10 **2130[2)]** $34,736	8 T+ 10 –	8 T+ 10 –

Type 824 Dual Outlet — Modulate Action

Option Code				
Flange class		**150 x 150**	**300 x 150**	**600 x 150**
Extra Orifice		**Valve size**		
P+	Art. No. **8244.**	8 P+ 10 Dual **1870[3)]** $22,156	8 P+ 10 Dual **1950[3)]** $22,156	8 P+ 10 Dual **2110[3)]** $22,931
R+	Art. No. **8244.**	6 R+ 8 Dual **1880[3)]** $28,987	6 R+ 8 Dual **1960[3)]** $28,987	6 R+ 8 Dual **2120[3)]** $31,357
T+	Art. No. **8244.**	8 T+ 10 Dual **1890[3)]** $49,419	8 T+ 10 Dual **1970[3)]** $49,419	8 T+ 10 Dual **2130[3)]** $51,656

[1)] Flange rating Class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional Option Code.

[2)] Only semi nozzle design available

[3)] Availability will be announced via LESER News.

High Efficiency

Type 821 LCB — Modulate Action

Option Code				H65		H67	
Flange class		**150 x 150**	**300 x 150**	**300 x 300[1]**	**600 x 150**	**600 x 300[1]**	**900 x 300**
Extra Orifice		**Valve size**					
G	Art. No. **8213.**	1 G 2 **1820[2]** $5,017	1 G 2 **1900[2]** $5,017	1 G 2 –	1 G 2 **2060[2]** $5,109	1 G 2 –	1 G 2 –
H	Art. No. **8213.**	1½ H 2 **1830[2]** $5,017	1½ H 2 **1910[2]** $5,017	1½ H 2 –	1½ H 2 **2070[2]** $5,241	1½ H 2 –	1½ H 2 –
J	Art. No. **8213.**	1½ J 3 **1840[2]** $5,459	1½ J 3 **1920[2]** $5,459	1½ J 3 –	1½ J 3 **2080[2]** $5,776	1½ J 3 –	1½ J 3 –
K+	Art. No. **8213.**	2 K+ 3 **1850[2]** $6,042	2 K+ 3 **1930[2]** $6,042	2 K+ 3 –	2 K+ 3 **2090[2]** $7,088	2 K+ 3 –	2 K+ 3 –
N+	Art. No. **8213.**	3 N+ 4 **1860[2]** $7,733	3 N+ 4 **1940[2]** $7,733	3 N+ 4 –	3 N+ 4 **2100[2]** $8,736	3 N+ 4 –	3 N+ 4 –
P+	Art. No. **8213.**	4 P+ 6 **1870[2]** $11,446	4 P+ 6 **1950[2]** $11,446	4 P+ 6 –	4 P+ 6 **2110[2]** $12,467	4 P+ 6 –	4 P+ 6 –
R+	Art. No. **8213.**	6 R+ 8 **1880[2]** $16,292	6 R+ 8 **1960[2]** $16,292	6 R+ 8 –	6 R+ 8 **2120[2]** $18,680	6 R+ 8 –	6 R+ 8 –
T+	Art. No. **8213.**	8 T+ 10 **1890[2]** $25,871	8 T+ 10 **1970[2]** $25,871	8 T+ 10 –	8 T+ 10 **2130[2]** $26,958	8 T+ 10 –	8 T+ 10 –

Type 824 Dual Outlet — Modulate Action

Option Code				
Flange class		**150 x 150**	**300 x 150**	**600 x 150**
Extra Orifice		**Valve size**		
P+	Art. No. **8243.**	8 P+ 10 Dual **1870[3]** $14,191	8 P+ 10 Dual **1950[3]** $14,191	8 P+ 10 Dual **2110[3]** $14,672
R+	Art. No. **8243.**	6 R+ 8 Dual **1880[3]** $18,036	6 R+ 8 Dual **1960[3]** $18,036	6 R+ 8 Dual **2120[3]** $19,941
T+	Art. No. **8243.**	8 T+ 10 Dual **1890[3]** $31,297	8 T+ 10 Dual **1970[3]** $31,297	8 T+ 10 Dual **2130[3]** $32,690

[1] Flange rating Class 300:
– in addition to API specification
– different center to face dimensions
– Article number and design of higher pressure types with additional Option Code.
[2] Only semi nozzle design available
[3] Availability will be announced via LESER News.

Notes

All Prices in $

Options

Type 821 – Modulate Action

				Valve size	1" x 2"				1 1/2" x 2"				1 1/2" x 3"			2" x 3"			
				Standard Orifice acc. to API 526	D	E	F		D	E	F		G	H		G	H	J	
				Extra Orifice				G				H			J				K+
POSV complete																			
NACE sour gas application	acc. to MR0175			R70	$1,245	$1,245	$1,245	$1,245	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366
	acc. to MR0103			R93	$1,245	$1,245	$1,245	$1,245	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366
Soft sealing POSV complete			FKM	R04[4]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
			EPDM	R05[4]	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
			FFKM	R06[4]	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$2,238	$2,238	$2,238	$2,238
Explosive Decompression conform design	for POSV ≥ Class 900		FKM "ED"[3] >740 psig	R3A[4]	$398	$398	$398	–	$398	$398	$398	–	$398	$398	–	$547	$547	$547	–
			FFKM "ED"[3] >1480 psig	R3B[4]	$2,736	$2,736	$2,736	–	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	–	$3,232	$3,232	$3,232	–
Design FKM-cold, -48 °C medium temperature		FKM-cold for ambient temp. up to -48°C		R3C	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,486	$2,486	$2,486	$2,486
		FKM-cold for ambient temp. up to -16°C		R3L	$1,042	$1,042	$1,042	$1,042	$1,042	$1,042	$1,042	$1,042	$1,042	$1,042	$1,042	$1,143	$1,143	$1,143	$1,143
Main valve																			
Special machining of flange	RTJ-groove		Inlet	H62	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
			Outlet	H63	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
	DIN-Flange facings		Inlet	[1]	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
			Outlet	[1]	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398
	Class 600[5]		Outlet		–	–	–	–	$3,980	$3,980	$3,980	–	–	–	–	$4,477	$4,477	$4,477	–
Disc[4]	Metal sealing			R71	$198	$198	$198	$198	$198	$198	$198	$198	$250	$250	$250	$348	$348	$348	$348
Drain hole	G 1/2			J19	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
	NPT 1/2"			R48	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
PTFE piston seal, spring loaded[6]				R20	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$598	$598	$598	$598
PTFE-Compound piston sealing, spring-loaded	[6]	PTFE-compound		R66	$398	$398	$398	$398	$498	$498	$498	$498	$498	$498	$498	$598	$598	$598	$598
Top plate material 1.4404/316L[7]				R46	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Studs / Nuts 1.4401 (A4-70)				J89	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Nozzle			[2]	R69	$2,983	$2,983	$2,983	–	$3,731	$3,731	$3,731	–	$3,731	$3,731	–	$6,215	$6,215	$6,215	–
	RTJ-Nut		[2]	L58	$250	$250	$250	–	$250	$250	$250	–	$250	$250	–	$250	$250	$250	–
Spring	for POSV	Inconel X750		X08	$498	$498	$498	–	$498	$498	$498	–	$498	$498	–	$498	$498	$498	–
Disc stellited	for POSV ≥ Class 900	Stellite 6		R65	$498	$498	$498	–	$746	$746	$746	–	$746	$746	–	$993	$993	$993	–
Disc with inserted sealing plate PEEK	for POSV > 435 psig depends on temperature	Sealing element FKM		R67 +R04	$447	$447	$447	–	$447	$447	$447	–	$598	$598	–	$697	$697	$697	–
		EPDM		R67 +R05	$447	$447	$447	–	$447	$447	$447	–	$598	$598	–	$697	$697	$697	–
		FFKM		R67 +R06	$447	$447	$447	–	$447	$447	$447	–	$598	$598	–	$697	$697	$697	–
Disc with inserted sealing plate PTFE	for POSV Inlet ≤ Class 300, ≤ 740 psig depends on temperature	FKM		I39 +R04	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697
		EPDM		I39 +R05	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697
		FFKM		I39 +R06	$447	$447	$447	$447	$447	$447	$447	$447	$598	$598	$598	$697	$697	$697	$697

[1] For available flange facings refer to page 119
[2] Dimension "a" 34 mm extended for full nozzle design
[3] Delivery time 8 weeks
[4] Depending on the pressure the main valve disc is designed as soft seal or metal disc without additional cost. The metal disc can be selected always as an option with additional cost.
[5] For flange ratings Class 1500 x 600 and Class 2500 x 600
[6] Selection depends on pressure and temperature
[7] For LCB Body material top plate material 1.4404/316L is standard

All Prices in $

Options

Type 821 – Modulate Action

				Valve size	3" x 4"				4" x 6"					6" x 8"			8" x 10"	
				Standard Orifice acc. to API 526	J	K	L		L	M	N	P		Q	R		T	
				Extra Orifice				N+					P+			R+		T+
POSV complete																		
NACE sour gas application	acc. to MR0175			R70	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,492	$1,492	$1,492	$1,618	$1,618
	acc. to MR0103			R93	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,366	$1,492	$1,492	$1,492	$1,618	$1,618
Soft sealing POSV complete			FKM	R04[4]	*	*	*	*	*	*	*	*	*	*	*	*	*	*
			EPDM	R05[4]	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
			FFKM	R06[4]	$2,486	$2,486	$2,486	$2,486	$2,983	$2,983	$2,983	$2,983	$2,983	$3,731	$3,731	$3,731	$4,228	$4,228
Explosive Decompression conform design	for POSV ≥ Class 900		FKM "ED"[3] >740 psig	R3A[4]	$746	$746	$746	–	$896	$896	$896	$896	–	–	–	–	–	–
			FFKM "ED"[3] >1480 psig	R3B[4]	$3,731	$3,731	$3,731	–	$4,228	$4,228	$4,228	$4,228	–	$5,468	$5,468	–	$5,967	–
Design FKM-cold, -48 °C medium temperature			FKM-cold for ambient temp. up to -48°C	R3C	$2,983	$2,983	$2,983	$2,983	$3,232	$3,232	$3,232	$3,232	$3,232	$3,481	$3,481	$3,481	$3,731	$3,731
			FKM-cold for ambient temp. up to -16°C	R3L	$1,194	$1,194	$1,194	$1,194	$1,366	$1,366	$1,366	$1,366	$1,366	$1,492	$1,492	$1,492	$1,618	$1,618
Main valve																		
Special machining of flange	RTJ-groove		Inlet	H62	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
			Outlet	H63	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
	DIN-Flange facings		Inlet	[1]	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
			Outlet	[1]	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
Disc[4]	Metal sealing			R71	$498	$498	$498	$498	$1,245	$1,245	$1,245	$1,245	$1,245	$1,618	$1,618	$1,618	$2,486	$2,486
Drain hole	G 1/2			J19	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
	NPT 1/2"			R48	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99	$99
PTFE piston seal, spring loaded[5]				R20	$598	$598	$598	$598	$598	$598	$598	$598	$598	$1,245	$1,245	$1,245	$1,245	$1,245
PTFE-Compound piston sealing, spring-loaded	[5]	PTFE-compound		R66	$746	$746	$746	$746	$993	$993	$993	$993	$993	$1,991	$1,991	$1,991	$4,228	$4,228
Top plate material 1.4404/316L[6]				R46	$398	$398	$398	$398	$398	$398	$398	$398	$398	$746	$746	$746	$746	$746
Studs / Nuts 1.4401 (A4-70)				J89	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Nozzle			[2]	R69	$7,458	$7,458	$7,458	–	$9,946	$9,946	$9,946	$9,946	–	$11,436	$11,436	–	$12,927	–
	RTJ-Nut		[2]	L58	$398	$398	$398	–	$398	$398	$398	$398	–	$746	$746	–	$746	–
Spring	for POSV	Inconel X750		X08	$498	$498	$498	–	$498	$498	$498	$498	–	$498	$498	–	$498	–
Disc stellited	for POSV ≥ Class 900	Stellite 6		R65	$1,042	$1,042	$1,042	–	$1,194	$1,194	$1,194	$1,194	–	–	–	–	–	–
Disc with inserted sealing plate PEEK	for POSV > 435 psig depends on temperature	Sealing element FKM		R67 +R04	$845	$845	$845	–	$993	$993	$993	$993	–	–	–	–	–	–
		EPDM		R67 +R05	$845	$845	$845	–	$993	$993	$993	$993	–	$1,245	$1,245	–	$1,366	–
		FFKM		R67 +R06	$845	$845	$845	–	$993	$993	$993	$993	–	$1,245	$1,245	–	$1,366	–
Disc with inserted sealing plate PTFE	for POSV Inlet ≤ Class 300, ≤ 740 psig depends on temperature	FKM		I39 +R04	$845	$845	$845	$845	$993	$993	$993	$993	$993	$1,245	$1,245	$1,245	$1,366	$1,366
		EPDM		I39 +R05	$845	$845	$845	$845	$993	$993	$993	$993	$993	$1,245	$1,245	$1,245	$1,366	$1,366
		FFKM		I39 +R06	$845	$845	$845	$845	$993	$993	$993	$993	$993	$1,245	$1,245	$1,245	$1,366	$1,366

[1] For available flange facings refer to page 119
[2] Dimension "a" 34 mm extended for full nozzle design
[3] Delivery time 8 weeks
[4] Depending on the pressure the main valve disc is designed as soft seal or metal disc without additional cost. The metal disc can be selected always as an option with additional cost.
[5] Selection depends on pressure and temperature
[6] For LCB Body material top plate material 1.4404/316L is standard

All Prices in $

Options

Type 821 – Modulate Action

Valve size			1" x 2"				1 1/2" x 2"				1 1/2" x 3"			2" x 3"			
Standard Orifice acc. to API 526			D	E	F		D	E	F		G	H		G	H	J	
Extra Orifice						G				H			J				K+
Pilot (Modulate Action)																	
Pilot test gag		R33	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Pilot lifting device		R25	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797
Pilot lifting device manuelly operated with test gag		R22	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398
Tag (foil/paper)		R94	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Stainless steel tag		R95	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40
Accessories																	
Backflow preventer			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Field test connection		R26	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348
Pilot supply filter		R30	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093
Manual blowdown	to atmosphere	R27	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348
	into main valve outlet	R24	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845
Remote sensing[1)]		R28	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Swagelok Connection		R23	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Needle valve	for field test connection	R4A	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	–	$993	$993	$993	$993

[1)] Not possible to use in combination with R26 or R30

All Prices in $

Options

Type 821 – Modulate Action

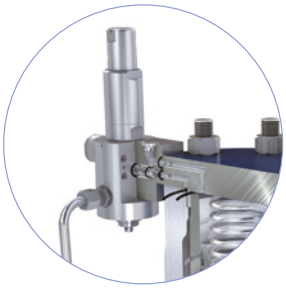
Valve size			3" x 4"				4" x 6"					6" x 8"			8" x 10"	
Standard Orifice acc. to API 526		J	K	L		L	M	N	P		Q	R		T	
Extra Orifice					N+					P+			R+		T+
Pilot (Modulate Action)															
Pilot test gag	R33	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Pilot lifting device	R25	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797	$797
Pilot lifting device manuelly operated with test gag	R22	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398	$398
Tag (foil/paper)	R94	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Stainless steel tag	R95	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40
Accessories															
Backflow preventer		*	*	*	*	*	*	*	*	*	*	*	*	*	*
Field test connection	R26	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348
Pilot supply filter	R30	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093	$1,093
Manual blowdown – to atmosphere	R27	$348	$348	$348	$348	$348	$348	$348	$348	$348	$348	$498	$348	$348	$348
Manual blowdown – into main valve outlet	R24	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845	$845
Remote sensing[1)]	R28	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Swagelok Connection	R23	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Needle valve for field test connection	R4A	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993	$993

[1)] Not possible to use in combination with R26 or R30

All prices in $

Type 810

Type 820



Type 810 Pilot control without main valve – Pop Action

				Pressure range [psig] 36 – 2190	2191 – 3713
			Article number	8104.1000	8104.2000
			Price	$2,498	$2,498
Options					
Explosive Decompression conform design	for Pop Action Pilot ≥ 102 bar	FKM "ED" [1]	R1A	$232	$232
		FFKM "ED" [1]	R1B	$973	$973
Soft sealing	for all Pop Action Pilots	FKM	R07	$0	–
		EPDM	R08	$0	–
		FFKM	R09	$973	$973
Pilot lifting device	manual		R25	$429	$429
Pilot test gag	for all Pop Action Pilots		R33	$312	$312
Spring		Inconel X750	X08	$349	$349
NACE design specification	acc to. MR0175		R70	$583	$583
	acc to. MR0103		R93	$583	$583
Stainless steel tag	for all Pop Action Pilots		R95	$63	$63

Type 820 Pilot control without main valve – Modulate Action

				Pressure range [psig] 36 – 435	436 – 1479	1480 – 3713	3714 – 6178
			Article number	8204.1000	8204.2000	8204.3000	8204.4000
			Price	$4,063	$4,063	$4,063	$4,443
Options							
Explosive Decompression conform design	for Modulate Action Pilot ≥ 102 bar	FKM "ED" [1]	R2A	$232	$232	$232	$232
		FFKM "ED" [1]	R2B	$1,749	$1,749	$1,749	–
Soft sealing	for all Modulate Action Pilots	FKM	R10	$0	$0	–	–
		EPDM	R11	$0	$0	–	–
		FFKM	R12	$1,749	$1,749	$1,749	–
Pilot lifting device	manual		R25	$429	$429	$429	$429
Pilot test gag	for all Modulate Action Pilots		R33	$312	$312	$312	$312
Spring		Inconel X750	X08	$349	$349	$349	$349
NACE design specification	acc to. MR0175		R70	$583	$583	$583	$583
	acc to. MR0103		R93	$583	$583	$583	$583
Stainless steel tag	for all Modulate Action Pilots		R95	$63	$63	$63	$63

[1] Delivery time 8 weeks

Weights – Semi nozzle

US units

Valve size	1" x 2"				1 1/2" x 2"				1 1/2" x 3"			2" x 3"			
Standard Orifice acc. to API 526	D	E	F		D	E	F		G	H		G	H	J	
Extra Orifice				G				H			J				K+
Weight m [lb]															
Flange class															
150 x 150	49.6	49.6	49.6	49.6	59.5	59.5	59.5	59.5	68.4	68.4	68.4	81.6	81.6	81.6	81.6
300 x 150	43.0	43.0	43.0	43.0	52.9	52.9	52.9	52.9	61.7	61.7	61.7	75.0	75.0	75.0	75.0
300 x 300	55.1	55.1	55.1	–	70.6	70.6	70.6	–	81.6	81.6	–	119.1	119.1	119.1	–
600 x 150	49.6	49.6	49.6	49.6	59.5	59.5	59.5	59.5	68.4	68.4	68.4	81.6	81.6	81.6	81.6
600 x 300	55.1	55.1	55.1	–	70.6	70.6	70.6	–	81.6	81.6	–	119.1	119.1	119.1	–
900 x 300	55.1	55.1	55.1	–	70.6	70.6	70.6	–	81.6	81.6	–	119.1	119.1	119.1	–
1500 x 300	55.1	55.1	55.1	–	70.6	70.6	70.6	–	81.6	81.6	–	119.1	119.1	119.1	–
1500 x 600	55.1	55.1	–	–	108.0	108.0	108.0	–	–	–	–	152.1	152.1	152.1	–
2500 x 300	72.8	72.8	–	–	108.0	108.0	108.0	–	–	–	–	152.1	152.1	152.1	–
2500 x 600	72.8	72.8	–	–	108.0	108.0	108.0	–	–	–	–	152.1	152.1	152.1	–

Valve size	3" x 4"				4" x 6"					6" x 8"			8" x 10"	
Standard Orifice acc. to API 526	J	K	L		L	M	N	P		Q	R		T	
Extra Orifice				N+					P+			R+		T+
Weight m [lb]														
Flange class														
150 x 150	130.1	130.1	130.1	130.1	196.2	196.2	196.2	196.2	196.2	430.0	430.0	430.0	579.9	579.9
300 x 150	130.1	130.1	130.1	130.1	196.2	196.2	196.2	196.2	196.2	430.0	430.0	430.0	579.9	579.9
300 x 300	196.2	196.2	196.2	–	291.1	291.1	291.1	291.1	–	423.4	423.4	423.4	617.4	617.4
600 x 150	130.1	130.1	130.1	130.1	196.2	196.2	196.2	196.2	196.2	430.0	430.0	430.0	579.9	579.9
600 x 300	196.2	196.2	196.2	–	291.1	291.1	291.1	291.1	–	423.4	423.4	423.4	617.4	617.4
900 x 300	196.2	196.2	196.2	–	291.1	291.1	291.1	291.1	–					
1500 x 300	196.2	196.2	196.2	–	291.1	291.1	291.1	291.1	–					
1500 x 600	196.2	196.2	196.2	–	291.1	291.1	291.1	291.1	–					

Flange drillings acc. to DIN EN 1092-1

				Standard Orifice	D	E	F		D	E	F		G	H		G	H	J	
				Extra Orifice				G				H			J				K+
				Valve size DN	25 x 50				40 x 50				40 x 80			50 x 80			
Inlet		Outlet		Art. No															
Flange rating class	Option code	Flange rating class	Option code																
PN 10	H44	PN 10	H50	8112. 8212. 8114. 8214. 8113. 8213.	0220	0230	0240	1900	0040	0050	0060	1830	0070	0080	1840	0090	0100	0110	1850
PN 16	H45	PN 16	H51		0220	0230	0240	1900	0040	0050	0060	1830	0070	0080	1840	0090	0100	0110	1850
PN 25	H46	PN 10	H50		0220	0230	0240	1900	0250	0260	0270	1910	0280	0290	1920	0300	0310	0320	1930
		PN 16	H51		0220	0230	0240	1900	0250	0260	0270	1910	0280	0290	1920	0300	0310	0320	1930
PN 40	H47	PN 10	H50		0220	0230	0240	1900	0250	0260	0270	1910	0280	0290	1920	0300	0310	0320	1930
		PN 16	H51		0220	0230	0240	1900	0250	0260	0270	1910	0280	0290	1920	0300	0310	0320	1930
		PN 25	H52		1060	1070	1080	–	1090	1100	1110	1130	1120	1130	–	–	–	–	–
		PN 40	H15		1060	1070	1080	–	1090	1100	1110	1130	1120	1130	–	–	–	–	–
PN 63	H10	PN 10	H50		–	–	–	–	–	–	–	–	–	–	–	0720	0730	0740	2090
		PN 16	H51		–	–	–	–	–	–	–	–	–	–	–	0720	0730	0740	2090
		PN 25	H52		1060	1070	1080	–	1090	1100	1110	1130	1120	1130	–	1140	1150	1160	–
		PN 40	H15		1060	1070	1080	–	1090	1100	1110	1130	1120	1130	–	1140	1150	1160	–
PN 100	H17	PN 25	H52		1060	1070	1080	–	1090	1100	1110	1130	1120	1130	–	1140	1150	1160	–
		PN 40	H15		1060	1070	1080	–	1090	1100	1110	1130	1120	1130	–	1140	1150	1160	–
PN 160	H11	PN 40	H15		1060	1070	1080	–	1090	1100	1110	1130	1120	1130	–	1140	1150	1160	–
		PN 63	H16		–	–	–	–	1630	1640	1650	–	–	–	–	–	–	–	–
PN 250	H12	PN 40	H15		1240	1250	1260	–	1270	1280	1290	1310	1300	1310	–	1320	1330	1340	–
		PN 63	H16		1600	1610	–	–	1630	1640	1650	–	–	–	–	1680	1690	1700	–
PN 320	H13	PN 40	H15		1600	1610	–	–	1630	1640	1650	–	–	–	–	1680	1690	1700	–
		PN 63	H16		1600	1610	–	–	1630	1640	1650	–	–	–	–	1680	1690	1700	–
PN 400	H14	PN 40	H15		1600	1610	–	–	1630	1640	1650	–	–	–	–	1680	1680	1700	–
		PN 63	H16		1600	1610	–	–	1630	1640	1650	–	–	–	–	1680	1680	1700	–

Flange drillings, flange facings

Flange drillings acc. to DIN EN 1092-1

				Standard Orifice	J	K	L		L	M	N	P		Q	R		T	
				Extra Orifice				N+					P+			R+		T+
				Valve size DN	80 x 100				100 x 150					150 x 200			200 x 250	
Inlet		Outlet		Art. No														
Flange rating class	Option code	Flange rating class	Option code															
PN 10	H44	PN 10	H50	8112. 8212. 8114. 8214. 8113. 8213.	0120	0130	0140	1860	0150	0160	0170	0180	1870	0190	0200	1880	0210	1890
PN 16	H45	PN 16	H51		0120	0130	0140	1860	0150	0160	0170	0180	1870	0190	0200	1880	0210	1890
PN 25	H46	PN 10	H50		0330	0340	0350	1940	0360	0370	0380	0390	1950	0400	0410	1960	0420	1970
		PN 16	H51		0330	0340	0350	1940	0360	0370	0380	0390	1950	0400	0410	1960	0420	1970
PN 40	H47	PN 10	H50		0330	0340	0350	1940	0360	0370	0380	0390	1950	0400	0410	1960	0420	1970
		PN 16	H51		0330	0340	0350	1940	0360	0370	0380	0390	1950	0400	0410	1960	0420	1970
		PN 25	H52		–	–	–	–	–	–	–	–	–	–	–	–	0420	1970
		PN 40	H15		–	–	–	–	–	–	–	–	–	–	–	–	1050	–
PN 63	H10	PN 10	H50		0750	0760	0770	2100	0780	0790	0800	0810	2110	0820	0830	2120	0840	2130
		PN 16	H51		0750	0760	0770	2100	0780	0790	0800	0810	2110	0820	0830	2120	0840	2130
		PN 25	H52		1170	1180	1190	–	1200	1210	1220	1230	–	1030	1040	–	0840	2130
		PN 40	H15		1170	1180	1190	–	1200	1210	1220	1230	–	1030	1040	–	1050	–
		PN 63	H16		1170	1180	1190	–	1560	1570	1580	1590	–	–	–	–	–	–
PN 100	H17	PN 25	H52		1170	1180	1190	–	1200	1210	1220	1230	–	1030	1040	–	–	–
		PN 40	H15		1170	1180	1190	–	1200	1210	1220	1230	–	1030	1040	–	–	–
		PN 63	H16		1170	1180	1190	–	1560	1570	1580	1590	–	–	–	–	–	–
PN 160	H11	PN 40	H15		1170	1180	1190	–	1200	1210	1220	1230	–	–	–	–	–	–
		PN 63	H16		1170	1180	1190	–	1560	1570	1580	1590	–	–	–	–	–	–
PN 250	H12	PN 40	H15		1350	1350	1370	–	1380	1390	1400	1410	–	–	–	–	–	–
		PN 63	H16		1350	1350	1370	–	1560	1570	1580	1590	–	–	–	–	–	–

Flange facings acc. to ASME B16.5

			Smooth Finish[1]		Serrated Finish		RTJ-groove				
			Inlet	Outlet	Inlet	Outlet	Inlet			Outlet	
	DN / NPS						Class 150	Class 300	Class 600	Class 150	
Type	Inlet	Outlet	Option code		Option code		Option code				
811, 821	all	all	L52	L53	*	*	H62			H63	
Nozzle design							Class 900	Class 1500	Class 2500	Class 300	Class 600
	all	all	L52	L53	*	*	L58			H63	

[1] Smooth finish is not defined in the effective standards.

Definitions as well as signs and symbols please refer to page 6.

Note: Flange drillings and facings meet always the requirements of mentioned flange standards.
Flange thickness and outer diameter may vary from flange standard.

High Efficiency
LESER Original Spare Parts Kits – Main valve

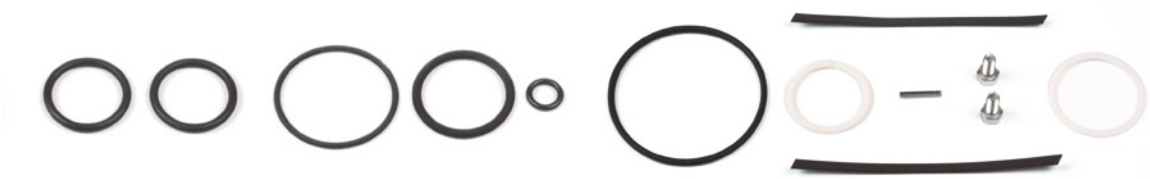
All prices in $

The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER pilot operated safety valve. Delivery time 3 days ex works Hohenwestedt.

Contents — Main valve

Item	Component	Material	Quantity
6.3[1], 7.3, 60, 61, 63, 67	O-ring	FKM / EPDM / FFKM	6
6.4[1]	Backup ring	PTFE	1
6.5	Guide ring	PTFE-carbon filler	2
10	Parallel pin	1.4310 / Stainless steel	1
58	Screw	1.4310 / Stainless steel	2
62	Backup ring	PTFE	1

[1] For flange ratings ≥ Class 900 x 150 in deviation from the O-ring (Item 6.3) and the backup ring (Item 6.4) lip seals have to be considered.



Spare Parts Kits

Valve size	1" x 2"	1 1/2" x 2"	1 1/2" x 3"	2" x 3"	3" x 4"	4" x 6"	6" x 8"	8" x 10"
Soft sealing FKM								
Art. No. 5012.	1130 $265	1131 $265	1132 $317	1133 $317	1134 $370	1135 $423	1136 $582	1137 $849
Soft sealing EPDM								
Art. No. 5012.	1138 $265	1139 $265	1140 $317	1141 $317	1142 $370	1143 $423	1144 $582	1145 $849
Soft sealing FFKM								
Art. No. 5012.	1146 $3,174	1147 $3,703	1148 $3,703	1149 $4,234	1150 $7,145	1151 $8,994	1152 $12,169	1153 $14,815
Soft sealing FKM ≥ Class 900 x 150[2]								
Art. No. 5012.	2130 $741	2131 $849	2132 $900	2133 $1,004	2134 $1,271	2135 $1,454	–	–
Soft sealing EPDM ≥ Class 900 x 150[2]								
Art. No. 5012.	2138 $741	2139 $849	2140 $900	2141 $1,004	2142 $1,271	2143 $1,454	–	–
Soft sealing FFKM ≥ Class 900 x 150[2]								
Art. No. 5012.	2146 $3,969	2147 $4,764	2148 $4,764	2149 $5,553	2150 $8,730	2151 $11,113	–	–
Lubricant								
Halocarbon oil 56S				333.0660.0016				
Molykote D				333.0660.0001				
				$7				

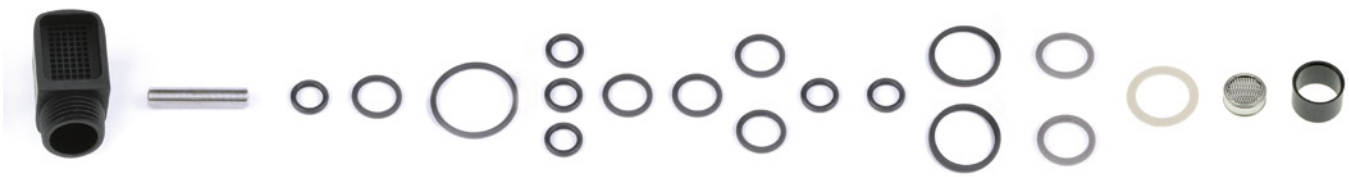
LESER Original Spare Parts Kits – Type 811 Pop Action

All prices in $

The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER pilot operated safety valve. Delivery time 3 days ex works Hohenwestedt.

Contents – Type 811 – Pop Action

Item	Component	Material	Quantity
64	Bug screen	Plastic	1
15	Plunger	1.4404 / 316L	1
6, 7, 8	O-ring Field test connection	FKM / EPDM / FFKM	3
24.4, 24.5, 24.6	O-ring Manifold bloc	FKM / EPDM / FFKM	7
30, 31, 32	O-ring	FKM / EPDM / FFKM	4
24.8	Gasket	1.4401 / 316	2
35	Gasket	PTFE	1
48	Screen	1.4404 / 316L	1
49	Support ring	Plastic	1



Spare Parts Kits – Type 811 – Pop Action

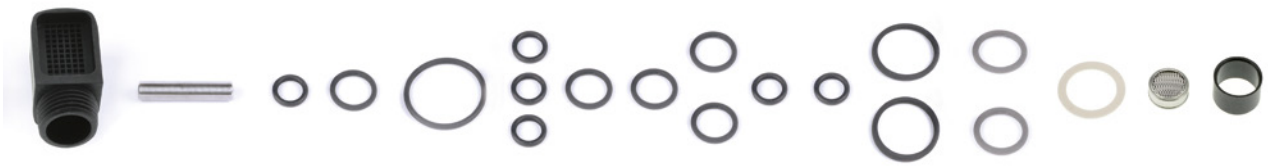
Valve size		**1" x 2" up to 8" x 10"**
Orifice		**D – T**
Soft sealing FKM		
	Art. No.	
Pilot 2,5 – 151 bar 36 – 2190 psig	**5012.**	**1163** $184
Pilot 151,01 – 256 bar > 2190 – 3705 psig	**5012.**	**1166** $317
Soft sealing EPDM		
	Art. No.	
Pilot 2,5 – 151 bar 36 – 2190 psig	**5012.**	**1164** $184
Pilot 151,01 – 256 bar > 2190 – 3705 psig	**5012.**	**1167** $317
Soft sealing FFKM		
	Art. No.	
Pilot 2,5 – 151 bar 36 – 2190 psig	**5012.**	**1165** $1,984
Pilot 151,01 – 256 bar > 2190 – 3705 psig	**5012.**	**1168** $2,911
Lubricant		
Halocarbon oil 56S		333.0660.0016
Molykote D		333.0660.0001 $7

High Efficiency
LESER Original Spare Parts Kits – Type 821 Modulate Action

All prices in $

Contents Type 821 – Modulate Action

			Diaphragm design	Piston design
Item	Component	Material	Quantity	Quantity
64	Bug screen	Plastic	1	1
6, 7, 8	O-ring Field test connection	FKM / EPDM / FFKM	3	3
24.4, 24.5, 24.6	O-ring Manifold bloc	FKM / EPDM / FFKM	7	7
24.8	Gasket	1.4401	2	2
30, 31, 32, 34, 35, 46	O-ring	FKM / EPDM / FFKM	7	7
44	Parallel pin	Stainless steel	1	1
48	Screen (high pressure application)	1.4404 / 316L	1	1
49	Support ring	Plastic	1	1
69	Bearing	1.4122	1	1
72	Diaphragm	FKM / EPDM / PTFE-FKM	1	–
73, 74	O-ring	FKM / EPDM / FFKM	2	–
77	Lock screw	1.4401 / Stainless steel	1	–
80	Guide ring	1.4404 / 316L	1	–



Spare Parts Kits Type 821 – Modulate Action

Valve size		1" x 2" up to 8" x 10"
Orifice		D – T
Soft sealing FKM		
Diaphragm design 2.5 – 30 bar 36 – 435 psig	Art. No **5012.**	**1157** $370
Piston design 30.01 – 102 bar > 435 – 1480 psig	Art. No **5012.**	**1160** $370
102.01 – 256 bar > 1480 – 3705 psig	Art. No **5012.**	**1169** $582
256.01 – 426 bar > 3705 – 6170 psig	Art. No **5012.**	**1220** $635
Soft sealing EPDM		
Diaphragm design 2.5 – 30 bar 36 – 435 psig	Art. No **5012.**	**1158** $370
Piston design 30.01 – 102 bar > 435 – 1480 psig	Art. No **5012.**	**1161** $370
102.01 – 256 bar > 1480 – 3705 psig	Art. No **5012.**	**1170** $1,454
Soft sealing FFKM		
Diaphragm design 2.5 – 30 bar 36 – 435 psig	Art. No **5012.**	**1159** $2,645
Piston design 30.01 – 102 bar > 435 – 1480 psig	Art. No **5012.**	**1162** $2,911
102.01 – 256 bar > 1480 – 3705 psig	Art. No **5012.**	**1171** $4,234
Lubricant		
Halocarbon oil 56S		333.0660.0016
Molykote D		333.0660.0001 $7

High Efficiency
Spare parts Type 811, 821 – Nozzle and Metal disc

All prices in $

Type 811, 821

	Valve size		1" x 2"				$1^1/_2$" x 2"				$1^1/_2$" x 3"		
	Standard Orifice acc. to API 526	D	E	F		D	E	F		G	H	
	Extra Orifice				G				H			J
Item	**Designation**	**Mat.**	**Material No.**										
5	**Nozzle**	1.4404 316L	**202.**	3149.9000 $900	3249.9000 $900	3349.9000 $900	3449.9000 $900	3549.9000 $953	3649.9000 $953	3749.9000 $953	3849.9000 $953	3949.9000 $953	4049.9000 $953	4149.9000 $953
	stellited	1.4404 316L	**202.**	3169.9000 $1,454	3269.9000 $1,454	3369.9000 $1,454	–	3569.9000 $1,720	3669.9000 $1,720	3769.9000 $1,720	–	3969.9000 $1,720	4069.9000 $1,720	–
7	**Disc**	1.4404 316L	**213.**	1149.9000 $423	1149.9000 $423	1149.9000 $423	1149.9000 $423	1249.9000 $582	1249.9000 $582	1249.9000 $582	1249.9000 $582	1249.9000 $582	1249.9000 $582	1249.9000 $582
	stellited	1.4404 316L	**213.**	1169.9000 $953	1169.9000 $953	1169.9000 $953	–	1249.9000 $582	1249.9000 $582	1249.9000 $582	1249.9000 $582	1249.9000 $582	1249.9000 $582	–

	Valve size		2" x 3"				3" x 4"			
	Standard Orifice acc. to API 526	G	H	J		J	K	L		
	Extra Orifice				K+				N+	
Item	**Designation**	**Mat.**	**Material No.**							
5	**Nozzle**	1.4404 316L	**202.**	4249.9000 $1,587	4349.9000 $1,587	4449.9000 $1,587	4549.9000 $1,587	4649.9000 $1,720	4749.9000 $1,720	4849.9000 $1,720	4949.9000 $1,720
	stellited	1.4404 316L	**202.**	4269.9000 $2,645	4369.9000 $2,645	4469.9000 $2,645	–	4669.9000 $2,911	4769.9000 $2,911	4869.9000 $2,911	–
7	**Disc**	1.4404 316L	**213.**	1349.9000 $795	1349.9000 $795	1349.9000 $795	1349.9000 $795	1449.9000 $1,056	1449.9000 $1,056	1449.9000 $1,056	1449.9000 $1,056
	stellited	1.4404 316L	**213.**	1369.9000 $1,851	1369.9000 $1,851	1369.9000 $1,851	–	1469.9000 $2,249	1469.9000 $2,249	1469.9000 $2,249	–

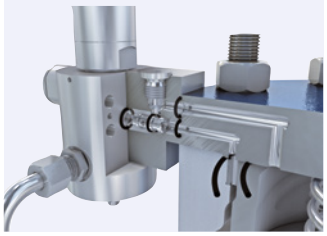
	Valve size		4" x 6"					6" x 8"			8" x 10"	
	Standard Orifice acc. to API 526	L	M	N	P		Q	R		T		
	Extra Orifice					P+			R+		T+	
Item	**Designation**	**Mat.**	**Material No.**									
5	**Nozzle**	1.4404 316L	**202.**	5049.9000 $1,851	5149.9000 $1,851	5249.9000 $1,851	5349.9000 $1,851	5449.9000 $1,851	5549.9000 $2,382	5649.9000 $2,382	5749.9000 $2,382	5849.9000 $3,174	5949.9000 $3,174
	stellited	1.4404 316L	**202.**	5069.9000 $3,174	5169.9000 $3,174	5269.9000 $3,174	5369.9000 $3,174	–	–	–	–	–	–
7	**Disc**	1.4404 316L	**213.**	1549.9000 $1,587	1549.9000 $1,587	1549.9000 $1,587	1549.9000 $1,587	1549.9000 $1,587	1649.9000 $2,382	1649.9000 $2,382	1649.9000 $2,382	1749.9000 $4,234	1749.9000 $4,234
	stellited	1.4404 316L	**213.**	1569.9000 $2,911	1569.9000 $2,911	1569.9000 $2,911	1569.9000 $2,911	–	–	–	–	–	–

High Efficiency
Available options

Field test connection
R26

Set pressure testing with external test medium.

Backflow preventer
(Standard)



Prevents return flow of the medium from the discharge into the system to be secured.

Pilot supply filter
R30

Filter to prevent plugging of the pilot.

Manual blowdown
R27 to atmosphere
R24 into main valve outlet

Functional test of main valve piston.

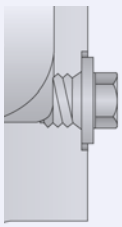
NACE sour gas application
R70: acc. to MR0175
R93: acc. to MR0103

Remote Sensing*
R28

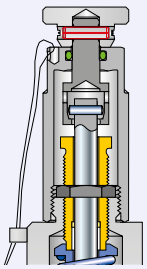
Soft sealing
POSV complete
R05: EPDM
R06: FFKM
R04: FKM (Standard)
R3C: FKM cold -48 °C
R3L: FKM cold -16°C

ED-Design
(Explosive decompression)
R3A (FKM)
R3B (FFKM)

Drain hole
J19: G$^1/_2$
R48: NPT $^1/_2$"

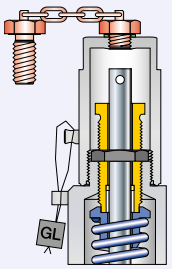


Pilot lifting device
R25



Mechanical lifting of pilot for verification of POSV operation.

Pilot test gag
R33

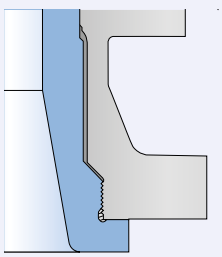


Blocking of operation in case of required hydrostatic testing of vessel.

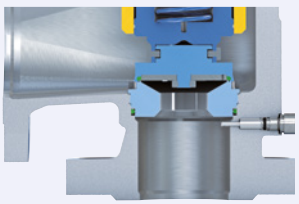
Blowdown
adjusted to x%
R44

Blowdown adjusted: Closing pressure difference as a fixed value between 2 – 15%. Standard adjustment between 3 – 7%.

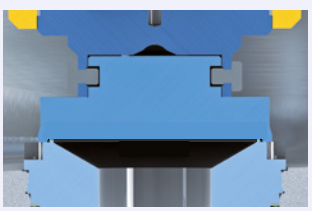
Full nozzle
R69



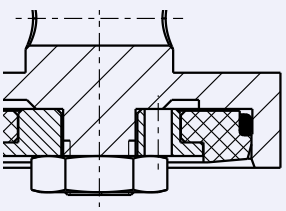
Flange rating class
300 x 300, 600 x 300
H65, H67



Main valve disc
R71 metal sealing



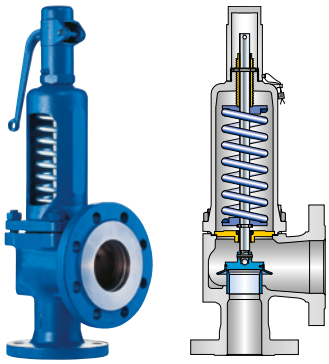
Disc with sealing plate
I39: PTFE
R67: PEEK



*Actual operating pressure sensed to pilot. No influence of inlet pressure losses, stable function of POSV.

High Performance
Flanged Safety Relief Valves

High Performance



All prices in $

Available flange ratings
and flange facings
on page 136 and 137

Type 441, 442 ANSI

		Valve size	1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
		Actual Orifice diameter d_0 [mm]	23	29	37	46	60	92
		Actual Orifice area A_0 [inch²]	0.644	1.024	1.667	2.576	4.383	10.304
		API eff. Orifice area [inch²]	0.307	0.503	0.785	1.838	2.853	6.380
		Weight [lb]	22	29	35	49	73	165
Body material: WCB								
					Class 150 / Class 300			
Bonnet closed	**H2**	Art. No. **4412.**	**4812** $1,850	**4822** $2,085	**4832** $2,511	**4842** $3,383	**4862** $4,503	**4872** $7,387
	H3	Art. No. **4412.**	**4813** $1,922	**4823** $2,219	**4833** $2,644	**4843** $3,511	**4863** $4,684	**4873** $7,568
	H4	Art. No. **4412.**	**4814** $2,012	**4824** $2,350	**4834** $2,776	**4844** $3,645	**4864** $4,920	**4874** $7,806
Bonnet open	**H3**	Art. No. **4422.**	**4815** $1,922	**4825** $2,219	**4835** $2,644	**4845** $3,511	**4865** $4,684	**4875** $7,568
		p [psig] S/G/L	**3 – 710 (740)**	**3 – 695**	**3 – 665**	**3 – 715**	**3 – 580**	**3 – 350**
Body material: CF8M								
					Class 150 [H64]			
Bonnet closed	**H2**	Art. No. **4414.**	**7912** $4,462	–	**7932** $6,015	**7942** $7,374	**7962** $10,246	**7972** $14,517
	H4	Art. No. **4414.**	**7914** $4,941	–	**7934** $6,701	**7944** $8,065	**7964** $11,195	**7974** $15,471
		p [psig] S/G/L	**3 – 275**	–	**3 – 275**	**3 – 275**	**3 – 275**	**3 – 275**
					Class 300			
Bonnet closed	**H2**	Art. No. **4414.**	**7912** $4,462	–	**7932** $6,015	**7942** $7,374	**7962** $10,246	**7972** $14,517
	H4	Art. No. **4414.**	**7914** $4,941	–	**7934** $6,701	**7944** $8,065	**7964** $11,195	**7974** $15,471
		p [psig] S/G/L	**3 – 616 (720)**	–	**3 – 580**	**3 – 464 (580)**	**3 – 390**	**3 – 290 (350)**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

All prices in $

Options — Type 441, 442 ANSI

Valve size				1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
Actual Orifice diameter d_0 [mm]				23	29	37	46	60	92
Actual Orifice area A_0 [inch^2]				0.644	1.024	1.667	2.576	4.383	10.304
Special machining of flange			per flange	$250	$250	$250	$250	$398	$398
Disc[1]		316L	L44	$90	$125	$125	$125	$198	$250
O-ring disc[2]	NBR	Buna-N®	"N" J30	$173	$224	$224	$224	$398	$647
	CR	Neoprene®	"K" J21	$173	$224	$224	$224	$398	$647
	EPDM	Buna-EP®	"D" J22	$173	$224	$224	$224	$398	$647
	FPM/FKM	Viton®	"L" J23	$173	$224	$224	$224	$398	$647
	FFKM	Kalrez®	"C" J20	$547	$896	$896	$896	$1,991	$3,232
Drain hole		1/4"	J18	$99	$99	$99	$99	$99	x
		1/2"	J19	x	x	x	x	x	$99
Test gag		H4	J69	$198	$198	$198	$198	$198	$198
		H2	J70	$198	$198	$198	$198	$198	$198
Stainless steel bellows		441	J78	$697	$1,366	$1,366	$1,366	$2,238	$3,980
		442	J68						
Elastomer bellows			J79	$250	$250	$250	$250	$398	$398
Heating jacket for body		4412		$3,481	$3,481	$4,477	$4,477	$4,972	$6,464
		4422							
		4414		$2,736	$2,736	$3,481	$3,481	$4,972	$6,464
Heating jacket spacer			H33	$1,740	$1,740	$1,740	$1,740	$2,983	$2,983
High temperature alloy spring			X01	$51	$125	$125	$125	*	*
Stainless steel spring			X04	$51	$224	$224	$250	$250	$993
Adaptor for lift indicator		H4	J39[4]	$250	$250	$250	$250	$250	$250
Lift indicator			J93[4]	$746	$746	$746	$746	$746	$746
Marking with stainless steel tag			M29	$40	$40	$40	$40	$40	$40
Free of oil and grease	Standard		J85	$250	$398	$398	$498	$746	$746
	increased requirement		J92	$298	$498	$498	$647	$845	$845
Oxygen service[3]		4414	N7D	$298	–	$498	$647	$845	$845
Gasket GYLON® (filled PTFE)			L68	$80	$80	$80	$80	$150	$150

[1] Valid for WCB, standard for CF8M
[2] See page 91 for elastomer limitation
[3] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.
[4] In case a gastight valve is needed (closed bonnet and cap), bellows must be used as well.

High Performance

All prices in $

Available flange ratings
and flange facings
on page 136 and 137

Type 441, 442 ANSI — acc. to DIN EN ISO 4126-1 / ASME XIII, VIII

		Valve size	10" x 14"	12" x 16"	16" x 20"
		Actual Orifice diameter d_0 [mm]	200	235	295
		Actual Orifice area A_0 [mm^2]	31416	43374	68349
		Weight[1] [lb]	1135	1532	2502
Body material: 1.0619 (SA-216 WCB)					
			Class 150	**Class 150**	**Class 150**
Bonnet closed	**H2**	Art.-No. **4412.**	**5242** $33,625	**5252** $44,485	**5262** $51,672
	H3	Art.-No. **4412.**	**–**	**–**	**–**
	H4	Art.-No. **4412.**	**5244** $34,376	**5254** $45,339	**5264** $61,851
Bonnet open	**H3**	Art.-No. **4422.**	**5245** $34,176	**5255** $61,851	**5265** $61,851
	p [psig]	S/G/L **2.9 –**	**261**	**191**	**145**
Body material: 1.4408 (SA-351 CF8M)					
			Class 150	**Class 150**	**Class 150**
Bonnet closed	**H2**	Art.-No. **4414.**	**8242** $59,098	**8252** $78,193	**8262** $105,112
	H4	Art.-No. **4414.**	**8244** $60,328	**8254** $79,666	**8264** $106,428
	p [psig]	S/G/L **2.9 –**	**101 / 261**[1]	**47 / 145**[1]	**50 / 64**[1]

[1] with steel spring X01 and bellows J78

Options see page 133

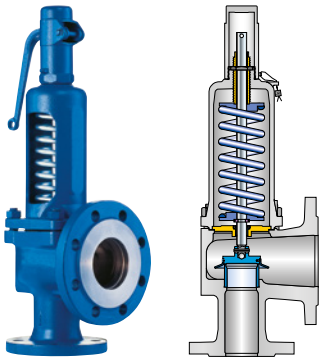
All prices in $

Type 441, 442 ANSI			acc. to AD 2000-Merkblatt A2		
		Valve size	10" x 14"	12" x 16"	16" x 20"
		Actual Orifice diameter d_0 [mm]	200	235	295
		Actual Orifice area A_0 [mm^2]	31416	43374	68349
		Weight[1] [lb]	1135	1532	2502
Body material: 1.0619 (SA-216 WCB)					
			Class 150	**Class 150**	**Class 150**
Bonnet closed	**H2**	Art.-No. **4412.**	**5212** $35,078	**5222** $46,468	**5232** $63,618
	H3	Art.-No. **4412.**	**–**	**–**	**–**
	H4	Art.-No. **4412.**	**5214** $35,830	**5224** $47,325	**5234** $64,428
Bonnet open	**H3**	Art.-No. **4422.**	**5215** $35,629	**5225** $47,325	**5235** $64,428
	p [psig]	S/G/L **2.9 –**	**261**	**239**	**145**
Body material: 1.4408 (SA-351 CF8M)					
			Class 150	**Class 150**	**Class 150**
Bonnet closed	**H2**	Art.-No. **4414.**	**8212** $63,861	**8222** $83,485	**8232** $111,822
	H4	Art.-No. **4414.**	**8214** $65,093	**8224** $84,956	**8234** $113,222
	p [psig]	S/G/L **2.9 –**	**74 / 261**[1]	**38 / 145**[1]	**47 / 64**[1]

[1] with steel spring X01 and bellows J78

Options see page 133

High Performance



All prices in $

Available flange ratings and flange facings on page 136 and 137

Type 441, 442 DIN

DN_I			20	25	32	40	50	65	80	100	125	150	200
DN_O			40	40	50	65	80	100	125	150	200	250	300
Actual Orifice diameter d_0 [mm]			18	23	29	37	46	60	74	92	98	125	165
Actual Orifice area A_0 [inch^2]			0.394	0.644	1.024	1.667	2.576	4.383	6.666	10.304	11.691	19.021	33.142
API Orifice designation			E	F	G	H	K	L	N	P	P	Q	R
API eff. Orifice area [inch^2]			0.196	0.307	0.503	0.785	1.838	2.853	4.340	6.380	6.380	11.050	16.000
Weight [lb]			20	20	26	35	49	71	123	165	187	289	628
Body material: ductile Gr. 60-40-18													
				PN 40 Class 150							PN 16 Class 150		PN 25 Class 150
Bonnet closed	**H2**	Art. No. **4415.**	–	**7382** $1,387	**7392** $1,568	**7402** $1,885	**7412** $2,534	**7422** $2,875	**7432** $3,852	**7442** $5,540	**7452** $7,602	**7462** $10,706	**7472** $17,443
	H3	Art. No. **4415.**	–	**7383** $1,462	**7393** $1,695	**7403** $2,016	**7413** $2,667	**7423** $3,055	**7433** $4,034	**7443** $5,723	**7453** $7,789	–	–
	H4	Art. No. **4415.**	–	**7384** $1,547	**7394** $1,830	**7404** $2,150	**7414** $2,801	**7424** $3,293	**7434** $4,271	**7444** $5,963	**7454** $8,027	**7464** $11,501	**7474** $18,233
Bonnet open	**H3**	Art. No. **4425.**	–	**7385** $1,462	**7395** $1,695	**7405** $2,016	**7415** $2,667	**7425** $3,055	**7435** $4,034	**7445** $5,723	**7455** $7,789	**7465** $11,288	**7475** $18,023
	p [psig]	S/G/L **1.5 –**	–	**580**	**580**	**580**	**580**	**580**	**464 (580)**	**580**	**230**	**230**	**290 (363)**
Body material: WCB													
				PN 40 Class 150									PN 25 Class 150
Bonnet closed	**H2**	Art. No. **4412.**	**4502** $1,850	**4512** $1,850	**4522** $2,085	**4532** $2,511	**4542** $3,383	**4552** $3,827	**4562** $5,131	**4572** $7,387	**4582** $10,134	**4592** $14,277	**4612** $23,255
	H3	Art. No. **4412.**	**4503** $1,922	**4513** $1,922	**4523** $2,219	**4533** $2,644	**4543** $3,511	**4553** $4,015	**4563** $5,313	**4573** $7,568	**4583** $10,317	–	–
	H4	Art. No. **4412.**	**4504** $2,012	**4514** $2,012	**4524** $2,350	**4534** $2,776	**4544** $3,645	**4554** $4,251	**4564** $5,553	**4574** $7,806	**4584** $10,557	**4594** $15,069	**4614** $24,049
Bonnet open	**H3**	Art. No. **4422.**	**4505** $1,922	**4515** $1,922	**4525** $2,219	**4535** $2,644	**4545** $3,511	**4555** $4,015	**4565** $5,313	**4575** $7,568	**4585** $10,317	**4595** $14,857	**4615** $23,837
	p [psig]	S/G/L **1.5 –**	**580**	**580**	**580**	**580**	**580**	**580**	**464 (580)**	**580**	**230**	**230**	**290 (363)**
Body material: CF8M													
				PN 40 Class 150									PN 25 Class 150
Bonnet closed	**H2**	Art. No. **4414.**	– [1]	**4642** $4,462	**4652** $5,187	**4662** $6,015	**4672** $7,374	**4682** $8,609	**4692** $11,806	**4702** $14,517	**4712** $18,898	**4722** $26,150	**4732**[2] $49,032
	H4	Art. No. **4414.**	– [1]	**4644** $4,941	**4654** $5,877	**4664** $6,701	**4674** $8,065	**4684** $9,561	**4694** $12,758	**4704** $15,471	**4714** $19,854	**4724** $27,475	**4734**[2] $49,836
	p [psig]	S/G/L **1.5 –**	–	**580**	**580**	**580**	**480 (540)**	**410**	**200 (360)**	**290 (380)**	**220 (350)**	**100 (140)**	**2.9 – (87)**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

[1] Please use Type 4594.

Art. No.	Option code
4594.2182	I26I49
4594.2184	I26I49

[2] Delivery time on request

All prices in $

Options

Type 441, 442 DIN

				DN	20	25	32	40	50	65	80	100	125	150	200
				DN_O	40	40	50	65	80	100	125	150	200	250	300
				Actual Orifice diameter d_0 [mm]	18	23	29	37	46	60	74	92	98	125	165
				Actual Orifice area A_0 [inch²]	0.394	0.644	1.024	1.667	2.576	4.383	6.666	10.304	11.691	19.021	33.142
Special machining of flange			per flange		$250	$250	$250	$250	$250	$398	$398	$398	$398	$746	$746
Disc[1]		316L	L44		$90	$90	$125	$125	$125	$198	$198	$250	$250	$250	$298
O-ring disc[2]	NBR	Buna-N®	"N"	J30	$173	$173	$224	$224	$224	$398	$398	$647	$647	$647	on request
	CR	Neoprene®	"K"	J21	$173	$173	$224	$224	$224	$398	$398	$647	$647	$647	
	EPDM	Buna-EP®	"D"	J22	$173	$173	$224	$224	$224	$398	$398	$647	$647	$647	
	FPM/FKM	Viton®	"L"	J23	$173	$173	$224	$224	$224	$398	$398	$647	$647	$647	
	FFKM	Kalrez®	"C"	J20	$547	$547	$896	$896	$896	$1,991	$1,991	$3,232	$3,232	$3,232	
Drain hole			1/4"	J18	$99	$99	$99	$99	$99	$99	$99	x	x	x	x
			1/2"	J19	x	x	x	x	x	x	x	$99	$99	$99	$99
Test gag				H4	J69	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198
				H2	J70	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198
Stainless steel bellows				441	J78	$697	$697	$1,366	$1,366	$1,366	$2,238	$2,238	$3,980	$3,980	$5,967	$7,957
				442	J68											
Elastomer bellows				EPDM	J79	$250	$250	$250	$250	$250	$398	$398	$498	$498	$498	–
				NBR	J87	$498	$498	$498	$498	$498	$797	$797	$993	$993	$993	–
Heating jacket for body				4412		–	$3,481	$3,481	$4,477	$4,477	$4,972	$4,972	$6,464	$6,464	$9,946	on request
				4422												
				4414		–	$2,736	$2,736	$3,481	$3,481	$4,228	$4,972	$6,464	$6,464	$9,946	on request
Heating jacket spacer					H33	$1,740	$1,740	$1,740	$1,740	$1,740	$2,983	$2,983	$2,983	$2,983	$2,983	on request
High temperature alloy spring					X01	$51	$51	$125	$125	$125	*	*	*	*	*	*
Stainless steel spring					X04	$51	$51	$224	$224	$250	$250	$298	$993	$993	$1,991	on request
Adaptor for lift indicator			H4		J39[4]	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Lift indicator					J93[4]	$746	$746	$746	$746	$746	$746	$746	$746	$746	$746	$746
Marking with stainless steel tag					M29	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40
Free of oil and grease	Standard				J85	$250	$250	$398	$398	$498	$746	$746	$746	$746	$746	$746
	increased requirement				J92	$298	$298	$498	$498	$647	$845	$845	$845	$845	$845	$845
Oxygen service[3]		4414			N7D	–	$298	$498	$498	$647	$845	$845	$845	$845	$845	–
Gasket GYLON® (filled PTFE)					L68	$80	$80	$80	$80	$80	$150	$150	$150	$150	$250	–

[1] Valid for WCB, standard for CF8M
[2] See page 91 for elastomer limitation
[3] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.
[4] In case a gastight valve is needed (closed bonnet and cap), bellows must be used as well.

High Performance

All prices in $

Available flange ratings
and flange facings
on page 136 and 137

Type 441, 442 DIN — acc. to DIN EN ISO 4126-1 / ASME XIII, VIII

		DN_{I+O}	250 x 350	300 x 400	400 x 500
		Valve size	10" x 14"	12" x 16"	16" x 20"
		Actual Orifice diameter d_0 [mm]	200	235	295
		Actual Orifice area A_0 [mm^2]	31416	43374	68349
		Weight[1] [lb]	1135	1532	2502
Body material: 1.0619 (SA-216 WCB)					
			PN 25	**PN 25**	**PN 25**
Bonnet closed	**H1**	Art.-No. **4412.**	**5022** $33,625	**5032** $44,485	**5042** $61,073
	H3	Art.-No. **4412.**	**–**	**–**	**–**
	H6	Art.-No. **4412.**	**5024** $34,376	**5034** $45,339	**5044** $61,851
Federhaube offen	**H3**	Art.-No. **4422.**	**5025** $34,176	**5035** $45,339	**5045** $54,979
	p [psig] S/G/L **2.9 –**		**261**	**191**	**145**
Body material: 1.4408 (SA-351 CF8M)					
			PN 25	**PN 25**	**PN 16**
Bonnet open	**H1**	Art.-No. **4414.**	**5052** $59,098	**5062** $78,193	**5072** $105,112
	H6	Art.-No. **4414.**	**5054** $60,328	**5064** $79,666	**5074** $106,428
	p [psig] S/G/L **2.9 –**		**101 / 261**[1]	**47 / 145**[1]	**50 / 64**[1]

Type 441, 442 DIN — acc. to AD 2000-Merkblatt A2

		DN_{I+O}	250 x 350	300 x 400	400 x 500
		Valve size	10" x 14"	12" x 16"	16" x 20"
Body material: 1.0619 (SA-216 WCB)					
			PN 25	**PN 25**	**PN 25**
Bonnet closed	**H1**	Art.-No. **4412.**	**4922** $35,078	**4932** $46,468	**4942** $63,618
	H3	Art.-No. **4412.**	**–**	**–**	**–**
	H6	Art.-No. **4412.**	**4924** $35,830	**4934** $47,325	**4944** $64,428
Bonnet open	**H3**	Art.-No. **4422.**	**4925** $35,629	**4935** $47,325	**4945** $64,428
	p [psig] S/G/L **2.9 –**		**261**	**239**	**145**
Body material: 1.4408 (SA-351 CF8M)					
			PN 25	**PN 25**	**PN 16**
Bonnet closed	**H1**	Art.-No. **4414.**	**4952** $63,861	**4962** $83,485	**4972** $111,822
	H6	Art.-No. **4414.**	**4954** $65,093	**4964** $84,956	**4974** $113,222
	p [psig] S/G/L **2.9 –**		**74 / 261**[1]	**38 / 145**[1]	**47 / 130**[1]

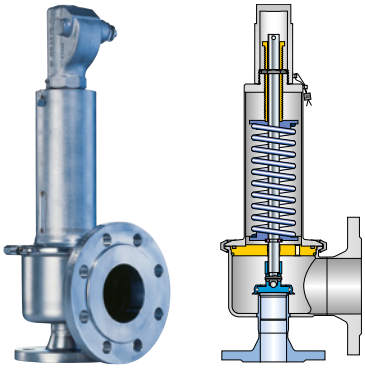
[1] with steel spring X01 and bellows J78

All prices in $

Options				Type 441, 442 DIN, ANSI		
			DN_{I+O}	250 x 350	300 x 400	400 x 500
			Valve size	10" x 14"	12" x 16"	16" x 20"
			Actual Orifice diameter d_0 [mm]	200	235	295
			Actual Orifice area A_0 [inch^2]	48.70	67.23	105.94
			Weight[1] [lb]	1,135	1,532	2,502
Lift stopper			J51	$598	$598	$598
Drain hole		G 1/2	J19	*	*	*
Stainless steel bellows		441	J78	$7,957	$9,946	$10,940
		442	J68			
		low pressure bellows	J78J63	–	–	–
Stainless steel spring		1.4310	X04	on request	on request	on request
Special springs			S54	on request	on request	on request
Special machining of flange		Inlet		$1,143	$1,042	$1,865
		Outlet		$1,618	$1,865	$2,238
Flange pressure rating Type 4412	PN 10 – B1	Inlet	H44	0,-	0,-	0,-
	PN 16 – B1	Inlet	H45	0,-	*	*
		Outlet	H51	0,-	0,-	0,-
	PN 25 – B1[2]	Inlet	H46	*	0,-	0,-
		Outlet	H52	0,-	–	–
	PN 40 – B1[2]	Inlet	H47	0,-	–	–
	Class 150 – RF	Inlet	H64	0,-	0,-	0,-
		Outlet	H79	0,-	0,-	0,-
	Class 300 – RF[2]	Inlet	H65	0,-	0,-	0,-
Flange pressure rating Type 4414	PN 10 – B1	Inlet	H44	0,-	0,-	0,-
	PN 16 – B1[2]	Inlet	H45	0,-	*	*
		Outlet	H51	0,-	–	–
	PN 25 – B1	Inlet	H46	*	0,-	–
	PN 40 – B1	Inlet	H47	0,-	–	–
	Class 150 – RF[2]	Inlet	H64	0,-	0,-	0,-
		Outlet	H79	0,-	0,-	0,-
	Class 300 – RF[2]	Inlet	H65	0,-	0,-	–
Adaptor for lift indicator		H4	J39	$250	$250	$250
Lift indicator			J93	$746	$746	$746
Free of oil and grease	Standard		J85	$746	$746	$746
	increased requirement		J92	$845	$845	$845
Oxygen service[3]		4414	N7D	$845	$845	$845

[1] Preliminary indications.
[2] The body pressure rating may be lower than the flange pressure rating.
[3] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.

High Performance



All prices in $

Available flange ratings
and flange facings
on page 136 and 137

Type 444 ANSI

		Valve size	1" x 2"	1 1/2" x 3"	2" x 3"	2 1/2" x 4"	3" x 4"	3" x 4"
		Actual Orifice diameter d_0 [mm]	23	37	46	60	74	74
		Actual Orifice area A_0 [inch²]	0.644	1.667	2.576	4.383	6.666	6.666
		API eff. Orifice area [inch²]	0.307	0.785	1.838	2.853	4.340	4.340
		Weight [lb]	16	29	31	51	53	53
Body material: 316L								
					Class 150			
Bonnet closed	**H2**	Art. No. **4444.**	**8902** $4,239	**8922** $5,717	**8932** $7,006	**8942** $9,733	**8952** $13,793	**8962** $13,793
	H4	Art. No. **4444.**	**8904** $4,712	**8924** $6,403	**8934** $7,695	**8944** $10,686	**8954** $14,744	**8964** $14,744
	p [psig]	S/G **1.5 –**	**230**	**230**	**230**	**230**	**98.6**	**–**
	p [psig]	L **1.5 –**	**230**	**230**	**230**	**230**	**98.6**	**98.7 – 230**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

Options

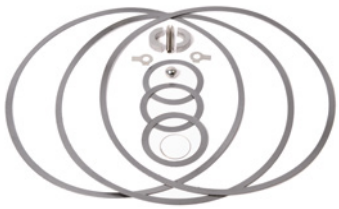
		Valve size	1" x 2"	1 1/2" x 3"	2" x 3"	2 1/2" x 4"	3" x 4"	3" x 4"
		Actual Orifice diameter d_0 [mm]	23	37	46	60	74	74
		Actual Orifice area A_0 [inch²]	0.644	1.667	2.576	4.383	6.666	6.666
Lift stopper		J51	$398	$398	$398	$598	$598	$598
Adaptor for lift indicator	Bonnet	J38[1)]	$250	–	–	–	–	–
	H4	J39[1)]	–	$250	$250	$250	$250	$250
Lift indicator		J93[1)]	$746	$746	$746	$746	$746	$746
Free of oil and grease	Standard	J85	$250	$398	$498	$746	$746	$746
	increased requirement	J92	$298	$498	$647	$845	$845	$845
Marking with stainless steel tag		M29	$40	$40	$40	$40	$40	$40

[1)] In case a gastight valve is needed (closed bonnet and cap, bellows must be used as well).

High Performance

LESER Original Spare Parts Kits – Type 441/442 DIN, 441/442 ANSI

All prices in $



The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER safety valve

Contents

Item	Component	Material	Quantity
7.5	Securing ring (Disc)	1.4571 / 316Ti	1
14	Split ring	1.4404 / 316L	2
40.3	Spacer	1.4571 / 316Ti	3
57	Pin	1.4310 / Stainless steel	1
59	Securing ring (Split ring)	1.4571 / 316Ti	1
60	Gasket	Graphite / 1.4401 Graphite / 316	3
61	Ball	1.4401 / 316	1

Spare Parts Kits

DN	20	25	32	40	50	65	80	100	125	150	200
Valve size	–	1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	–	4" x 6"	–	–	–
Art. No. **5012.**	**1201**	**1202**	**1203**	**1204**	**1205**	**1206**	**1207**	**1208**	**1209**	**1210**	**1211**
	$80	$80	$99	$99	$99	$173	$198	$298	$298	$348	$845

High Performance
Series 441 – Flange drillings

Type 4412, 4414 ANSI – Flange drillings

Inlet				Outlet			
DN	d_0	ASME B16.5		DN	d_0	ASME B16.5	
		Class 150	Class 300			Class 150	Class 300
1"	23	H64	H65	2"	23	*	–
$1^1/_2$"	29	H64	H65	2"	29	*	–
$1^1/_2$"	37	H64	H65	$2^1/_2$"	37	*	–
2"	46	H64	H65	3"	46	*	–
3"	60	H64	H65	4"	60	*	–
4"	92	H64	H65	6"	92	*	–

Type 4415, 4425 DIN – Flange drillings

Inlet						Outlet					
DN	d_0	DIN EN 1092				DN	d_0	DIN EN 1092			
		PN 10	PN 16	PN 25	PN 40			PN 10	PN 16	PN 25	PN 40
25	23	*	*	*	*	40	23	*	*	*	*
32	29	*	*	*	*	50	29	*	*	(*)	(*)
40	37	*	*	*	*	65	37	*	*	(H15)	(H15)
50	46	*	*	*	*	80	46	*	*	(*)	(*)
65	60	H45	H45	*	*	100	60	*	*	–	–
80	74	*	*	*	*	125	74	*	*	–	–
100	92	H45	H45	*	*	150	92	*	*	–	–
125	98	*	*	–	–	200	98	H50	*	–	–
150	125	*	*	–	–	250	125	H50	*	–	–
200 casted	165	H44	H45	*	–	300 casted	165	*	(H51)	–	–

Type 4412, 4422, 4414 DIN – Flange drillings

Inlet									Outlet								
DN	NPS	d_0	ASME B16.5		DIN EN 1092				DN	NPS	d_0	ASME B16.5		DIN EN 1092			
			Class 150	Class 300	PN 10	PN 16	PN 25	PN 40				Class 150	Class 300	PN 10	PN 16	PN 25	PN 40
20	$^3/_4$	18	H64	–	*	*	*	*	40	$1^1/_2$	18	H79	–	*	*	*	*
25	1	23	H64	–	*	*	*	*	40	$1^1/_2$	23	H79	–	*	*	*	*
32	$1^1/_4$	29	H64	H65	*	*	*	*	50	2	29	H79	[H80]	*	*	*	*
40	$1^1/_2$	37	H64	–	*	*	*	*	65	$2^1/_2$	37	H79	–	*	*	(H15)	(H15)
50	2	46	H64	[H65]	*	*	*	*	80	3	46	H79	–	*	*	(*)	(*)
65	$2^1/_2$	60	H64	–	H45	H45	*	*	100	4	60	[H79]	–	*	*	–	–
80	3	74	H64	–	*	*	*	*	125	5	74	H79	–	*	*	–	–
100	4	92	[H64]	–	H45	H45	*	*	150	6	92	H79	–	*	*	–	–
125	5	98	H64	–	H45	H45	*	*	200	8	98	H79	–	H50	*	–	–
150	6	125	H64	–	H45	H45	*	*	250	10	125	H79	–	H50	*	–	–
200	8	165	H64	–	H44	H45	*	–	300	12	165	H79	–	H50	*	H52	H52
250	10	200	H64	–	H44	H45	H46	–	350	14	200	H79	–	H50	H51	–	–
300	12	235	H64	–	H44	H45	H46	–	400	16	235	H79	–	H50	H51	–	–
400	16	295	H64	–	H44	H45	H46	–	500	20	295	H79	–	H50	H51	–	–

Note: Flange thickness and outer diameter can differ from standard.

Type 4444 – Flange drillings

Inlet				Outlet			
NPS	d_0	ASME B16.5		NPS	d_0	ASME B16.5	
		Class 150	Class 300			Class 150	Class 300
1	23	*	–	2	23	*	–
$1^1/_2$	37	*	–	3	37	*	–
2	46	*	–	3	46	*	–
$2^1/_2$	60	*	–	4	60	*	–
3	74	*	–	4	74	*	–

High Performance
Series 441 – Flange facings

Type 441, 442 DIN / 4444 – Flange facings – General

Indication	Standard	Inlet	Outlet	Remark
Flange undrilled	–	H38	H39	

Type 441, 442 DIN / 4444 – Flange facings according to ASME B16.5

Flange facing			Smooth finish[1]		Serrated finish		RTJ-groove			
	DN / NPS		Inlet	Outlet	Inlet	Outlet	Inlet		Outlet	
Type	Inlet	Outlet	Option code		Option code		Flange class	Option code	Flange class	Option code
4412, 4414, 4422, 4444	all	all	L52	L53	*	*	150	H62	150	H63
441 ANSI[2]	≤ 4	≤ 6	L52	L53	*	*	150, 300	H62	150	H63

[1] Smooth finish is not defined in the effective standards.

[2] Deviating center to face dimension.

Type 441, 442 DIN / 441, 442 / 4444 – Flange facings – according to DIN EN 1092

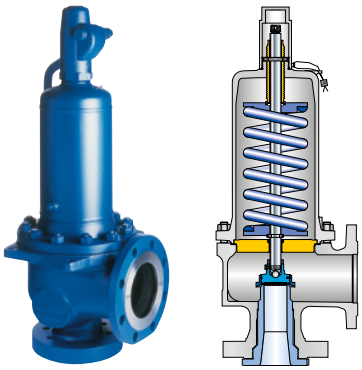
Flange facing (see also LDeS 3313.40)		Inlet 441/442 PN 10 – PN 40	Inlet 441/442 PN 63 – PN 400	Outlet 441/442 PN 10 – PN 40	Outlet 441/442 PN 63 – PN 400	Remark (Rz-data according to DIN EN 1092 in µm)	
Raised face	Type B1	*	–	*	–	Facing: Rz 12.5 – 50	
	Type B2	L36	*	L38	*	Facing: Rz 3.2 – 12.5	Steel flanges only
Tongue face C[3]		H94		H92			
Groove face D[3]		H93		H91			
Male face E		H96		H98			
Female face F		H97		H99			
O-ring male face G		J01		J02			
O-ring female face H		J03		J04			

[3] LESER manufactures the groove at flanged valves by milling. If you require a turned surface in the bottom of the groove according to DIN EN 1092-1 an additional option code is necessary: “S01: bottom of the groove turned.”

Note: Flange drillings and facings meet always the requirements of mentioned flange standards.
Flange thickness and outer diameter may vary from flange standard.

High Performance

All prices in $



Type 457, 458

Valve size	1" x 2"		2" x 3"		3" x 4"		4" x 6"				6" x 10"
Actual Orifice diameter d_0 [mm]	15	20	30	40	50	60	50	60	74	88	110
Actual Orifice area A_0 [inch^2]	0.274	0.487	1.096	1.948	3.043	4.383	3.043	4.383	6.666	9.427	14.730
API Orifice designation	E	F	H	J	K	L	K	L	N	P	Q
API eff. Orifice area [inch^2]	0.196	0.307	0.785	1.287	1.838	2.853	1.838	2.853	4.340	6.380	11.050
Weight [lb]	44		99		194		346				289
Body material: WCB											
	Class 300 – 1500				**Class 300 – 600**						**Class 300**
Bonnet closed **H2** Art. No. **4582.**	**6102** $4,872	**6112** $4,872	**6122** $7,268	**6132** $7,268	**6142** $11,319	**6152** $11,319	**6162** $17,900	**6172** $17,900	**6182** $17,900	**6192** $17,900	**4602** $20,860
H3 Art. No. **4582.**	**6103** $5,007	**6113** $5,007	**6123** $7,453	**6133** $7,453	**6143** $11,504	**6153** $11,504	–	–	–	–	–
H4 Art. No. **4582.**	**6104** $5,141	**6114** $5,141	**6124** $7,690	**6134** $7,690	**6144** $11,742	**6154** $11,742	**6164** $18,695	**6174** $18,695	**6184** $18,695	**6194** $18,695	**4604** $21,652
Bonnet open **H3** Art. No. **4572.**	**6105** $5,007	**6115** $5,007	**6125** $7,453	**6135** $7,453	**6145** $11,504	**6155** $11,504	**6165** $18,485	**6175** $18,485	**6185** $18,485	**6195** $18,485	**4605** $21,441
p [psig] S/G/L **36 –**	**4350**	**2570**	**1815 (3045)**	**1420 (1660)**	**1885 (2115)**	**1115**	**620 (2320)**	**665 (2130)**	**770 (1100)**	**490 (700)**	**260 (557)**
Body material: WC6											
	Class 300 – 1500				**Class 300 – 600**						**Class 300**
Bonnet closed **H2** Art. No. **4587.**	**6302** $6,651	**6312** $6,651	**6322** $9,083	**6332** $9,083	**6342** $14,728	**6352** $14,728	**6362** $20,187	**6372** $20,187	**6382** $20,187	**6392** $20,187	–
H3 Art. No. **4587.**	**6303** $6,784	**6313** $6,784	**6323** $9,270	**6333** $9,270	**6343** $14,911	**6353** $14,911	–	–	–	–	–
H4 Art. No. **4587.**	**6304** $6,917	**6314** $6,917	**6324** $9,506	**6334** $9,506	**6344** $15,151	**6354** $15,151	**6364** $20,980	**6374** $20,980	**6384** $20,980	**6394** $20,980	–
Bonnet open **H3** Art. No. **4577.**	**6305** $6,784	**6315** $6,784	**6325** $9,270	**6335** $9,270	**6345** $14,911	**6355** $14,911	**6365** $20,773	**6375** $20,773	**6385** $20,773	**6395** $20,773	–
p [psig] S/G/L **36 –**	**4350**	**2570**	**1815 (3045)**	**1420 (1660)**	**1885 (2115)**	**1115**	**620 (2320)**	**665 (2130)**	**770 (1100)**	**490 (700)**	–
Body material: CF10M											
	Class 300 – 1500				**Class 300 – 600**						**Class 300**
Bonnet closed **H2** Art. No. **4584.**	**6202** $11,236	**6212** $11,236	**6222** $20,018	**6232** $20,018	**6242** $24,175	**6252** $24,175	**6262** $34,472	**6272** $34,472	**6282** $34,472	**6292** $34,472	**4732** $60,374
H4 Art. No. **4584.**	**6204** $11,924	**6214** $11,924	**6224** $20,971	**6234** $20,971	**6244** $25,128	**6254** $25,128	**6264** $35,798	**6274** $35,798	**6284** $35,798	**6294** $35,798	**4734** $61,698
p [psig] S/G/L **36 –**	**3620**	**2115**	**1190 (1880)**	**885 (945)**	**885 (1505)**	**510 (745)**	**230 (1030)**	**160 (800)**	**245 (710)**	**0 (460)**	**64 (145)**

All prices in $

Options

Type 457, 458

Valve size				1" x 2"		2" x 3"		3" x 4"		4" x 6"				6" x 10"
Actual Orifice diameter d_0 [mm]				15	20	30	40	50	60	50	60	74	88	110
Actual Orifice area A_0 [inch^2]				0.274	0.487	1.096	1.948	3.043	4.383	3.043	4.383	6.666	9.427	14.730
Special machining of flange			per flange	$250	$250	$250	$250	$398	$398	$398	$398	$398	$398	$746
Butt-weld connection			S05	$1,245	$1,245	$1,991	$1,991	$2,486	$2,486	$3,232	$3,232	$3,232	$3,232	$3,232
O-ring disc[1]	CR	Neoprene® "K"	J21	–	$173	$224	$224	$224	$398	$224	$398	$398	$647	$647
	EPDM	Buna-EP® "D"	J22	–	$173	$224	$224	$224	$398	$224	$398	$398	$647	$647
	FPM/FKM	Viton® "L"	J23	–	$173	$224	$224	$224	$398	$224	$398	$398	$647	$647
	FFKM	Kalrez® "C"	J20	–	$547	$896	$896	$896	$1,991	$896	$1,991	$1,991	$3,232	$3,232
Drain hole		1/4"	J18	$99	$99	$99	$99	$99	$99	x	x	x	x	x
		1/2"	J19	x	x	x	x	x	x	$99	$99	$99	$99	$99
Test gag		H4	J69	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198
		H2	J70	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198	$198
Stainless steel bellows		458	J78	$1,042	$1,042	$2,113	$2,113	$3,980	$3,980	$6,962	$6,962	$6,962	$6,962	$8,453
		457	J68											
High temperature equipment		4577	J88	$1,865	$1,865	$2,983	$2,983	$4,972	$4,972	$9,946	$9,946	$9,946	$9,946	x
Heating jacket for body		4572 4587		$4,477	$4,477	$4,972	$4,972	$6,464	$6,464	$9,946	$9,946	$9,946	$9,946	on request
		4584		$3,481	$3,481	$4,972	$4,972	$6,464	$6,464	$9,946	$9,946	$9,946	$9,946	on request
Heating jacket spacer			H33	$1,740	$1,740	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	on request
Spring		Stainless steel	X04	$224	$224	$250	$250	$993	$993	$1,991	$1,991	$1,991	$1,991	on request
		Inconel	X08	$447	$447	$1,618	$1,618	$2,486	$2,486	$6,962	$6,962	$6,962	$6,962	on request
Inspection certificate for body material: DIN EN 10204-3.2 for		WC6	H09	$498	$498	$498	$498	$746	$746	$746	$746	$746	$746	on request
Adaptor for lift indicator		H4	J39[3]	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250	$250
Lift indicator			J93[3]	$746	$746	$746	$746	$746	$746	$746	$746	$746	$746	$746
Marking with stainless steel tag			M29	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40	$40
Free of oil and grease	Standard		J85	$598	$598	$746	$746	$746	$746	$746	$746	$746	$746	$746
	increased requirement		J92	$746	$746	$845	$845	$845	$845	$845	$845	$845	$845	$845
Oxygen service[2]		4584	N7D	$746	$746	$845	$845	$845	$845	$845	$845	$845	$845	$845
Gasket GYLON® (filled PTFE)			L68	$80	$80	$150	$150	$150	$150	$250	$250	$250	$250	$250

[1] See page 91 for elastomer limitation
[2] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.
[3] In case a gastight valve is needed (closed bonnet and cap), bellows must be used as well.

High Performance
Spare parts

All prices in $

Series 441

Valve size		Type 4412 – WCB Disc Material: Hardened stainless steel	Type 4414 – CF8M Disc Material: 316L
Disc – Metal to metal seat (Item 7), detachable lifting aid			
–	DN 20 x DN 40	210.7039.9000 $398	–
1" x 2"	DN 25 x DN 40	210.9739.9000 $398	210.9749.9000 $423
1 1/2" x 2"	DN 32 x DN 50	210.9839.9000 $547	210.9849.9000 $547
1 1/2" x 2 1/2"	DN 40 x DN 65	210.9939.9000 $598	210.9949.9000 $598
2" x 3"	DN 50 x DN 80	210.8739.9000 $746	210.8749.9000 $746
3" x 4"	DN 65 x DN 100	220.1639.9000 $945	220.1649.9000 $945
–	DN 80 x DN 125	220.1739.9000 $1,366	220.1749.9000 $1,366
4" x 6"	DN 100 x DN 150	220.1839.9000 $1,740	220.1849.9000 $1,740

Valve size		O-ring size	ARP-No.	CR Neoprene® "K"	EPDM Buna-EP® "D"	FPM/FKM Viton® "L"	FFKM Kalrez® "C"
Disc – Soft seal, material: 316L (Item 7)							
–	DN 20 x DN 40			200.4949.9051 $447	200.4949.9041 $447	200.4949.9071 $447	200.4949.9091 $746
1" x 2"	DN 25 x DN 40	1" x 1/8"	214	200.5049.9051 $447	200.5049.9041 $447	200.5049.9071 $447	200.5049.9091 $746
1 1/2" x 2"	DN 32 x DN 50	1 1/4" x 1/8"	218	200.5149.9051 $598	200.5149.9041 $598	200.5149.9071 $598	200.5149.9091 $1,042
1 1/2" x 2 1/2"	DN 40 x DN 65	15/8" x 1/8"	223	200.5249.9051 $647	200.5249.9041 $647	200.5249.9071 $647	200.5249.9091 $1,366
2" x 3"	DN 50 x DN 80	2" x 1/8"	226	200.5349.9051 $746	200.5349.9041 $746	200.5349.9071 $746	200.5349.9091 $2,113
3" x 4"	DN 65 x DN 100	25/8" x 3/16"	334	200.5449.9051 $993	200.5449.9041 $993	200.5449.9071 $993	200.5449.9091 $2,736
–	DN 80 x DN 125			200.5549.9051 $1,492	200.5549.9041 $1,492	200.5549.9071 $1,492	200.5549.9091 $3,980
4" x 6"	DN 100 x DN 150	4 1/8" x 3/16"	346	on request $2,364	200.5649.9041 $2,364	200.5649.9071 $2,364	200.5649.9091 $4,972

Valve size		Graphite + 316SS	Gylon® (filled PTFE)
Gaskets – Body / bonnet (Item 60)			
–	DN 20 x DN 40	500.0407.0000 $20	500.0405.0000 $80
1" x 2"	DN 25 x DN 40	500.0607.0000 $20	500.0605.0000 $80
1 1/2" x 2"	DN 32 x DN 50	500.0807.0000 $20	500.0805.0000 $80
1 1/2" x 2 1/2"	DN 40 x DN 65	500.1007.0000 $20	500.1005.0000 $80
2" x 3"	DN 50 x DN 80	500.1207.0000 $20	500.1205.0000 $80
3" x 4"	DN 65 x DN 100	500.1607.0000 $40	500.1605.0000 $150
–	DN 80 x DN 125	500.1907.0000 $51	500.1905.0000 $150
4" x 6"	DN 100 x DN 150	500.2107.0000 $69	500.2105.0000 $150

Valve size		Ø [mm]	Part No.
Ball – Material 316 (Item 61)			
–	DN 20 x DN 40	6	510.0104.0000 $20
1" x 2"	DN 25 x DN 40	6	510.0104.0000 $20
1 1/2" x 2"	DN 32 x DN 50	6	510.0104.0000 $20
1 1/2" x 2 1/2"	DN 40 x DN 65	9	510.0204.0000 $20
2" x 3"	DN 50 x DN 80	9	510.0204.0000 $20
3" x 4"	DN 65 x DN 100	12	510.0304.0000 $30
–	DN 80 x DN 125	12	510.0304.0000 $30
4" x 6"	DN 100 x DN 150	15	510.0404.0000 $51

High Performance
Spare parts

All prices in $

Series 441

Valve size		O-ring size	ARP-No.	CR Neoprene® "K"	EPDM Buna-EP® "D"	FPM/FKM Viton® "L"	FFKM Kalrez® "C"
O-ring – Soft seal, material: 316L (Item 7.4)							
–	DN 20 x DN 40			502.0171.2651 $30	502.0171.2641 $30	502.0171.2671 $40	502.0171.2691 $348
1" x 2"	DN 25 x DN 40	1" x 1/8"	214	502.0249.3551 $30	502.0249.3541 $30	502.0249.3571 $40	502.0249.3591 $348
1 1/2" x 2"	DN 32 x DN 50	1 1/4" x 1/8"	218	502.0313.3551 $30	502.0313.3541 $30	502.0313.3571 $40	502.0313.3591 $598
1 1/2" x 2 1/2"	DN 40 x DN 65	15/8" x 1/8"	223	502.0408.3551 $30	502.0408.3541 $30	502.0408.3571 $60	502.0408.3591 $697
2" x 3"	DN 50 x DN 80	2" x 1/8"	226	502.0503.3551 $30	502.0503.3541 $30	502.0503.3571 $99	502.0503.3591 $1,366
3" x 4"	DN 65 x DN 100	25/8" x 3/16"	334	502.0660.5351 $40	502.0660.5341 $40	502.0660.5371 $198	502.0660.5391 $1,740
–	DN 80 x DN 125			502.0819.5351 $40	502.0819.5341 $40	502.0819.5371 $250	502.0819.5391 $2,486
4" x 6"	DN 100 x DN 150	4 1/8" x 3/16"	346	On request $40	502.1041.5341 $40	502.1041.5371 $348	502.1041.5391 $3,481

Valve size		Standard Bellows		Low pressure bellows	
		Part No.	Conversion Kit[1)]	Part No.	Conversion Kit[1)]
Bellows and Bellows Conversion Kit – Material 316L (Item 15)					
–	DN 20 x DN 40	400.1549.0000 $547	5021.1040 $741	400.1549.0021 $547	on request
1" x 2"	DN 25 x DN 40	400.2449.0000 $547	5021.1041 $741	400.0949.0021 $547	on request
1 1/2" x 2"	DN 32 x DN 50	400.2549.0000 $1,042	5021.1042 $1,454	400.2549.0021 $1,042	on request
1 1/2" x 2 1/2"	DN 40 x DN 65	400.1149.0000 $1,042	5021.1043 $1,454	400.1149.0021 $1,042	on request
2" x 3"	DN 50 x DN 80	400.2649.0000 $1,042	5021.1044 $1,454	400.1249.0021 $1,042	on request
3" x 4"	DN 65 x DN 100	400.2749.0000 $1,740	5021.1045 $2,382	400.1349.0021 $1,740	on request
–	DN 80 x DN 125	400.2849.0000 $1,740	5021.1046 $2,382	400.3549.0021 $1,740	on request
4" x 6"	DN 100 x DN 150	400.2349.0000 $3,232	5021.1047 $4,234	400.0849.0021 $3,232	on request

[1)] A conversion kit contains the following parts: bellows, spacer, spindle, gaskets, guide, studs.

Valve size		Spindle – Ø [mm]	Part No.
Split ring – Material 316L (Item 14)			
–	DN 20 x DN 40	12	251.0149.0000 $7
1" x 2"	DN 25 x DN 40	12	251.0149.0000 $7
1 1/2" x 2"	DN 32 x DN 50	16	251.0249.0000 $7
1 1/2" x 2 1/2"	DN 40 x DN 65	16	251.0249.0000 $7
2" x 3"	DN 50 x DN 80	16	251.0249.0000 $7
3" x 4"	DN 65 x DN 100	20	251.0349.0000 $7
–	DN 80 x DN 125	20	251.0349.0000 $7
4" x 6"	DN 100 x DN 150	24	251.0449.0000 $20

Valve size		Spindle – Ø [mm]	Part No.
Pin (Item 57)			
–	DN 20 x DN 40	12	480.0505.0000 $7
1" x 2"	DN 25 x DN 40	12	480.0505.0000 $7
1 1/2" x 2"	DN 32 x DN 50	16	480.0705.0000 $7
1 1/2" x 2 1/2"	DN 40 x DN 65	16	480.0705.0000 $7
2" x 3"	DN 50 x DN 80	16	480.0705.0000 $7
3" x 4"	DN 65 x DN 100	20	480.1005.0000 $7
–	DN 80 x DN 125	20	480.1005.0000 $7
4" x 6"	DN 100 x DN 150	24	480.1105.0000 $7

All prices in $

Series 441

Valve size	
Disc – Metal to metal seat, material 316Ti (Item 7)	
10" x 14"	$4,722
12" x 16"	$7,707
16" x 20"	$10,444

Orifice [inch²]	
Gaskets – Body / bonnet, material graphite / 316L (Item 60)	
10" x 14"	$250
12" x 16"	$298
16" x 20"	$298

Orifice [inch²]	Spindle – Ø [mm]	
Ball – Material 316 (Item 61)		
10" x 14"	18	$80
12" x 16"	18	$80
16" x 20"	18	$80

All prices in $

Series 441

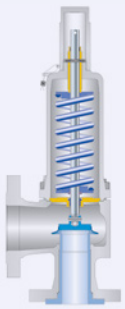
Orifice [inch²]	Spindle – Ø [mm]	
Split ring – Material 316L (Item 14)		
10" x 14"	35	$60
12" x 16"	35	–
16" x 20"	35	–

Orifice [inch²]	Spindle – Ø [mm]	
Pin – Material 316SS (Item 57)		
10" x 14"	35	$7
12" x 16"	35	$7
16" x 20"	35	$7

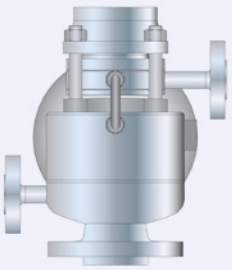
Orifice [inch²]	
Bellows – Material 316L (Item 15)	
10" x 14"	**Special** $7,957
12" x 16"	**Special** $9,946
16" x 20"	**Special** $11,436

High Performance
Available options

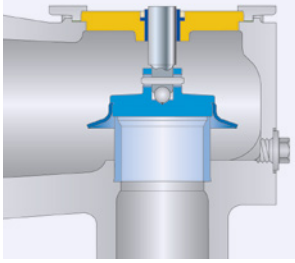
Body full nozzle design



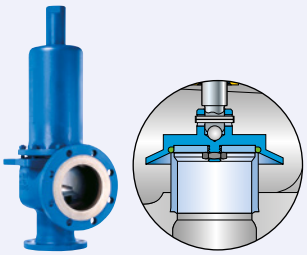
Heating jacket



Drain hole
J18: G $^1/_4$
J19: G $^1/_2$

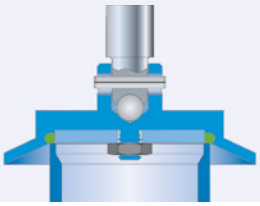


Type 441 for industrial refrigeration
H91: Outlet groove face D
H93: Inlet groove face D



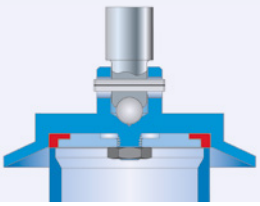
O-ring disc

J21: CR	Neoprene®	"K"
J22: EPDM	Buna-EP®	"D"
J23: FPM/FKM	Viton®	"L"
J20: FFKM	Kalrez®	"C"

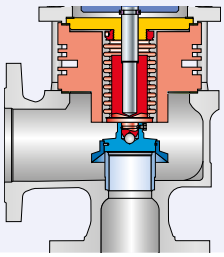


Disc with inserted sealing plate

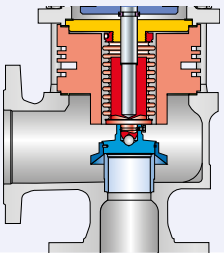
J44: PTFE-FDA	"A"
J48: PCTFE	"G"
J49: SP	"T"



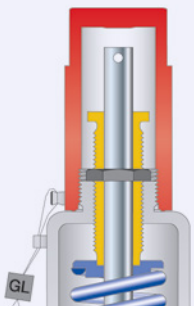
Stainless steel bellows
J68: Open bonnet
J78: Closed bonnet



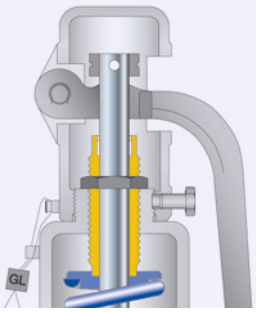
Conversion kit for stainless steel bellows
On request



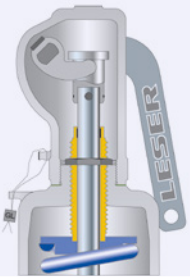
Screwed cap H2
H2



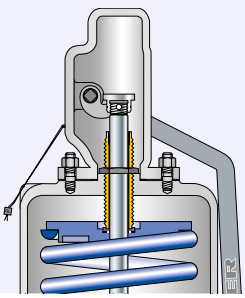
Plain lever H3
H3



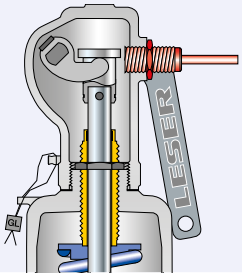
Packed lever H4
H4



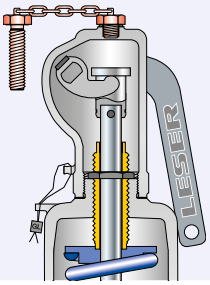
Bolted lifting device H6
H6



Lift indicator
J39: Adaptor for lift indicator H4
J93: Lift indicator



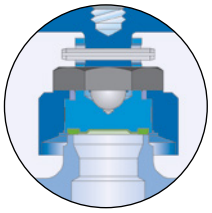
Test gag
J69: H4
J70: H2



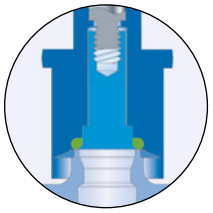
Clean Service
Safety Relief Valves

Clean Service

All prices in $



Vulcanized soft seal
4814.769X
1.5 – 232 psig



Soft seal, O-ring
4814.768X
233 – 968 psig

Type 481

Valve size			Depends on actual connection, see below	
Actual Orifice diameter d_0 [mm]			10	10
Actual Orifice area A_0 [inch^2]			0.122	0.122
API Orifice designation			0.462 D	0.462 D
Weight [lb]			3.1	3.1
Body material: 316L				
Bonnet closed	**H2**	Art. No. **4814.**	**7692** $1,525	**7682** $1,525
	H4	Art. No. **4814.**	**7694** $1,655	**7684** $1,655
	H8	Art. No. **4814.**	**7698** $3,344	**7688** $3,344
	p [psig] S*)/G/L		**1.5 – 232**	**73 – 985**[1)]

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.
[1)] p depends on the maximum allowable pressure of the inlet connection.
*) For steam service, pressure and temperature ratings are limited by the O-ring material selected.

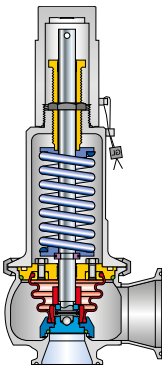
Options				
Tri-Clamp connection outlet 1" see below			$547	$547
Vulcanized / O-ring soft seal	EPDM	J22	*	*
	FKM	J23	$51	$51
	FFKM	J20	$224	$224
Lifting device Double piston design	H8	J41	$398	$398
Test gag	H4	J69	–	–
	H2	J70	$198	$198
LESER Surface package Clean finish Inlet R_a 30 µinch Mechanically polished		B50	*	*
LESER Surface package HyClean finish Inlet R_a 30 µinch Mechanically and electropolished[2)]		B51	$298	$298
LESER Surface package Sterile finish Inlet R_a 20 µinch Mechanically and electropolished[2)]		B52	$845	$845
Marking with stainless steel tag		M29	$40	$40

Available connections	**Inlet**		**Outlet**		
d_0 [mm]	10				
Tri-Clamp®	**Option code**				
NPS	–	1	–	1	–
CO	–	L96I79	CO	L97A79	
Threaded connections	**Option code**				
NPS	–		$^1/_2$ NPT	$^3/_4$ NPT	1 NPT
XN	–		V70	V77	V71

[2)] For electropolished valves the surface roughness certificate (N04) is included as standard. In case N04 is required for the mechanically polished valves, please check page 191.

Clean Service

All prices in $



Type 483

		Valve size	Depends on actual connection, see below	
		Actual Orifice diameter d_0 [mm]	13	25
		Actual Orifice area A_0 [inch^2]	0.206	0.761
		API Orifice designation	D	E
		API eff. Orifice area [inch^2]	0.110	0.196
		Weight [lb]	3.5	8.2
Body material: 316L				
Bonnet closed	**H2**	Art. No. **4834.**	**7702** $2,568	**7712** $3,644
	H4	Art. No. **4834.**	**7704** $2,697	**7714** $3,855
	H8	Art. No. **4834.**	**7708** $4,385	**7718** $6,501
		p [psig] S*)/G/L	**4.4 – 232**	**1.5 – 232**

Starting from 15 psig the SV is certified acc. to ASME Sec. XIII and UV Sec. VIII, Div. 1.

*) For steam service, pressure and temperature ratings are limited by the O-ring material selected.

Please note: Type 483 Connection CO sterile finish only out of Charlotte
Type 483 Connection BO both sterile and clean finish only available out of Charlotte

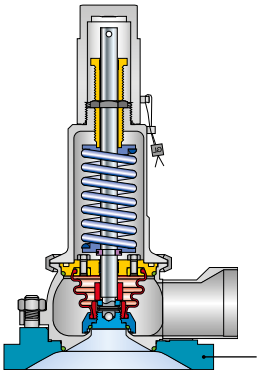
Options				
Adaptor for lift indicator	**Bonnet**	J38	$250	$250
Lift indicator		J93	$746	$746
Lifting device Double piston design	H8	J41	$398	$647
Test gag	H4	J69	–	–
	H2	J70	$198	$198
O-ring disc	FFKM	J20	$298	$298
	EPDM	J22	*	*
	FKM	J23	$51	$51
LESER Surface package Clean finish Inlet R_a 30 µinch Mechanically polished		B53	*	*
LESER Surface package HyClean finish Inlet R_a 30 µinch Mechanically and electropolished[2)]		B54	$498	$498
LESER Surface package Sterile finish Inlet R_a 15 µinch Mechanically and electropolished[2)]		B55	$1,042	$1,042
Marking with stainless steel tag		M29	$40	$40

Available connections	**Inlet**		**Outlet**	**Inlet**		**Outlet**
d_0 [mm]		13			25	
NPS	1	1 1/2	1 1/2	1 1/2	2	2
Clamp	**Option code**					
BO	I75I79	I75I80	I76A80	I75I80	I75I81	I76A81
CO	L96I79	L96I80	L97A80	L96I80	L96I81	L97A81

2) For electropolished valves the surface roughness certificate (N04) is included as standard. In case N04 is required for the mechanically polished valves, please check page 191.

Clean Service

All prices in $



Vessel flange Type 5034
in addition to valve order

Type 484

Actual Orifice diameter d_0 [mm]			13	25
Actual Orifice area A_0 [inch^2]			0.206	0.761
API Orifice designation			D	E
API eff. Orifice area [inch^2]			0.110	0.196
Weight [lb]			7	9
Body material: 316L				
Bonnet closed	**H2**	Art. No. **4844.**	**7722** $7,408	**7732** $10,797
	H4	Art. No. **4844.**	**7724** $7,537	**7734** $11,005
	H8	Art. No. **4844.**	**7728** $9,226	**7738** $13,653
	p [psig] S*)/G/L		**4.4 – 232**	**1.5 – 232**

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

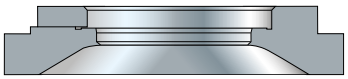
*) For steam service, pressure and temperature ratings are limited by the O-ring material selected.

Options				
Adaptor for lift indicator		J38	$250	$250
Lift indicator		J93	$746	$746
Lifting device Double piston design	H8	J41	$398	$647
Test gag	H4	J69	–	–
	H2	J70	$198	$198
O-ring disc	FFKM	J20	$224	$224
	EPDM	J22	*	*
LESER Surface package Clean finish Inlet R_a 30 µinch Mechanically polished		B56	*	*
LESER Surface package HyClean finish Inlet R_a 20 µinch Mechanically and electropolished[1)]		B57	$845	$845
LESER Surface package Sterile finish Inlet R_a 15 µinch Mechanically and electropolished[1)]		B58	$1,245	$1,245
Marking with stainless steel tag		M29	$40	$40

1) For electropolished valves the surface roughness certificate (N04) is included as standard. In case N04 is required for the mechanically polished valves, please check page 191.

Available connections	**Outlet**	
d_0 [mm]	13	25
NPS	1 1/2	2
Tri-Clamp®	**Option code**	
CO	L97A80	L97A81

All prices in $



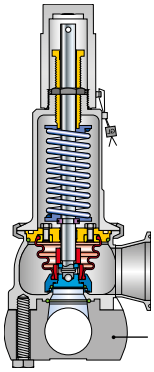
Type 5034		Vessel flange, dead space free	
Safety valve size	d_0 [mm]	13	25
	A_0 [inch^2]	0.206	0.206
Body material: 316L			
Wall thickness of the vessel t ≤ 5 mm t ≤ 0.2 inch	Art. No. **5034.**	**0980** $1,454	**0982** $1,984
Wall thickness of the vessel t > 5 mm t > 0.2 inch	Art. No. **5034.**	**0981** $1,720	**0983** $2,249

Options			
LESER Surface package **Clean finish** Mechanically polished[1)]	B59	*	*
LESER Surface package **HyClean finish** Mechanically polished[1)]	B60	$547	$547
LESER Surface package **Sterile finish** Mechanically polished[1)]	B61	$647	$647

[1)] In case N04 is required for the mechanically polished surfaces, please check page 191

Clean Service

All prices in $



Integrated pipework connection Type 5034
in addition to valve order

Type 485

Actual Orifice diameter d_0 [mm]			13	25
Actual Orifice area A_0 [inch^2]			0.206	0.761
API Orifice designation			D	E
API eff. Orifice area [inch^2]			0.110	0.196
Weight [lb]			7	11
Body material: 316L				
Bonnet closed	**H2**	Art. No. **4854.**	**7742** $8,100	**7752** $11,150
	H4	Art. No. **4854.**	**7744** $8,231	**7754** $11,356
	H8	Art. No. **4854.**	**7748** $9,920	**7758** $14,006
	p [psig]	S*)/G/L	**4.4 – 232**	**1.5 – 232**

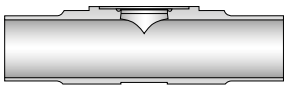
Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

*) For steam service, pressure and temperature ratings are limited by the O-ring material selected.

Options				
Adaptor for lift indicator		J38	$250	$250
Lift indicator		J93	$746	$746
Lifting device Double piston design	H8	J41	$398	$647
Test gag	H4	J69	–	–
	H2	J70	$198	$198
O-ring disc	FFKM	J20	$224	$224
	EPDM	J22	*	*
LESER Surface package Clean finish Inlet R_a 30 inch Mechanically and electropolished[1)]		B62	*	*
LESER Surface package HyClean finish Inlet R_a 20 inch Mechanically and electropolished[1)]		B63	$845	$845
LESER Surface package Sterile finish Inlet R_a 15 inch Mechanically and electropolished[1)]		B64	$1,245	$1,245
Marking with stainless steel tag		M29	$40	$40

[1)] For electropolished valves the surface roughness certificate (N04) is included as standard. In case N04 is required for the mechanically polished valves, please check page 191,

All prices in $



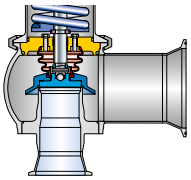
Type 5034		Integrated pipework connection, dead space free		
Safety valve size	d_0 [mm]	13	25	
	A_0 [inch^2]	0.206	0.761	
Nominal pipe size tube	NPS	1	$1^1/_2$	2
Body material: 316L				
OD-tube, Pipe standard ISO 2037	Art. No. **5034.**	**0994** $2,911	**0995** $3,439	**0996** $3,703
	$Ø_A$ x t	**1" x $^1/_{16}$"**	**$1^1/_2$" x $^1/_{16}$"**	**2" x $^1/_{16}$"**
Pipe standard DIN EN ISO 1127	Art. No. **5034.**	**0998** $2,911	**0999** $3,439	–
	$Ø_A$ x t	**$1^5/_{16}$" x $^3/_{32}$"**	**$1^{29}/_{32}$" x $^3/_{32}$"**	–

Options				
LESER Surface grade Clean finish Mechanically polished[1)]	B65	*	*	
LESER Surface grade HyClean finish Mechanically polished[1)]	B66	$647	$647	
LESER Surface grade Sterile finish Mechanically polished[1)]	B67	$746	$746	

[1)] In case N04 is required for the mechanically polished surfaces, please check page 191.

Clean Service

All prices in $



HyTight Assembly

Type 488 HyTight

Valve size			Depends on actual connection see below				
Actual Orifice diameter d_0 [mm]		23	37	46	60	74	92
Actual Orifice area A_0 [inch^2]		0.644	1.667	2.576	4.383	6.666	10.304
API Orifice designation		F	H	K	L	N	P
API eff. Orifice area [inch^2]		0.307	0.785	1.838	2.853	4.430	6.380
Weight [lb]		20	44	48	58	104	123
Body material: 316L							
Bonnet closed	**H2** Art. No. **4884.**	**8842** $6,040	**8852** $8,126	**8862** $9,488	**8872** $11,844	**8882** $15,642	**8892** $20,581
	H4 Art. No. **4884.**	**8844** $6,247	**8854** $8,438	**8864** $9,801	**8874** $12,159	**8884** $16,059	**8894** $20,998
	H8 Art. No. **4884.**	**8848** $8,898	**8858** $11,502	**8868** $12,865	**8878** $15,221	**8888** $19,538	**8898** $24,483
	p [psig] S*)/G/L	**1.5 – 232**	**1.5 – 232**	**3 – 217**	**1.5 – 150**	**1.5 – 150**	**1.5 – 118**
Obsolete models replaced by Type 488 HyTight							
Design 2002	Art. No. **4884.**	**802X**	**804X**	**805X**	**806X**	**807X**	**808X**
	Art. No. **4484.**	**750X**	**752X**	**753X**	**754X**	**755X**	**756X**

For liquids starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.
For steam/gas starting from 20 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.

*) For steam service, pressure and temperature ratings are limited by the O-ring material selected.

All prices in $

Options

				d_0 [mm]	23	37	46	60	74	92
O-ring disc HyTight	CR	Neoprene®	"K"	J21	*	*	*	*	*	*
	EPDM	Buna-EP®	"D"	J22	*	*	*	*	*	*
	FPM/FKM	Viton®	"L"	J23	*	*	*	*	*	*
	FFKM	Kalrez®	"C"	J20	$547	$1,093	$1,618	$1,991	$2,486	$3,232
Adaptor for lift indicator			Bonnet	J38	$250	–	–	–	–	–
			H4	J39	–	$250	$250	$250	$250	$250
			H8	J40	–	$250	$250	$250	$250	$250
Lift indicator				J93	$746	$746	$746	$746	$746	$746
Test gag			H4	J69	–	$198	$198	$198	$198	$198
			H2	J70	$198	$198	$198	$198	$198	$198
Lifting device Double piston design			H8	J41	$647	$797	$797	$797	$945	$945
LESER Surface package Clean finish Inlet R_a 30 inch Mechanically polished				B68	*	*	*	*	*	*
LESER Surface package HyClean finish Inlet R_a 30 inch Mechanically and electropolished[3]				B69	$298	$447	$598	$797	$993	$1,245
LESER Surface package Sterile finish Inlet R_a 15 inch Mechanically and electropolished[3]				B70[4]	$845	$1,245	$1,740	$2,238	$2,736	$3,481
Marking with stainless steel tag				M29	$40	$40	$40	$40	$40	$40

			d_0 [mm]	23	37	46	60	74	92
Tri-Clamp®[1] – CO x CO connections									
Inlet	L96	NPS		$1^1/_2$	2	$2^1/_2$	3	4	$4^1/_2$
Outlet	L97	NPS		2	3	4	$4^1/_2$	$5^1/_2$	$6^5/_8$
Clamp – BO x BO connections									
Inlet	I75	NPS		$1^1/_2$	2	$2^1/_2$	3	4	4 [2]
Outlet	I76	NPS		2	3	4	4.5 [2]	5 [2]	6 [2]
Flange connection – Class 150 FA x FA									
Inlet	L94	NPS		1	$1^1/_2$	2	$2^1/_2$	3	4
Outlet	L95	NPS		$1^1/_2$	$2^1/_2$	3	4	5	6

[1] LESER's Tri-Clamp® connections provided with the Type 488 are designed according to ISO 2852 and are compatible with Tri-Clover Tri-Clamp® connections for the most common sizes. Tri-Clamp® connection size designations are LESER designations. For detailed dimensions and selection refer to catalog.
[2] Use CO connection
[3] For electropolished valves the surface roughness certificate (N04) is included as standard. In case N04 is required for the mechanically polished valves, please check page 187.
[4] BO Clamps in stock in Charlotte.

Note: Only certain connection combinations are kept in Charlotte stock. Please see page 199 "Availability from Charlotte stock".

All prices in $

Type 481

Actual Orifice diameter d_0 [mm]			10	
Actual Orifice area A_0 [inch^2]			0.122	
Body (Item 1)			**Material-No. / Art. No.**	
Inlet body	CO	Connection size	$^3/_4$"	1"
	316 L		–	**136.4669.9266** $647

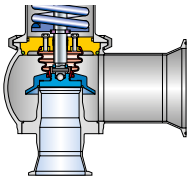
Disc with vulcanized soft seal (Item 7)			**Material-No. / Art. No.**
Disc 316L	EPDM Buna-EP®	"D"	**200.9049.9041** $250
	CR Neoprene®	"K"	**200.9049.9051** $250
	FPM/FKM Viton®	"L"	**200.9049.9071** $250
	NBR Buna-N®	"N"	**200.9049.9081** $250
	FFKM Kalrez®	"C"	**200.9049.9091** $647
Disc – Soft seal with O-ring (Item 7)			**Material-No. / Art. No.**
Disc 316L e-polished	EPDM Buna-EP®	"D"	**200.8349.9741** $198
	CR Neoprene®	"K"	**200.8349.9751** $198
	FPM/FKM Viton®	"L"	**200.8349.9771** $198
	NBR Buna-N®	"N"	**200.8349.9781** $198
	FFKM Kalrez®	"C"	**200.8349.9721** $647
O-ring – Soft seal (Item 7.4)			**Material-No. / Art. No.**
O-ring	EPDM Buna-EP®	"D"	**502.0107.2641** $30
	CR Neoprene®	"K"	**502.0107.2651** $30
	FPM/FKM Viton®	"L"	**502.0107.2671** $40
	NBR Buna-N®	"N"	**502.0107.2681** $30
	FFKM Kalrez®	"C"	**502.0107.2621** $348

All prices in $

Type 483, 484, 485

	Actual Orifice diameter d_0 [mm]		13	25
	Actual Orifice area A_0 [inch^2]		0.206	0.761
Disc – Soft seal with O-ring (Item 7)			**Material-No. / Art. No.**	
Disc 316L e-polished	EPDM	"D"	**200.8169.9741**	**200.2569.9741**
	Buna-EP®		$238	$317
	FFKM	"C"	**200.8169.9721**	**200.2569.9721**
	Kalrez®		$697	$746
	Assembly tool for Aseptic O-ring disc		Tool not required for this valve size	**445.0139.0000**
				$398
O-ring – Soft seal (Item 7.4)			**Material-No. / Art. No.**	
O-ring	EPDM	"D"	**502.0123.2641**	**502.0250.2641**
	Buna-EP®		$30	$30
	CR	"K"	**502.0123.2651**	**502.0250.2651**
	Neoprene®		$30	$30
	FPM/FKM	"L"	**502.0123.2671**	**502.0250.2671**
	Viton®		$40	$40
	NBR	"N"	**502.0123.2681**	**502.0250.2681**
	Buna-N®		$30	$30
	FFKM	"C"	**502.0123.2621**	**502.0250.2621**
	Kalrez®		$547	$547
Pin / Split ring (Item 14)			**Material-No. / Art. No.**	
Pin / Split ring	Spindle Ø [mm]		8	12
	Stainless steel / 316L		–	**251.0149.0000**
			–	$7
Pin (Item 57)			**Material-No. / Art. No.**	
Pin	Ø [mm]		3	3
	Stainless steel		**480.0405.0000**	**480.0405.0000**
			$7	$7
O-ring body / guide (Item 60)			**Material-No. / Art. No.**	
O-ring	EPDM	"D"	**502.0460.3041**	**502.0600.3041**
	Buna-EP®		$40	$40
Ball (Item 61)			**Material-No. / Art. No.**	
Ball	Ø [mm]		6	6
	316L		**510.0104.0000**	**510.0104.0000**
			$20	$20
Bellows (Item 70)			**Material-No. / Art. No.**	
Bellows	EPDM	"D"	**224.3049.9000**	**224.3149.9000**
	Buna-EP®		$250	$298

All prices in $



HyTight Assembly

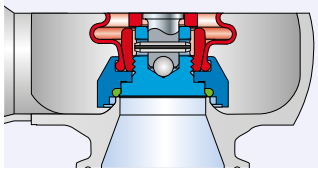
Type 488			HyTight					
Actual Orifice diameter d_0 [mm]			23	37	46	60	74	92
Actual Orifice area A_0 [inch^2]			0.644	1.667	2.576	4.383	6.666	10.304
Art. No. **4884.**			**884X**	**885X**	**886X**	**887X**	**888X**	**889X**
Disc – Soft seal (Item 7)			Material-No. / Art. No.					
Disc 316L mechanically polished	EPDM	"D"	**205.3549.9741**	**205.3649.9741**	**205.3749.9741**	**205.3869.9741**	**205.3969.9741**	**205.4069.9741**
	Buna-EP®		$447	$647	$797	$1,042	$1,366	$1,740
	CR	"K"	**205.3549.9751**	**205.3649.9751**	**205.3749.9751**	**205.3849.9751**	**205.3949.9751**	**205.4049.9751**
	Neoprene®		$447	$647	$797	$1,042	$1,366	$1,740
	FPM/FKM	"L"	**205.3549.9771**	**205.3649.9771**	**205.3749.9771**	**205.3849.9771**	**205.3949.9771**	**205.4049.9771**
	Viton®		$447	$647	$797	$1,042	$1,366	$1,740
	FFKM	"C"	**205.3549.9791**	**205.3649.9791**	**205.3749.9791**	**205.3849.9791**	**205.3949.9791**	**205.4049.9791**
	Kalrez®		$797	$1,366	$2,113	$2,736	$3,731	$5,220
O-ring – Soft seal (Item 7.4)			Material-No. / Art. No.					
O-ring	EPDM	"D"	**502.0249.3541**	**502.0408.3541**	**502.0503.3541**	**502.0660.5341**	**502.0819.5341**	**502.1041.5341**
	Buna-EP®		$40	$40	$40	$40	$40	$40
	CR	"K"	**502.0249.3551**	**502.0408.3551**	**502.0503.3551**	**502.0660.5351**	**502.0819.5351**	**502.1041.5351**
	Neoprene®		$30	$30	$30	$40	$40	$40
	FPM/FKM	"L"	**502.0249.3571**	**502.0408.3571**	**502.0503.3571**	**502.0660.5371**	**502.0819.5371**	**502.1041.5371**
	Viton®		$40	$60	$99	$198	$250	$348
	FFKM	"C"	**502.0249.3591**	**502.0408.3591**	**502.0503.3591**	**502.0660.5391**	**502.0819.5391**	**502.1041.5391**
	Kalrez®		$348	$697	$1,366	$1,740	$2,486	$3,481

All prices in $

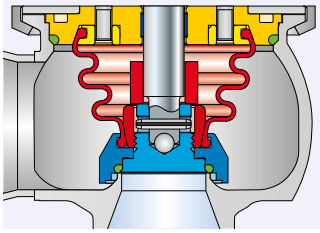
Type 488	HyTight					
Actual Orifice diameter d_0 [mm]	23	37	46	60	74	92
Actual Orifice area A_0 [inch^2]	0.644	1.667	2.576	4.383	6.666	10.304
Art. No. **4884.**	**884X**	**885X**	**886X**	**887X**	**888X**	**889X**
Split ring (Item 14)	**Material-No. / Art. No.**					
Split ring Spindle Ø [mm]	12	16	16	16	20	20
316 L	**251.0149.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0249.0000** $7	**251.0349.0000** $7	**251.0349.0000** $7
Pin (Item 57)	**Material-No. / Art. No.**					
Pin Ø [mm]	3	4	4	5	5	5
Stainless steel	**480.3205.0000** $7	**480.1605.0000** $7	**480.1605.0000** $7	**480.3005.0000** $7	**480.3105.0000** $7	**480.3105.0000** $7
O-ring body / guide (Item 60)	**Material-No. / Art. No.**					
O-ring EPDM "D"	**502.0600.3041** $40	**502.0850.4041** $40	**502.0850.4041** $40	**502.1130.4041** $40	**502.1380.4041** $40	**502.1580.5041** $40
Buna-EP®						
Ball (Item 61)	**Material-No. / Art. No.**					
Ball Ø [mm]	6	9	9	12	12	15
316L	**510.0104.0000** $7	**510.0204.0000** $7	**510.0204.0000** $7	**510.0304.0000** $30	**510.0304.0000** $30	**510.0404.0000** $51
Bellows (Item 70)	**Material-No. / Art. No.**					
Bellows EPDM "D"	**224.3249.9000** $298	**224.3349.9000** $348	**224.3349.9000** $348	**224.3449.9000** $498	**224.3449.9000** $498	**224.3449.9000** $498
Buna-EP®						

Clean Service
Available options

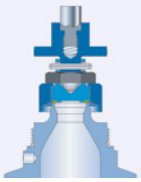
O-ring disc
J22: EPDM “D”
J21: CR “K”
J23: FKM “L”
J30: NBR “N”
J20: FFKM “C”



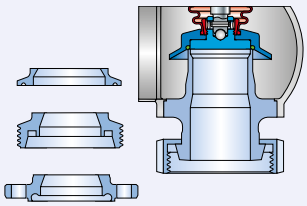
Elastomer bellows
EPDM “D”
FFKM “C”



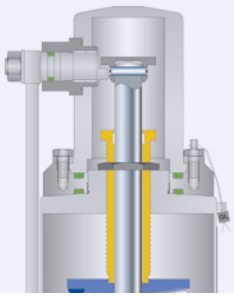
Vulcanized soft seal
Type 481: 0,1 – 16 bar
J22: EPDM “D”
J21: CR “K”
J23: FKM “L”
J30: NBR “N”
J20: FFKM “C”



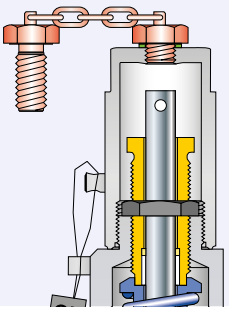
Wide range of aseptic connections
- Dairy industry coupling
- Sterile screw coupling
- Small flange
- Clamp



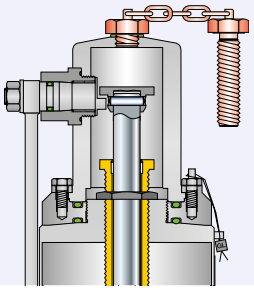
Packed lever H4
Type 488



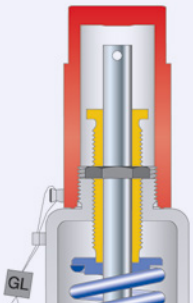
Test gag
J70: H2



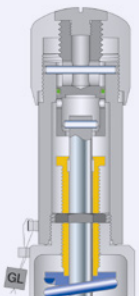
Test gag
Type 488
J69: H4



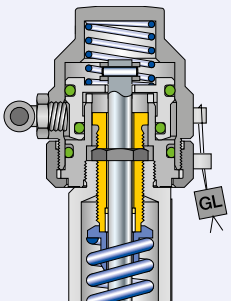
Screwed cap H2
H2



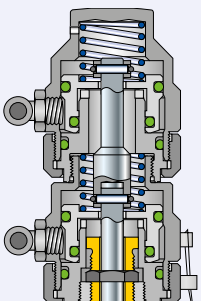
Packed knob H4



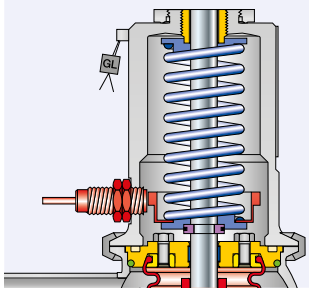
Pneumatic lifting device H8
Single piston



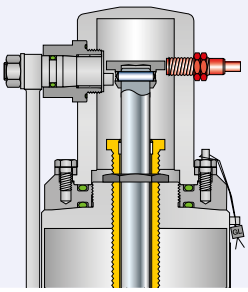
Pneumatic lifting device H8
J41: Double piston design



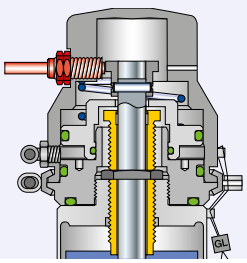
Lift indicator placed in bonnet
Type 483, 484, 485, 488 (1")
J38 + J93



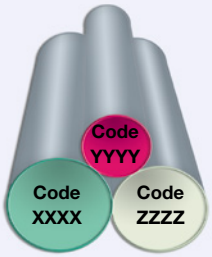
Lift indicatorr H4
Type 483 (Orifice 1.667 – 10.3)
J39 + J93



Lift indicator H8
Type 488 (Orifice 1.667 – 10.3)
J40 + J93

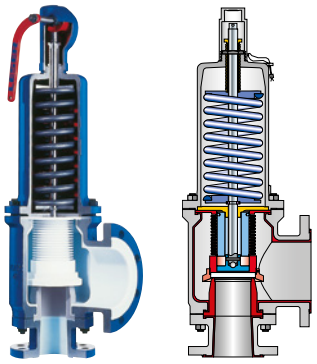


Special material
2.4610 Hastelloy® C4
2.4360 Monel® 400
1.4462 Duplex



Critical Service
Safety Relief Valves

Critical Service



All prices in $

Flange class, inlet: Class 150
Flange class, outlet: Class 150

Type 447

			1" x 2"	2" x 3"	3" x 4"	4" x 6"
		Valve size				
		Actual Orifice diameter d_0 [mm]	23	46	60	92
		Actual Orifice area A_0 [inch^2]	0.644	2.576	4.383	10.304
		API Orifice designation	F	J	L	P
		API eff. Orifice area [inch^2]	0.307	1.838	2.853	6.380
		Weight [lb]	33	64	110	231
Body material: 1.0619 (WCB) Lined with: Virginal PTFE-TF (white)						
				Class 150		
Bonnet closed	**H2**	Art. No. **4472.**	**3872** $9,651	**3882** $12,372	**3892** $18,017	**3902** $28,843
	H4	Art. No. **4472.**	**3874** $9,916	**3884** $12,639	**3894** $18,437	**3904** $29,268
		p [psig] S/G/L	**1.5 – (174) 230**[1)]	**1.5 – 145 (230)**[1)]	**1.5 – 145 (230)**[1)]	**1.5 – 145 (230)**[1)]
Body material: 1.0619 (WCB) Lined with: Conductive PTFE-TF (black)						
				PN 16 (Class 150)		
Bonnet closed	**H2**	Art. No. **447B.**	**3872** $12,152	**3882** $16,708	**3892** $23,289	**3902** $37,972
	H4	Art. No. **447B.**	**3874** $12,653	**3884** $17,156	**3894** $23,797	**3904** $40,505
		p [barg] S/G/L **0.1 –**	**12 (16)**[1)]	**10 (16)**[1)]	**10 (16)**[1)]	**10 (16)**[1)]

Starting from 15 psig the safety valve is certified in accordance with ASME Section XIII and UV designated for Section VIII Div. 1 service.
1) Depending on the pressure temperature ratings

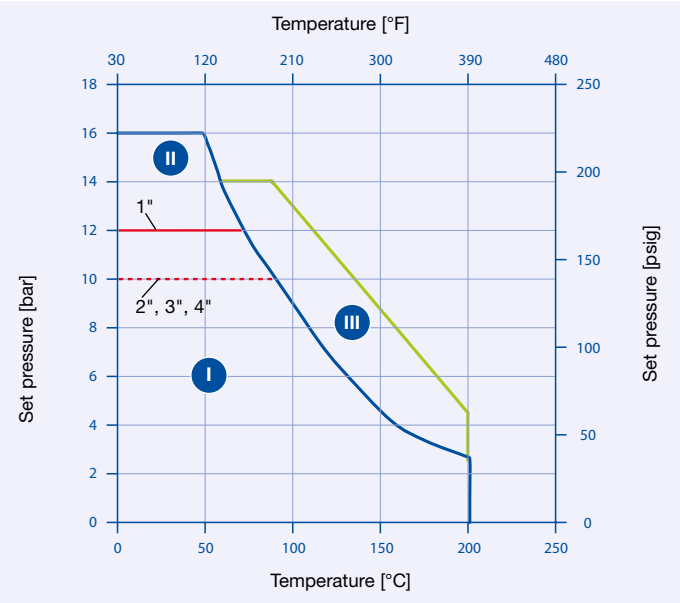
Options

			1" x 2"	2" x 3"	3" x 4"	4" x 6"
		Valve size				
Special machining of flange		per flange	$250	$250	$398	$398
Nozzle in material	HC4			on request		
Disc sealing plate in material	HC4			on request		
Test gag	H4	J69	$198	$198	$198	$198
	H2	J70	$198	$198	$198	$198
Sparc test	DIN 28055-2 EN 10204 2.2		$150	$150	$150	$150
Adaptor for lift indicator	H4	J39	$250	$250	$250	$250
Lift indicator		J93	$746	$746	$746	$746
Free of oil and grease	Standard	J85	$498	$647	$945	$1,618
	increased requirement	J92	$647	$797	$1,143	$1,865
Marking with stainless steel tag		M29	$40	$40	$40	$40

All prices in $

Spare parts

Valve size	1" x 2"	2" x 3"	3" x 4"	4" x 6"
Inlet body (Item 1)				
1.0570/PTFE	**118.2929.9108** $3,439	**118.2829.9108** $6,084	**118.2529.9108** $9,521	**118.2729.9108** $11,113
Nozzle (Item 5)				
PTFE/25 % glass	**207.0659.0000** $1,004	**207.1159.0000** $1,271	**207.1659.0000** $1,851	**207.0359.0000** $2,911
Disc including bellows complete (Item 7)				
PTFE/Borofloat glass	**200.2959.0000** $2,645	**200.3059.0000** $3,439	**200.3359.0000** $5,819	**200.3159.0000** $6,878
Bellows (Item 7.1)				
PTFE	**224.1659.0000** $1,851	**224.1759.0000** $2,249	**224.2259.0000** $3,703	**224.1559.0000** $4,234



Pressure temperature ratings

[1] The pressure / temperature functional ranges of Type 447 are dependent on the PTFE components in the safety valve. The chart shows the application ranges for:

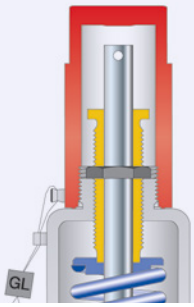
- **I** Standard safety valve with PTFE nozzle and sealing plate made of BOROFLOAT glass
- **II** Design for pressures above 10 bar or 12 bar: Safety valve with metallic nozzle and sealing plate of Hastelloy®, nickel-base alloys, etc.
- **III** Safety valve with metallic nozzle and sealing plate of Hastelloy®, nickel-base alloys, etc.

Additional order codes are required for ordering

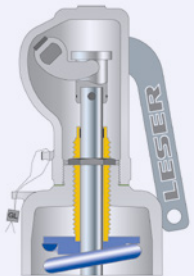
Nominal diameter	Set pressure [bar]	Option code
DN 25	12.01 – 16	S05 + S07
DN 50	10.01 – 16	S05 + S07 + S54
DN 80	10.01 – 16	S05 + S07 + S54
DN 100	10.01 – 16	S05 + S07 + S54

Critical Service
Available options

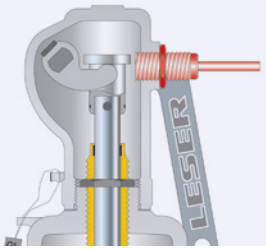
Screwed cap H2
H2



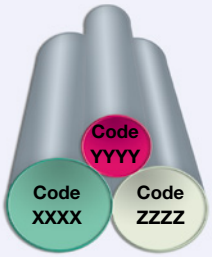
Packed lever H4
H4



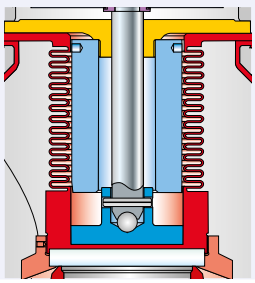
Lift indicator
J39: Adaptor for lift indicator H4
J93: Lift indicator



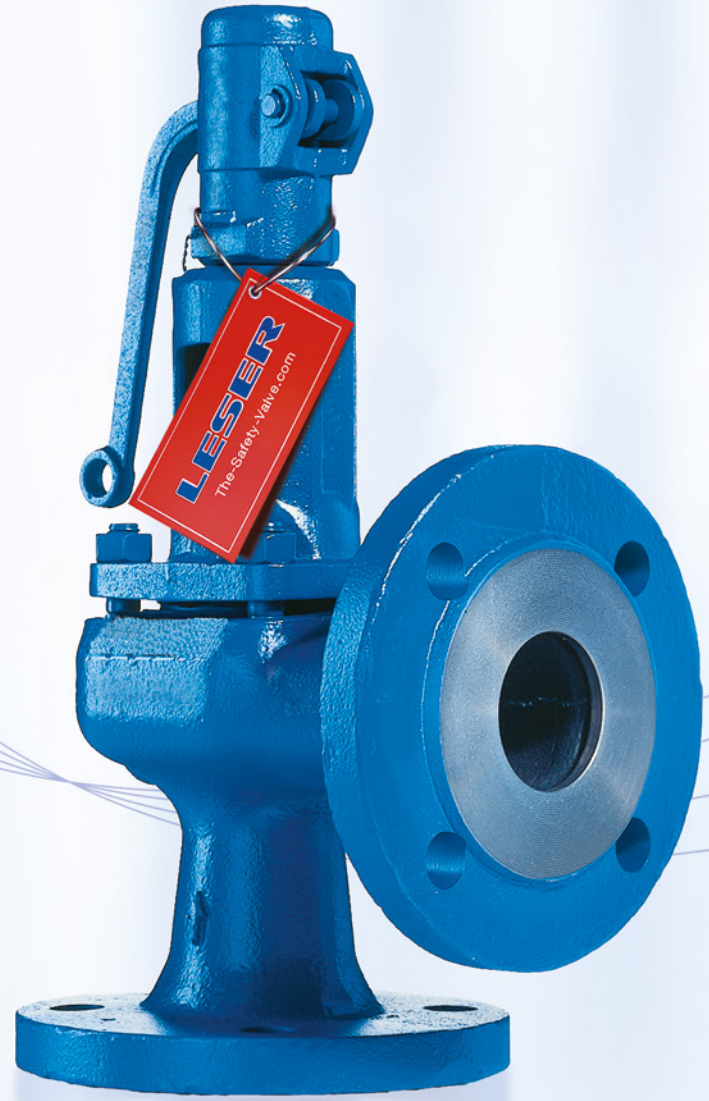
Special material
2.4610 Hastelloy® C4



Lift stopper Type 447
J51

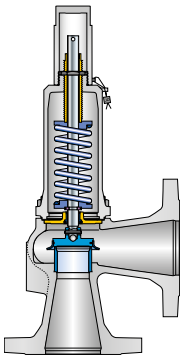


Modulate Action
Flanged Safety Relief Valves



Modulate Action

All prices in $



Type 431, 433

Valve size	1/2" x 1/2"	3/4" x 3/4"	1" x 1"	1 1/4" x 1 1/4"	1 1/2" x 1 1/2"	2" x 2"	2 1/2" x 2 1/2"	3" x 3"	4" x 4"	5" x 5"	6" x 6"
Actual Orifice diameter d_0 [mm]	12	18	18	18	23	29	37	46	60	74	92
Actual Orifice area A_0 [inch^2]	0.175	0.394	0.394	0.394	0.644	1.024	1.667	2.576	4.383	6.666	10.304
Weight [lb]	11	14	14	18	20	27	34	45	74	108	146
Body material: WCB											
	Class 150 / 300	**Class 150**	**Class 150 / 300**		**Class 150**	**Class 150 / 300**		**Class 150**			
Bonnet closed **H2** Art. No. **4332.**	**4422** $1,721	**4142** $1,622	**4152** $1,651	**4162** $1,714	**4172** $1,932	**4182** $2,358	**4192** $2,948	**4202** $3,876	**4212** $5,816	**4222** $8,169	**4232** $11,748
H3 Art. No. **4332.**	**4423** $1,721	**4143** $1,789	**4153** $1,817	**4163** $1,880	**4173** $2,103	**4183** $2,527	**4193** $3,248	**4203** $4,178	**4213** $6,116	**4223** $8,585	**4233** $12,166
H4 Art. No. **4332.**	**4424** $1,984	**4144** $1,988	**4154** $2,014	**4164** $2,073	**4174** $2,296	**4184** $2,720	**4194** $3,549	**4204** $4,476	**4214** $6,415	**4224** $9,127	**4234** $12,707
Bonnet open **H3** Art. No. **4312.**	**4425** $1,721	**4145** $1,789	**4155** $1,817	**4165** $1,880	**4175** $2,103	**4185** $2,527	**4195** $3,248	**4205** $4,178	**4215** $6,116	**4225** $8,585	**4235** $12,166
p [psig] S/G/L **3 –**	**580**	**580**	**580**	**580**	**580**	**580**	**507 (580)**	**507**	**435**	**464**	**232**
Body material: CF8M											
	Class 150 / 300	**Class 150**	**Class 150 / 300**		**Class 150**	**Class 150 / 300**		**Class 150**			
Bonnet closed **H2** Art. No. **4334.**	**4432** $3,175	**4272** $3,285	**4282** $3,454	**4292** $4,338	**4302** $4,950	**4312** $5,712	**4322** $8,311	**4332** $9,585	**4342** $14,911	–	–
H4 Art. No. **4334.**	**4434** $3,175	**4274** $4,366	**4284** $4,534	**4294** $5,415	**4304** $6,025	**4314** $6,788	**4324** $9,870	**4334** $11,143	**4344** $16,470	–	–
p [psig] S/G/L **3 –**	**580**	**580**	**580**	**580**	**580**	**458 (580)**	**377**	**362**	**319**	–	–

Modulating Series valves are not ASME certified.

Modulate Action

All prices in $

Options

Valve size			1/2" x 1/2"	3/4" x 3/4"	1" x 1"	1 1/4" x 1 1/4"	1 1/2" x 1 1/2"	2" x 2"	2 1/2" x 2 1/2"	3" x 3"	4" x 4"	5" x 5"	6" x 6"
Actual Orifice diameter d_0 [mm]			12	18	18	18	23	29	37	46	60	74	92
Actual Orifice area A_0 [inch^2]			0.175	0.394	0.394	0.394	0.644	1.024	1.667	2.576	4.383	6.666	10.304
Weight [lb]			11	14	14	14	18	20	27	34	74	108	146
Special machining of flange		per flange	$250	$250	$250	$250	$250	$250	$398	$398	$398	$398	$746
O-ring disc	CR Neoprene®	"K" J21	–	$173	$173	$173	$173	$224	$224	$224	$398	$398	$647
	EPDM Buna-EP®	"D" J22	–	$173	$173	$173	$173	$224	$224	$224	$398	$398	$647
	FPM/FKM Viton®	"L" J23	–	$173	$173	$173	$173	$224	$224	$224	$398	$398	$647
	FFKM Kalrez®	"C" J20	–	$547	$547	$547	$547	$896	$896	$896	$1,991	$1,991	$3,232
Lift stopper		J51	–	x	x	x	x	$398	$398	$398	$598	$598	$598
Drain hole	G 1/4	J18	$99	$99	$99	$99	$99	$99	$99	$99	x	x	x
	G 1/2	J19	x	x	x	x	x	x	x	x	$99	$99	$99
Stainless steel bellows	433	J78	$697	$697	$697	$697	$697	$1,366	$1,366	$1,366	$2,238	$2,238	$3,980
	431	J68											
	pressure range p [psig]		$845	$845	$845	$845	$845	$1,618	$1,618	$1,618	$2,736	$2,736	$4,972
O-ring damper	H2	J65	$547	–	$547	$547	$547	$547	$547	$547	$547	$547	$547
	pressure range p [psig]		7 – 580	–	7 – 580	7 – 580	7 – 580	7 – 580	7 – 508	7 – 508	7 – 435	–	–
O-ring damper	H4	J66	$647	–	$647	$647	$647	$647	$647	$647	$647	$647	$647
	pressure range p [psig]		7 – 580	–	7 – 580	7 – 580	7 – 580	7 – 580	7 – 508	7 – 508	7 – 435	–	–
Heating jacket for body	4312		$2,736	$2,736	$2,736	$3,481	$3,481	$3,481	$4,477	$4,477	–	–	–
	4332												
	4334		$2,238	$2,238	$2,238	$2,736	$2,736	$2,736	$3,481	$3,481	–	–	–
Heating jacket spacer		H33	$1,740	$1,740	$1,740	$1,740	$1,740	$1,740	$1,740	$1,740	–	–	–
High temperature alloy spring	1.8159	X01	$51	$51	$51	$51	$51	$51	$125	$125	$125	*	*
	1.7102												
Stainless steel spring	1.4310	X04	$51	$51	$51	$51	$51	$51	$224	$224	$250	$250	$993
Free of oil and grease	Standard	J85	$173	$173	$198	$224	$250	$298	$447	$498	$746	$746	$746
	increased requirement	J92	$224	$224	$224	$298	$298	$348	$498	$1,245	$845	$845	$598
Oxygen service[1]	4334	N7D	$224	$224	$224	$298	$298	$348	$498	$1,245	$845	$845	$845

[1] For oxygen service, the option code J92 is automatically used for order control, but without additional charge.

LESER Original Spare Parts Kits – Type 427/429, 431/433

Contents

The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER safety valve

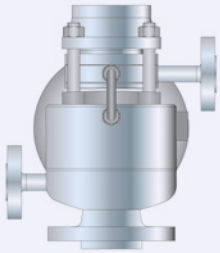
Item	Component	Material	Quantity	Item	Component	Material	Quantity
7.5	Securing ring (Disc)	1.4571 / 316Ti	1	**59**	Securing ring (Split ring)	1.4571 / 316Ti	1
14	Split ring	1.4404 / 316L	2	**60**	Gasket	Graphite / 1.4401 Graphite / 316	3
40.3	Spacer	1.4571 / 316Ti	3	**61**	Ball	1.4401 / 316	1
57	Pin	1.4310/Stainless steel	1				

Spare Parts Kits

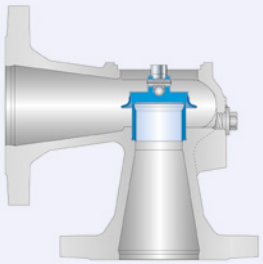
DN	15 – 25	25	32	40	50	65	80	100	125	150
Art. No. **5012.**	**1201**	**1201**	**1201**	**1201**	**1212**	**1213**	**1204**	**1214**	**1215**	**1216**
	$85	$85	$85	$85	$85	$105	$105	$105	$210	$317

Modulate Action
Available options

Heating jacket
H29, H30: Couplings $^{3}/_{8}$", $^{3}/_{4}$"
K31, K32: Flanges $^{1}/_{2}$" Class 150,
1" Class 150



Drain hole
J18: G $^{1}/_{4}$
J19: G $^{1}/_{2}$

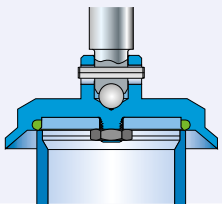


Open bonnet
See Art. No.

Type 433 Refrigeration technology
H91: Outlet groove face D
H93: Inlet groove face D

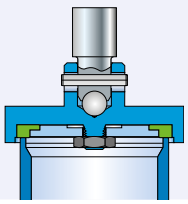
O-ring disc

J21: CR	Neoprene®	"K"
J22: EPDM	Buna-EP®	"D"
J23: FPM/FKM	Viton®	"L"
J20: FFKM	Kalrez®	"C"

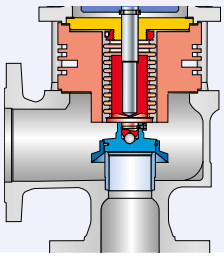


Disc with inserted sealing plate

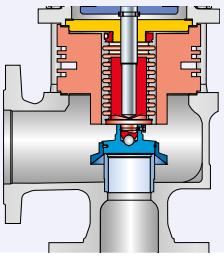
J44: PTFE-FDA	"A"
J48: PCTFE	"G"
J49: SP	"T"



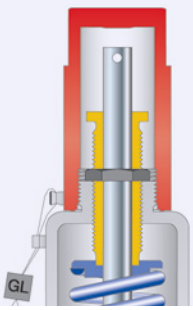
Stainless steel bellows
J68: Open bonnet
J78: Closed bonnet



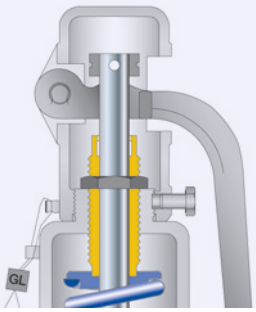
Conversion kit for stainless steel bellows
On request



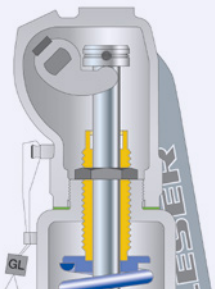
Screwed cap H2
H2



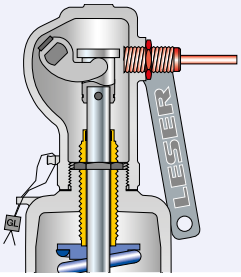
Plain lever H3
H3



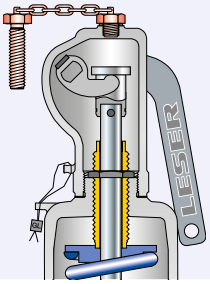
Packed lever H4
H4



Lift indicator
J39: Adaptor for lift indicator H4
J93: Lift indicator



Test gag
J69: H4
J70: H2

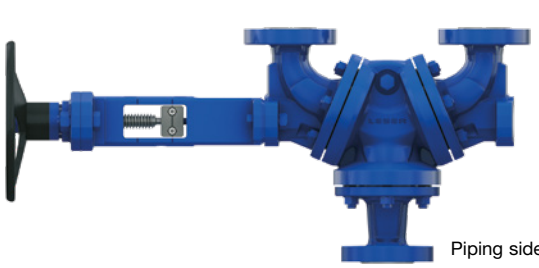


Best Availability

Page

Best Availability

All prices in $



Type 330 Compact

		Safety valve side DN	25	40	50	65	80	100	125
		NPS	1	1 1/2	2	2 1/2	3	4	5
Weight [kg]		H dimension Standard	73	78	79	117	125	185	209
		H dimension extended	74	82	86	–	125	190	–
Base price									
		Body basic construction				**PN 40 (Class 300)**			
Body material		Art. No. **3300.**	**0010**	**0050**	**0070**	**0090**	**0100**	**0120**	**0140**
	1.0619 WCB	Option code Q09	$2,312	$3,669	$3,991	$5,859	$7,236	$8,730	$11,964
Additional price for other body materials									
Low-temperature steel	LCB	Q10	$447	$746	$797	$1,143	$1,492	$1,740	$2,364
Stainless steel	1.4408 CF8M	Q11	$1,618	$2,486	$2,736	$3,980	$4,972	$5,967	$8,204

Options

Type 330 Compact

		Safety valve side DN	25	40	50	65	80	100	125
		NPS	1	1 1/2	2	2 1/2	3	4	5
Machining of flange		Piping side	$250	$250	$250	$398	$398	$398	$398
		Safety valve side	$498	$498	$498	$797	$797	$797	$797
Flange facing RTJ-groove		Piping side Y85	$250	$250	$250	$398	$398	$398	$398
		Safety valve side Y86	$498	$498	$498	$797	$797	$797	$797
Spindle	1.4404/316L	Q39	$547	$547	$547	$697	$697	$697	$1,194
Seat	1.4404 stellited	Q67	$250	$250	$250	$250	$250	$398	$398
Disc	1.4404 stellited	Q68	$250	$250	$250	$250	$250	$398	$398
TA-Luft conformity for gaskets and gland		Q69	$398	$447	$498	$797	$945	$1,245	$1,093
Pickled version		Q77	$150	$150	$150	$746	$746	$746	$746
Lockable combination									
Change-over valve: inlet with chain wheel		Q03	$1,042	$1,143	$1,618	$1,618	$1,740	$1,740	$2,113
Change-over valve: outlet with chain wheel and chain		Q04	$1,093	$1,194	$1,740	$1,740	$1,865	$1,865	$2,238
Locking device for the hand wheel		Q3C	$896	$896	$896	$896	$896	$896	$896

Best Availability

All prices in $

Type 330 Compact

		Safety valve side DN	150	200	250	300	350	400
		NPS	6	8	10	12	14	16
Weight [kg]		H dimension Standard	270	565	782	1003	1038	1375
		H dimension extended	–	532	–	–	–	–
Base price								
		Body basic construction	PN 40 (Class 300)			PN 25 / Class 150	PN 16 / Class 150	
Body material		Art. No. **3300.**	**0150**	**0170**	**0190**	**0200**	**0220**	**0230**
	1.0619 WCB	Option code Q09	$15,198	$25,063	$35,942	$57,337	$80,724	$113,651
Additional price for other body materials								
Low-temperature steel	LCB	Q10	$2,983	$4,972	$7,211	$11,436	$15,911	$22,376
Stainless steel	1.4408 CF8M	Q11	$10,444	$17,406	$24,865	$39,781	$57,184	$79,560

Options

Type 330 Compact

		Safety valve side DN	150	200	250	300	350	400
		NPS	6	8	10	12	14	16
Machining of flange		Piping side	$746	$746	$746	$1,245	$1,245	$1,245
		Safety valve side	$1,492	$1,492	$1,492	$2,486	$2,486	$2,486
Flange facing RTJ-groove		Piping side Y85	$746	$746	$746	$1,245	$1,245	$1,245
		Safety valve side Y86	$1,492	$1,492	$1,492	$2,486	$2,486	$2,486
Spindle[1]	1.4404/316L	Q39	$1,194	$2,486	$2,486	$2,486	$2,486	$2,486
Seat	1.4404 stellited	Q67	$447	$598	$746	$896	$1,042	$1,194
Disc	1.4404 stellited	Q68	$447	$598	$746	$896	$1,042	$1,194
TA-Luft conformity for gaskets and gland		Q69	$1,366	$1,740	$1,865	$1,991	$2,486	$3,232
Pickled version		Q77	$746	$746	$746	$746	$746	$746
Lockable combination								
Change-over valve: inlet with chain wheel		Q03	$2,364	$2,364	$2,983	$2,983	$2,983	$2,983
Change-over valve: outlet with chain wheel and chain		Q04	$2,736	$2,736	$3,481	$3,481	$3,481	$3,481
Locking device for the hand wheel		Q3C	$896	$896	$896	$896	$896	$896

[1] Valid only in combination with base material Q09 (WCB)

Best Availability

All prices in $

Options			Type 330 Compact						
	Safety valve side DN		25	40	50	65	80	100	125
	NPS		1	1 1/2	2	2 1/2	3	4	5
NACE Material test certificate DIN EN 10204-3.1	MR0103	N77	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364
	MR0175	N78	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364	$2,364
Free of oil and grease	Standard	J85	$746	$1,093	$1,093	$1,093	$1,093	$1,740	$1,740
	increased requirement [1]	J92	$945	$1,366	$1,366	$1,492	$1,492	$2,238	$2,238
	oxygen service [1] [2]	N7D	$945	$1,366	$1,366	$1,492	$1,492	$2,238	$2,238
Drain hole with lock screw EN 10204-3.1	G 1/4	Q2W	$250	$250	$250	$250	$250	$250	$250
	G 1/2	Q2Y	$250	$250	$250	$250	$250	$250	$250
	NPT 1/4	Q2X	$250	$250	$250	$250	$250	$250	$250
	NPT 1/2	Q2Z	$250	$250	$250	$250	$250	$250	$250
Expansion Piping side	DN 40	Q5Q	$498	–	–	–	–	–	–
	DN 50	Q5R	$498	$498	–	–	–	–	–
	DN 80	Q5T	–	–	–	$746	–	–	–
	DN 100	Q5U	–	–	–	–	–	–	–
	1 1/2"	Q5V	–	–	–	–	–	$1,042	–
	2"	Q5C	$498	–	–	–	–	–	–
	2 1/2"	Q5D	$498	$498	–	–	–	–	–
	3"	Q5F	–	–	–	$746	–	–	–
	5"	Q5H	–	–	–	–	–	$1,042	–
Pressure balancing		Q70	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865
Pressure relief	Needle valve for 10 mm pipe	Q71	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve with NPT 1/2	Q75	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve flange DN15, PN 40	Q72	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange DN15, PN 250	Q7A	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange 1/2", Class 300 / 600	Q7B	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Conn. for pressure relief v. NPT 1/2	Q7C	$250	$250	$250	$250	$250	$250	$250
Remote sensing	for POSV, inlet body	Q73	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
Flushing hole (without lock screw)	NPT 1/2	Q3A	$250	$250	$250	$250	$250	$250	$250
	G 1/2	Q3B	$250	$250	$250	$250	$250	$250	$250
Proximity switch	Adaptor	Q76	$250	$250	$250	$250	$250	$250	$250
	Proximity switch	J93	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991

[1] Standard valve delivery time + 1 week

[2] For oxygen service, the Option Code J92 is automatically used for order control, but without additional charge.

Best Availability

All prices in $

Options			Type 330 Compact					
	Safety valve side DN		150	200	250	300	350	400
	NPS		6	8	10	12	14	16
NACE Material test certificate DIN EN 10204-3.1	MR0103	N77	$4,477	$4,477	$10,940	$10,940	$10,940	$12,432
	MR0175	N78	$4,477	$4,477	$10,940	$10,940	$10,940	$12,432
Free of oil and grease	Standard	J85	$1,991	$2,364	$3,731	$5,220	$7,707	$9,449
	increased requirement [1]	J92	$2,486	$4,477	$4,477	$6,215	$9,449	$11,436
	oxygen service [1] [2]	N7D	$2,486	$4,477	$4,477	$6,215	$9,449	$11,436
Drain hole with lock screw EN 10204-3.1	G 1/4	Q2W	$250	$250	$250	$250	$250	$250
	G 1/2	Q2Y	$250	$250	$250	$250	$250	$250
	NPT 1/4	Q2X	$250	$250	$250	$250	$250	$250
	NPT 1/2	Q2Z	$250	$250	$250	$250	$250	$250
Expansion Piping side	DN 40	Q5Q	–	–	–	–	–	–
	DN 50	Q5R	–	–	–	–	–	–
	DN 80	Q5T	–	–	–	–	–	–
	DN 100	Q5U	–	–	–	–	–	–
	DN 125	Q5C	–	–	–	–	–	–
	1 1/2"	Q5D	–	–	–	–	–	–
	2"	Q5E	–	–	–	–	–	–
	3"	Q5F	–	–	–	–	–	–
	5"	Q5H	–	–	–	–	–	–
Pressure balancing		Q70	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865
Pressure relief	Needle valve for 10 mm pipe	Q71	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve with NPT 1/2"	Q75	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve flange DN15, PN 40	Q72	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange DN15, PN 250	Q7A	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange 1/2", Class 300 / 600	Q7B	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Conn. for pressure relief v. NPT 1/2	Q7C	$250	$250	$250	$250	$250	$250
Remote sensing	for POSV, inlet body	Q73	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
Flushing hole (without lock screw)	NPT 1/2	Q3A	$250	$250	$250	$250	$250	$250
	G 1/2	Q3B	$250	$250	$250	$250	$250	$250
Proximity switch	Adaptor M12	Q76	$250	$250	$250	$250	$250	$250
	Proximity switch	J93	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991

[1] Standard valve delivery time + 1 week
[2] For oxygen service, the Option Code J92 is automatically used for order control, but without additional charge.

Best Availability

All prices in $

Type 320 Flow			PN 16 – PN 40					
		Safety valve side DN	40	50	65	80	100	125
		NPS	1 1/2	2	2 1/2	3	4	5
Weight [kg]		H dimension Standard	103	105	169	174	240	493
Base price								
		Body basic construction			**PN 40 (Class 300)**			
Body material		Art. No. **3200.**	**0050**	**0070**	**0090**	**0100**	**0120**	**0140**
	1.0619 WCB	Option code Q09	$4,765	$6,611	$7,556	$9,897	$16,364	$16,791
Additional price for other body materials								
Low-temperature steel	LCB	Q10	$945	$1,366	$1,492	$1,991	$3,232	$3,481
Stainless steel	1.4408 CF8M	Q11	$3,232	$4,477	$5,220	$6,715	$11,436	$11,935

Options				Type 320 Flow, PN 16 – PN 40					
		Safety valve side DN		40	50	65	80	100	125
		NPS		1 1/2	2	2 1/2	3	4	5
Machining of flange		Piping side		$250	$250	$398	$398	$398	$398
		Safety valve side		$498	$498	$797	$797	$797	$797
Flange facing RTJ-groove		Piping side	Y85	$250	$250	$398	$398	$398	$398
		Safety valve side	Y86	$498	$498	$797	$797	$797	$797
Spindle[1]	1.4404/316L		Q39	$547	$547	$697	$697	$697	$1,194
Seat	1.4404 stellited		Q67	$250	$250	$398	$398	$447	$447
Disc	1.4404 stellited		Q68	$250	$250	$398	$398	$447	$447
TA-Luft conformity for gaskets and gland			Q69	$447	$498	$797	$945	$1,245	$1,093
Pickled version			Q77	$150	$150	$746	$746	$746	$746
Lockable combination									
Change-over valve: inlet with chain wheel			Q03	$1,143	$1,618	$1,618	$1,740	$1,740	$2,113
Change-over valve: outlet with chain wheel and chain			Q04	$1,194	$1,740	$1,740	$1,865	$1,865	$2,238
Locking device for the hand wheel			Q3C	$896	$896	$896	$896	$896	$896

[1] Valid only in combination with base material Q09 (WCB)

All prices in $

Type 320 Flow			PN 16 – PN 40			
		Safety valve side DN	150	200	250	300
		NPS	6	8	10	12
Weight [kg]		H dimension Standard	690	930	987	1460
Base price						
		Body basic construction	**PN 40 (Class 300)**		**PN 25 (Class 150)**	**PN 16 (Class 150)**
Design	Body	Art. No. **3200.**	**0150**	**0170**	**0190**	**0200**
Steel	1.0619 WCB	Option Code Q09	$21,334	$35,177	$50,445	$80,471
Additional price for other base materials						
Low-temperature steel	LCB	Q10	$4,228	$6,962	$9,946	$15,911
Stainless steel	1.4408 CF8M	Q11	$14,917	$24,365	$34,807	$57,184

Options				Type 320 Flow, PN 16 – PN 40			
		Safety valve side DN		150	200	250	300
		NPS		6	8	10	12
Machining of flange		Piping side		$746	$746	$746	$1,245
		Safety valve side		$1,492	$1,492	$1,492	$2,486
Flange facing RTJ-groove		Piping side	Y85	$746	$746	$746	$1,245
		Safety valve side	Y86	$1,492	$1,492	$1,492	$2,486
Spindle[1]	1.4404/316L		Q39	$1,194	$2,486	$2,486	$2,486
Seat	1.4404 stellited		Q67	$746	$896	$1,042	$1,194
Disc	1.4404 stellited		Q68	$746	$896	$1,042	$1,194
TA-Luft conformity for gaskets and gland			Q69	$1,366	$1,740	$1,865	$1,991
Pickled version			Q77	$746	$746	$746	$746
Lockable combination							
Change-over valve: inlet with chain wheel			Q03	$2,364	$2,364	$2,983	$2,983
Change-over valve: outlet with chain wheel and chain			Q04	$2,736	$2,736	$3,481	$3,481
Locking device for the hand wheel			Q3C	$896	$896	$896	$896

[1] Valid only in combination with base material Q09 (WCB)

Best Availability

All prices in $

Options				Type 320 Flow, PN 16 – PN 40					
	Safety valve side DN		40	50	65	80	100	125
	NPS		1 1/2	2	2 1/2	3	4	5
NACE Material test certificate DIN EN 10204-3.1	MR0103	N77	$2,364	$2,364	$2,364	$2,364	$2,364	$4,477
	MR0175	N78	$2,364	$2,364	$2,364	$2,364	$2,364	$4,477
Free of oil and grease	Standard	J85	$1,093	$1,093	$1,740	$1,740	$1,991	$2,364
	increased requirement [1]	J92	$1,366	$1,366	$2,238	$2,238	$2,736	$2,983
	oxygen service [1] [2]	N7D	$1,366	$1,366	$2,238	$2,238	$2,736	$2,983
Drain hole with lock screw EN 10204-3.1	G 1/4	Q2W	$250	$250	$250	$250	$250	$250
	G 1/2	Q2Y	$250	$250	$250	$250	$250	$250
	NPT 1/4	Q2X	$250	$250	$250	$250	$250	$250
	NPT 1/2	Q2Z	$250	$250	$250	$250	$250	$250
Expansion Piping side	DN 50	Q5R	$498	–	–	–	–	–
	DN 65	Q5S	$498	$498	–	–	–	–
	DN 80	Q5T	$498	$598	–	–	–	–
	DN 100	Q5U	–	–	$746	$896	–	–
	DN 125	Q5V	–	–	–	$896	–	–
	DN 150	Q5W	–	–	–	–	$1,042	[3]
	DN 200	Q5X	–	–	–	–	–	$1,194
	DN 250	Q5Y	–	–	–	–	–	–
	DN 300	Q5Z	–	–	–	–	–	–
	DN 400	Q6B	–	–	–	–	–	–
	1 1/2"	Q5C	–	–	–	–	–	–
	2"	Q5D	$498	–	–	–	–	–
	2 1/2"	Q5E	$498	$598	–	–	–	–
	3"	Q5F	$498	$598	–	–	–	–
	4"	Q5G	–	–	$746	$896	–	–
	5"	Q5H	–	–	–	$896	–	–
	6"	Q5I	–	–	–	–	$1,042	[3]
	8"	Q5J	–	–	–	–	–	$1,194
	10"	Q5K	–	–	–	–	–	–
	12"	Q5L	–	–	–	–	–	–
	16"	Q5N	–	–	–	–	–	–
Pressure balancing		Q70	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865
Pressure relief	Needle valve for 10 mm pipe	Q71	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve with NPT 1/2	Q75	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve flange DN15, PN 40	Q72	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange DN15, PN 250	Q7A	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange 1/2", Class 300 / 600	Q7B	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Conn. for pressure relief v. NPT 1/2	Q7C	$250	$250	$250	$250	$250	$250
Remote sensing	for POSV, inlet body	Q73	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
Flushing hole (without lock screw)	NPT 1/2	Q3A	$250	$250	$250	$250	$250	$250
	G 1/2	Q3B	$250	$250	$250	$250	$250	$250
Proximity switch	Adaptor M12	Q76	$250	$250	$250	$250	$250	$250
	Proximity switch	J93	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991

[1] Standard valve delivery time + 1 week
[2] For oxygen service, the Option Code J92 is automatically used for order control, but without additional charge.
[3] Standard with single expansion

Best Availability

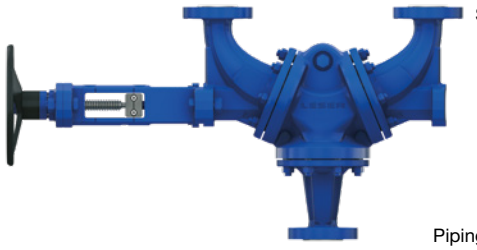
All prices in $

Options			Type 320 Flow, PN 16 – PN 40			
Safety valve side DN			150	200	250	300
NPS			6	8	10	12
NACE Material test certificate DIN EN 10204-3.1	MR0103	N77	$4,477	$4,477	$10,940	$12,432
	MR0175	N78	$2,364	$4,477	$10,940	$12,432
Free of oil and grease	Standard	J85	$4,477	$3,232	$7,707	$9,449
	increased requirement [1]	J92	$3,232	$3,232	$9,449	$11,436
	oxygen service [1] [2]	N7D	$3,232	$3,232	$9,449	$11,436
Drain hole with lock screw EN 10204-3.1	G 1/4	Q2W	$250	$250	$250	$250
	G 1/2	Q2Y	$250	$250	$250	$250
	NPT 1/4	Q2X	$250	$250	$250	$250
	NPT 1/2	Q2Z	$250	$250	$250	$250
Expansion Piping side	DN 50	Q5R	–	–	–	–
	DN 65	Q5S	–	–	–	–
	DN 80	Q5T	–	–	–	–
	DN 100	Q5U	–	–	–	–
	DN 125	Q5V	–	–	–	–
	DN 150	Q5W	–	–	–	–
	DN 200	Q5X	$1,194	–	–	–
	DN 250	Q5Y	$1,194	$1,492	–	–
	DN 300	Q5Z	–	$1,492	$1,865	–
	DN 350	Q5A	–	–	$1,492	–
	1 1/2"	Q5C	–	–	–	–
	2"	Q5D	–	–	–	–
	2 1/2"	Q5E	–	–	–	–
	3"	Q5F	–	–	–	–
	4"	Q5G	–	–	–	–
	5"	Q5H	–	–	–	–
	6"	Q5I	–	–	–	–
	8"	Q5J	$1,194	–	–	–
	10"	Q5K	$1,194	$1,492	–	–
	12"	Q5L	–	$1,492	$1,865	–
	14"	Q5M	–	–	$1,865	–
Pressure balancing		Q70	$1,865	$1,865	$1,865	$1,865
Pressure relief	Needle valve for 10 mm pipe	Q71	$2,486	$2,486	$2,486	$2,486
	Needle valve with NPT 1/2"	Q75	$2,486	$2,486	$2,486	$2,486
	Needle valve flange DN15, PN 40	Q72	$2,983	$2,983	$2,983	$2,983
	Needle valve flange DN15, PN 250	Q7A	$2,983	$2,983	$2,983	$2,983
	Needle valve flange 1/2", Class 300 / 600	Q7B	$2,983	$2,983	$2,983	$2,983
	Conn. for pressure relief v. NPT 1/2	Q7C	$250	$250	$250	$250
Remote sensing	for POSV, inlet body	Q73	$2,486	$2,486	$2,486	$2,486
Flushing hole (without lock screw)	NPT 1/2	Q3A	$250	$250	$250	$250
	G 1/2	Q3B	$250	$250	$250	$250
Proximity switch	Adaptor M12	Q76	$250	$250	$250	$250
	Proximity switch	J93	$1,991	$1,991	$1,991	$1,991

[1] Standard valve delivery time + 1 week
[2] For oxygen service, the Option Code J92 is automatically used for order control, but without additional charge.

Best Availability

All prices in $



Type 320 Flow — PN 100 – PN 250

		Safety valve side DN	25	40	50	80	100	150	200
		NPS	1	1 1/2	2	3	4	6	8
Weight [kg]		H dimension Standard	145	164	175	400	435	945	1030
Base price									
		Body basic construction	**PN 250 (Class 1500)**					**PN 100 (Class 600)**	
Design	Body	Art. No. **3200.**	**0020**	**0060**	**0080**	**0110**	**0130**	**0160**	**0180**
Steel	1.0619 WCB	Option Code Q09	$5,171	$5,803	$7,770	$12,665	$18,011	$26,314	$43,396
			Prices valid for flange rating class PN 63 (Class 300) additional prices for higher flange rating classes see below						
Additional price for other base materials									
Low-temperature steel	LCB	Q10	$993	$1,143	$1,492	$2,486	$3,481	$6,464	$10,444
Stainless steel	1.4408 CF8M	Q11	$3,481	$3,980	$5,220	$8,703	$12,432	$22,376	$37,294

Options — Type 320 Flow, PN 100 – PN 250

			Safety valve side DN	25	40	50	80	100	150	200
			Valve size	1"	1 1/2"	2"	3"	4"	6"	8"
Machining of flange		Piping side		$250	$250	$250	$398	$398	$746	$746
		Safety valve side		$498	$498	$498	$797	$797	$1,492	$1,492
Flange facing RTJ-groove		Piping side	Y85	$250	$250	$250	$398	$398	$746	$746
		Safety valve side	Y86	$498	$498	$498	$797	$797	$1,492	$1,492
Spindle	1.4404/316L		Q39	$547	$547	$547	$697	$697	$1,194	$2,486
Seat	1.4404 stellited		Q67	$250	$250	$250	$447	$447	$746	$746
Disc	1.4404 stellited		Q68	$250	$250	$250	$447	$447	$746	$746
TA-Luft conformity for gaskets and gland			Q69	$398	$447	$498	$945	$1,245	$1,366	$1,740
Pickled version			Q77	$150	$150	$150	$746	$746	$746	$746
Lockable combination										
Change-over valve: inlet with chain wheel			Q03	$1,042	$1,143	$1,618	$1,740	$1,740	$2,364	$2,364
Change-over valve: outlet with chain wheel and chain			Q04	$1,093	$1,194	$1,740	$1,865	$1,865	$2,736	$2,736
Locking device for the hand wheel			Q3C	$896	$896	$896	$896	$896	$896	$896
Flange rating class Safety valve side		PN 100	Q2F	$498	$498	$498	$797	$797	$1,492	$1,492
		PN 160	Q2G	$993	$993	$993	$1,618	$1,618	$2,983	$2,983
		PN 250	Q05	$1,492	$1,492	$1,492	$2,364	$2,364	$4,477	$4,477
		Class 600	Q2J	$498	$498	$498	$797	$797	$1,492	$1,492
		Class 900	Q2K	$993	$993	$993	$1,618	$1,618	$2,983	$2,983
		Class 1500	Q06	$1,492	$1,492	$1,492	$2,364	$2,364	$4,477	$4,477
Flange rating class Piping side		PN 100	Q2Q	$250	$250	$250	$398	$398	$746	$746
		PN 160	Q2R	$498	$498	$498	$797	$797	$1,492	$1,492
		PN 250	Q07	$746	$746	$746	$1,194	$1,194	$2,238	$2,238
		Class 600	Q2U	$250	$250	$250	$398	$398	$746	$746
		Class 900	Q2V	$498	$498	$498	$797	$797	$1,492	$1,492
		Class 1500	Q08	$746	$746	$746	$1,194	$1,194	$2,238	$2,238

[1] Seat and disc 1.4404 stellited > 63 bar standard

Best Availability

All prices in $

Options

Type 320 Flow, PN 100 – PN 250

		Safety valve side DN		25	40	50	80	100	150	200
		NPS		1	1 1/2	2	3	4	6	8
NACE Material test certificate DIN EN 10204-3.1	MR0103		N77	$2,364	$2,364	$2,364	$2,364	$4,477	$5,220	$5,220
	MR0175		N78	$2,364	$2,364	$2,364	$2,364	$4,477	$5,220	$5,220
Free of oil and grease		Standard	J85	$746	$1,093	$1,093	$1,740	$1,740	$2,364	$3,232
		increased requirement [1]	J92	$945	$1,366	$1,366	$2,238	$2,736	$3,232	$3,980
		oxygen service [1] [2]	N7D	$945	$1,366	$1,366	$2,238	$2,736	$3,232	$3,980
Drain hole with lock screw EN 10204-3.1	G 1/4		Q2W	$250	$250	$250	$250	$250	$250	$250
	G 1/2		Q2Y	$250	$250	$250	$250	$250	$250	$250
	NPT 1/4		Q2X	$250	$250	$250	$250	$250	$250	$250
	NPT 1/2		Q2Z	$250	$250	$250	$250	$250	$250	$250
Expansion Piping side	DN 40		Q5Q	$993	–	–	–	–	–	–
	DN 50		Q5R	$993	$1,093	–	–	–	–	–
	DN 65		Q5S	–	–	–	–	–	–	–
	DN 80		Q5T	–	–	–	–	–	–	–
	DN 100		Q5U	–	–	–	$1,618	–	–	–
	DN 150		Q5W	–	–	–	$1,618	$1,991	–	–
	DN 200		Q5X						$1,194	
	DN 250		Q5Y	–	–	–	–	–	$1,194	$3,731
	1 1/2"		Q5C	$993	–	–	–	–	–	–
	2"		Q5D	$993	$1,093	–	–	–	–	–
	2 1/2"		Q5E	–	–	–	–	–	–	–
	3"		Q5F	–	–	–	–	–	–	–
	4"		Q5G	–	–	–	$1,618	–	–	–
	6"		Q5I	–	–	–	–	$1,991	–	–
	8"		Q5J	–	–	–	–	–	$1,194	–
	10"		Q5K	–	–	–	–	–	$1,194	$3,731
Pressure balancing			Q70	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865	$1,865
Pressure relief	Needle valve for 10 mm pipe		Q71	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve with NPT 1/2		Q75	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
	Needle valve flange DN 15, PN 40		Q72	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange DN 15, PN 250		Q7A	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Needle valve flange 1/2", Class 300 / 600		Q7B	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983	$2,983
	Conn. for pressure relief v. NPT 1/2		Q7C	$250	$250	$250	$250	$250	$250	$250
Remote sensing	for POSV, inlet body		Q73	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486	$2,486
Flushing hole (without lock screw)	NPT 1/2		Q3A	$250	$250	$250	$250	$250	$250	$250
	G 1/2		Q3B	$250	$250	$250	$250	$250	$250	$250
Proximity switch	Adaptor M12		Q76	$250	$250	$250	$250	$250	$250	$250
	Proximity switch		J93	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991	$1,991

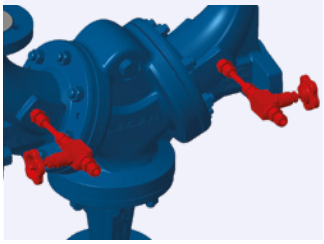
[1] Standard valve delivery time + 1 week

[2] For oxygen service, the Option Code J92 is automatically used for order control, but without additional charge.

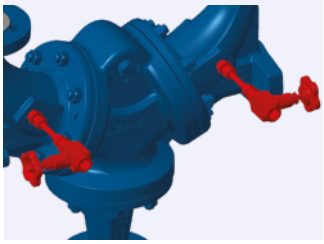
Best Availability
Available options – Type 330, Type 320

Connection for pressure relief valve
Q7C: NPT $^1/_2$

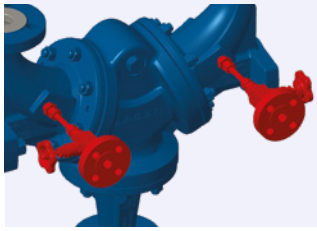
Pressure relief, Needle valve for 10 mm pipe
Q71



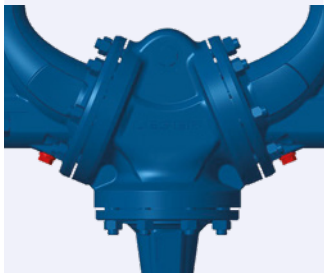
Pressure relief, Needle valve with threaded connection
Q75: NPT $^1/_2$
Q7E: G $^1/_2$



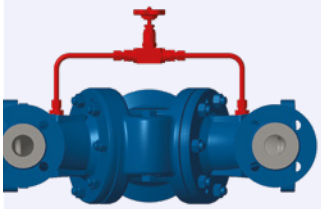
Pressure relief, Needle valve with flanged connection
Q72: DN 15, PN 40
Q7A: DN 15, PN 250
Q7B: $^1/_2$", Class 300 / 600



Drain hole with lock screw
Q2W: G $^1/_4$ **Q2X: NPT $^1/_4$**
Q2Y: G $^1/_2$ **Q2Z: NPT $^1/_2$**

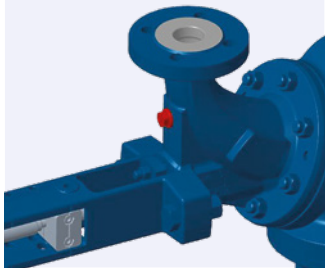


Pressure balancing
Q70

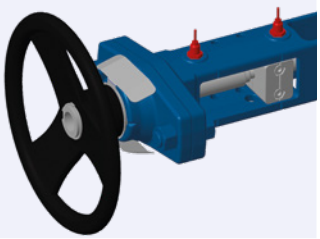


Remote sensing for POSV, inlet body
Q73

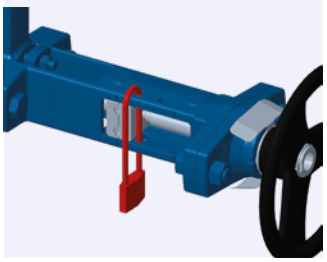
Flushing holes (both sides)
Q3A: NPT $^1/_2$
Q3B: G $^1/_2$



Proximity switch
Q76: Adaptor M12
Q7D: Adaptor M18
J93: Proximity switch



Locking device
Q3C



NACE-Compliant Change-over valves
N78: acc. to MR0175
N77: acc. to MR0103

NACE INTERNATIONAL

Available options

Contacts & Services

Page

Coating systems

All prices in $

Level 1 — LESER Standard coating systems

	DN	15 – 65	80 – 150	≥ 200
	Valve size	1/2" – 2 1/2"	3" – 6"	≥ 8"
	Option code			
1-layer coating system in RAL 5005 acc. to LID 1608.03	P2A	*	*	*
1-layer coating system in RAL 3002 acc. to LID 1608.01	L11	$150	$250	$398
2-layer coating system in RAL 5005 acc. to LID 1608.02	P2C	$198	$348	$547
2-layer coating system in RAL 3002 acc. to LID 1608.13	P2D	$198	$348	$547
Without coating for carbon steel valves	L06	–	–	–

Level 2 — Coating systems based on ISO 12944 C4

	DN	15 – 65	80 – 150	≥ 200
	Valve size	1/2" – 2 1/2"	3" – 6"	≥ 8"
	Option code			
3-layer coating system in RAL 5005 for temperatures up to 120 °C for industrial areas and coastal areas with moderate salinity and chemical plants similar to C4 (ISO 12944) acc. to LID 1608.04	P90	$348	$598	$896
4-layer coating system in RAL 5005 for temperatures up to 120 °C for industrial areas and coastal areas with moderate salinity and chemical plants similar to C4 (ISO 12944) acc. to LID 1608.05	P91	$598	$896	$1,245
2-layer coating stem in RAL 9006 for temperatures up to 540 °C for industrial areas and coastal areas with moderate salinity and chemical plants acc. to LID 1608.06	P92	$348	$598	$896
3-layer coating system in RAL 3002 for temperatures up to 120 °C for industrial areas and coastal areas with moderate salinity and chemical plants similar to C4 (ISO 12944) acc. to LID 1608.07	P93	$348	$598	$896

Coating systems

All prices in $

Level 3	Coating systems acc. to ISO 12944 C5M			
	DN	15 – 65	80 – 150	≥ 200
	Valve size	1/2" – 2 1/2"	3" – 6"	≥ 8"
	Option code			
Corrosion protection by protective coating systems similar to C5M (ISO 12944) and Norsok Standard M-501 for carbon steel (120 °C to 540 °C) in aluminum acc. to LID 1608.08	P85	$797	$1,143	$1,618
Corrosion protection by protective coating system acc. to C5M (ISO 12944) and Norsok Standard M-501 for carbon steel (-50 °C up to 120 °C) in RAL 5005 acc. to LID 1608.09	P86	$797	$1,143	$1,618
Corrosion protection by protective coating systems high temperature (120 °C to 540 °C) similar to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel in aluminum acc. to LID 1608.10	P87	$797	$1,143	$1,618
Corrosion protection by protective coating system acc. to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel (-50 °C up to 120 °C) in RAL 5005 acc. to LID 1608.11	P88	$797	$1,143	$1,618
Corrosion protection by protective coating system for cryogenic tempeture (-196 °C to -50 °C) similar to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel in RAL 5005 acc. to LID 1608.12	P89	$797	$1,143	$1,618
Corrosion protection by protective coating systems for body (up to 540 °C) in color aluminum and corrosion protection by protective coating systems for bonnet, bonnet spacer and cap (-50 °C to 120 °C) with customized color	L1C	$2,238	$2,736	$2,983

Delivery times for Level 3 option codes: + 2 weeks

Note: The prices of the coating systems for the Best Availability product group can be found under Options on p. 184 ff.

Adaptation of a Level 2 or 3 coating system acc. to customer specification				
	DN	15 – 65	80 – 150	≥ 200
	Valve size	1/2" – 2 1/2"	3" – 6"	≥ 8"
	Option code			
Coating system acc. to customer specification	L13	$298	$348	$447

Coating systems

All prices in $

Level 3

Best Availability, Type 330 Compact: Coating systems acc. to ISO 12944 C5M

		DN	25 – 65	80 – 150	200 – 250	300	350 - 400
		Valve size	1" – 2 1/2"	3" – 6"	8" – 10"	12"	14" – 16"
	LESER Standard	Option Code					
Corrosion protection by protective coating systems similar to C5M (ISO 12944) and Norsok Standard M-501 for carbon steel (-25°C to 540 °C) in aluminum acc. to LID 1608.08	LDeS 1001.80	P85	$1,245	$1,618	$2,983	$4,722	$6,215
Corrosion protection by protective coating system acc. to C5M (ISO 12944) and Norsok Standard M-501 for carbon steel (-50 °C up to 120 °C) in RAL 5005 acc. to LID 1608.09	LDeS 1001.80	P86	$1,245	$1,618	$2,983	$4,722	$6,215
Corrosion protection by protective coating systems high temperature (120 °C to 540 °C) similar to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel in aluminum acc. to LID 1608.10	LDeS 1001.80	P87	$1,245	$1,618	$2,983	$4,722	$6,215
Corrosion protection by protective coating system acc. to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel (-50 °C up to 120 °C) in RAL 5005 acc. to LID 1608.11	LDeS 1001.80	P88	$1,245	$1,618	$2,983	$4,722	$6,215
Corrosion protection by protective coating system for cryogenic tempeture (-196 °C to -50 °C) similar to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel in RAL 5005 acc. to LID 1608.12	LDeS 1001.80	P89	$1,245	$1,618	$2,983	$4,722	$6,215

Delivery times for Level 3 option codes: + 2 weeks

Level 3

Best Availability, Type 320 Flow: Coating systems acc. to ISO 12944 C5M

		DN	25 – 65	80 – 100	125 – 150	200	250 – 300
		Valve size	1" – 2 1/2"	3" – 4"	5" – 6"	8"	10" – 12"
	LESER Standard	Option Code					
Corrosion protection by protective coating systems similar to C5M (ISO 12944) and Norsok Standard M-501 for carbon steel (-25°C to 540 °C) in aluminum acc. to LID 1608.08	LDeS 1001.80	P85	$1,245	$1,618	$2,736	$4,722	$6,215
Corrosion protection by protective coating system acc. to C5M (ISO 12944) and Norsok Standard M-501 for carbon steel (-50 °C up to 120 °C) in RAL 5005 acc. to LID 1608.09	LDeS 1001.80	P86	$1,245	$1,618	$2,736	$4,722	$6,215
Corrosion protection by protective coating systems high temperature (120 °C to 540 °C) similar to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel in aluminum acc. to LID 1608.10	LDeS 1001.80	P87	$1,245	$1,618	$2,736	$4,722	$6,215
Corrosion protection by protective coating system acc. to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel (-50 °C up to 120 °C) in RAL 5005 acc. to LID 1608.11	LDeS 1001.80	P88	$1,245	$1,618	$2,736	$4,722	$6,215
Corrosion protection by protective coating system for cryogenic tempeture (-196 °C to -50 °C) similar to C5M (ISO 12944) and Norsok Standard M-501 for stainless steel in RAL 5005 acc. to LID 1608.12	LDeS 1001.80	P89	$1,245	$1,618	$2,736	$4,722	$6,215

Delivery times for Level 3 option codes: + 2 weeks

For change-over valves, external actuator components that cannot be coated are replaced by corrosion-resistant materials. Therefore, different additional prices apply for coating systems according to ISO 12944 C5M than for safety valves.

Coating systems

All prices in $

Documentation and Testing

	DN	15 – 65	80 – 150	≥ 200
	Valve size	1/2" – 2 1/2"	3" – 6"	≥ 8"
	Option code			
Dry film thickness test (DFT) acc. to EN ISO 2808 and ISO19840 Inspection certificate 3.1 acc. to DIN EN 10204	P84	$250		
Holiday Test acc. to NACE SP0188 (Porosity) Inspection certificate 3.1 acc. to DIN EN 10204	P83	$198		
Adhesion Test (Pull Off Test) acc. to EN ISO 4624 Inspection certificate 3.1 acc. to DIN EN 10204	P82	$150		
Adhesion Test (Cross-Cut Test) acc. to EN ISO 2409 Inspection certificate 3.1 acc. to DIN EN 10204	P81	$150		
Corrosion protection by protective coating system certificat FROSIO Level III from LESER inclusive inspection certificate 3.1 acc. to DIN EN 10204	P80[1)]	$298		
Corrosion protection by protective coating system certificat FROSIO Level III from 3rd Party inclusive inspection certificate 3.2 acc. to DIN EN 10204	P79[1)]	$697		

[1)] The corrosion protection certificate FROSIO Level III automatically entails further tests.

Markings

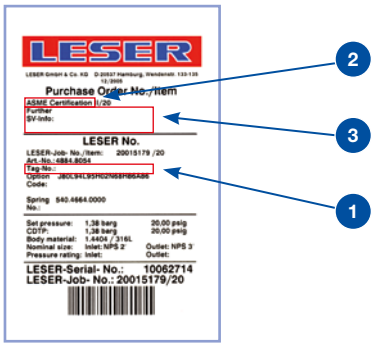
Markings on Safety Relief Valves

All prices in $

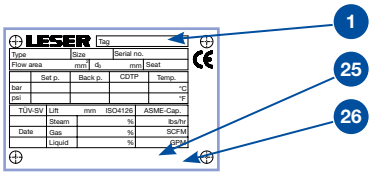
This side shows the possibilities for the marking of LESER safety relief valves.
The standard marking consists of:
– Safety valve tag
– Name plate for global application – NGA

LESER also offers the following additional markings:
– Additional information on the safety valve tag
– Marking on name plate deviating from standard
– Marking with stainless steel tag
– Marking with numeral punch
– Marking with tag provided by customer
– LESER Digital ID, machine-readable marking acc. DIN Spec 91406
For details about different marking options please see table below.

Safety valve tag
Dimensions W x H [mm]: 85 x 126

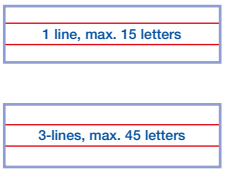


Name plate – NGA
Dimensions W x H [mm]: 60 x 40



Digital ID
Dimensions W x H [mm]: 60 x 30

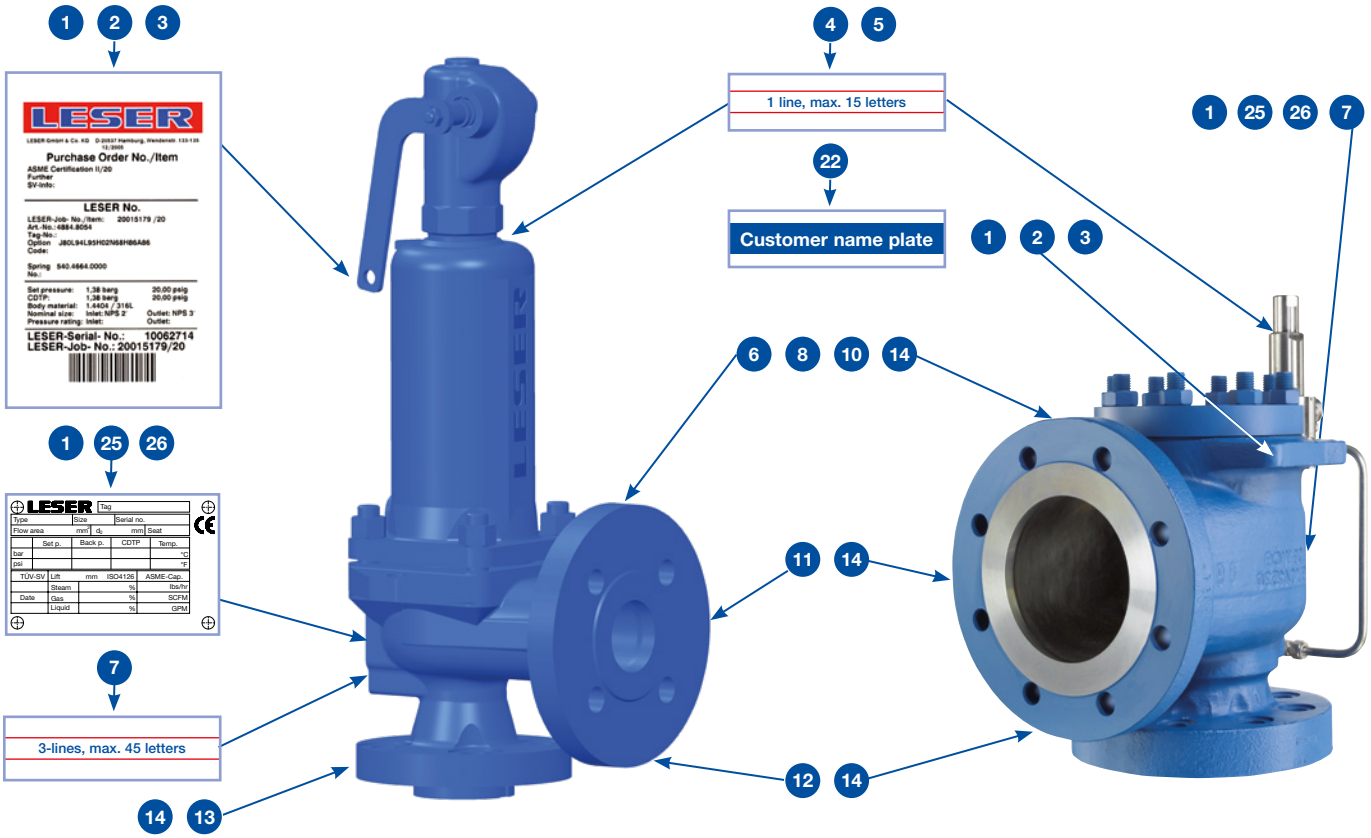
Stainless steel tag
Dimensions W x H [mm]: 58 x 15



	Item no.	Designation	Quantity of lines	Quantity of letters	Type height [mm]	Option code			Additional price
Safety valve tag									
	1	1. TAG-no. per safety valve	1	18	3	–			
	2	2. Component of plant or pipework	1	15	3	M25			–
	3	3. Additional information	3	45	3				
Fixing		Design with lever H3/H4: by wire tie in bore of the lever							*
		Design with cap H2: by wire tie in one bore at the outlet flange							*
Name plate NGA									
	25 + 26	Customer specific information	2	30	2	M16			–
	26	Customer specific information	1	30	2	M17			–
	25 + 26	Global Name Plate RU: Customer information	2	30	2	N8A			$60
Stainless steel tag									
	4	1. TAG-no. per safety valve	1	15	3	M29			$40
	5	2. Additional information	3	45	3				
	15	LESER Digital ID QR Code	–	–	–	N8D	Retrofit: 331.A000.0049		$30
Numeral punches						Safety valve	Change-over valve		
	9	Numeral punches, inlet body	1	4	3	M27	–	–	$60
	10	Numeral punches, top of oulet flange	1	15	6	M26	Valve side in front	Q61	$60
	11	Numeral punches, outlet flange sidewards	1	15	6	M39	Valve side sidewards	Q63	$60
	12	Numeral punches, bottom of outlet flange	1	15	6	M42	Valve side backwards	Q62	$60
	13	Numeral punches, inlet flange sidewards	1	15	6	M31	Piping side sidewards	Q66	$60
	13a	Numeral punches	1	15	6	–	Piping side in front	Q64	$60
	13b	Numeral punches	1	15	6	–	Piping side backwards	Q65	$60
	14	Numeral punches, 10 mm Ident-Nr. 10 – 13	1	15	10	M32	–	–	$60
Tag provided by customer									
	22	Tag provided by customer				J75			–
	–	Supply latest two weeks before date of delivery to:		**LESER GmbH & Co.KG**, Abt. PP – Sonderbearbeitung Itzehoer Str. 63 – 65, 24594 Hohenwestedt, Germany				Fon + 49 (4871) 27-0	
Fixing of stainless steel tag and customer tag									
	–	With sealing wire in the region of bonnet/cap – lifting device							*
	6	Spot welded on outlet flange					N69		$173
	7	Spot welded at backsite of body					M24		$173
	8	Fixing with grooved pins, top of outlet flange					N11		$173
	18	Fixing with grooved pins instead of spot welding					M30		$90

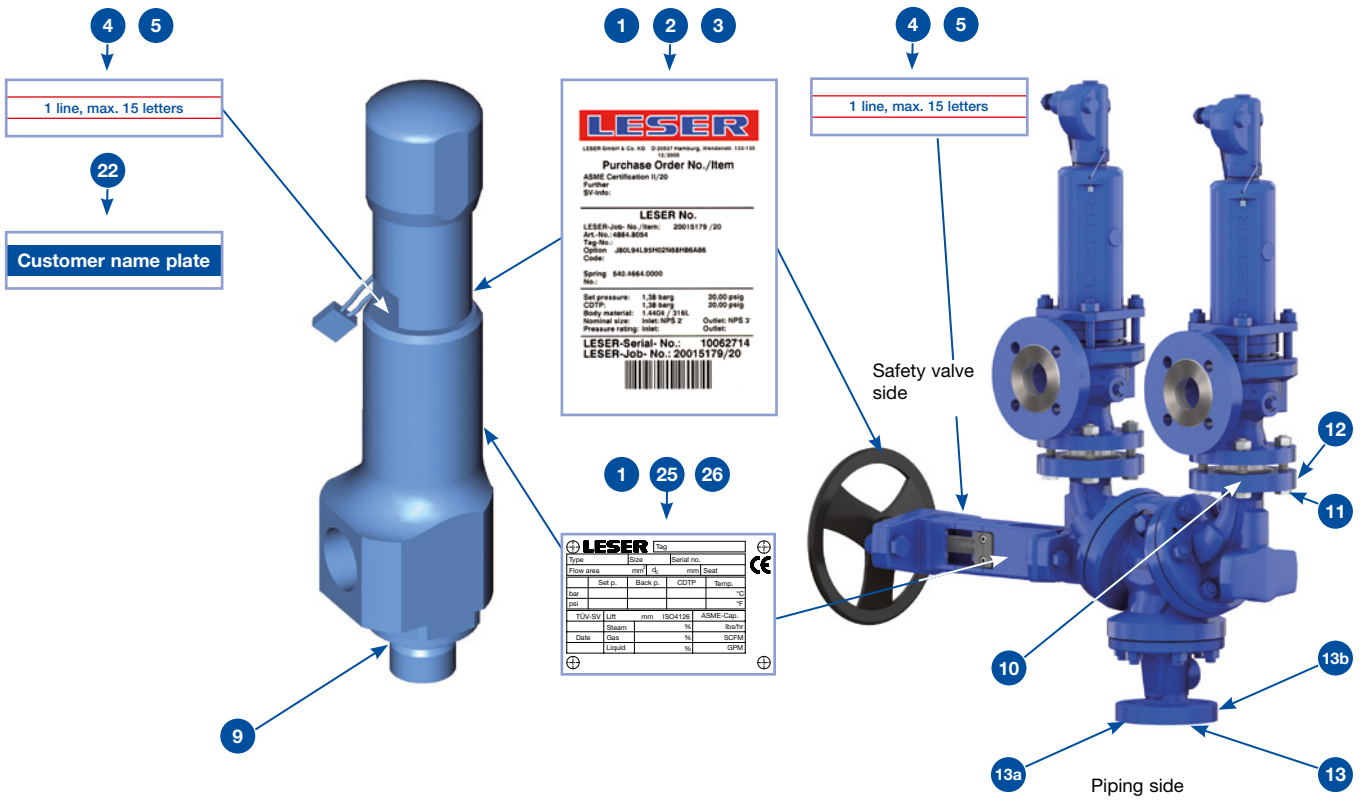
Markings
Placement of marking

API Safety relief valve



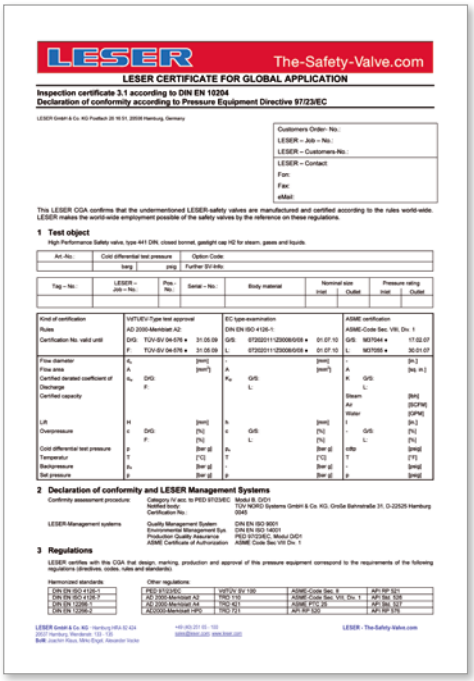
POSV Pilot operated safety valve

Compact Performance Safety valve



Best Availability Change-over valve

LESER Certificate for Global Application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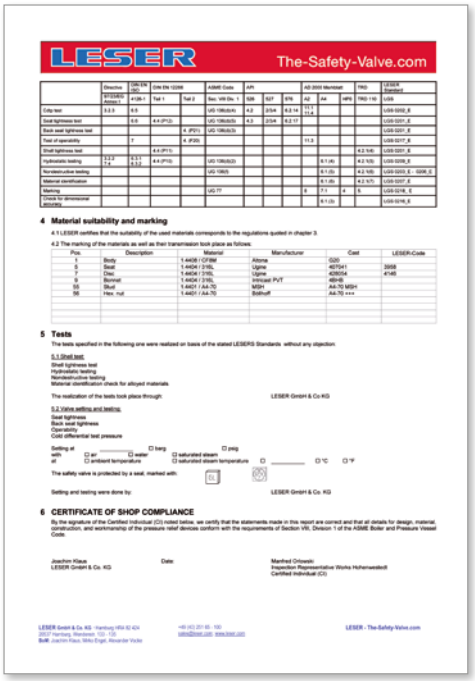
LESER CERTIFICATE FOR GLOBAL APPLICATION

Inspection certificate 3.1 according to DIN EN 10204
Declaration of conformity according to Pressure Equipment Directive 97/23/EC

1 Test object

2 Declaration of conformity and LESER Management Systems

3 Regulations


LESER The-Safety-Valve.com

4 Material suitability and marking

5 Tests

6 CERTIFICATE OF SHOP COMPLIANCE

LESER CGA Certificate for Global Application

To be able to operate pressurised systems, they must usually be equipped with safety valves. These safety valves must meet regulation standards, which however vary depending on the application region. For example:

- Europe: Fulfilment of the Pressure Equipment Directive (PED) in connection with the fulfilment of harmonised standards such as ISO 4126 and type-examination by a notified body
- North America: Fulfilment of the ASME code and approval from the National Board
- China: Fulfilment of the European or American testing criterion and AQSIQ approval

LESER delivers safety valves which meet all requirements of the worldwide relevant regulations and provides the necessary documentation in form of the CGA.

The LESER CGA includes all necessary information, and documents all required processing steps and tests, so that no further certificates are necessary for the start of operation of the safety valve. If some cases, additional country-specific delivery papers are required, for example, a GOST passport. In other words: LESER as an OEM supplier often does not know where the delivered safety valve is put into operation.
However, with LESER CGA, it is possible to put LESER safety valves into operation throughout the world.

Furthermore to the CGA, LESER can issue for each test an inspection certificate 3.1 according to DIN EN 10204 on request. Please order the inspection certificates with the option codes see next page. The shipment of certificates (LESER CGA or single inspection certificates) will be carried out together with the safety valves, if not specified otherwise. By request LESER dispatches the certificates also by e-mail, fax or mail. All certificates already ordered by the customer can be downloaded from the “LESER Download Portal” www.leser.com

For additional orders of inspection certificates please contact LESER Service “Certificates”: certificate@leser.com
Additional orders of inspection certificates will be charged later.
The issue of a LESER CGA has no effect on the delivery time of the safety valve! The LESER CGA can be ordered by the customer with option code H03.

LESER CGA Certificate for Global Application	Option code	Price per safety valve
LESER CGA Certificate for Global Application Inspection certificate 3.1 according to DIN EN 10204	H03	$0
Pilot: Inspection certificate 3.1 according to DIN EN 10204	R92	$0

Tests and Procedures

All tests carried out at LESER are specified in “Procedures”.

Procedures provide you with all detailed information about:

- Applicability
- Scope and definition
- Test reference
- Test equipment
- Test procedure
- Acceptance criteria
- Personal qualification
- Documentation
- Standard references

LESER Certificate for Global Application

Tests at LESER certified by CGA Certificate for Global Application

All test, which are certified with the LESER CGA Certificate for Global Application are listed below. On customer request LESER can issue an additional inspection certificate 3.1 according to DIN EN 10204 for each test.
Please order the additional inspection certificates with the option codes stated in the column “Option code”. The issue of a LESER CGA has no effect on the delivery time of the safety valve!

Note: All prices quoted on this page are net prices in $

All prices are per safety valve

Test pressure	Directive	LESER Standard	Option code	Price
Inspection certificate 3.1 acc. to DIN EN 10204: Testing of cold differential test pressure with air	DIN EN ISO 4126-4 DIN EN ISO 4126-1, chapter 7.2 ASME Code Section I, PG-72 ASME Code Section XIII, 3.6.3; AD 2000-Merkblatt A2, chapter 11	LGS 0202	N05	$90
Component strength test				
Inspection certificate 3.1 acc. to DIN EN 10204: Hydrostatic testing 1,5 x PN	DIN EN ISO 4126-1; ASME Code Sec. XIII, 3.6.1	LGS 0209	M68	$90
Surface crack test				
Surface crack testing in accordance with AD 2000-Merkblatt A4, chapter 6 and ASME code section VIII, Div. 1 is usually conducted as random testing and can be certified with LESER CGA. Surface crack testing can be conducted using varying methods (magnetic particle testing, red-white colour dye penetrant testing, or fluorescent penetrant testing). LESER determines the corresponding test method for the component and substance.				
Inspection certificate 3.1 acc. to DIN EN 10204: Surface crack test	AD 2000-Merkblatt A4, chapter 6 ASME Code, Section VIII Div 1	LGS 0203 LGS 0204	Customer specific surface crack test see page 184	
Tightness (Overview of different tightness tests see page 188)				
Seat tightness test				
Inspection certificate 3.1 acc. to DIN EN 10204: Seat tightness test with air, bubble test – Standard tightness requirements	DIN EN ISO 4126-1; DIN EN 12266-1, ASME Code Section XIII, 3.6.4; API 527	LGS 0201	M66	$90
Inspection certificate 3.1 acc. to DIN EN 10204: Seat tightness test with air, test fluid	DIN EN ISO 4126-1; DIN EN 12266-1, ASME Code Section XIII, 3.6.4; API 527	LGS 0201	M22	$90
Pressure retaining body Inspection certificate 3.1 acc. to DIN EN 10204: Shell tightness test	DIN EN 12266-1, 4.2	LGS 0201	M18	$90
Back seat tightness test (tightness outwards)				
Flanged Safety valves Inspection certificate 3.1 acc. to DIN EN 10204: Back seat tightness test with test fluid	DIN EN 12266-2, test P21 ASME Code Section XIII, 3.6.2	LGS 0201	M28	$90
Compact Performance Safety valves Inspection certificate 3.1 acc. to DIN EN 10204: Back seat tightness test, dipping procedure		LGS 0201	M78	$90
Material identification check (PMI)				
Material identification check in accordance with AD 2000-Merkblatt A4, chapter 6, par. 6.1 (6) is usually conducted as random testing and can be certified with LESER CGA. LESER determines the corresponding test method for the component and material.				
Inspection certificate 3.1 acc. to DIN EN 10204: Material identification check (PMI)	AD 2000-Merkblatt A4, chapter 6, par. 6.1 (6)	LGS 0207	Customer specific checking to components see page 185	
Body volume check				
Inspection certificate 3.1 acc. to DIN EN 10204: Ultrasonic test	AD 2000-Merkblatt A4, chapter 6 ASME Code, Section VIII Div. 1, App.12	LGS 0205	M56	$90

For additional tests on customer request (not certified by LESER CGA) please refer to pages 190 and 191.

LESER Certificate for Global Application
Tests and inspection certificates
Change-over Valves Type 330 Compact, 320 Flow

Note: All prices quoted on this page are net prices in $

All prices are per safety valve

Tightness	Directive	LESER Standard	Option code	Price
Inspection certificate 3.1 acc. to DIN EN 10204: Hydrostatic pressure test of the complete change-over valve	DIN EN 12266-1, 4.2	LGS 0209	Q1I	$90

Radiographic test change-over valves						
					DN / NPS	25 – 150	≥ 200
Radiographic test acc. to DIN and ASME	**Component**	**Option code**	**Directive**	**LESER Standard**	**Price**	
Inspection certificate 3.1 acc. to DIN EN 10204: Radiographic test body item 2 (critical areas)	Body Item 2	Q1E	IN 1690 Part 10 or ASME B16.34 Appendix 1	LGS 0206	$1,042	on request
Inspection certificate 3.1 acc. to DIN EN 10204: Radiographic test Flange elbow item 3/4 (critical areas)	Flange elbow Item 3/4	Q1F				
Inspection certificate 3.1 acc. to DIN EN 10204: Radiographic test inlet body item 1 (critical areas)	Inlet body Item 1	Q1G				
Inspection certificate 3.1 acc. to DIN EN 10204: Radiographic test disc item 7 (total shot)	Disc Item 7	Q1H				

Surface crack test change-over valves						
				DN / NPS	25 – 50	65 – 125	≥ 150
Dye penetrant testing (DPT)	**Directive**	**LESER Standard**	**Option code**	**Price**		
Inspection certificate 3.1 acc. to DIN EN 10204: Dye penetrant testing (DPT)	AD 2000-Merkblatt A4, chapter 6 ASME Code, Section VIII Div 1, App. 8	LGS 0204				
– Inlet body item 1			Q78			
– Body item 2			Q79	$250	$298	$498
– Flange elbow item 3/4			Q80			
– Seat item 5			Q82	$198	$198	$198
– Disc item 7			Q81	$198	$198	$198
Fluorescent penetrant testing (FPT)						
Inspection certificate 3.1 acc. to DIN EN 10204: Fluorescent penetrant testing (FPT)	AD 2000-Merkblatt A4, chapter 6 ASME Code, Section VIII Div 1, App. 8	LGS 0204				
– Inlet body item 1			Q83			
– Body item 2			Q84	$250	$298	$498
– Flange elbow item 3/4			Q85			
– Seat item 5			Q87	$198	$198	$198
– Disc item 7			Q86	$198	$198	$198
Magnetic particle testing (MPT)						
Inspection certificate 3.1 acc. to DIN EN 10204: Magnetic particle testing (MPT)	AD 2000-Merkblatt A4, chapter 6 ASME Code, Section VIII Div 1, App. 6	LGS 0203				
– Inlet body item 1			Q89			
– Body item 2			Q91	$250	$298	$498
– Flange elbow item 3/4			Q92			
– Seat item 5			Q90	$198	$198	$198

LESER Certificate for Global Application
Tests and inspection certificates
Change-over Valves Type 330 Compact, 320 Flow

Note: All prices quoted on this page are net prices in $

All prices are per safety valve

Material identification check PMI change-over valves

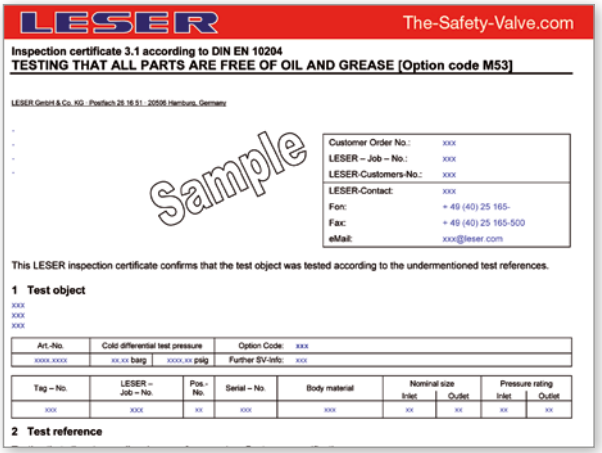
Customer-specific
Material identification checking to components can be conducted according to customer specifications. The components such as discs, seat bodies, inlet body are to be specified by the customer. The tests conducted on the individual components are verified with an inspection certificate 3.1 according to DIN EN 10204.

PMI X-ray fluorescence analysis (RFA)	Directive	LESER Standard	Option code	Price
Inspection certificate 3.1 acc. to DIN EN 10204: X-ray fluorescence analysis (RFA)	AD 2000-Merkblatt A4, chapter 6, Abs. 6.1 (6) Röntgenverordnung (RöV): §15a ASME Section II Part A, SA751, Specification for Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products API 578, Material Verification Program for New and existing alloy Piping Systems	LGS 0207		
– Inlet body item 1			Q97	$224
– Body item 2			Q95	
– Flange elbow item 3/4			Q96	
– Seat item 5			Q94	
– Disc item 7			Q93	
– Spindle item 12			Q88	
Spectral analysis (SPA)				
Inspection certificate 3.1 acc. to DIN EN 10204: Spectral analysis (SPA)		LGS 0207		
– Seat item 5			Q99	$224
– Disc item 7			Q98	

Specific Testing
Tests and inspection certificates

Note: All prices quoted on this page are net prices in $

All prices are per safety valve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Inspection certificate 3.1 according to DIN EN 10204
TESTING THAT ALL PARTS ARE FREE OF OIL AND GREASE [Option code M53]

LESER GmbH & Co. KG · Postfach 26 16 51 · 20506 Hamburg, Germany

Sample

Customer Order No.: xxx
LESER – Job – No.: xxx
LESER-Customers-No.: xxx
LESER-Contact: xxx
Fon: + 49 (40) 25 165-
Fax: + 49 (40) 25 165-500
eMail: xxx@leser.com

This LESER inspection certificate confirms that the test object was tested according to the undermentioned test references.

1 Test object

xxx
xxx
xxx

Art.-No.	Cold differential test pressure		Option Code: xxx
xxxx.xxxx	xx.xx barg	xxxx.xx psig	Further SV-Info: xxx

Tag – No.	LESER – Job – No.	Pos.-No.	Serial – No.	Body material	Nominal size Inlet	Nominal size Outlet	Pressure rating Inlet	Pressure rating Outlet
xxx	xxx	xx	xxx	xxx	xx	xx	xx	xx

2 Test reference

Specific testing

Specific testing is always verified by an inspection certificate 3.1 in accordance with DIN EN 10204. This, however, does not mean that the LESER CGA is given. To order testing including the inspection certificate, please enter the appropriate option code.

			DN / NPS	≤ 50	65 – 150	≥200
Tightness: Helium leakage test	**Directive**	**LESER Standard**	**Option code**	**Price**		
Back seat tightness test with helium Inspection certificate 3.1 acc. to DIN EN 10204 included	DIN EN 12266-2, Prüfung P21 ASME Code Section V, Article 10, App. IV	LGS 0225	N64	$173	$298	$447
Seat tightness test with helium, overpressure procedure – Inspection certificate 3.1 acc. to DIN EN 10204 included	DIN EN ISO 4126-1 DIN EN 12266-1, Prüfung P12 ASME Code Section V, Article 10, App. IV API 527	LGS 0225	N62	$173	$298	$447
Seat tightness test with helium, leakage detection in vacuum – sniffing method Inspection certificate 3.1 acc. to DIN EN 10204 included		LGS 0225	M86	$173	$298	$447
Seat tightness test with helium under cryogenic conditions Inspection certificate 3.1 acc. to DIN EN 10204 included	DIN EN 13648	LDeS 0201.04	M80	on request		
Testing of substances						
Testing that all parts are free of oil and grease Inspection certificate 3.1 acc. to DIN EN 10204 included	LGS 0210		See price section of corresponding valve type			

Surface crack test (unspecific)

Surface crack testing to components can be conducted according to customer specifications. Components such as discs, seat/nozzle and bodies/inlet bodies are to be specified by the customer. LESER determines the corresponding test method for the component and material.
The tests conducted on the individual components are verified with an inspection certificate 3.1 according to DIN EN 10204.

			DN / NPS	15 – 50	65 – 125	≥ 150
Dye penetrant test (DPT)						
Inspection certificate 3.1 acc. to DIN EN 10204: Dye penetrant test (DPT)	AD 2000-Merkblatt A4, Kapitel 6 ASME Code, Section VIII Div 1, App. 8	LGS 0204				
– Body / inlet body			N5A	$250	$298	$498
– Outlet body			N5B	$250		
– Nozzle			N5C		$198	
– Disc			N5D		$198	
– Bonnet			N5E	$250	$298	$498

Specific Testing
Tests and inspection certificates

Note: All prices quoted on this page are net prices in $

All prices are per safety valve

Surface crack test			DN / NPS	15 – 50	65 – 125	≥ 150
Flourescent penetrant test (FPT)	**Directive**	**LESER Standard**	**Option code**	**Price**		
Inspection certificate 3.1 acc. to DIN EN 10204: Flourescent penetrant test (FPT)	AD 2000-Merkblatt A4, Kapitel 6 ASME Code, Section VIII Div 1, App. 8	LGS 0204				
– Body / inlet body			N6A	$250	$298	$498
– Outlet body			N6B	$250		
– Nozzle			N6C		$198	
– Disc			N6D		$198	
– Bonnet			N6E	$250	$298	$498
Magnetic particle test (MPT)						
Inspection certificate 3.1 acc. to DIN EN 10204: Magnetic particle test (MPT)	AD 2000-Merkblatt A4, Kapitel 6 ASME Code, Section VIII Div 1, App. 6	LGS 0203				
– Body / inlet body			N7A	$250	$298	$498
– Outlet body			N7B	$250		
– Bonnet			N7E	$250	$298	$498
Visual examination and dimension test						
Visual examination test report 2.2 acc. to DIN EN 10204 included	AD 2000-Merkblatt A4, chapter 6 ASME Code Section V, Article 9: Visual Examination	LGS 0218	N1R	$51		
Dimension test test report 2.2 acc. to DIN EN 10204 included	AD 2000-Merkblatt A4, chapter 6 PED 2014/68/EU, Pressure Equipment Directive	LGS 0216	N1S	$51		

Surface roughness	Directive	LESER Standard	Option code	Price
Clean Service Safety valves The surface qualities for LESER Clean Service Safety valves are defined as LESER Surface Grades (LSG), and assigned to the individual valves by the Clean finish, HyClean finish, and Sterile finish surface packages.				
LESER Surface packages – Clean finish – HyClean finish – Sterile finish			B50 – B79	See price section of corresponding valve type
Inspection certificate 3.1 acc. to DIN EN 10204: Surface roughness	DIN EN ISO 11866 ASME BPE 2002 Part SD	LGS 0214	N04[1)]	$498
Surface roughness for components according to customer specification				
Testing of surface roughness Inspection certificate 3.1 acc. to DIN EN 10204 included – Components to be specified	Customer specification	LGS 0214	N04[1)]	$498
Hardness test acc. to NACE				
Specification acc. to NACE Inspection certificate 3.1 acc. to DIN EN 10204 included[2)] Components: Body, seat / nozzle and disc	NACE Standard - MR0175 - MR0103	LDeS 1001.91	N78 N77	$173

[1)]for electropolished valves N04 option is included as a standard

[2)]Other options required to supply NACE can be found on page 69.

Specific Testing
Tests and inspection certificates

Note: All prices quoted on this page are net prices in $
All prices are per safety valve

Material identification check (PMI)

Customer-specific
Material identification checking to components can be conducted according to customer specifications. The components such as discs, seat / nozzle and bodies/inlet bodies are to be specified by the customer. The tests conducted on the individual components are verified with an inspection certificate 3.1 according to DIN EN 10204.

PMI X-ray flourescence analysis (RFA)	Directive	LESER Standard	Option code	Price
Inspection certificate 3.1 acc. to DIN EN 10204: X-ray flourescence analysis (RFA)	AD 2000-Merkblatt A4, Kap. 6, Abs. 6.1 (6) Röntgenverordnung (RöV): §15a ASME Section II Part A, SA751, Specification for Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products API 578, Material Verification Program for New and existing alloy Piping Systems	LGS 0207		
– PMI RFA Disc			N55	$224
– PMI RFA Seat / nozzle			N56	
– PMI RFA Body / Inlet body			N57	
– PMI RFA Outlet body (Pos. 2)			N4A	
– PMI RFA Outlet adapter			N4B	
– PMI RFA Outlet flange			N4C	
– PMI RFA Spindle			N1A	
– PMI RFA Guide			N1B	
– PMI RFA Bonnet			N1C	
– PMI RFA Spring			N1D	
– PMI RFA Bellows			N1E	
– PMI RFA Cap / lifting device			N1F	
– PMI RFA Top plate (POSV)			N1G	
– PMI RFA Piston guide (POSV)			N1H	
– PMI RFA Spring (POSV Pos. 59)			N1J	
– PMI RFA Lower spring plate			N1U	

PMI Spectral analysis (SPA)	Directive	LESER Standard	Option code	Price
Inspection certificate 3.1 acc. to DIN EN 10204: Spectral analysis (SPA)	AD 2000-Merkblatt A4, Kap. 6, Abs. 6.1 (6) Röntgenverordnung (RöV): §15a ASME Section II Part A, SA751, Specification for Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products API 578, Material Verification Program for New and existing alloy Piping Systems	LGS 0207		
– PMI SPA Spindle			N4D	$224
– PMI SPA Guide			N4E	
– PMI SPA Bonnet			N4F	
– PMI SPA Spring			N4G	
– PMI SPA Cap / lifting device			N4I	
– PMI SPA Top plate (POSV)			N4J	
– PMI SPA Piston guide (POSV)			N4K	
– PMI SPA Spring plate			N4M	
– PMI SPA Outlet body			N4N	
– PMI SPA Outlet adapter			N4O	
– PMI SPA Outlet flange			N4P	
– PMI SPA Disc			N4Q	
– PMI SPA Seat / nozzle			N4R	
– PMI SPA Body / inlet body			N4S	
– PMI SPA Stud			N4T	
– PMI SPA Nut			N4U	
– PMI SPA Inlet flange			N4V	

Material identification checking for change-over valves see page 188

Delta-Ferrite Test	Component	Option code	Directive	LESER Standard	Price
Inspection certificate 3.1 acc. to DIN EN 10204: Delta-Ferrite-Testing / Content ≤ 0,5% acc. to Basler Norm-2 Body (all components incl. weld), bonnet	Body (all components incl. weldings), bonnet	N4X	Basler Norm-2	LDeS 0205.00	$224
Inspection certificate 3.1 acc. to DIN EN 10204: Delta-Ferrite-Testing / Content bar material ≤ 3% castings ≤ 13% acc. to E-GS-4-1-5 Body, bonnet	Body, bonnet	N5X	AIR LIQUIDE E-GS-4-1-5	LDeS 0205.00	$224

Specific Testing
Tests and inspection certificates

Note: All prices quoted on this page are net prices in $
All prices are per safety valve

Hydrostatic Pressure Test	Component	Option code	Directive	LESER Standard	Price
Inspection certificate 3.1 acc. to DIN EN 10204: Hydrostatic pressure test of body / inlet body acc. to LGS 0209, with holding time (3-15 min) acc. to customer specification	Body	N2D	Customer Specification (test time is required, test pressure acc. to LGS 0209)	LGS 0209	$150
Inspection certificate 3.1 acc. to DIN EN 10204: Hydrostatic pressure test of bonnet acc. to LGS 0209, with holding time (3-15 min) acc. to customer specification	Bonnet	N2E			$150
Inspection certificate 3.1 acc. to DIN EN 10204: Hydrostatic pressure test of full nozzle / POSV nozzle acc. to LGS 0209, with holding time (3-15 min) acc. to customer specification	Nozzle	N2F			$150
Inspection certificate 3.1 acc. to DIN EN 10204: Hydrostatic pressure test of cap/lifting device acc. to LGS 0209, with holding time (180-900 sec.) acc. to customer specification	Cap	N2Q			$150
Intergranular Corrosion (IGC) Test	**Component**	**Option code**	**Directive**	**LESER Standard**	**Price**
Inspection certificate 3.1 acc. to DIN EN 10204: Intergranular corrosion (IGC) test acc. to ASTM A 262 Practice E for body of austenitic stainless steel castings	Body	N2G	ASTM A 262 Practice E		$498
Inspection certificate 3.1 acc. to DIN EN 10204: Intergranular corrosion (IGC) test acc. to ASTM A 262 Practice E for bonnet of austenitic stainless steel castings	Bonnet	N2H			$498
Inspection certificate 3.1 acc. to DIN EN 10204: Intergranular corrosion (IGC) test acc. to ASTM A 262 Practice E for full nozzle / POSV nozzle of austenitic stainless steel	Nozzle (casting)	N2I			$498
	Nozzle (bar material)				$1,245
Inspection certificate 3.1 acc. to DIN EN 10204: Intergranular corrosion (IGC) test acc. to ASTM A 262 Practice E for disc (item 7.1) of austenitic stainless steel	Disc	N2J			$1,245
Radiographic Test acc. to ASME	**Component**	**Option code**	**Directive**	**LESER Standard**	**Price**
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and ASME B16.34 Appendix 1 for complete body	Body	N2K	ASME B16.34 Appendix 1	LGS 0206	$1,042
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and ASME B16.34 Appendix 1 for complete bonnet	Bonnet	N2L			$1,042
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and ASME B16.34 Appendix 1 for critical areas of the body	Body	N2A			$1,740
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and ASME B16.34 Appendix 1 for critical areas of the bonnet	Bonnet	N2B			$1,042
Radiographic Test acc. to DIN EN	**Component**	**Option code**	**Directive**	**LESER Standard**	**Price**
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and DIN 1690 Part 10 for complete body	Body	N2M	DIN 1690 Part 10	LGS 0206	$1,042
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and DIN 1690 Part 10 for complete bonnet	Bonnet	N2N			$1,042
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and DIN 1690 Part 10 for critical areas of the body	Body	N2O			$1,740
Inspection certificate 3.1 acc. to DIN EN 10204: radiographic test acc. to LGS 0206 and DIN 1690 Part 10 for critical areas of the bonnet	Bonnet	N2P			$1,042

Tightness test

This page gives an overview for all tightness tests carried out at LESER and option codes for ordering the inspection certificate 3.1 according to DIN EN 10204.

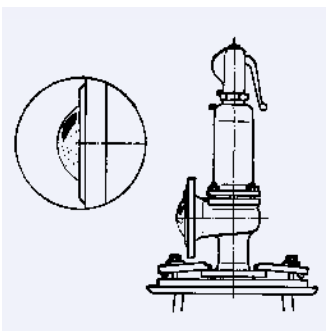
For further informationen and prices please refer to page 182, 183 and 186.

Tightness test

No.	Designation	Test media	Option code (Inspection certificate)	LESER Standard
1	Seat tightness test with air			
1a	– Bubble test – standard tightness requirements	Air	M66	LGS 0201
1b	– Test fluid	Air	M22	
2	Shell tightness test	Air	M18	LGS 0201
3	Back seat tightness test (Tightness outwards)			
3a	– Test fluid	Air	M28	LGS 0201
3b	– Dipping method	Air	M78	
3c	– Vacuum method	Helium	N64	LGS 0225
3d	– Fugitive Emission Test (FET)	Helium	F28 / F29	LGS 0225
4	Seat tightness test with helium			
4a	– Overpressure procedure (sniffing method)	Helium	N62	LGS 0225
4b	– Leak detection method in vacuum	Helium	M86	
4c	– under cryogenic conditions	Helium	M80	LDeS 0201.04

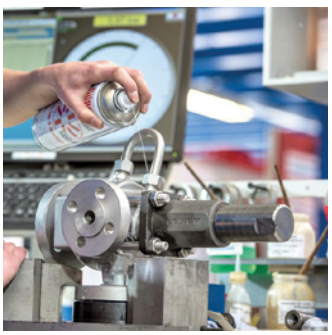
Graphical presentation

1a Air,
bubble test
Option code M66



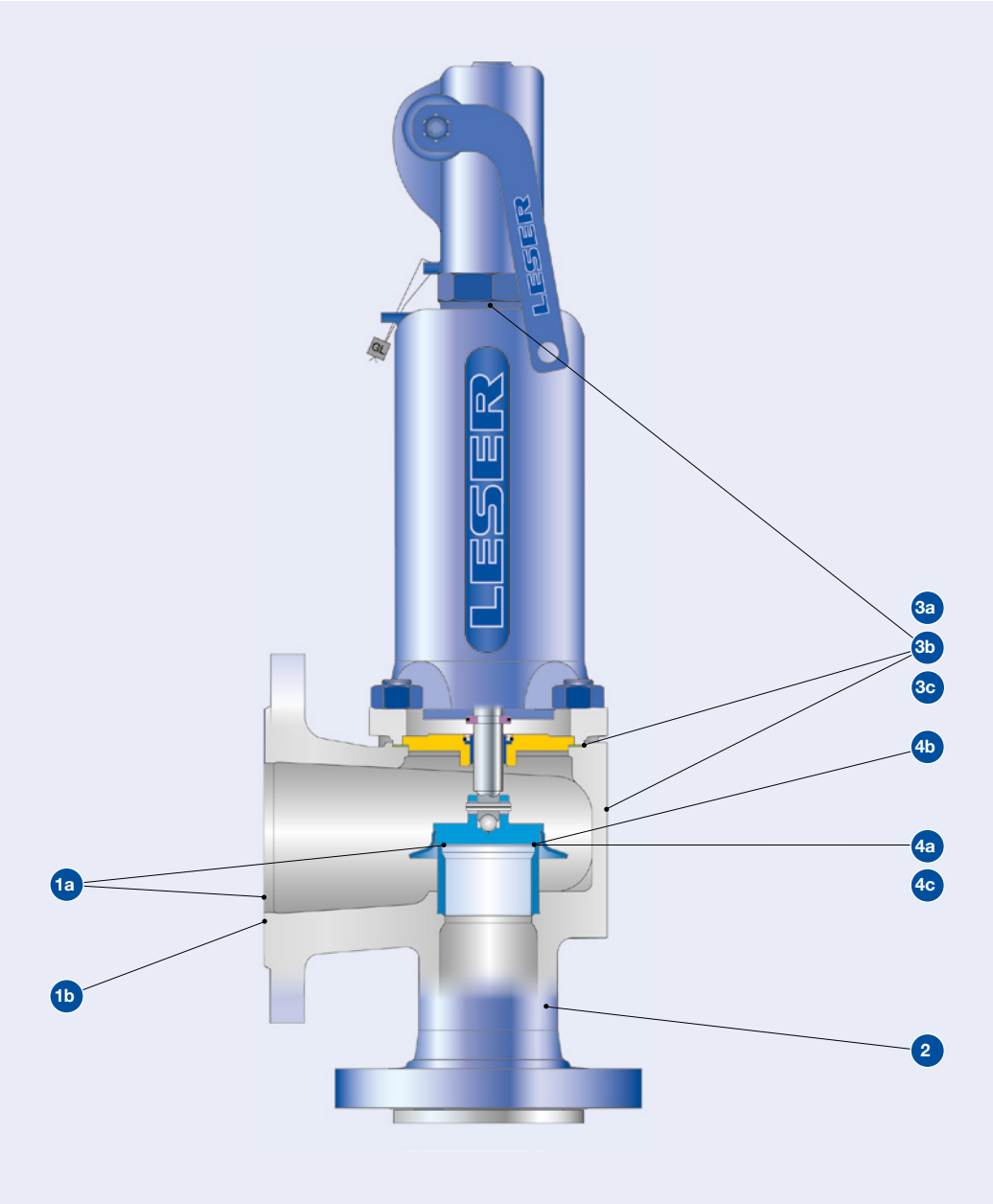
1b Air,
leak detector
acc. to DIN 14291
Option code M22

2 Air,
leak detector
acc. to DIN 14291
Option code M18



3a Air,
leak detector
Option code M28

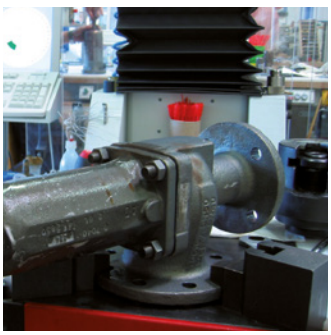
Tightness test



4c Helium seat tightness test under cryogenic conditions Option code M80

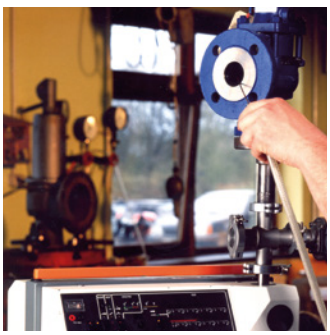
4b Helium, Leakage detection in vacuum Option code M86

3b Air, dipping method Option code M78



3c Helium, Vacuum method Option code N64

3d Helium, Fugitive Emission Test (FET) Option code F28 / F29



4a Helium Overpressure procedure Option code N62

Material test certificates

Note: All prices quoted on this page are net prices in $
Shipment of certificates with the valve, if not stated otherwise
All prices are per safety valve!

Material test certificates

		DN / NPS	15 – 125	150	≥ 200
Compact Performance		**Option code**	**Prices**		
Inlet body	DIN EN 10204-3.1	H01	$0	–	–
Outlet body	DIN EN 10204-3.1	L34	$51	–	–
Inlet flange	DIN EN 10204-3.1	L22	$51	–	–
Outlet flange	DIN EN 10204-3.1	N3B	$51	–	–
Outlet connection	DIN EN 10204-3.1	N3A	$51	–	–
Flange safety valves					
Body	DIN EN 10204-3.1	H01	$0	$0	$0
Type 5267 body	DIN EN 10204-3.2	H09	Prices see pages 60 and 61		
Type 4587 body	DIN EN 10204-3.2	H09	Prices see page 138		
Type 447 Outlet body	DIN EN 10204-3.1	L34	$125	–	–
Change-over valves Type 320, Type 330					
Inlet body Item 1	DIN EN 10204-3.1	Q55	$51		
Body Item 2	DIN EN 10204-3.1	Q53			
Flange elbow Item 3/4	DIN EN 10204-3.1	Q54			
Seat Item 5	DIN EN 10204-3.1	Q1L			
Disc Item 7	DIN EN 10204-3.1	Q50			
Studs Item 55	DIN EN 10204-3.2	Q51			
Nuts Item 56	DIN EN 10204-3.2	Q52			
Pilot operated safety valve, Main valve					
Body	DIN EN 10204-3.1	H01	$0		
Piston	DIN EN 10204-3.1	R75	$51		
Cover	DIN EN 10204-3.1	R76	$51		
Piston Guide	DIN EN 10204-3.1	R77	$51		
Spring Item 59	DIN EN 10204-3.1	H2K	$51		
Pilot operated safety valve, Pilot					
Body	DIN EN 10204-3.1	R78	$51		
Bonnet	DIN EN 10204-3.1	R79	$51		
Manifold	DIN EN 10204-3.1	R84	$51		
Pilot operated safety valve, Options					
Field test connection	DIN EN 10204-3.1	R88	$51		
Pilot supply filter	DIN EN 10204-3.1	R89	$51		
Other components					
Adjusting ring	DIN EN 10204-2.2	H2D	all DN / NPS $51		
Spring plate	DIN EN 10204-2.2	H2F			
Adjusting screw	DIN EN 10204-2.2	H2G			
Gasket	DIN EN 10204-2.2	H2H			
Lock screw	DIN EN 10204-2.2	H2J			
Bonnet	DIN EN 10204-3.1	L30	all DN / NPS $51		
Cap / lifting device	DIN EN 10204-3.1	L31			
Seat / nozzle	DIN EN 10204-3.1	L59			
Disc	DIN EN 10204-3.1	L23			
Guide[1)]	DIN EN 10204-3.1	N95			
Bonnet spacer	DIN EN 10204-3.1	H2E			

[1)] For 459 with bellows design, please use N96 (bellows MTR 3.1), this MTR includes the guide certificate

Tests and Certificates

Note: All prices quoted on this page are net prices in $

Material test certificates

		DN / NPS	15 – 125	150	≥ 200
Other components		**Option code**	**Prices**		
Spindle	DIN EN 10204-3.1	N94	all DN / NPS $51		
Bellows metal	DIN EN 10204-3.1	N96			
Elastomer bellows	DIN EN 10204-3.1	N96			
Studs	DIN EN 10204-3.1	N07			
Nuts	DIN EN 10204-3.1	N08			
Spring	DIN EN 10204-3.1	L60			
Lower spring plate	DIN EN 10204-3.1	N90			
Maximum amount for material certification of other components:			$224		

Each classification societies has different requirements to materials and their certificates (inspection test certificates 3.1 or 3.2) for each part. The requirements distinguish according to pressure, size and temperature (< -55°C) and can differ from the LESER standard. Each inquiry will be checked individually to these 3 parameters. Herefrom the result can be additional configurations, prices and delivery times.

Inspection by third party

		Option code	Delivery time of certificates	Price[1)]
Standard inspections for set pressure				
DNV GL SE	(DNV GL)	M45	LESER provides the certificates directly after receiving them from the inspection organisation.	$348
Lloyd's Register EMEA	(LREMEA)	M48		$498
American Bureau of Shipping	(ABS)	M38		$647
Bureau Veritas	(BV)	M43		$547
Registro Italiano Navale	(RINA)	M50		$498
ClassNK NIPPON Kaiji Kyokai (Japan)				on request
Others				LESER will charge the third party cost plus $250 per safety valve.
Notch bar impact value for bar stock: Impact test at -196°C		N7H		$90

[1)] Price only valid for standard inspections of set pressure.
Dependig on the certifying body additional options must be complied with. See LGS 3001

Design specification

Approval	Option code	LESER Standard	all countries
Approval acc. to Eurasian Custom Union (EAC - Eurasian Conformity) Technical passport and safety report included	N89 Change-over valve: Q1K	LGS 3001	$598
US Coast Guard (U.S.A.)	N31	LGS 3001	$0

Customer specific inspection

Prices for customer specific inspections as well as by third party please specify detailed scale of inspection.

Export documents

Prices for legalization by consulate / embassy	For the legalization by consulate / embassy a certification by chamber of commerce is necessary at first.
Please note: Due to the legalization by consulate / embassy the delivery time must be extended by 2 – 3 weeks.	For the determination of extended legalization costs please state the number and the document character (Commercial Invoice, Certificate of Origin, etc.).

Springs
Price overview of springs

All prices in $

Select a row in the upper part of the table according to product group, Type and nominal diameter of the safety valve you require a spring for. In the lower part of the table you can see the particular material code and price for your required spring.

You will find the order number for your spring according to the spring data tables in LGS 3600.

Characteristic	Type	Nominal diameter / d_0 / Orifice										
High Performance	441/442	–	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100 –125	DN 150	≥ DN 200
	441/442 ANSI	–	–	1" x 2"	$1^1/_2$" x 2"	$1^1/_2$" x $2^1/_2$"	2" x 3"	3" x 4"	–	4" x 6"	–	–
	455/456 457/458	–	–	–	–	DN 25	–	DN 50	–	DN 80	DN 100 – 150	–
Modulate Action	431/433	–	DN 15 – 40	DN 50	DN 65	DN 80	DN 100	DN 125	–	DN 150	–	–
Critical Service	447	–	–	–	DN 25	–	DN 50	–	DN 80	DN 100	–	–
Compact Performance	459/462	–	all d_0	–	–	–	–	–	–	–	–	–
	437/438	all d_0	–	–	–	–	–	–	–	–	–	–
Clean Service	481	d_0 10	–	–	–	–	–	–	–	–	–	–
	488	–	–	DN 25	–	–	DN 40 – 65	DN 80 – 100	–	–	–	–
	483/484/485	DN 25	DN 40	–	–	–	–	–	–	–	–	–
API	526 Class 150	–	–	–	D, E	–	F – H	J	K, L	M – P	Q, R	T
	526 Class 300L	–	–	–	D, E	–	F – H	J	K, L	M – P	Q, R	T
	526 Class 300	–	–	–	D, E	–	F, G	H	J, K	L – P	Q	R, T
	526 Class 600	–	–	–	D, E	–	F, G	H	J, K	L – P	Q	R
	526 Class 900	–	–	–	–	–	D – G	H	J	K – N	P, Q	–
	526 Class 1500	–	–	–	–	–	D – F	G, H	J	K, L	–	–
	526 Class 2500	–	–	–	–	–	D – F	G, H	–	–	–	–

Material code	Materials	Bonnet size and spring dimensions										
		437	**459 V20**	**V25**	**V32**	**V40**	**V50**	**V65**	**V80**	**V100 V125**	**HD100 V150**	**≥ V200**
		15 x 55	**28 x 78**	**28 x 91**	**34 x 103**	**40 x 135**	**50 x 203**	**64 x 250**	**80 x 290**	**110 x 325**	**140 x 315**	**200 x 570**
1. (standard)	1.1200	$134	$134	$134	$184	$184	$238	–	–	–	–	–
2. (heat resistant)	1.8159/1.7102	$134	$134	$134	$265	$265	$317	$531	$795	$1,056	$1,324	$2,118
4. (corrosion resistant)	1.4310	$134	$134	$134	$370	$370	$475	$741	$1,056	$2,118	$3,439	on request
7. (corrosion resistant)	Inconel X750	$475	$475	$475	$1,324	$1,324	$1,720	$2,645	$3,703	$7,407	$12,169	on request

Remark:
Springs not in stock are special springs. For those there are variable prices according to special springs-price list!
For double springs you also have to double the price!
In case of Inconel springs as an option the price for the spring has to be charged additionally to the price of the safety valve.

Availability from Charlotte stock

Items listed in red throughout the US Order and Pricing Information are available in one week (or less) from Charlotte stock. Below is a compressed overview of the red safety valves. The overview shows the material, size, and connection combinations carried in stock for each valve Type. The column in the far right, "Small order" shows the number of pieces that can be expected to be available per customer order.

For orders with quantities over 10 pieces, standard lead times may not apply. Please consult LESER US to verify the lead time of these large quantity orders.

Type	d_0 [mm]	Material	Connection		Small order PC
			Size	Type	
Compact Performance					
437 standard version	10	430 F	1/2" x 1/2"	MNPT x FNPT	20
			1/2" x 3/4"	MNPT x FNPT	10
			1/2" x 1"	MNPT x FNPT	20
			3/4" x 3/4"	MNPT x FNPT	10
			3/4" x 1"	MNPT x FNPT	20
			1" x 1"	MNPT x FNPT	20
			1/2" x 1"	Class 150 – 600 x Class 150	10
			3/4" x 1"	Class 150 – 600 x Class 150	10
		316L	1/2" x 1/2"	MNPT x FNPT	16
			1/2" x 1"	MNPT x FNPT	20
			3/4" x 3/4"	MNPT x FNPT	10
			3/4" x 1"	MNPT x FNPT	20
			1/2" x 1/2"	FNPT x FNPT	20
			1/2" x 1"	Class 150 – 600 x Class 150	10
			3/4" x 1"	Class 150 – 600 x Class 150	10
437 long version	10	316L	1/2" x 1/2"	FNPT x FNPT	20
			1/2" x 1"	MNPT x FNPT	20
438 / 439	10	430 F	1/2" x 1/2"	MNPT x FNPT	10
			1/2" x 1"	MNPT x FNPT	5
			3/4" x 1"	MNPT x FNPT	16
			1/2" x 1"	Class 150 – 600 x Class 150	6
			3/4" x 1"	Class 150 – 600 x Class 150	6
		316L	1/2" x 1/2"	MNPT x FNPT	10
			1/2" x 1"	MNPT x FNPT	5
			3/4" x 1"	MNPT x FNPT	10
			1/2" x 1"	Class 150 – 600 x Class 150	6
			3/4" x 1"	Class 150 – 600 x Class 150	6
459 / 462	9	WCB	1/2" x 1"	MNPT x FNPT	10
			3/4" x 1"	MNPT x FNPT	10
			1" x 1"	MNPT x FNPT	10
			3/4" x 1"	Class 150 – 2500 x Class 150 – 300	10
			1" x 1"	Class 150 – 1500 x Class 150 – 300	10
		CF8M	1/2" x 1"	MNPT x FNPT	10
			3/4" x 1"	MNPT x FNPT	10
			1" x 1"	MNPT x FNPT	10
			3/4" x 1"	Class 150 – 2500 x Class 150 – 300	10
			1" x 1"	Class 150 – 1500 x Class 150 – 300	10
	13	WCB	1/2" x 1"	MNPT x FNPT	20
			3/4" x 1"	MNPT x FNPT	20
			1" x 1"	MNPT x FNPT	20
			3/4" x 1"	Class 150 – 1500 x Class 150 – 300	20

Type	d_0 [mm], Orifice	Material	Connection		Small order PC
			Size	Type	
Compact Performance					
459 / 462	13	WCB	1" x 1"	Class 150 – 1500 x Class 150 – 300	20
	13	CF8M	3/4" x 1"	MNPT x FNPT	10
			1" x 1"	MNPT x FNPT	10
			3/4" x 1"	Class 150 – 1500 x Class 150 – 300	10
			1" x 1"	Class 150 – 1500 x Class 150 – 300	10
	17.5	WCB	1" x 1 1/2"	MNPT x FNPT	10
		CF8M	1" x 1 1/2"	MNPT x FNPT	10
High Performance					
441	F	WCB	1"	Class 150 – 300	10
	G		1 1/2"	Class 150 – 300	6
	H		1 1/2"	Class 150 – 300	4
	K		2"	Class 150 – 300	4
	L		3"	Class 150 – 300	4
	P		4"	Class 150 – 300	4
	F	CF8M	1"	Class 150	6
	H		1 1/2"	Class 150	4
	K		2"	Class 150	4
	F	WCB	DN 25	PN 40	6
	G		DN 50	PN 40	4
Clean Service					
481	10	316L	1" x 1/2"	CO x FNPT	15
			1" x 1"	CO x FNPT	10
483	10	316L	1" x 1 1/2"	BO x BO CO x CO	20
	25		1 1/2" x 2"	BO x BO CO x CO	20
488	23	316L	1 1/2" x 2"	BO x BO CO x CO	20
			1" x 1 1/2"	Class 150 x 150	4
	37		2" x 3"	BO x BO CO x CO	15
			1 1/2" x 2 1/2"	Class 150 x 150	2
	46		2 1/2" x 4"	BO x BO CO x CO	6
			2" x 3"	Class 150 x 150	2
Critical Service					
447	F	WCB / PTFE	1"	Class 150	15
	J		2"	Class 150	4
	L		3"	Class 150	2
High Efficiency					
811 / 821	D – T	WCB	1" – 8"	Class 150 x 150 Class 300 x 150	8
				Class 600 x 150	4
		CF8M	1" – 3"	Class 150 - 300 x Class 150	4
			4" – 8"	Class 150-600 x Class 150	2

Delivery times

API Availability — WCB 1.0619

	Flange class	150 x 150	300L x 150	300 x 150	600 x 150	900 x 300	1500 x 300	2500 x 300
D	Valve size	1 D 2	1 D 2	1 D 2	1 D 2	1 1/2 D 2	1 1/2 D 2	1 1/2 D 3
	Art. No. 5262.	001*	002*		003*	004*		005*
E		1 E 2	1 E 2	1 E 2	1 E 2	1 1/2 E 2	1 1/2 E 2	1 1/2 E 3
	Art. No. 5262.	015*	016*		017*	018*		019*
F		1 1/2 F 2	1 1/2 F 2	1 1/2 F 2	1 1/2 F 2	1 1/2 F 3	1 1/2 F 3	1 1/2 F 3
	Art. No. 5262.	029*	030*	031*	032*	033*		034*
G		1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	2 G 3	2 G 3
	Art. No. 5262.	045*	046*	047*	048*	049*	050*	051*

	Flange class	150 x 150	300L x 150	300 x 150	600 x 150	900 x 150	1500 x 300
H	Valve size	1 1/2 H 3	1 1/2 H 3	2 H 3	2 H 3	2 H 3	2 H 3
	Art. No. 5262.	142*	143*	144*	145*	146*	147*
J		2 J 3	2 J 3	3 J 4	3 J 4	3 J 4	3 J 4
	Art. No. 5262.	162*	163*	164*	165*	166*	167*
K		3 K 4	3 K 4	3 K 4	3 K 4	3 K 6	3 K 6
	Art. No. 5262.	202*	203*		204*	205*	206*

	Flange class	150 x 150	300L x 150	300 x 150	600 x 150	900 x 150	1500 x 150
L	Valve size	3 L 4	3 L 4	4 L 6	4 L 6	4 L 6	4 L 6
	Art. No. 5262.	232*	233*	234*	235*	236*	237*
M		4 M 6	4 M 6	4 M 6	4 M 6	4 M 6	
	Art. No. 5262.	580*	581*		582*	583*	
N		4 N 6	4 N 6	4 N 6	4 N 6	4 N 6	
	Art. No. 5262.	590*	591*		592*	593*	
P		4 P 6	4 P 6	4 P 6	4 P 6	4 P 6	
	Art. No. 5262.	645*	646*	647*	648*	649*	
Q		6 Q 8	6 Q 8	6 Q 8	6 Q 8		
	Art. No. 5262.	657*	658*		659*		
R		6 R 8	6 R 8	6 R 10	6 R 8		
	Art. No. 5262.	665*	666*	667*	668*		
T		8 T 10	8 T 10	8 T 10	8 T 10		
	Art. No. 5262.	675*	676*		–		

Small order PC	
10	2 week
6	2 week
4	1 week
2	1 week
	5.5 up to 11 weeks

API Availability — CF8M 1.4408

	Flange class	150 x 150	300L x 150	300 x 150	600 x 150	900 x 300	1500 x 300	2500 x 300
D	Valve size	1 D 2	1 D 2	1 D 2	1 D 2	1 1/2 D 2	1 1/2 D 2	1 1/2 D 3
	Art. No. 5264.	010*	011*		012*	013*		014*
E		1 E 2	1 E 2	1 E 2	1 E 2	1 1/2 E 2	1 1/2 E 2	1 1/2 E 3
	Art. No. 5264.	024*	025*		026*	027*		028*
F		1 1/2 F 2	1 1/2 F 2	1 1/2 F 2	1 1/2 F 2	1 1/2 F 3	1 1/2 F 3	1 1/2 F 3
	Art. No. 5264.	039*	040*	041*	042*	043*		044*
G		1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	1 1/2 G 3	2 G 3	2 G 3
	Art. No. 5264.	110*	111*	112*	113*	114*	115*	116*

	Flange class	150 x 150	300L x 150	300 x 150	600 x 150	900 x 300	1500 x 300
H	Valve size	1 1/2 H 3	1 1/2 H 3	2 H 3	2 H 3	2 H 3	2 H 3
	Art. No. 5264.	152*	153*	154*	155*	156*	157*
J		2 J 3	2 J 3	3 J 4	3 J 4	3 J 4	3 J 4
	Art. No. 5264.	196*	197*	198*	199*	200*	201*
K		3 K 4	3 K 4	3 K 4	3 K 4	3 K 6	3 K 6
	Art. No. 5264.	111*	112*		113*	114*	115*

	Flange class	150 x 150	300L x 150	300 x 150	600 x 150	900 x 150	1500 x 150
L	Valve size	3 L 4	3 L 4	4 L 6	4 L 6	4 L 6	4 L 6
	Art. No. 5264.	242*	243*	244*	245*	246*	–
M		4 M 6	4 M 6	4 M 6	4 M 6	4 M 6	
	Art. No. 5264.	587*	588*		589*	–	
N		4 N 6	4 N 6	4 N 6	4 N 6	4 N 6	
	Art. No. 5264.	597*	598*		599*	–	
P		4 P 6	4 P 6	4 P 6	4 P 6	4 P 6	
	Art. No. 5264.	653*	654*	655*	656*	–	
Q		6 Q 8	6 Q 8	6 Q 8	6 Q 8		
	Art. No. 5264.	662*	663*		664*		
R		6 R 8	6 R 8	6 R 10	6 R 8		
	Art. No. 5264.	671*	672*	673*	674*		
T		8 T 10	8 T 10	8 T 10	8 T 10		
	Art. No. 5264.	678*	679*		–		

Small order PC	
6	1 week
4	1 week
2	1 week
	5.5 up to 11 weeks

Service
Delivery / Shipping Information

Calculating the shipping weight

Weights of individual LESER safety valves can be found throughout the “US Order and Pricing Information”.
Below is an example from the Type 441 pricing on page 126:

Type 441, 442 ANSI					
Valve size		1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"
Actual Orifice diameter d_0 [mm]		23	29	37	46
Actual Orifice area A_0 [inch^2]		0.644	1.024	1.667	2.576
API Orifice designation		F	G	H	K
API eff. Orifice area [inch^2]		0.307	0.503	0.785	1.838
Weight [lb]		22	29	35	49
Body material: WCB					
Bonnet closed	**H2** Art. No. **4412.**	**4812** $1,850	**4822** $2,085	**4832** $2,511	**4842** $3,383

The weight of a shipment without packing material is defined as the net weight. The gross weight of a shipment includes the packing material. The gross weight can be estimated by multiplying the net weight by a factor.
If bellows construction is selected an additional factor must be taken into consideration

Example: **Type 4412.4842 with bellows**

Net weight		Packing factor		Bellows factor		Gross weight
49 lb	x	1.2	x	1.05	=	57 lb

Note: An additional $90 from Charlotte / $200 from Germany per each **High Efficiency** and **Change-over Valve** will be added to shipping charges per crating requirements.

Delivery times

The chart on the next page outlines how to determine the delivery time for each LESER valve Type. There are two delivery points LESER can supply from: Charlotte, NC USA and Hohenwestedt, Germany.

Please note: acc. to Incoterms 2010, FCA stands for Free Carrier and assigns responsibility for freight charges to the buyer from the FCA point.

Production/assembly times are listed for each valve Type. The delivery time can be estimated by adding the transit time for the delivery to the production/assembly time. Additional times required for special options (ex. heating jacket) only available from the German factory must be added to determine the total delivery time.

Example: **Type 526 with welded flanges supplied from factory by air freight**

Production time		Special option time		Transit time		Total time
4 weeks	+	4 weeks	+	2 weeks	=	10 weeks

Shipping Matrix
Transportation Zones and Delivery times

Tranportation Zones
See next page for Freight Rates

United States of America						Canada	
US State	**Zone**	**US State**	**Zone**	**US State**	**Zone**	**Province**	**Zone**
AL – Alabama	2	LA – Louisiana	4	OH – Ohio	2	AB – Alberta	7
AK – Alaska	8	ME – Maine	4	OK – Oklahoma	4	LB – Labrador	8
AZ – Arizona	5	MD – Maryland	2	OR – Oregon	5	NB – New Brunswick	7
AR – Arkansas	3	MA – Massachusetts	4	PA – Pennsylvania	2	NS – Nova Scotia	7
CA – California	5	MI – Michigan	3	RH – Rhode Island	4	NW – North West Terr.	8
CO – Colorado	5	MN – Minnesota	4	SC – South Carolina	1	PE – Prince Edward Is.	8
CT – Connecticut	4	MS – Mississippi	3	SD – South Dakota	5	SK – Saskatchewan	7
DE – Delaware	2	MO – Missouri	3	TN – Tennessee	2	BC – British Columbia	7
FL – Florida	2	MT – Montana	5	TX – Texas	4	MB – Manitoba	7
GA – Georgia	1	NE – Nebraska	4	UT – Utah	5	NF – Newfoundland	8
HI – Hawaii	8	NV – Nevada	5	VA – Virginia	1	NU – Nunavut	8
ID – Idaho	5	NH – New Hampshire	4	VT – Vermont	4	ON – Ontario	6
IL – Illinois	3	NJ – New Jersey	2	WA – Washington	5	QC – Quebec	6
IN – Indiana	3	NM – New Mexico	5	WV – West Virginia	2		
IA – Iowa	4	NY – New York	2	WI – Wisconsin	4		
KS – Kansas	4	NC – North Carolina	1	WY – Wyoming	5		
KY – Kentucky	2	ND – North Dakota	5				

Delivery Times

Product group	Type	Origin Charlotte (CLT)	Origin German Factory (HOW)
Compact	**437/438/439**	1 week	2 weeks
Performance	**459/462**	1 week	2 weeks
API	**526**	1 week	4 weeks
High Efficiency	**811, 821**	1 week	4 weeks
High Performance	**441**	1 week	4 weeks
	441 from 10" **444** ANSI		8 weeks
Clean Service	**481/483**	1 week	6 weeks
	488	1 week	6 weeks
Critical Service	**447**	1 week	4 weeks
Modulate Action	**433**		4 weeks
Change-over Valve	**320 Flow** **330 Compact**		8 weeks
Spare parts		1 day	3 days

Options with extended delivery times (Only available from origin German Factory (HOW))	**Additional delivery time** (Add to delvery times B, C, and D)
Heating jacket	5 weeks
Special machining of flange	4 weeks
Welded flanges	4 weeks
Special coating system	4 weeks
Oxygen cleaning – Free of oil and grease	2 weeks
Improved surface quality	2 weeks
Special trim (Hastelloy®, MONEL®, etc.)	Consult LESER US
Clean Service Disc Lead Time	Consult LESER US
Non Standard Discs	Consult LESER US

US Prepaid Freight Charges

Note: All prices quoted on this page are net prices in USD$

If LESER's prepaid freight service is selected the charges listed in the chart below will be used depending on the delivery zone. Please see previous page for an explanation of the delivery zones. The charges listed below are only valid for the contiguous United States and Canada. Certain rural areas of US and Canada especially in Zone 8 may require additional transportation costs that need to be calculated outside this chart below. LESER uses LTL services with the product on a pallet or in a crate when the weight of the shipment exceeds 75 pounds. LESER reserves the right to institute a fuel surcharge on shipments, if necessary, due to a significant increase in transportation costs from our transportation providers. LESER will not be the importer of record outside of the US. Please provide your third party freight account number on your purchase order if you prefer to use your own transportation vendor.

Freight Charges

United States of America												Canada					
Weight [lb]		Zone 1		Zone 2		Zone 3		Zone 4		Zone 5		Zone 6		Zone 7		Zone 8	
From	To	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air	Ground	Air
0	5	$17	$46	$18	$74	$18	$78	$19	$82	$21	$102	$43	$105	$44	$110	$182	$253
6	10	$18	$60	$19	$102	$20	$106	$20	$109	$26	$139	$55	$134	$56	$138	$199	$267
11	20	$20	$85	$20	$156	$23	$163	$25	$168	$41	$204	$71	$163	$74	$184	$217	$300
21	40	$29	$126	$36	$253	$36	$265	$40	$274	$69	$334	$110	$284	$114	$312	$289	$382
41	50	$39	$150	$48	$287	$48	$306	$48	$320	$78	$397	$130	$325	$134	$363	$325	$449
51	75	$82	$272	$120	$470	$120	$485	$126	$504	$145	$630	$198	$455	$203	$490	$470	$567
76	100	$184	$355	$189	$567	$197	$584	$201	$659	$252	$864	$265	$507	$273	$546	$518	$832
101	150	$320	$413	$335	$591	$380	$617	$392	$870	$405	$1158	$632	$856	$428	$777	$723	$1205
151	200	$322	$420	$353	$639	$385	$672	$394	$896	$410	$1211	$640	$875	$432	$807	$745	$1249
200	250	$324	$427	$371	$687	$390	$726	$400	$921	$430	$1263	$650	$893	$435	$836	$768	$1292
251	300	$356	$510	$444	$825	$451	$870	$459	$1106	$483	$1516	$660	$993	$522	$1012	$848	$1507
301	350	$415	$604	$518	$962	$527	$1016	$536	$1290	$564	$1768	$670	$1159	$611	$1182	$929	$1721
351	400	$473	$688	$591	$1100	$601	$1161	$615	$1474	$646	$2021	$677	$1326	$697	$1351	$1011	$2045
401	450	$531	$771	$667	$1237	$679	$1283	$691	$1658	$727	$2274	$762	$1489	$785	$1519	$1091	$2259
451	500	$553	$826	$695	$1269	$723	$1396	$749	$1727	$797	$2506	$846	$1655	$871	$1689	$1212	$2474
501	600	$664	$936	$832	$1428	$864	$1483	$896	$1943	$954	$2817	$1015	$1827	$1045	$1864	$1310	$2722
601	700	$774	$1092	$970	$1665	$1009	$1729	$1046	$2267	$1114	$3286	$1183	$2129	$1218	$2171	$1412	$3226
701	800	$884	$1248	$1110	$1904	$1152	$1977	$1195	$2589	$1273	$3755	$1350	$2434	$1390	$2482	$1613	$3629
801	900	$994	$1403	$1248	$2158	$1296	$2226	$1343	$2914	$1433	$4226	$1521	$2739	$1566	$2794	$1916	$4132
901	1000	$1080	$1552	$1328	$2158	$1399	$2384	$1473	$3181	$1524	$4652	$1573	$2841	$1620	$2975	$1916	$4536
1001	1250	$1348	$1939	$1660	$2699	$1749	$2978	$1842	$3976	$1904	$5812	$1966	$3553	$2025	$3719	$2219	$5651
1251	1500	$1618	$2327	$1993	$3238	$2100	$3576	$2207	$4770	$2285	$6976	$2359	$4264	$2429	$4464	$2622	$6754
1501	1750	$1889	$2715	$2326	$3797	$2450	$4170	$2575	$5454	$2665	$8174	$2752	$4972	$2834	$5209	$3025	$7864
1751	2000	$1935	$2979	$2603	$3797	$2632	$4337	$2659	$5535	$2901	$8287	$3146	$5683	$3240	$5953	$3226	$8064
2001	2250	$2163	$3351	$2929	$4273	$2959	$4879	$2988	$6134	$3264	$9197	$3540	$6394	$3645	$6697	$3629	$8871
2251	2500	$2405	$3723	$3255	$4747	$3288	$5419	$3321	$6817	$3627	$10218	$3933	$7105	$4049	$7439	$4032	$9880
2501	2750	$2647	$4096	$3581	$5223	$3618	$5964	$3654	$7502	$3990	$11245	$4326	$7813	$4454	$8183	$4235	$11593
2751	3000	$2886	$4468	$3907	$5697	$3947	$6504	$3986	$8179	$4353	$12261	$4719	$8524	$4860	$8928	$4435	$12600
3001	3250	$3129	$4840	$4235	$6171	$4279	$7051	$4322	$8868	$4718	$13292	$5113	$9239	$5266	$9675	$5041	$13609
3251	3500	$3367	$5214	$4558	$6649	$4604	$7592	$4653	$9547	$5080	$14310	$5507	$9950	$5671	$10420	$5545	$14616
3501	3750	$3608	$5586	$4883	$7121	$4932	$8130	$4981	$10225	$5439	$15327	$5899	$10655	$6074	$11161	$6048	$15625
3751	4000	$3852	$5958	$5212	$7600	$5262	$8674	$5313	$10913	$5801	$16358	$6294	$11369	$6480	$11908	$6451	$16632
4001	4250	$4089	$6331	$5536	$8072	$5592	$9219	$5648	$11592	$6165	$17375	$6687	$12080	$6886	$12650	$6552	$17641
4251	4500	$4330	$6703	$5860	$8546	$5920	$9757	$5980	$12271	$6528	$18393	$7078	$12788	$7289	$13392	$6654	$18648
4501	4750	$4570	$7078	$6182	$9023	$6246	$10298	$6311	$12957	$6891	$19422	$7472	$13500	$7696	$14139	$6754	$19657
4751	5000	$4810	$7449	$6511	$9497	$6577	$10844	$6644	$13637	$7255	$20441	$7866	$14211	$8100	$14884	$6855	$20664

Contact, Ordering and Delivery

Contact

For inquiries, orders, technical assistance etc. please contact LESERs local representative.
If local rep is unknown, please see www.leser.com or ask LESER LLC.

Delivery time

Delivery time is indicated in this “Prices” by highlighting article numbers and prices in red.

Example:

4412.4812 $1,850	Delivery 1 week (FCA Charlotte, NC). If requested, same day delivery is possible, please ask.
5262.0015 $3,163	Delivery minimum of 4 weeks (FCA Hohenwestedt); if shorter delivery times are required, there will be additional charges for air freight.
Option price	Blue option price = “Design to Order”-version with longer delivery time on request. If no other delivery time is specified: min. 9 weeks
Spare parts	Spare parts available for next day delivery.

Please refer to pages 200 and 201.

Terms of delivery

All prices are net 30 days, FCA Charlotte, NC, packing included.

Ordering

Following information is needed to process your order properly:

Safety valves

For ordering safety valves please use order codes shown in the “How to order” for various LESER products.

Springs

Please indicate valve type and size or 8 digit valve article number (yyyy.yyyy) and set pressure.

Spare parts

Please indicate 11 digit part number (xxx.xxxx.xxxx). You can find part numbers in the product catalogs.
If part number is not available, please state 8 digit valve article number (yyyy.yyyy; can be taken from order confirmation or name plate) and part item number (see product catalog, materials section).

Material test Certs

- Material test Certs 3.1 are available for almost every component of LESER safety valves. Please specify with your order.
- If Certs are requested after delivery, please contact LESER LLC. You will get the requested Certs within 24 hours.

LESER authorized repair centers (LARC)

- LESER has designated “LESER authorized repair centers (LARC)” throughout the country. Please see www.leser.com for all LARC´s.
- LARC’s provide local service and repair for LESER products with factory trained personnel.
- All LARC’s are VR stamp holder or assembler for LESER valves.

Coding

All valves sold in the US carry UV and NB stamp according to ASME code Section VIII.
CRN numbers for Canada can be applied and further to that LESER safety valves are in compliance with PED 2014/68/EU (CE-marking) without any changes necessary.

LESER LLC
Terms and conditions of sale

NOTICE: ALL TRANSACTIONS BETWEEN LESER, LLC, A NORTH CAROLINA LIMITED LIABILITY COMPANY ("SELLER") AND BUYER ("BUYER"), AND ALL DOCUMENTS PERTAINING TO SUCH TRANSACTIONS, ARE SUBJECT TO AND CONDITIONED UPON THESE TERMS AND CONDITIONS OF SALE ("TERMS") AND THESE TERMS ARE INCORPORATED BY REFERENCE INTO AND ARE A PART OF ALL TRANSACTIONS BETWEEN SELLER AND BUYER.

I. General; Order Process; Acceptance; Additional or Conflicting Terms.

(a)"Sales Documents" include any quotation, proposal, statement of work, service request, order confirmation, order acceptance and invoice issued in writing (including via email or electronically) by an authorized representative of Seller. Buyer's purchase of Products (defined below) from Seller, and any Services (defined below) Seller provides, will be governed solely by these Terms and any applicable Sales Documents issued by Seller in connection with such Products and Services (collectively, the "Contract"). In no event will Buyer's terms in any purchase order, service request, commercial document, communication or otherwise apply to, nor will Buyer's proposed additional or different terms modify, a Contract unless Seller expressly accepts Buyer's specific terms in writing by including such specific term in the Sales Documents. Seller hereby objects to and rejects any additional or different terms or conditions proposed by Buyer or contained in any purchase order, statement of work, service request, commercial document or other correspondence from Buyer, regardless of any knowledge Seller may have of such terms, and such terms will not bind Seller or be applicable to the transaction (even if Buyer's purchase order is referenced in the Sales Documents). If any of these Terms conflict with the Sales Documents, the specific terms in the applicable Sales Documents will prevail over these Terms to the extent of such conflict. The applicable terms of any revised or later Sales Document will control over such terms in a prior, similar Sales Document. No other terms or changes, modifications, amendments or waivers of any terms in a Contract will apply to Seller unless in writing and signed by an authorized representative of Seller.

(b) All sales of products and any other goods sold by Seller (individually, "Product" and collectively, "Products") and any services performed by Seller ("Services") are contracts entered into in North Carolina and then only in accordance with the Sales Documents.

(c) Seller will sell Products and provide Services to Buyer in the quantities and at the times set forth in the Sales Documents. Buyer may order Products by submitting written purchase orders that reference Product(s), quantity per Product, and requested delivery date. Buyer may request Services by submitting a service request describing the Services and referencing a performance date. All purchase orders and requests submitted to Seller for Products or Services are subject to acceptance by Seller and, notwithstanding Seller's acceptance, only the terms of the Sales Documents will apply. Seller's acceptance may be in writing (such as via an order confirmation, order acknowledgement, invoice or delivery note), including electronically or via email, or by delivery of Products to Buyer or performance of Services for Buyer.

(d) Buyer may not cancel or change a Contract except with the prior written consent of Seller. Seller shall have the right to make any changes to the Services which are necessary to comply with any applicable law or safety requirement or which do not materially affect the nature or quality of the Services or the Products. Seller may change a Sales Document at any time to correct mathematical or clerical errors.

II. Price and Payment Terms.

(a) All prices for Products and Services will be as specified in writing by Seller in its Sales Documents and may be changed by Seller at any time without notice. If no price has been specified in the Sales Document, the price will be Seller's standard price in its catalogs or price lists in effect at the time of delivery or performance, as the case may be. Unless otherwise stated in Seller's Sales Documents, all prices must be in writing and are in U.S. dollars. Unless expressly specified otherwise in the Sales Documents, Buyer will also reimburse Seller for all reasonable travel and out-of-pocket expenses incurred by Seller in connection with the performance of Services.

(b) If not agreed otherwise in the Sales Documents, prices for Products shall assume delivery is made (i) FCA (Incoterms 2020) Seller's facility located in Charlotte, North Carolina, USA, if Products are on hand and shipped from Charlotte, North Carolina, USA or (ii) FCA (Incoterms 2020) Seller's facility located in Hohenwestedt, Germany if Products are shipped from Hohenwestedt, Germany, in each case inclusive of packaging.

(c) The prices do not include any sales, use, personal property, excise, transfer or other tax, nor any duties or assessment, arising out of or related to Products, Services or their respective purchase and sale which may be imposed by any governmental authority, all of which will be the obligation of, and paid by, Buyer. If Seller pays any such tax, duty or assessment, Buyer will reimburse Seller in accordance with the terms of Section II(e) below. Buyer is responsible for obtaining and providing to Seller any certificate of exemption or similar document required to exempt any sale from sales, use or similar tax liability.

(d) Unless expressly specified otherwise in the Sales Documents, Buyer will pay all amounts due in full, and without deduction or setoff, to Seller's account within thirty

(30) days of the date of the invoice, net without discount for shipping or other transfer, regardless of any dispute or controversy that may arise. Buyer will make all payments under a Contract by wire transfer, cash, check, or such other payment method as Seller may specify from time to time and in U.S. dollars. Buyer is responsible for all foreign exchange, wire transfer and other bank fees. The date of payment will be the date Seller receives payment in full. If at any time, in its sole discretion, Seller has any doubt or concern as to Buyer's financial standing, solvency, creditworthiness or ability to perform its obligations, Seller may decline to make shipments, discontinue performance of Services, and terminate a Contract (in whole or in part), except upon receipt of a deposit or other satisfactory security or advance payment shipment. Buyer will not withhold, offset or recoup any amounts it owes to Seller under a transaction, Contract, or otherwise against any other amount Buyer claims Seller owes to it, regardless of any dispute that may arise between the parties. Seller may, in its sole discretion, apply payments by Buyer to the oldest invoice first and in the following order: accrued costs, accrued interest, price for Products.

(e) If Buyer fails to make any payments as and when due or otherwise defaults (i) interest will accrue from the date the payment was due until payment is received in full at the lower of 1.5% per month or the maximum amount allowed by applicable law; and (ii) Seller may take any or all of the following actions:

(1) suspend performance under the applicable Contract or any other Contract with Buyer;

(2) terminate the applicable Contract for default or any other Contract with Buyer;

(3) require Buyer to pay the full Contract price and any interest, fees, taxes, or assessments and other charges immediately; and

(4) take any other actions or pursue any other rights or remedies. To the extent allowed by applicable law, Buyer will further reimburse Seller for all costs incurred in collecting any late payments, including attorneys' fees and expenses. Failure by Seller to charge interest on late payments or to exercise its other rights and remedies will not be construed as a waiver of any other legal or equitable remedies.

III. Delivery; Transfer of Risk.

Unless otherwise stated in Seller's Sales Documents, all deliveries of Products are (i) FCA (Incoterms 2020) Seller's facility located in Charlotte, North Carolina, USA, if Products are on hand and shipped from Charlotte, North Carolina, USA, (ii) FCA (Incoterms 2020) Seller's facility located in Hohenwestedt, Germany if Products are shipped from Hohenwestedt, Germany, or such other location as designated by Seller ("Delivery Point") and all risk of loss to the Products shall pass to Buyer at the Delivery Point. Unless otherwise stated in Seller's Sales Documents, Buyer will take delivery of Products when Products have been made available at or delivered to the Delivery Point. Except as otherwise noted herein, the prices do not include any transportation, insurance, installation, training setup, storage or packaging costs and Buyer is responsible for all such costs. Seller may make partial or early deliveries. Notwithstanding any requested delivery dates by Buyer, the delivery date in Seller's order confirmation will control. Any shipping or delivery schedule, quotation, forecast or commitment is only an estimate and Seller will not be liable for any delay or failure to deliver all or any part of any order for any reason.

IV. Acceptance; Returns.

Buyer will inspect all Products and Services immediately upon their delivery or performance, and prior to use or resale. Immediately and no later than five

(5) days after delivery of a Product or completion of a Service, Buyer must give written notice to Seller of any claim by Buyer based upon any alleged shortage, defect or discrepancy of Products sold or Services provided, and such notice must indicate the basis of the claim in detail, state the invoice number, invoice date, and information, such as a serial number, on the Product itself or the Product label or packaging. Buyer's failure to comply within the time specified in this Section IV constitutes irrevocable acceptance by Buyer of Products delivered or Services provided and will bind Buyer to pay to Seller the full price of such Products or Services. Products sold and accepted will not be returned, unless Seller provides its prior written consent to any such return on an individual basis. Any such return will be made by Buyer DDP (Incoterms 2020) Seller's facility located in Charlotte, North Carolina, plus a minimum restocking fee equal to (i) 15% of the Contract price of standard Products returned and (ii) 50% of the Contract price of any non-standard Products returned, all in accordance with Seller's then current return policies.

V. Security Agreement.

Buyer hereby grants Seller a continuing first priority purchase money security interest in all Products sold or delivered to it and to the proceeds of Products (collectively, "Collateral") to secure the full payment of the purchase price of Products and all other obligations of Buyer arising out of a Contract. Buyer authorizes Seller to file, on Buyer's behalf, all financing statements, continuation statements and other documents necessary or desirable to establish, perfect, maintain, preserve and enforce Seller's security interest in the Collateral.

VI. Limited Warranty.

(a) Subject to the provisions in these Terms and in the Sales Documents, Seller warrants that (i) when Products are delivered to Buyer, Products will materially comply with Seller's specifications included in the Sales Documents for such Products, and (ii) when Services are performed, Services will have been performed using personnel of required skill, experience, and qualifications and in a workmanlike manner in accordance with generally recognized industry standards for similar services. The warranties provided in this Section VI are hereinafter referred to collectively as the "Limited Warranty." Unless expressly specified otherwise in the Sales Documents, the Limited Warranty shall expire twelve (12) months after the delivery date of a Product, or thirty (30) days after completion of Services (each, a "Warranty Period"). The Limited Warranty is conditioned upon Buyer following the claims process outlined in Section VII below, which Seller may change from time to time. Buyer is solely responsible for proper selection of Services and Products as well as for their intended use, application and processing,. As such, Buyer should not rely on Seller to ensure that the Services performed or Products purchased will meet any standards or specifications.

(b) Any depictions, statements, claims, advertising, technical advice, trials, projections, diagrams, samples, drawings, illustrations, and other descriptions or other information from Seller or its affiliates, applicable to Products, Services, or a Contract, whether included in catalogs, datasheets or otherwise, are descriptions or approximations only, and do not constitute any specifications, representations, warranties, or guarantees, implicitly or explicitly.

(c) EXCEPT FOR THE LIMITED WARRANTY EXPRESSLY PROVIDED IN THIS SECTION VI, SELLER MAKES NO REPRESENTATIONS OR WARRANTIES, STATUTORY OR OTHERWISE, REGARDING OR RELATING TO PRODUCTS, SERVICES OR ANY CONTRACT, AND SELLER DISCLAIMS ALL REPRESENTATIONS AND WARRAN-

-> continue

LESER LLC
Terms and conditions of sale

TIES, EXPRESS AND IMPLIED, WRITTEN OR ORAL, WITH RESPECT TO PRODUCTS AND SERVICES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT WHETHER ARISING BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE.

VII. Limited Warranty Exclusions and Buyer's Limited Warranty Claims.

(a) The Limited Warranty does not cover: (i) damage to Products during or after delivery; (ii) normal wear and tear or items that are expendable; (iii) user error, including unsuitable or improper use; (iv) use under circumstances or resale for uses exceeding Seller's specifications or limitations or contrary to any instructions or information from Seller; (v) unauthorized use, or unauthorized or improper installation, repair, modification or alteration; (vi) improper storage; (vii) Products sold or Services performed based on Buyer's instructions, information, design, plans or other non-Seller specifications; (viii) faulty or negligent treatment; (ix) any warranties or representations given by Buyer on resale of Products or use of Services; (x) repackaging, rebranding; (xi) modification or alteration of Products or Services; (xii) accidents; (xiii) faulty assembly or commissioning by Buyer or third parties related to Buyer; (xiv) improper maintenance; (xv) unsuitable operating equipment or media;

(xvi) faulty construction work; or (xvii) unsuitable foundations, chemical, electrochemical or electrical influences to the extent that Seller is not responsible for such cases.

(b) Buyer must give Seller detailed written notice of any Products or Services which Buyer alleges do not conform to the Limited Warranty, specifying the alleged non- conformities (each, a "Warranty Claim"). Any Warranty Claim must be made within thirty (30) days after Buyer is aware of the alleged non-conformity and, in any event, within the Warranty Period. Buyer will follow Seller's then current Warranty Claims process. At Seller's request, Buyer will return, at Buyer's expense, any alleged non- conforming Product to a location designated by Seller for Seller to evaluate and verify the alleged non-conformity. For any Products which Seller determines do not conform to the Limited Warranty, Seller's sole liability and obligation, and Buyer's sole and exclusive remedy, will be, at Seller's choice, to repair or replace such non-conforming Product, or to refund the purchase price for such non-conforming Product. For any Services which Seller determines do not conform to the Limited Warranty, Seller's sole liability and obligation, and Buyer's sole and exclusive remedy, will be, at Seller's choice, to correct or repeat such Services.

VIII. Limitation of Liability.

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS, REGARDLESS OF THE THEORY OF RECOVERY, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SELLER'S MAXIMUM AGGREGATE LIABILITY UNDER THE CONTRACT OR WITH RESPECT TO THE SERVICES OR PRODUCTS OR THEIR USE, WHETHER IN WARRANTY, CONTRACT, TORT, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE AMOUNT BUYER PAID TO SELLER FOR THE PARTICULAR SERVICES OR PRODUCTS AT ISSUE. SELLER IS NOT RESPONSIBLE FOR ANY INJURY OR DAMAGE RESULTING FROM THE USE OR APPLICATION OF THE PRODUCTS, ALONE OR IN CONJUNCTION WITH OTHER GOODS.

IX. Indemnity.

Buyer agrees to indemnify, defend and hold harmless Seller and its affiliates, and their respective officers, directors, employees and agents, from any and all third-party claims, actions, suits, damages, liabilities, costs, obligations, and expenses (including attorneys' fees and expenses) arising out of or relating to: (i) Buyer, its employees, agents, or customers' selection, use of, modification of, or application of the Products alone or in conjunction with other products; (ii) any processing or modification of Products in any manner by Buyer, its employees, agents, or customers; (iii) claims regarding warnings or failure to warn of dangers related to Products; (iv) any violation or failure to comply with applicable laws and regulations, including those pertaining to health and/or safety; (v) any intentional or negligent act, or misrepresentation by Buyer, its employees or agents; (vi) any breach of warranty or misrepresentation (express or implied) made by Buyer, its employees or agents; (vii) any violation, misappropriation, or infringement of any patent, trademark, copyright or other intellectual property rights of any person or entity arising out of or related to compliance with Buyer's design, specifications or instructions or Buyer's use of a Product with other goods; (viii) use of a Product or Services inconsistent with or exceeding Seller's specifications, limitations or recommendations; and (ix) any breach by Buyer of any terms of a Contract.

X. Confidentiality; Intellectual Property; No License.

Buyer may have access to certain proprietary and/or confidential information and to other property (including trademarks) owned or used by Seller and its affiliates, whether in oral, written, electronic or other form or media. Buyer acknowledges and agrees that all such proprietary and/or confidential information and other property will remain the property of Seller and its affiliates and that, upon Seller's request, Buyer will return or destroy all proprietary and/or confidential information (in any and all forms) and will return to Seller all such other property of Seller and its affiliates. Buyer will not, without Seller's prior written consent, disclose to any third party any aspect of any such proprietary and/or confidential information, and will not use, except internally to perform its obligations under a Contract, any such proprietary and/or confidential information or other property of Seller or its affiliates. All intellectual property rights arising out of or in connection with the Services shall be the sole and exclusive property of Seller and its affiliates. Buyer agrees that Seller's sale of Products and provision of Services does not grant to Buyer any license or intellectual property or similar right applicable to or in any Products or Services, or in any information or documents (including estimates, projections, drawings, calculations or instructions) Seller provides to Buyer, and Buyer waives any and all such rights. Seller and its affiliates retain ownership in and control over all intellectual property, including patents, trademarks, copyrights, know-how, and goodwill applicable to or arising out of a Product or a Service. Buyer will not name or designate any Seller information or Product or Service in any patent application. Buyer may not alter or remove, and will abide by, any patent, trademark, copyright, trade secret, proprietary or other notices, serial numbers, labels, tags or other identifying marks, symbols or legends contained on or in a Product (including containers packages). If Buyer acquires any intellectual property or similar rights in or relating to any Products purchased under a Contract (including any rights in any trademarks, derivative works or patent improvements relating thereto), by operation of law, or otherwise, such rights are deemed and are hereby irrevocably assigned to Seller or its licensors, as the case may be, without further action by either Seller or Buyer.

XI. Applicable; Venue; Jurisdiction.

All Contracts, and any matter, dispute or controversy arising out of or relating to Contract or Products or Services will be governed by the laws of the State of North Carolina, excluding its conflict of laws provisions. Any matter, action, dispute, claim or controversy arising out of or relating to this Agreement or a breach of this Agreement will be commenced and heard exclusively in the North Carolina state courts or the United States District Court for the Western District of North Carolina, except for any action instituted by Seller for equitable or injunctive relief.

XII. Insurance.

Buyer will maintain commercial general liability, personal injury and property damage insurance policies, including wrongful death coverage, in reasonable amounts consistent with industry standards with a nationally recognized insurance company. All such insurance policies will name Seller and its affiliates as additional insureds, and Buyer will immediately deliver to Seller a certificate of insurance meeting the requirements listed in this Section XII.

XIII. Additional Legal Terms.

(a) Termination or Suspension. Without limiting Seller's other rights and remedies available under a Contract, applicable law or in equity, Seller may suspend or terminate performance and delivery, if: (a) Buyer fails to perform or observe any obligations under a Contract between Seller and Buyer; (b) there is a change in the control or management of Buyer; (c) Buyer ceases to conduct its operation in the normal course of business; (d) Buyer becomes insolvent or files for bankruptcy or has a bankruptcy proceeding filed against it;

(e) Buyer fails to pay all amounts due in full to Seller within thirty (30) days of the date of the invoice for a sale of Products; or (f) Buyer makes an assignment for the benefit of creditors, or a receiver, trustee in bankruptcy or similar officer is appointed to take charge of all or part of Buyer's property. Seller may also suspend performance or terminate any Contract, without liability or obligation to Buyer, if Seller reasonably believes that its performance may violate applicable laws, regulations or orders of a governmental authority.

(b) Compliance with Laws. Buyer will conduct its business in complete compliance with all applicable Federal, State, foreign and/or local laws, orders, regulations, directions, restrictions, and limitations.

(c) Force Majeure. Seller will not be liable, and its performance (and delivery dates and delivery periods) will be deemed extended, for any delays or failure to perform directly or indirectly resulting from events and causes beyond its, or its suppliers' and/or subcontractors' reasonable control, including accidents, acts of God, acts and omissions of any governmental authority, declared or undeclared wars, terrorism, explosions, strikes or other labor disputes, fires and natural calamities (including floods, earthquakes, storms and epidemics), changes in the law, or delays in obtaining or the inability to obtain labor, materials, Products or Services through usual sources at normal prices.

(d) Relationship. Seller is an independent contractor. Nothing in a Contract will be construed as creating a partnership, association or joint venture between the parties. Buyer will have no power or authority to bind Seller on any matter including making any representation or warranty on behalf of Seller.

(e) Miscellaneous. A Contract contains the entire agreement of the parties relating to the subject matter and supersedes all previous and contemporaneous agreements, understandings, usages of trade and courses of dealing, whether written or oral. Buyer may not assign (including by operation of law) all or any portion of its rights or obligations under a Contract without Seller's prior written consent. No assignment will relieve Buyer of any obligations under a Contract. Any consent, approval or agreement required or allowed by Seller may be given or withheld by Seller in its sole discretion and must be in writing and signed by an authorized representative of Seller to be effective. No delay or failure by Seller to exercise or enforce any of its rights or remedies under a Contract will be construed as a waiver of such rights or remedies. If any provisions of these Terms or any Sales Documents are held to be invalid, illegal or unenforceable by any court of competent jurisdiction, such provision(s) will be deemed to be severable and these Terms and any Sales Documents will then be construed and enforced in accordance with the remaining provisions. As used herein, the words "including", "include" and "includes" will not be deemed to be limiting. The Contract and these Terms may be amended or modified only by a written agreement, signed by both parties, expressly amending or modifying the Contract or these Terms.

LESER LLC
January 2020

LESER worldwide

www.leser.com/en-us/the-company/worldwide-contacts/

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