API Series

Flanged Safety Relief Valves

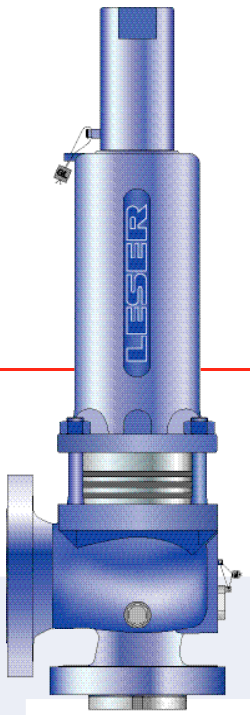
Series 526

CATALOG

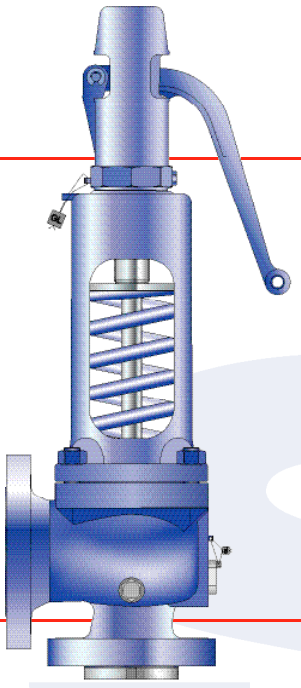
LESER

The Safety Valve

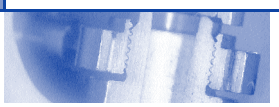
Type 526
Plain lever H3



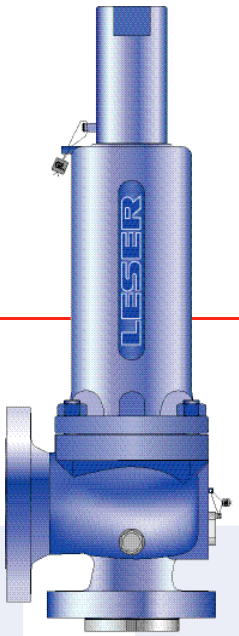
Type 526
Balanced bellows
design



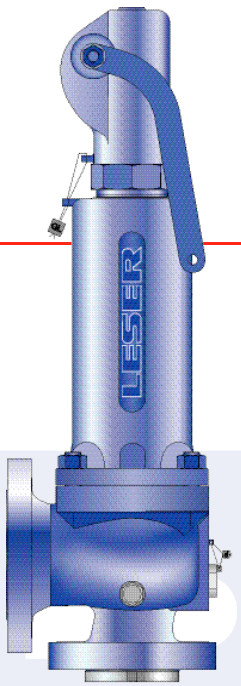
Type 526
Open bonnet



Contents



Type 526
Cap H2

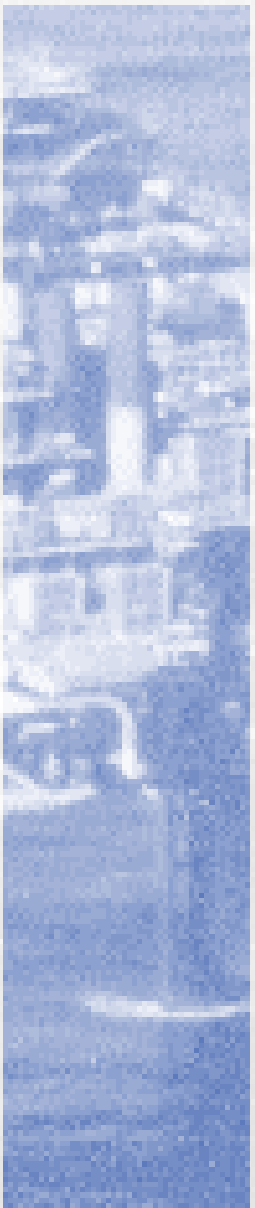


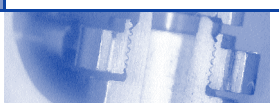
Type 526
Packed lever H4

LESER´s API series 526 is a spring loaded pressure relief valve series, specially designed and manufactured to API 526 and approved according to ASME (Sec. VIII, Div. 1) the Canadian CRN, the European PED standard, the German AD 2000-Merkblatt A2 and those of many other countries, covering requirements from end-users, OEM´s and engineering companies worldwide, thus allowing immediate replacement.

LESER´s API series 526 has been optimized in close cooperation with plant engineers and service specialists, simplifying design with fewer components for less down time, fewer spare parts and lower maintenance costs.

Extensive testing at the LESER ASME-certified test lab together with up to date manufacturing processes ensure the reliability of this state of the art product.





Applications

LESER´s API series 526 presents the simple safe solution for heavy duty applications, such as crude oil extraction, transportation and processing in

- Refineries
- Chemical industry
- Petrochemical industry
- Oil and Gas - Onshore and Offshore
- Oilfields (“Christmas trees”)
- Vessels & piping systems
- Blow-down systems
- Storage tank farms

Features and Benefits

LESER´s API series 526 covers a large variety of types, materials and options to fit any application:

Scope of Design

- Seven valve sizes from 1” through 8”
- 14 orifice sizes from D through T
- Materials: WCB, WC6, CF8M and a wide range of material variations for critical applications
- Open or closed bonnet, packed or plain lifting lever or gastight cap
- Optional balanced bellows construction for back pressure compensation
- Heating jacket available for high viscosity fluids
- Many other options to adjust to various operating conditions

Simplified design for “built-in safety”

- Fool-proof design with few parts for built-in safety
- Single trim for steam, gas and liquid for fewer spare parts and easier maintenance
- One-piece spindle reduces friction
- Two-point-guided nozzle for improved alignment
- Self draining body avoids residues and reduces corrosion
- Long springs for large pressure ranges

Ease of plant design, installation, operation and maintenance

- Reduced number of components for easier and more cost effective maintenance
- Replaceable nozzle and disc
- Stellited or hardened metal sealing for longer product life
- Optional soft seat for superior tightness
- Integral cast support brackets

Codes and Standards

LESER´s API series 526 complies with the following codes and standards:

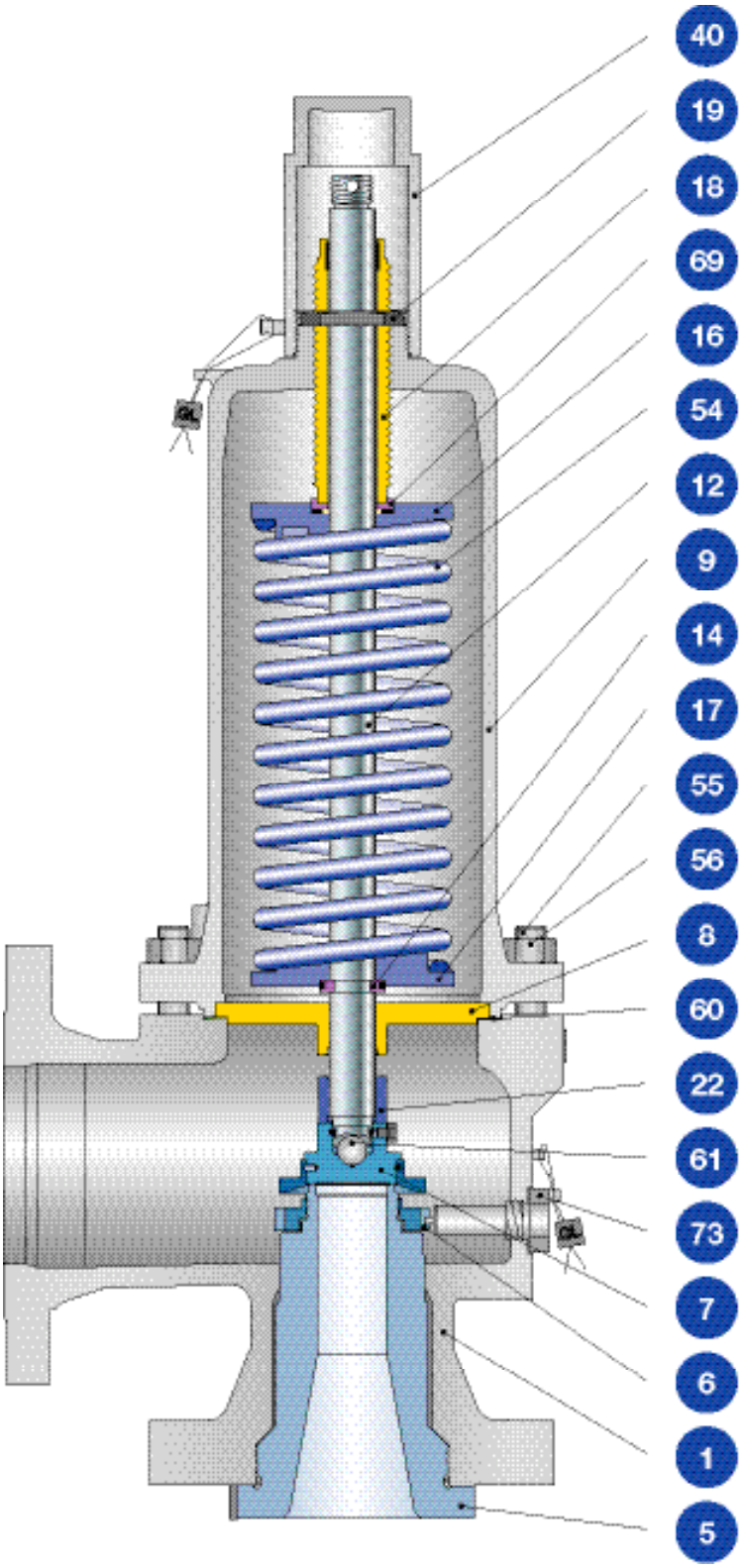
- ASME Section VIII – National Board certified capacities (single trim for steam, gas and liquid service): UV-stamp
- ASME Section II - materials
- ASME B16.34 and ASME B16.5 - flanging
- API 526 – fourth edition 1995
- API 520 and 527
- NACE MR 0175
- ISO 4126
- PED 97/23/EC (CE-marking)
- CRN, VdTUEV-SV 100, AD 2000-Merkblatt A2
- Others

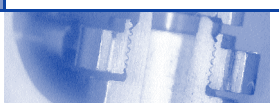
Materials – Conventional Design

Standard Service Type 5262

Item	Part Name	Trim: standard
1	**Body**	**SA 216 WCB**
5	Nozzle	316L
6	Adjusting ring	316L
7	Disc	Hardened stainless steel
8	Guide	316L
9	**Bonnet**	**SA 216 WCB**
12	Spindle	AISI 420
14	Split ring	AISI 420
16/17	Spring plate	12L13
18	Adjusting screw with bushing	AISI 430F PTFE
19	Lock nut	Steel
22	Lift stop	316L
40	Cap H2	12L13
54	Spring	High temperature alloy steel
55	Stud	B7
56	Nut	2H
60	Gasket	Graphite / 316L
61	Ball	Hardened stainless steel
69	Needle bearing	316L
73	Lock screw	316L

Remark
Nozzles for flange classes 600 and higher are supplied with stellited sealing surfaces as a stan-dard for improved wear resistance.





Material Options – Conventional Design

Corrosive Service[1] Type 5264					
Item	**Part Name**	**Trim: Standard**	**Trim: Hastelloy® Grade HA**	**Trim: Monel® Grade MA**	**Trim: Duplex® Grade DA**
1	**Body**	**SA 351 CF8M**	**SA 351 CF8M**	**SA 351 CF8M**	**SA 351 CF8M**
5	Nozzle	316L	Hastelloy® C	Monel®	Duplex®
6	Adjusting ring	316L	316L	316L	316L
7	Disc	316L stellited	Hastelloy® C	Monel®	Duplex®
8	Guide	316L	316L	316L	316L
9	**Bonnet**	**SA 351 CF8M or SA 479 316Ti**	**SA 351 CF8M or SA 479 316Ti**	**SA 351 CF8M or SA 479 316Ti**	**SA 351 CF8M or SA 479 316Ti**
12	Spindle	AISI 420	AISI 420	AISI 420	AISI 420
14	Split ring	316L	316L	316L	316L
16 / 17	Spring plate	316L	316L	316L	316L
18	Adjusting screw with bushing	316L tenifer PTFE	316L tenifer PTFE	316L tenifer PTFE	316L tenifer PTFE
19	Lock nut	316L	316L	316L	316L
22	Lift stop	316L	316L	316L	316L
40	Cap H2	316L	316L	316L	316L
54	Spring	Stainless steel	Stainless steel	Stainless steel	Stainless steel
55	Stud	B8M	B8M	B8M	B8M
56	Nut	8M	8M	8M	8M
60	Gasket	Graphite / 316 L	Graphite / 316L	Graphite / 316L	Graphite / 316L
61	Ball	316	316	316	316
69	Needle bearing	316L	316L	316L	316L
73	Lock screw	316L	316L	316L	316L

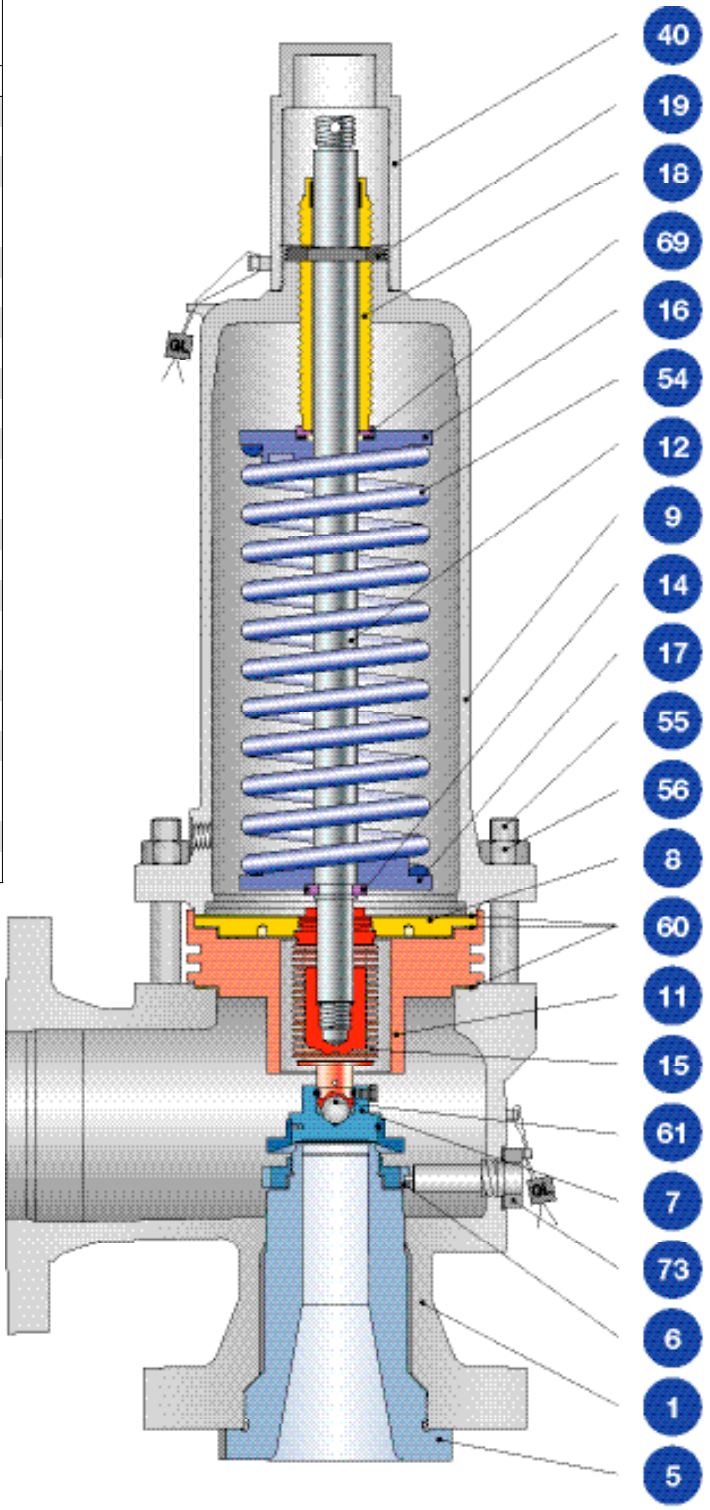
Notes: [1] Materials in blue: variations from standard bill of material
[2] 316L stellited for flange classes 900 and higher

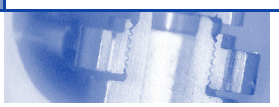
Materials – Balanced Bellows Design

		Standard Service Type 5262	High Temperature Service Type 5267
Item	**Part Name**	**Trim: standard**	**Trim: standard**
1	**Body**	**SA 216 WCB**	**SA 217 WC6**
5	Nozzle	316L	316L stellited
6	Adjusting ring	316L	316L
7	Disc	Hardened stainless steel	Hardened stainless steel
8	Guide	316L	316L
9	**Bonnet**	**SA 216 WCB**	**SA 217 WC6**
11	Bonnet spacer[1]	SA 479 316L	SA 479 316L
12	Spindle	AISI 420	AISI 420
14	Split ring	316L	316L
15	Bellows	316L	316L
16/17	Spring plate	12L13	12L13
18	Adjusting screw with bushing	AISI 430F PTFE	AISI 430F PTFE
19	Lock nut	Steel	Steel
22	Lift stop	316L	316L
40	Cap H2	12L13	12L13
54	Spring	High temperature alloy steel	High temperature alloy steel
55	Stud	B8M	B16
56	Nut	8M	7M
60	Gasket	Graphite / 316L	Graphite / 316L
61	Ball	Hardened stainless steel	Hardened stainless steel
69	Needle bearing	316L	316L
73	Lock screw	8M	8M

Note: [1] Orifice T without bonnet spacer

Remark
Nozzles for flange classes 600 and higher are supplied with stellited sealing surfaces as a stan-dard for improved wear resistance.





Material Options – Balanced Bellows Design

Corrosive Service[1] Type 5264					
Item	**Part Name**	**Trim: Standard**	**Trim: Hastelloy® Grade HB**	**Trim: Monel® Grade MB**	**Trim: Duplex® Grade DB**
1	**Body**	**SA 351 CF8M**	**SA 351 CF8M**	**SA 351 CF8M**	**SA 351 CF8M**
5	Nozzle	316L[2]	Hastelloy® C	Monel®	Duplex®
6	Adjusting ring	316L	316L	316L	316L
7	Disc	316L stellited	Hastelloy® C	Monel®	Duplex®
8	Guide	316L	316L	316L	316L
9	**Bonnet**	**SA 351 CF8M or SA 479 316Ti**	**SA 351 CF8M or SA 479 316Ti**	**SA 351 CF8M or SA 479 316Ti**	**SA 351 CF8M or SA 479 316Ti**
11	Bonnet spacer	SA 479 316L	SA 479 316L	SA 479 316L	SA 479 316L
12	Spindle	AISI 420	AISI 420	AISI 420	AISI 420
14	Split ring	316L	316L	316L	316L
15	Bellows	316L	Hastelloy®	Monel®	Duplex®
16 / 17	Spring plate	316L	316L	316L	316L
18	Adjusting screw with bushing	316L tenifer PTFE	316L tenifer PTFE	316L tenifer PTFE	316L tenifer PTFE
19	Lock nut	316L	316L	316L	316L
22	Lift stop	316L	316L	316L	316L
40	Cap H2	316L	316L	316L	316L
54	Spring	Stainless steel	Stainless steel	Stainless steel	Stainless steel
55	Stud	B8M	B8M	B8M	B8M
56	Nut	8M	8M	8M	8M
60	Gasket	Graphite / 316L	Graphite / 316L	Graphite / 316L	Graphite / 316L
61	Ball	316	316	316	316
69	Needle bearing	316L	316L	316L	316L
73	Lock screw	316L	316L	316L	316L

Notes: [1] Materials in blue: variations from standard bill of material
[2] 316L stellited for flange classes 900 and higher

Sour Gas Service (H_2S)
NACE MR 0175

NACE MR 0175 defines two levels for the sour gas service of safety relief valves:

Level 1: for compliance of wetted parts in closed position

Level 2: for compliance of wetted parts in open position.

LESER's API series 526 fulfills the requirements with the standard bill of materials. Only very few modifications according to the table below are recommended. Material test reports and hardness test certificates for pro-duct wetted parts are available on request.

		Modification			
		Level 1		Level 2	
Type	**Body Material**	**Material Information**	**Option Code**	**Material Information**	**Option Code**
5262	SA 216 WCB	Disc material: 316L stellited	J25	Disc material: 316L stellited[1]	J25
5264	SA 351 CF8M	Use standard bill of materials	–	Use standard bill of materials[1]	–

Note: [1] Spindle material 316L or stainless steel bellows are available on request.

How to Order

Numbering System

1 Article No.

1	2	3	4
526	2	. 001	2

1 Valve Type
526

2 Material Code
2 – body+bonnet material WCB
4 – body+bonnet material CF8M
7 – body+bonnet material WC6

3 Valve Code
Identifies valve size, body material, orifice and flange class. Refer to table “Valve Codes Overview” page 12.

4 Code for Lifting Device
2 – screwed cap H2
3 – plain lever H3
4 – packed lever H4
5 – plain lever H3 with open bonnet

2 Set Pressure

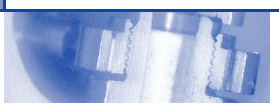
Please state unit (in gauge)!

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

3 Connections

Flanges acc. to	Option Code
ANSI B16.5	not required
DIN EN 1092-1 / DIN 2501	Please refer to table on page 50 – 51.
Other	please state in writing

5262.0012	100 psig		
Article No.	**Set Pressure**	**Connections**	



4 Options

Options Type 526			Option Code
• RJ groove inlet			L58
• O-ring-disc	CR	"K"	J21
	EPDM	"D"	J22
	FKM	"L"	J23
	FFKM	"C"	J20
• Disc 316L stellited			J25
• Nozzle 316L stellited			L61
• Stainless steel bellows			
- open bonnet			J68
- closed bonnet			J78
- high temp. equipment (Type 5267 only)			J88
• Stainless steel spring			X04
• Adaptor for proximity switch			J39
• Proximity switch			J93
• Test gag			
- cap H2			J69
- packed lever H4			J70
• Free of oil and grease			J85
• Materials			
- NACE			H01
- MONEL®			Grade MA
			Grade MB
- Hastelloy®			Grade HA
			Grade HB
- Duplex steel			Grade DA
			Grade DB
• Heating jacket			
- Couplings FNPT			S01 + H30
- Lap joint flanges			S01 + H32

5 Documentation

Please select requested documentation:

Material test report:
EN 10204-3.1.B

Part	Option Code
Body	H01
Bonnet	L30
Cap / lever cover	L31
Nozzle	L59
Disc	L23
Studs / nuts	L24

6 Code and Medium

1 2
1 . 1

1 Code
1 ASME Section VIII
2. CE/VdTUEV
3. ASME Section VIII + CE/VdTUEV

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

J22					H01	L30		1.1
Options					Documentation			Code and Medium

How to Order

Valve Codes Overview

Orifice letter	Orifice [Inch²]	Flange Class																			
		150x150			300Lx150			300x150			600x150			900x300			1500x300			2500x300		
Body Material		WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M
D	0.110	1” x 2”			1” x 2”			1” x 2”			1” x 2”			Use 1500-lb			1 1/2” x 2”			1 1/2” x 3”		
		001	–	010	002	–	011	002	006	011	003	007	012				004	008	013	005	009	014
E	0.196	1” x 2”			1” x 2”			1” x 2”			1” x 2”			dimensions for			1 1/2” x 2”			1 1/2” x 3”		
		015	–	024	016	–	025	016	020	025	017	021	026				018	022	027	019	023	028
F	0.307	1 1/2” x 2”			1 1/2” x 2”			1 1/2” x 2”			1 1/2” x 2”			these sizes			1 1/2” x 3”			1 1/2” x 3”		
		029	/	039	030	–	040	031	035	041	032		042				033	037	043	034	038	044
G	0.503	1 1/2” x 3”			1 1/2” x 3”			1 1/2” x 3”			1 1/2” x 3”			1 1/2” x 3”			2” x 3”			2” x 3”		
		045	–	110	046	–	111	047	052	112	048	053	113	049	054	114	050	055	115	051	056	116

Orifice letter	Orifice [Inch²]	Flange Class																			
		150x150			300Lx150			300x150			600x150			900x150			1500x300				
Body Material		WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M		
H	0.785	1 1/2” x 3”			1 1/2” x 3”			2” x 3”			2” x 3”			2” x 3”			2” x 3”				
		142	–	152	143	–	153	144	148	154	145	149	155	146	150	156	147	151	157		
J	1.287	2” x 3”			2” x 3”			3” x 4”			3” x 4”			3” x 4”			3” x 4”				
		162	–	196	163	–	197	164	168	198	165	169	199	166	170	200	167	171	201		
K	1.838	3” x 4”			3” x 4”			3” x 4”			3” x 4”			3” x 6”			3” x 6”				
		202	–	211	203	–	212	203	207	212	204	208	213	205	209	214	206	210	215		

Orifice letter	Orifice [Inch²]	Flange Class																			
		150x150			300Lx150			300x150			600x150			900x150			1500x150				
Body Material		WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M	WCB	WC6	CF8M		
L	2.853	3” x 4”			3” x 4”			4” x 6”			4” x 6”			4” x 6”			4” x 6”				
		232	–	242	233	–	243	234	238	244	235	239	245	236	240	246	237	241	–		
M	3.600	4” x 6”			4” x 6”			4” x 6”			4” x 6”			4” x 6”							
		580	–	587	581	–	588	581	584	588	582	585	589	583	586	–					
N	4.340	4” x 6”			4” x 6”			4” x 6”			4” x 6”			4” x 6”							
		590	–	597	591	–	598	591	594	598	592	595	599	593	596	–					
P	6.380	4” x 6”			4” x 6”			4” x 6”			4” x 6”			4” x 6”							
		645	–	653	646	–	654	647	650	655	648	651	656	649	652	–					
Q	11.050	6” x 8”			6” x 8”			6” x 8”			6” x 8”										
		657	–	662	658	–	663	658	660	663	659	661	664								
R	16.000	6” x 8”			6” x 8”			6” x 10”			6” x 10”										
		665	–	671	666	669	672	667	–	673	668	670	674								
T	26.000	8” x 10”			8” x 10”			8” x 10”													
		675	–	678	676	–	679	676	677	679											

Flange Class inlet x outlet

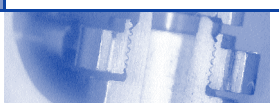
Body Material

Valve size inlet x outlet

Valve Code

The valve code identifies
· Valve size
· Body Material
· Orifice
· Flange Class

Note: “L” in Flange Class 300L means low.
Class 300 has higher pressure-temperature ratings than class 300L.



Specifications

The following pages contain selection charts and specification tables. They specify important data about the valves based on the API 526 fourth edition 1995, like

- Valve sizes
- Body materials
- Flange classes
- Set pressure and temperature limits
- Back pressure limits

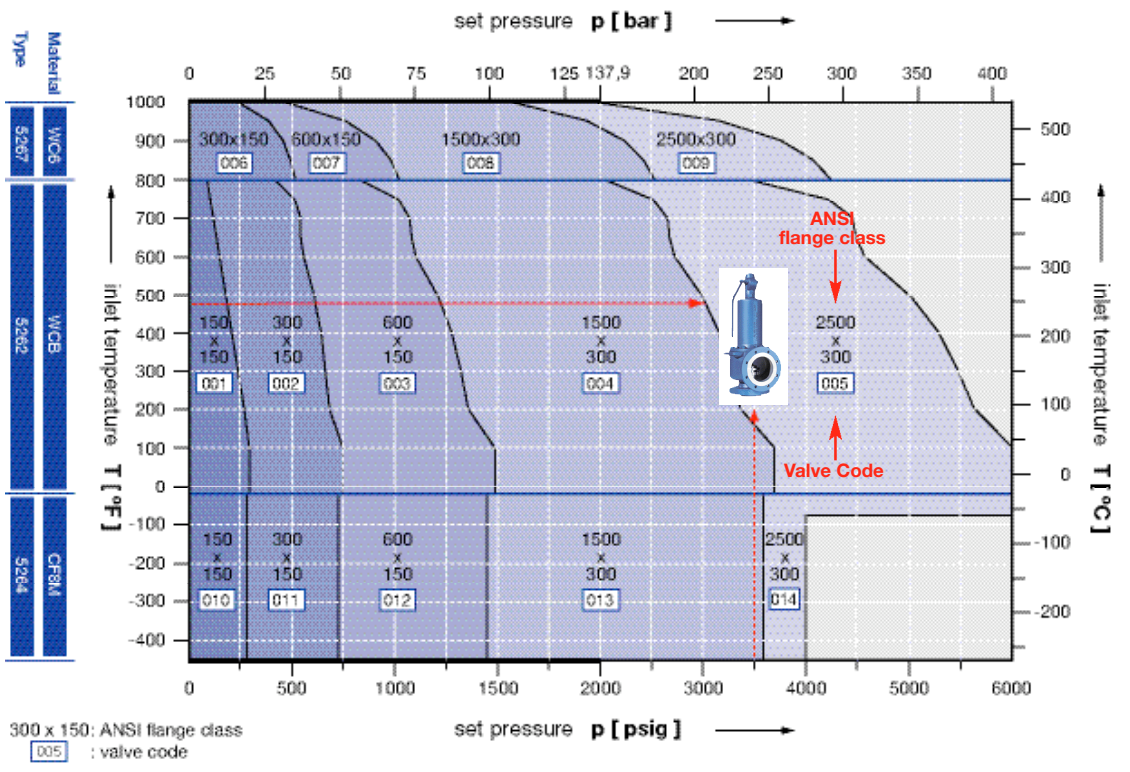
How to use Selection Charts

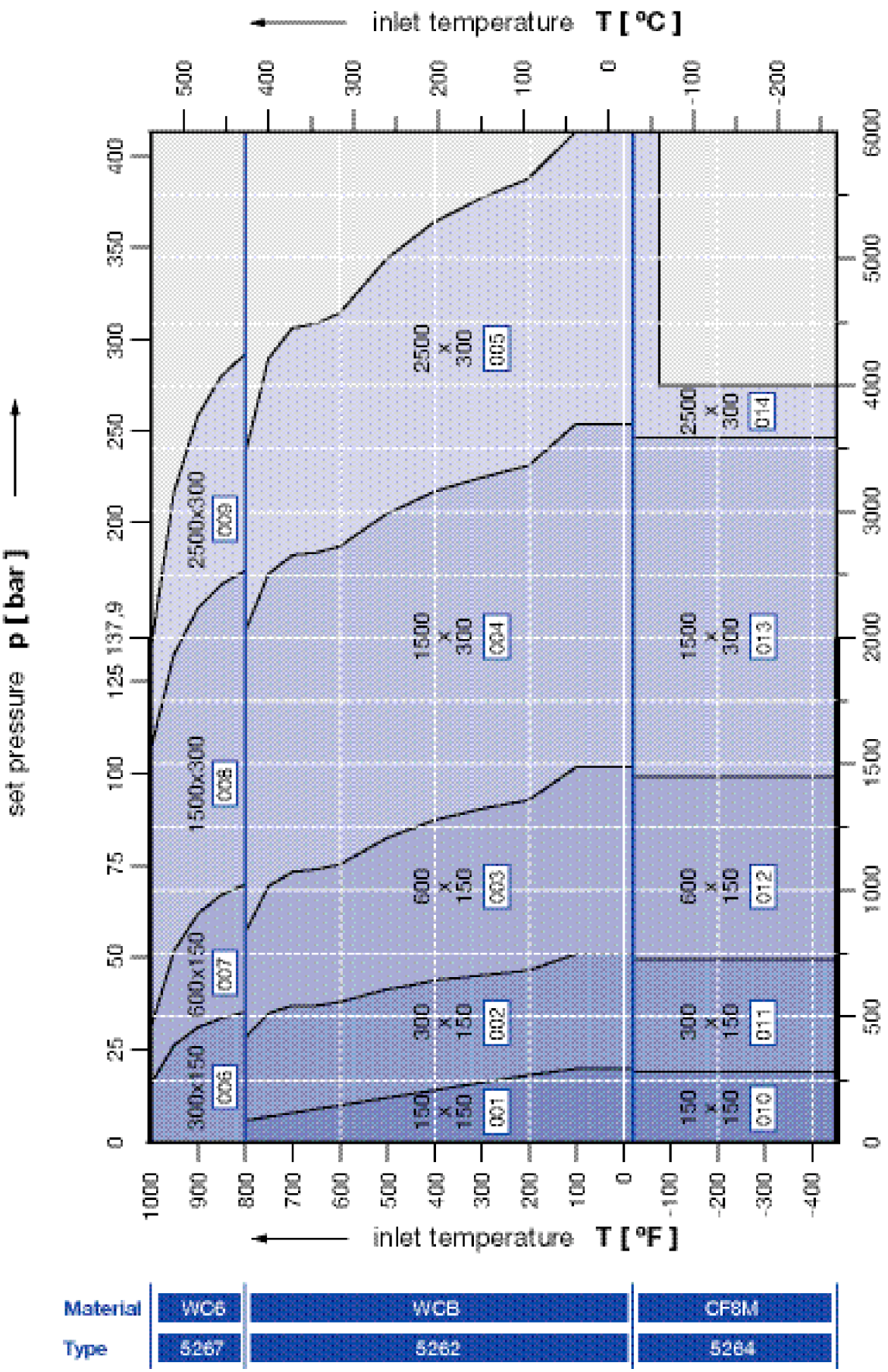
Step	Procedure	References
1	Determination of the required flow area and orifice letter (sizing)	API RP 520 VALVESTAR® – Sizing software Capacity tables
2	Determination of: • Material • Flange class • Valve Code 005	Selection charts page 14 – 40
3	Determination of the material code	Specification tables page 15 – 41
4	Determination of the code for lifting device	Specification tables page 15 – 41

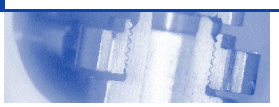
Example

- Set pressure: 3500 psig
- Temperature: 480 °F
- Required orifice letter: “D” → Valve Code 005

Selection Chart – Orifice D




inlet temperature T [°C]
set pressure p [bar]
set pressure p [psig]
inlet temperature T [°F]
300 x 150: ANSI flange class
006: valve code
300x150 006
600x150 007
1500x300 008
2500x300 009
150 x 150 001
300 x 150 002
600 x 150 003
1500 x 300 004
2500 x 300 005
150 x 150 010
300 x 150 011
600 x 150 012
1500 x 300 013
2500 x 300 014
Material WC6 WCB CF8M
Type 5267 5262 5264



Orifice D – Specification

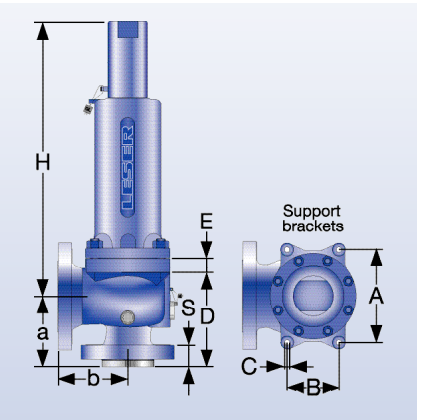
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
1 D 2	150	150	**5264.010**☐	**5262.001**☐	–	275	275	285	185	80	–	–	285	230
1 D 2	300	150	**5264.011**☐	**5262.002**☐	**5267.006**☐	720	720	740	615	410	510	225	285	230
1 D 2	600	150	**5264.012**☐	**5262.003**☐	**5267.007**☐	1440	1440	1480	1235	825	1015	445	285	230
1½ D 2	900	300	–	–	–	Use 1500-lb dimensions for these sizes								
1½ D 2	1500	300	**5264.013**☐	**5262.004**☐	**5267.008**☐	3600	3600	3705	3080	2060	2540	1115	600	500
1½ D 3	2500	300	**5264.014**☐	**5262.005**☐	**5267.009**☐	4000	6000	6000	5135	3430	4230	1860	740	500

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
1 D 2	150	150	**5264.010**☐	**5262.001**☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	15.9
1 D 2	300	150	**5264.011**☐	**5262.002**☐	**5267.006**☐	49.6	49.6	51.0	42.4	28.3	35.2	15.5	19.7	15.9
1 D 2	600	150	**5264.012**☐	**5262.003**☐	**5267.007**☐	99.3	99.3	102.0	85.1	56.9	70.0	30.6	19.7	15.9
1½ D 2	900	300	–	–	–	Use 1500-lb dimensions for these sizes								
1½ D 2	1500	300	**5264.013**☐	**5262.004**☐	**5267.008**☐	248.2	248.2	255.4	212.4	142.0	175.1	76.8	41.4	34.5
1½ D 3	2500	300	**5264.014**☐	**5262.005**☐	**5267.009**☐	275.8	413.7	413.7	354.0	236.5	291.6	128.2	51.0	34.5

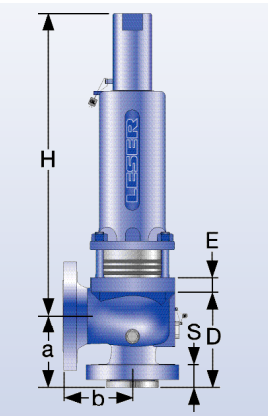
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

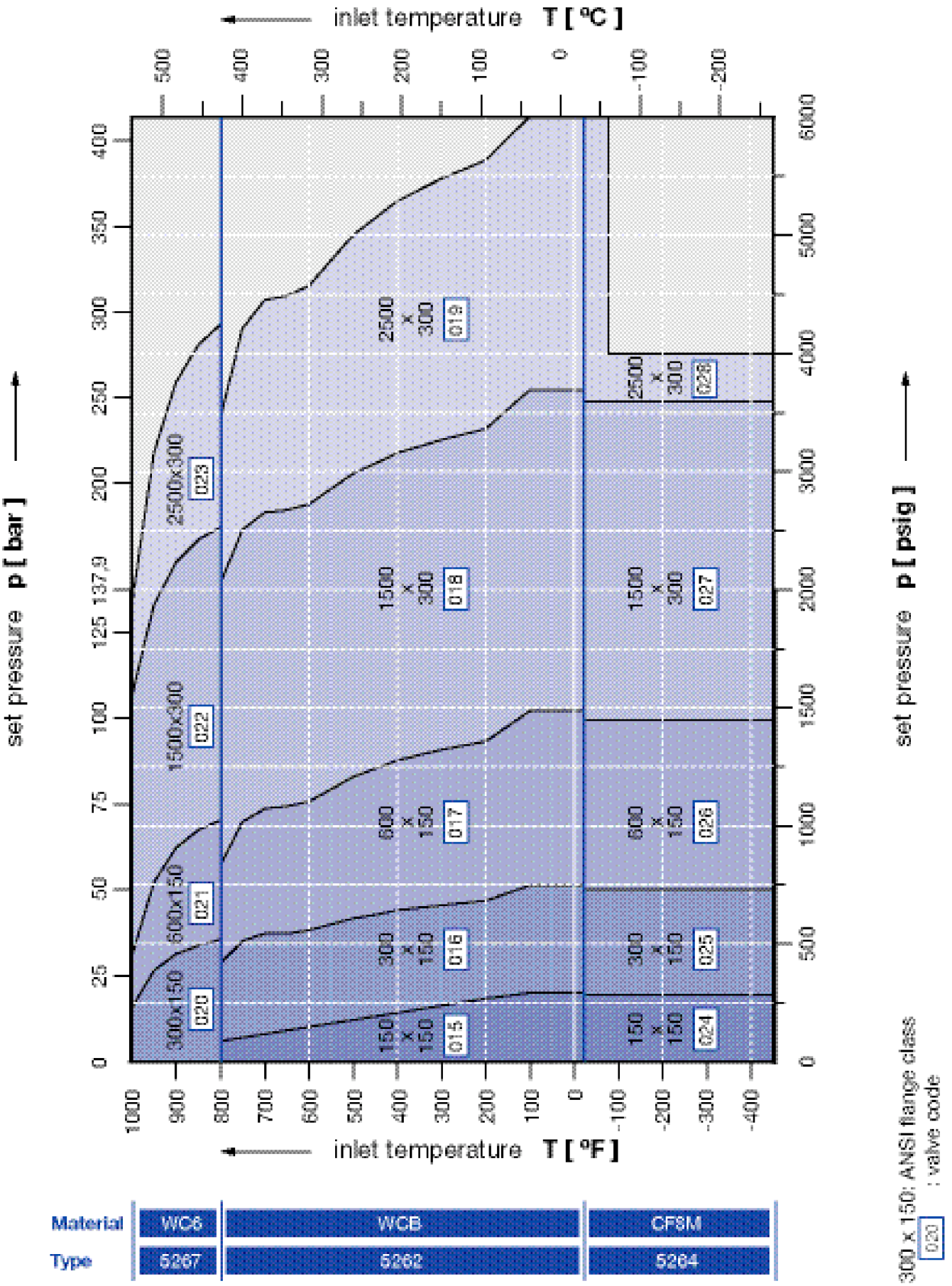


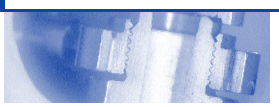
Balanced bellows design

Orifice D – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	[lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1 D 2	150	150	4 1/8	4 1/2	1 3/16	13 5/32	5 1/8	–	Ø 9/16	5 7/32	5/8	38.1	14 1/8	40.5
1 D 2	300	150	4 1/8	4 1/2	1 3/16	13 5/32	5 1/8	–	Ø 9/16	5 7/32	5/8	38.1	14 1/8	40.5
1 D 2	600	150	4 1/8	4 1/2	1 3/16	13 5/32	5 1/8	–	Ø 9/16	5 7/32	5/8	38.1	14 1/8	40.5
1½ D 2	900	300	Use 1500-lb dimensions for these sizes											
1½ D 2	1500	300	4 1/8	5 1/2	1 3/4	16 3/16	6 3/8	–	Ø 9/16	5 3/32	5/8	68.6	17 5/32	73.0
1½ D 3	2500	300	5 1/2	7	2 1/4	17 3/16	6 3/8	–	Ø 9/16	7 15/32	5/8	92.2	17 3/16	98.4

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	[kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1 D 2	150	150	105	114	30	335	130	–	Ø 14	132	16	17.3	360	18.4
1 D 2	300	150	105	114	30	335	130	–	Ø 14	132	16	17.3	360	18.4
1 D 2	600	150	105	114	30	335	130	–	Ø 14	132	16	17.3	360	18.4
1½ D 2	900	300	Use 1500-lb dimensions for these sizes											
1½ D 2	1500	300	105	140	44	412	162	–	Ø 14	129	16	31.1	437	33.1
1½ D 3	2500	300	140	178	57	436	162	–	Ø 14	189	16	41.8	436	44.6


inlet temperature T [°C]
500 400 300 200 100 0 -100 -200
set pressure p [bar]
0 25 50 75 100 125 137,9 200 250 300 350 400
set pressure p [psig]
0 500 1000 1500 2000 3000 4000 5000 6000
1000 900 800 700 600 500 400 300 200 100 0 -100 -200 -300 -400
inlet temperature T [°F]
300x150 020
600x150 021
1500x300 022
2500x300 023
150 x 150 015
300 x 150 016
600 x 150 017
1500 x 300 018
2500 x 300 019
150 x 150 024
300 x 150 025
600 x 150 026
1500 x 300 027
2500 x 300 028
Material WC6 WCB CF8M
Type 5267 5262 5264
300 x 150: ANSI flange class
020 : valve code



Orifice E – Specification

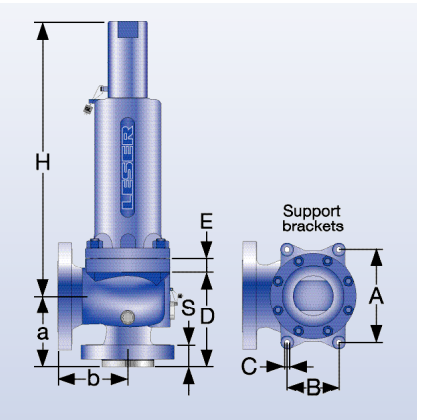
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
1 E 2	150	150	**5264.024**☐	**5262.015**☐	–	275	275	285	185	80	–	–	285	230
1 E 2	300	150	**5264.025**☐	**5262.016**☐	**5267.020**☐	720	720	740	615	410	510	225	285	230
1 E 2	600	150	**5264.026**☐	**5262.017**☐	**5267.021**☐	1440	1440	1480	1235	825	1015	445	285	230
1½ E 2	900	300	–	–	–	Use 1500-lb dimensions for these sizes								
1½ E 2	1500	300	**5264.027**☐	**5262.018**☐	**5267.022**☐	3600	3600	3705	3080	2060	2540	1115	600	500
1½ E 3	2500	300	**5264.028**☐	**5262.019**☐	**5267.023**☐	4000	6000	6000	5135	3430	4230	1860	740	500

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
1 E 2	150	150	**5264.024**☐	**5262.015**☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	15.9
1 E 2	300	150	**5264.025**☐	**5262.016**☐	**5267.020**☐	49.6	49.6	51.0	42.4	28.3	35.2	15.5	19.7	15.9
1 E 2	600	150	**5264.026**☐	**5262.017**☐	**5267.021**☐	99.3	99.3	102.0	85.1	56.9	70.0	30.6	19.7	15.9
1½ E 2	900	300	–	–	–	Use 1500-lb dimensions for these sizes								
1½ E 2	1500	300	**5264.027**☐	**5262.018**☐	**5267.022**☐	248.2	248.2	255.4	212.4	142.0	175.1	76.8	41.4	34.5
1½ E 3	2500	300	**5264.028**☐	**5262.019**☐	**5267.023**☐	275.8	413.7	413.7	354.0	236.5	291.6	128.2	51.0	34.5

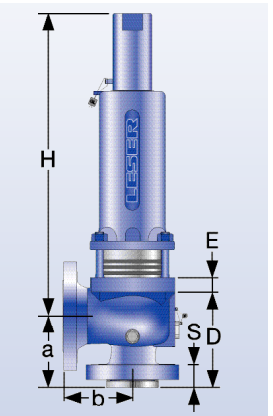
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

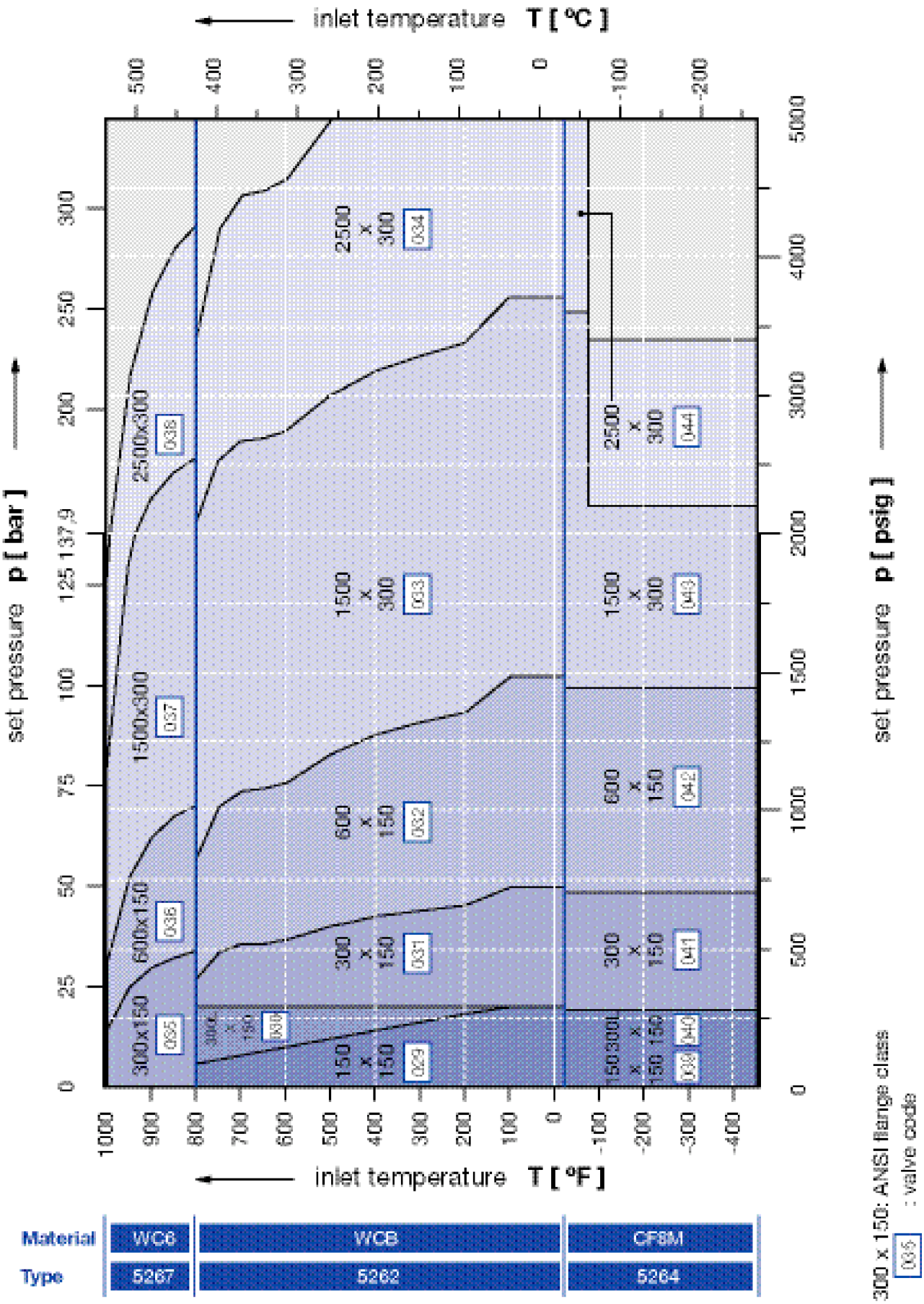


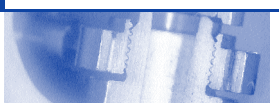
Balanced bellows design

Orifice E – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	[lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1 E 2	150	150	4 1/8	4 1/2	1 3/16	13 5/32	5 1/8	–	Ø 9/16	5 7/32	5/8	38.1	14 1/8	40.5
1 E 2	300	150	4 1/8	4 1/2	1 3/16	13 5/32	5 1/8	–	Ø 9/16	5 7/32	5/8	38.1	14 1/8	40.5
1 E 2	600	150	4 1/8	4 1/2	1 3/16	13 5/32	5 1/8	–	Ø 9/16	5 7/32	5/8	38.1	14 1/8	40.5
1½ E 2	900	300	Use 1500-lb dimensions for these sizes											
1½ E 2	1500	300	4 1/8	5 1/2	1 3/4	16 3/16	6 3/8	–	Ø 9/16	5 3/32	5/8	68.6	17 5/32	73.0
1½ E 3	2500	300	5 1/2	7	2 1/4	17 3/16	6 3/8	–	Ø 9/16	7 15/32	5/8	92.2	17 3/16	98.4

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	[kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1 E 2	150	150	105	114	30	335	130	–	Ø 14	132	16	17.3	360	18.4
1 E 2	300	150	105	114	30	335	130	–	Ø 14	132	16	17.3	360	18.4
1 E 2	600	150	105	114	30	335	130	–	Ø 14	132	16	17.3	360	18.4
1½ E 2	900	300	Use 1500-lb dimensions for these sizes											
1½ E 2	1500	300	105	140	44	412	162	–	Ø 14	129	16	31.1	437	33.1
1½ E 3	2500	300	140	178	57	436	162	–	Ø 14	189	16	41.8	436	44.6


inlet temperature T [°C]
set pressure p [bar]
set pressure p [psig]
inlet temperature T [°F]
300x150 035
600x150 036
1500x300 037
2500x300 038
150 x 150 029
300 x 150 030
300 x 150 031
600 x 150 032
1500 x 300 033
2500 x 300 034
150 x 150 039
300 x 150 040
300 x 150 041
600 x 150 042
1500 x 300 043
2500 x 300 044
Material WC6 WCB CF8M
Type 5267 5262 5264
300 x 150: ANSI flange class
035 : valve code



Orifice F – Specification

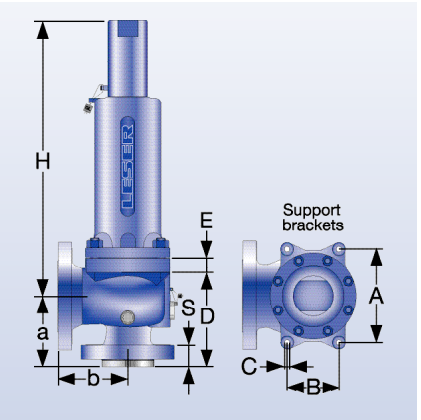
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
1½ F 2	150	150	5264.039☐	5262.029☐	–	275	275	285	185	80	–	–	285	230
1½ F 2	300L	150	5264.040☐	5262.030☐	–	275	275	285	285	285	–	–	285	230
1½ F 2	300	150	5264.041☐	5262.031☐	5267.035☐	720	720	740	615	410	510	225	285	230
1½ F 2	600	150	5264.042☐	5262.032☐	5267.036☐	1440	1440	1480	1235	825	1015	445	285	230
1½ F 3	900	300	–	–	–	Use 1500-lb dimensions for these sizes								
1½ F 3	1500	300	5264.043☐	5262.033☐	5267.037☐	2200	3600	3705	3080	2060	2540	1115	740	500
1½ F 3	2500	300	5264.044☐	5262.034☐	5267.038☐	3400	5000	5000	5000	3430	4230	1860	740	500

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
1½ F 2	150	150	5264.039☐	5262.029☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	15.9
1½ F 2	300L	150	5264.040☐	5262.030☐	–	19.0	19.0	19.7	19.7	19.7	–	–	19.7	15.9
	300	150	5264.041☐	5262.031☐	5267.035☐	49.6	49.6	51.0	42.4	28.3	35.2	15.5	19.7	15.9
1½ F 2	600	150	5264.042☐	5262.032☐	5267.036☐	99.3	99.3	102.0	85.1	56.9	70.0	30.7	19.7	15.9
1½ F 3	900	300	–	–	–	Use 1500-lb dimensions for these sizes								
1½ F 3	1500	300	5264.043☐	5262.033☐	5267.037☐	151.7	248.2	255.4	212.4	142.0	175.1	76.9	51.0	34.5
1½ F 3	2500	300	5264.044☐	5262.034☐	5267.038☐	234.4	344.7	344.7	344.7	236.5	291.6	128.2	51.0	34.5

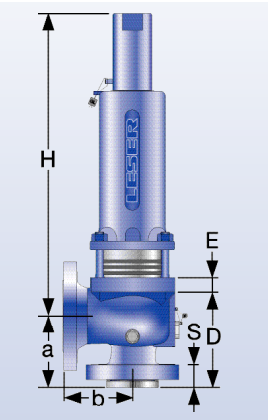
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

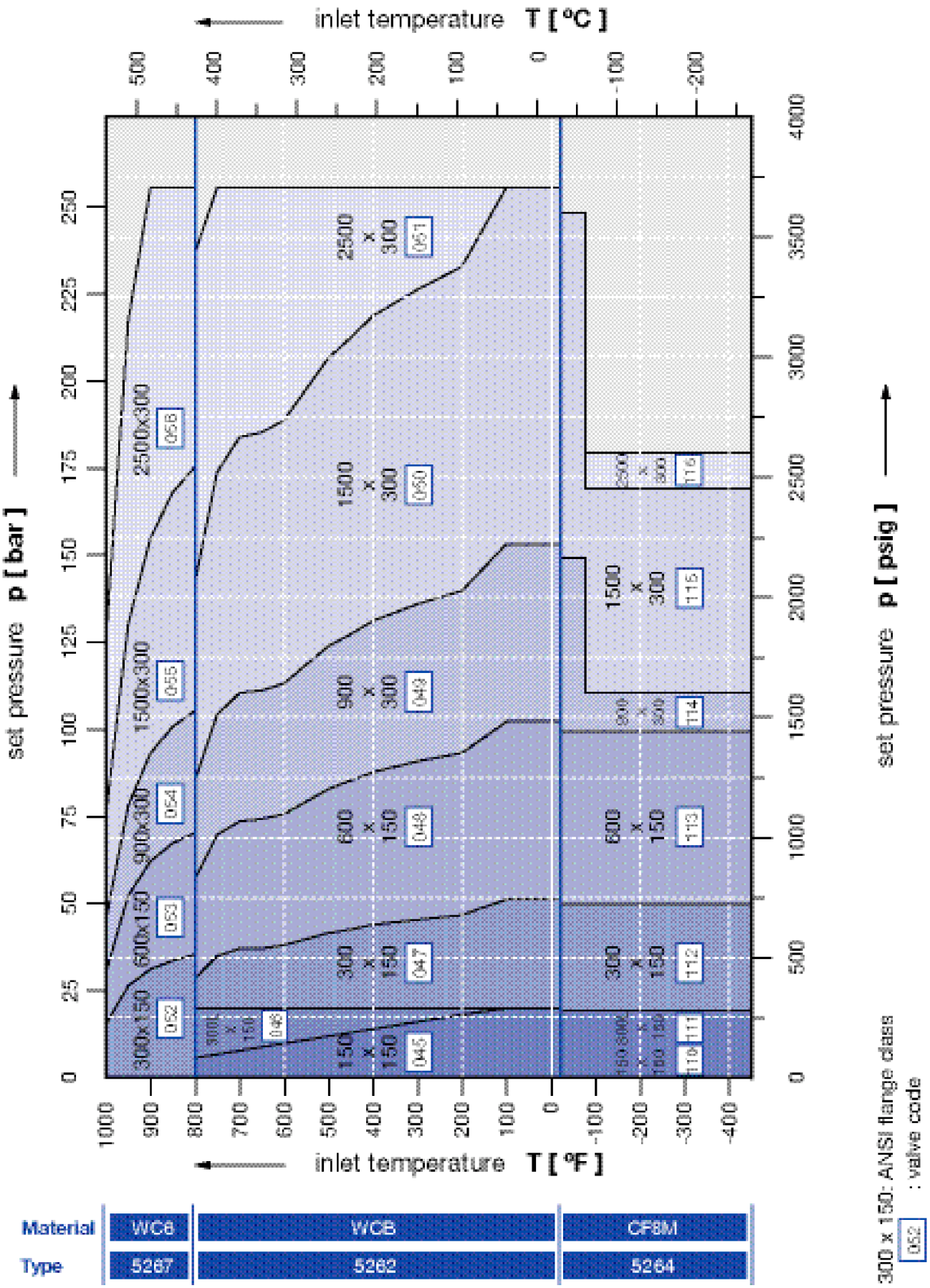


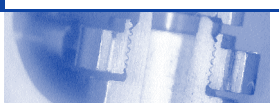
Balanced bellows design

Orifice F – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	Bellows Design [lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1½ F 2	150	150	4 7/8	4 3/4	1 1/4	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	67.5	17 5/32	73
1½ F 2	300L	150	4 7/8	4 3/4	1 1/4	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	67.5	17 5/32	73
1½ F 2	300	150	4 7/8	6	1 13/32	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	71.7	17 5/32	77.2
1½ F 2	600	150	4 7/8	6	1 13/32	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	71.7	17 5/32	77.2
1½ F 3	900	300	Use 1500-lb dimensions for these sizes											
1½ F 3	1500	300	4 7/8	6 1/2	1 3/4	17 3/16	6 3/8	–	Ø 9/16	6 27/32	5/8	80.0	17 3/16	85.1
1½ F 3	2500	300	5 1/2	7	2 1/4	17 3/16	6 3/8	–	Ø 9/16	7 15/32	5/8	92.2	17 3/16	98.4

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	Bellows Design [kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1½ F 2	150	150	124	121	32	412	162	–	Ø 14	148	16	30.6	437	33.1
1½ F 2	300L	150	124	121	32	412	162	–	Ø 14	148	16	30.6	437	33.1
1½ F 2	300	150	124	152	35	412	162	–	Ø 14	148	16	32.5	437	35.0
1½ F 2	600	150	124	152	35	412	162	–	Ø 14	148	16	32.5	437	35.0
1½ F 3	900	300	Use 1500-lb dimensions for these sizes											
1½ F 3	1500	300	124	165	44	436	162	–	Ø 14	174	16	36.3	436	38.6
1½ F 3	2500	300	140	178	57	436	162	–	Ø 14	189	16	41.8	436	44.6


inlet temperature T [°C]
set pressure p [bar]
set pressure p [psig]
inlet temperature T [°F]
2500x300
1500x300
900x300
600x150
300x150
2500 x 300
1500 x 300
900 x 300
600 x 150
300 x 150
300 x 150: ANSI flange class
: valve code
Material
Type
WCB
WCB
CF8M
5267
5262
5264



Orifice G – Specification

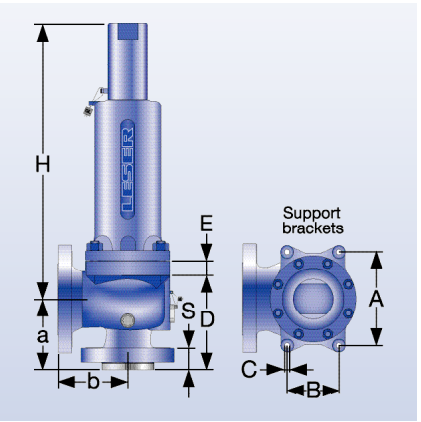
Valve Size	Flange Rating		Article No.			Max. set pressure [psig] CF8M		WCB			WC6[2]		Back pressure limits [psig]	
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
1½ G 3	150	150	5264.110☐	5262.045☐	–	275	275	285	185	80	–	–	285	230
1½ G 3	300L	150	5264.111☐	5262.046☐	–	275	275	285	285	285	–	–	285	230
1½ G 3	300	150	5264.112☐	5262.047☐	5267.052☐	720	720	740	615	410	510	225	285	230
1½ G 3	600	150	5264.113☐	5262.048☐	5267.053☐	1440	1440	1480	1235	825	1015	445	285	230
1½ G 3	900	300	5264.114☐	5262.049☐	5267.054☐	1600	2160	2220	1845	1235	1525	670	740	470
2 G 3	1500	300	5264.115☐	5262.050☐	5267.055☐	2450	3600	3705	3080	2060	2540	1115	740	470
2 G 3	2500	300	5264.116☐	5262.051☐	5267.056☐	2600	3600	3705	3705	3430	3705	1860	740	470

Valve Size	Flange Rating		Article No.			Max. set pressure [bar] CF8M		WCB			WC6[2]		Back pressure limits [bar]	
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
1½ G 3	150	150	5264.110☐	5262.045☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	15.9
1½ G 3	300L	150	5264.111☐	5262.046☐	–	19.0	19.0	19.7	19.7	19.7	–	–	19.7	15.9
1½ G 3	300	150	5264.112☐	5262.047☐	5267.052☐	49.6	49.6	51.0	42.4	28.3	35.2	15.5	19.7	15.9
1½ G 3	600	150	5264.113☐	5262.048☐	5267.053☐	99.3	99.3	102.0	85.1	56.9	70.0	30.6	19.7	15.9
1½ G 3	900	300	5264.114☐	5262.049☐	5267.054☐	110.3	148.9	153.1	127.2	85.1	105.1	46.2	51.0	32.4
2 G 3	1500	300	5264.115☐	5262.050☐	5267.055☐	168.9	248.2	255.4	212.4	142.0	175.1	76.8	51.0	32.4
2 G 3	2500	300	5264.116☐	5262.051☐	5267.056☐	179.3	248.2	255.4	255.4	236.5	255.4	128.2	51.0	32.4

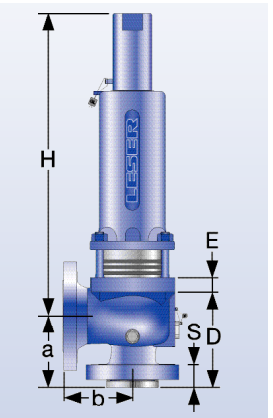
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

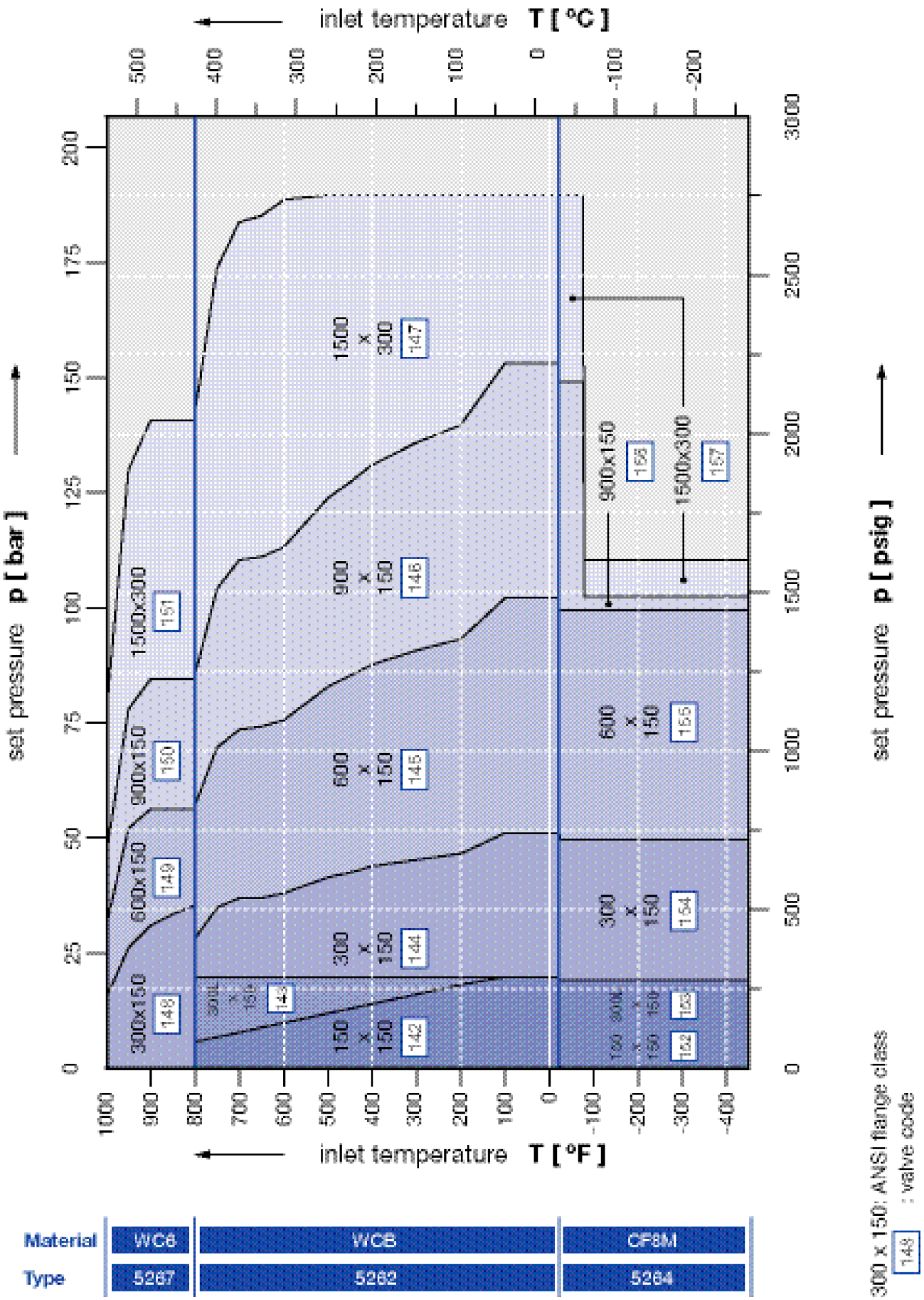


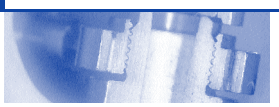
Balanced bellows design

Orifice G – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	Bellows Design [lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1½ G 3	150	150	4 7/8	4 3/4	1 1/4	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	67.5	17 21/32	73
1½ G 3	300L	150	4 7/8	4 3/4	1 1/4	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	67.5	17 21/32	73
1½ G 3	300	150	4 7/8	6	1 13/32	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	71.7	17 21/32	77.2
1½ G 3	600	150	4 7/8	6	1 13/32	16 3/16	6 3/8	–	Ø 9/16	5 27/32	5/8	71.7	17 21/32	77.2
1½ G 3	900	300	4 7/8	6 1/2	1 3/4	17 3/16	6 3/8	–	Ø 9/16	6 27/32	5/8	80.0	17 11/16	81.5
2 G 3	1500	300	6 1/8	6 3/4	2 11/16	20 15/16	7 1/4	4 11/32	Ø 9/16	7 13/16	5/8	154.1	21 19/32	159.8
2 G 3	2500	300	6 1/8	6 3/4	2 11/16	20 15/16	7 1/4	4 11/32	Ø 9/16	7 13/16	5/8	154.1	21 19/32	159.8

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	Bellows Design [kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1½ G 3	150	150	124	121	32	412	162	–	Ø 14	148	16	30.6	450	33.1
1½ G 3	300L	150	124	121	32	412	162	–	Ø 14	148	16	30.6	450	33.1
1½ G 3	300	150	124	152	35	412	162	–	Ø 14	148	16	32.5	450	35.0
1½ G 3	600	150	124	152	35	412	162	–	Ø 14	148	16	32.5	450	35.0
1½ G 3	900	300	124	165	44	436	162	–	Ø 14	174	16	36.3	449	38.6
2 G 3	1500	300	156	172	68	532	184	110	Ø 14	198	16	69.9	549	72.5
2 G 3	2500	300	156	172	68	532	184	110	Ø 14	198	16	69.9	549	72.5


inlet temperature T [°C]
500
400
300
200
100
0
-100
-200
set pressure p [bar]
200
175
150
125
100
75
50
25
0
1500 x 300 147
900x150 153
1500x300 157
900 x 150 146
600 x 150 145
600 x 150 155
1500x300 151
900x150 150
600x150 149
300 x 150 144
300 x 150 154
300x150 148
150 x 150 142
150 x 150 152
set pressure p [psig]
3000
2500
2000
1500
1000
500
0
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
inlet temperature T [°F]
Material
WC6
WCB
CF8M
Type
5267
5262
5264
300 x 150: ANSI flange class
148 : valve code



Orifice H – Specification

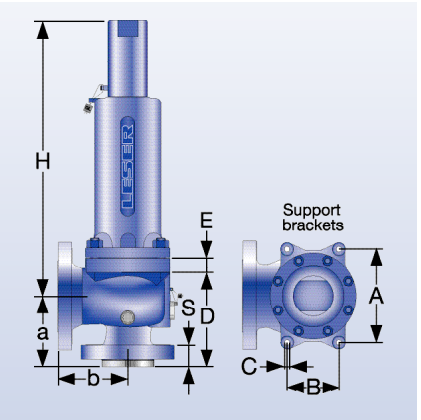
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
1½ H 3	150	150	5264.152☐	5262.142☐	–	275	275	285	185	80	–	–	285	230
1½ H 3	300L	150	5264.153☐	5262.143☐	–	275	275	285	285	285	–	–	285	230
2 H 3	300	150	5264.154☐	5262.144☐	5267.148☐	720	720	740	615	410	510	225	285	230
2 H 3	600	150	5264.155☐	5262.145☐	5267.149☐	1440	1440	1480	1235	825	815	445	285	230
2 H 3	900	150	5264.156☐	5262.146☐	5267.150☐	1485	2160	2220	1845	1235	1225	670	285	230
2 H 3	1500	300	5264.157☐	5262.147☐	5267.151☐	1600	2750	2750	2750	2060	2040	1115	740	415

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
1½ H 3	150	150	5264.152☐	5262.142☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	15.9
1½ H 3	300L	150	5264.153☐	5262.143☐	–	19.0	19.0	19.7	19.7	19.7	–	–	19.7	15.9
2 H 3	300	150	5264.154☐	5262.144☐	5267.148☐	49.6	49.6	51.0	42.4	28.3	35.2	15.5	19.7	15.9
2 H 3	600	150	5264.155☐	5262.145☐	5267.149☐	99.3	99.3	102.0	85.1	56.9	56.2	30.7	19.7	15.9
2 H 3	900	150	5264.156☐	5262.146☐	5267.150☐	102.4	148.9	153.1	127.2	85.1	84.5	46.2	19.7	15.9
2 H 3	1500	300	5264.157☐	5262.147☐	5267.151☐	110.3	189.6	189.6	189.6	142.0	140.7	76.9	51.0	28.6

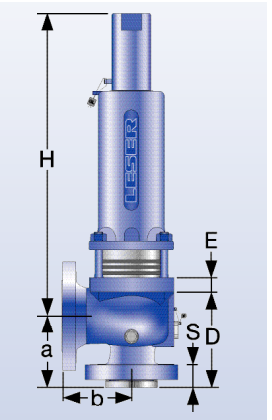
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design



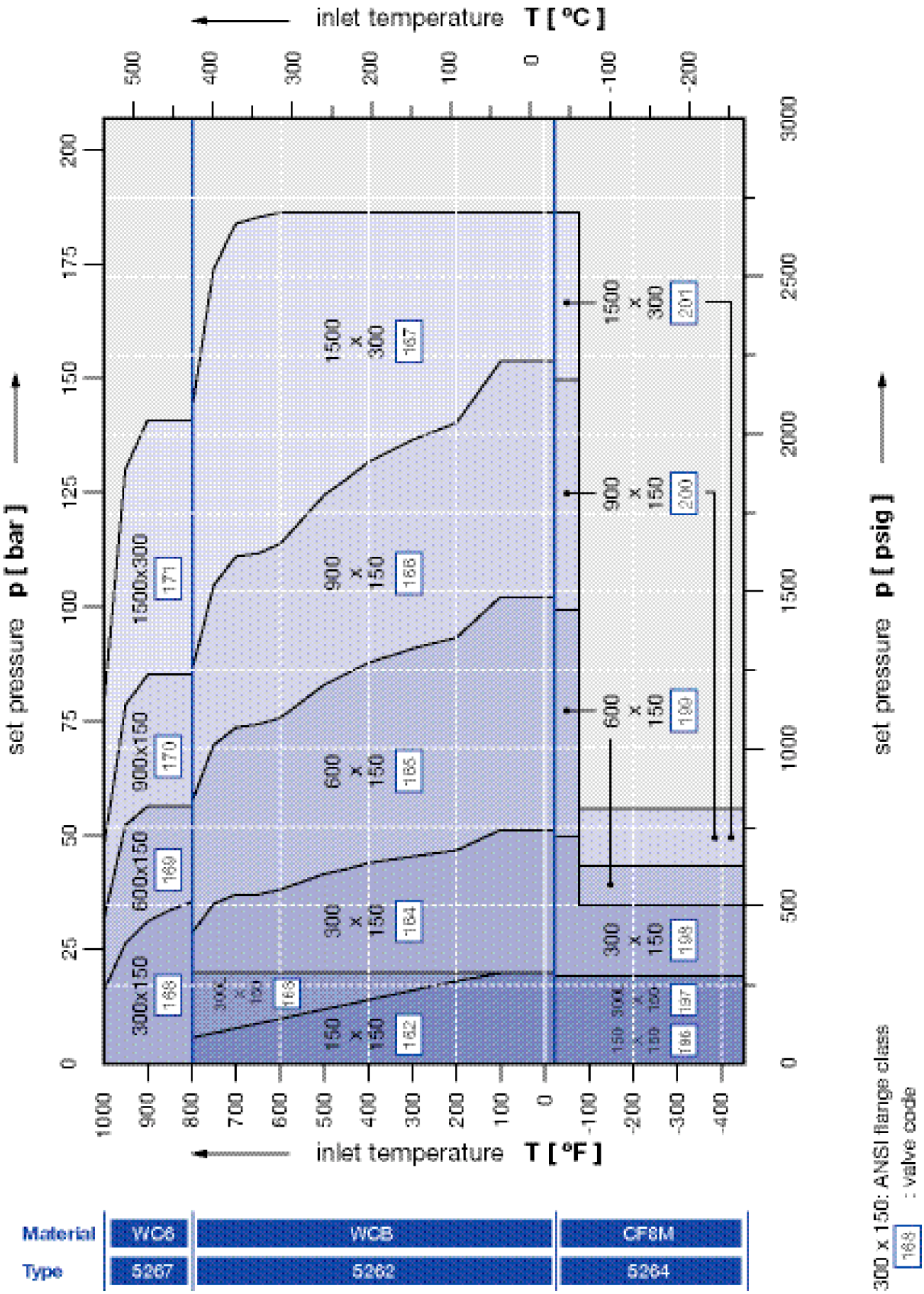
Balanced bellows design

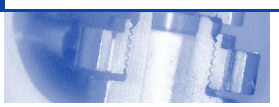
Orifice H – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	Bellows Design [lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1½ H 3	150	150	5 1/8	4 7/8	1 1/2	16 3/16	6 3/8	–	Ø 9/16	6 3/32	5/8	67.5	17 21/32	73.0
1½ H 3	300L	150	5 1/8	4 7/8	1 1/2	16 3/16	6 3/8	–	Ø 9/16	6 3/32	5/8	67.5	17 21/32	73.0
2 H 3	300	150	5 1/8	4 7/8	1 11/16	21 3/32	7 1/4	4 11/32	Ø 9/16	6 31/32	5/8	98.3	22 3/32	106.7
2 H 3[1]	600	150	5 1/8	4 7/8	1 11/16	21 3/32	7 1/4	4 11/32	Ø 9/16	6 31/32	5/8	98.3	22 3/32	106.7
2 H 3[2]	600	150	6 1/16	6 3/8	2 3/16	21 1/8	7 1/4	4 11/32	Ø 9/16	7 15/16	5/8	137.1	22 1/8	143.9
2 H 3	900	150	6 1/16	6 3/8	2 3/16	21 1/8	7 1/4	4 11/32	Ø 9/16	7 15/16	5/8	137.1	22 1/8	143.9
2 H 3	1500	300	6 1/16	6 3/8	2 3/16	21 1/8	7 1/4	4 11/32	Ø 9/16	7 15/16	5/8	137.1	22 1/8	143.9

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	Bellows Design [kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
1½ H 3	150	150	130	124	38	412	162	–	Ø 14	155	16	30.6	450	33.1
1½ H 3	300L	150	130	124	38	412	162	–	Ø 14	155	16	30.3	450	33.1
2 H 3	300	150	130	124	43	536	184	110	Ø 14	177	16	44.6	562	48.4
2 H 3[1]	600	150	130	124	43	536	184	110	Ø 14	177	16	44.6	562	48.4
2 H 3[2]	600	150	154	162	56	537	184	110	Ø 14	202	16	62.2	563	65.3
2 H 3	900	150	154	162	56	537	184	110	Ø 14	202	16	62.2	563	65.3
2 H 3	1500	300	154	162	56	537	184	110	Ø 14	202	16	62.2	563	65.3

[1] dimensions for WC6 material
[2] dimensions for CF8M and WCB material


inlet temperature T [°C]
500 400 300 200 100 0 -100 -200
set pressure p [bar]
0 25 50 75 100 125 150 175 200
1000 900 800 700 600 500 400 300 200 100 0 -100 -200 -300 -400
inlet temperature T [°F]
set pressure p [psig]
0 500 1000 1500 2000 2500 3000
300x150 168
600x150 169
900x150 170
1500x300 171
150 x 150 162
300 x 150 163
300 x 150 164
600 x 150 165
900 x 150 166
1500 x 300 167
1500 x 300 201
900 x 150 200
600 x 150 199
300 x 150 198
150 x 150 197
150 x 150 196
Material WC6 WCB CF8M
Type 5267 5262 5264
300 x 150: ANSI flange class
168 : valve code



Orifice J – Specification

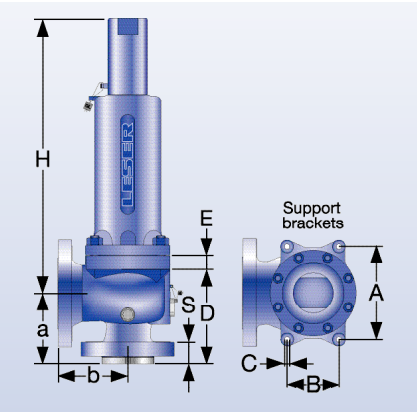
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
2 J 3	150	150	5264.196☐	5262.162☐	–	275	275	285	185	80	–	–	285	230
2 J 3	300L	150	5264.197☐	5262.163☐	–	275	275	285	285	285	–	–	285	230
3 J 4	300	150	5264.198☐	5262.164☐	5267.168☐	500	720	740	615	410	510	225	285	230
3 J 4	600	150	5264.199☐	5262.165☐	5267.169☐	625	1440	1480	1235	825	815	445	285	230
3 J 4	900	150	5264.200☐	5262.166☐	5267.170☐	800	2160	2220	1845	1235	1225	670	285	230
3 J 4	1500	300	5264.201☐	5262.167☐	5267.171☐	800	2700	2700	2700	2060	2040	1115	600	230

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
2 J 3	150	150	5264.196☐	5262.162☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	15.9
2 J 3	300L	150	5264.197☐	5262.163☐	–	19.0	19.0	19.7	19.7	19.7	–	–	19.7	15.9
3 J 4	300	150	5264.198☐	5262.164☐	5267.168☐	34.5	49.6	51.0	42.4	28.3	35.2	15.5	19.7	15.9
3 J 4	600	150	5264.199☐	5262.165☐	5267.169☐	43.1	99.3	102.0	85.1	56.9	56.2	30.7	19.7	15.9
3 J 4	900	150	5264.200☐	5262.166☐	5267.170☐	55.2	148.9	153,1	127.2	85.1	84.5	46.2	19.7	15.9
3 J 4	1500	300	5264.201☐	5262.167☐	5267.171☐	55.2	186.2	186.2	186.2	142.0	1140.7	76.9	41.4	15.9

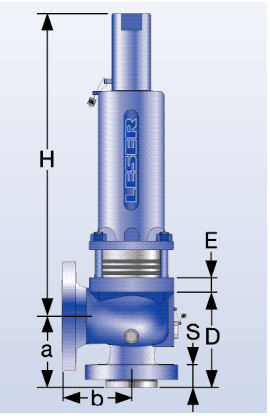
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

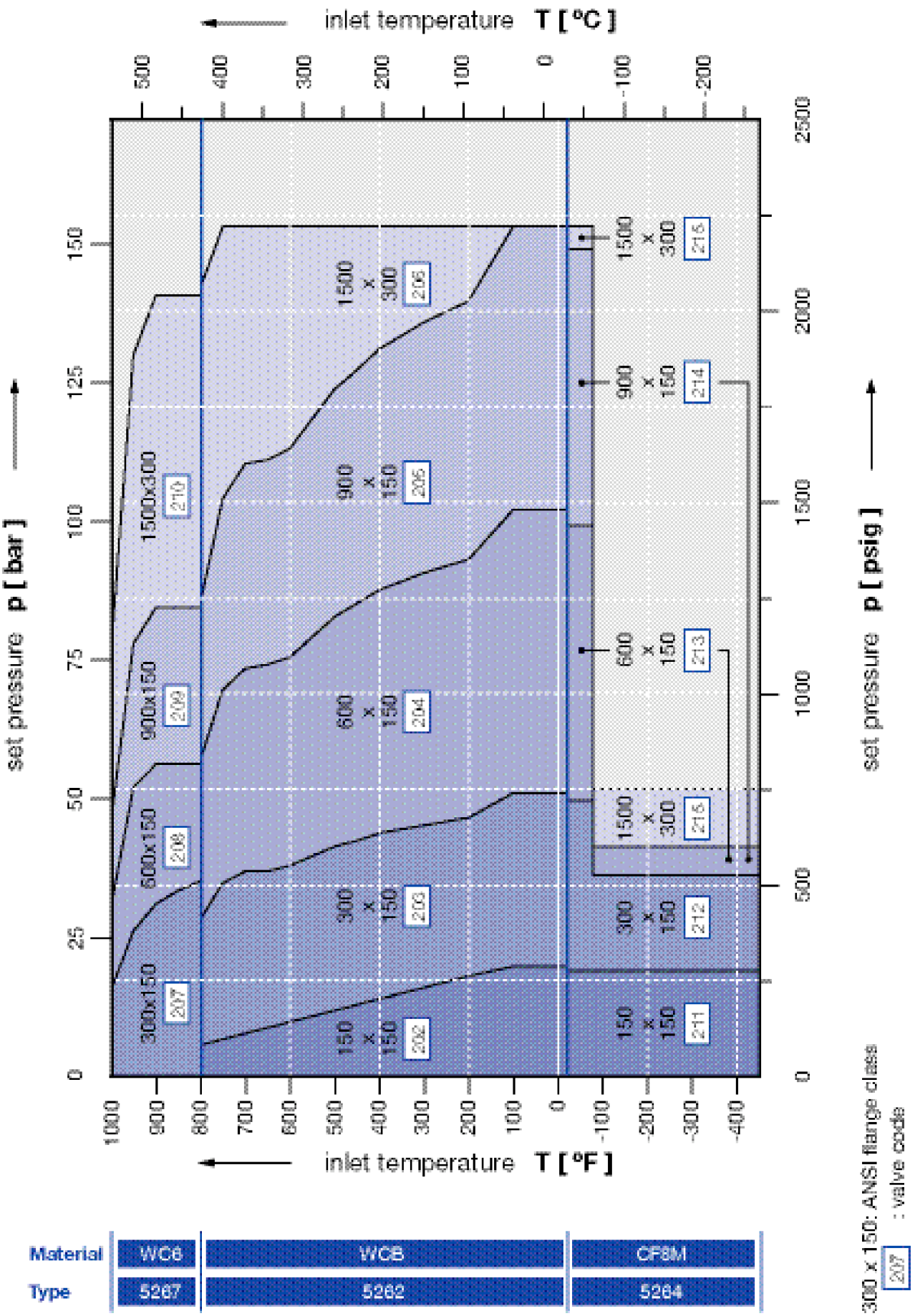


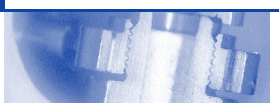
Balanced bellows design

Orifice J – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	[lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
2 J 3	150	150	5 3/8	4 7/8	1 15/16	21 3/32	7 1/4	4 11/32	Ø 9/16	7 7/32	5/8	98.3	23	106.4
2 J 3	300	150	5 3/8	4 7/8	1 15/16	21 3/32	7 1/4	4 11/32	Ø 9/16	7 7/32	5/8	98.3	23	106.4
3 J 4	300L	150	7 1/4	7 1/8	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	9 7/32	31/32	171.3	25 3/16	183.4
3 J 4	600	150	7 1/4	7 1/8	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	9 7/32	31/32	171.3	25 3/16	183.4
3 J 4	900	150	7 1/4	7 1/8	2 9/16	23 11/16	9 3/8	5 1/2	Ø 23/32	9 7/32	31/32	220.9	25 3/16	233.0
3 J 4	1500	300	7 1/4	7 1/8	2 9/16	23 11/16	9 3/8	5 1/2	Ø 23/32	9 7/32	31/32	220.9	25 3/16	233.0

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	[kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
2 J 3	150	150	137	124	49	536	184	110	Ø 14	184	16	44.6	585	48.4
2 J 3	300	150	137	124	49	536	184	110	Ø 14	184	16	44.6	585	48.4
3 J 4	300L	150	184	181	49	602	238	140	Ø 18	234	25	77.7	640	83.2
3 J 4	600	150	184	181	49	602	238	140	Ø 18	234	25	77.7	640	83.2
3 J 4	900	150	184	181	65	602	238	140	Ø 18	234	25	100.2	640	105.7
3 J 4	1500	300	184	181	65	602	238	140	Ø 18	234	25	100.2	640	105.7


inlet temperature T [°C]
set pressure p [bar]
set pressure p [psig]
inlet temperature T [°F]
1500x300 210
900x150 209
600x150 208
300x150 207
1500 x 300 206
900 x 150 205
600 x 150 204
300 x 150 203
150 x 150 202
1500 x 300 215
900 x 150 214
600 x 150 213
1500 x 300 215
300 x 150 212
150 x 150 211
Material WC6 WCB CF8M
Type 5267 5262 5264
300 x 150: ANSI flange class
207 : valve code



Orifice K – Specification

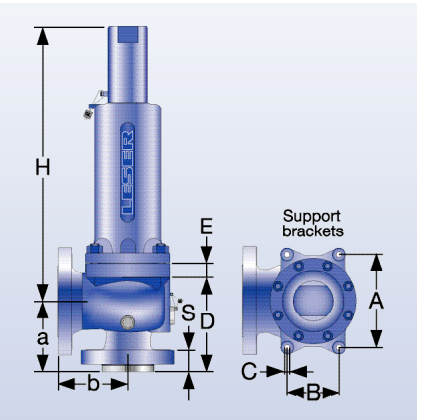
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
3 K 4	150	150	5264.211☐	5262.202☐	–	275	275	285	185	80	–	–	285	150
3 K 4	300	150	5264.212☐	5262.203☐	5267.207☐	525	720	740	615	410	510	225	285	150
3 K 4	600	150	5264.213☐	5262.204☐	5267.208☐	600	1440	1480	1235	825	815	445	285	200
3 K 6	900	150	5264.214☐	5262.205☐	5267.209☐	600	2160	2220	1845	1235	1225	670	285	200
3 K 6	1500	300	5264.215☐	5262.206☐	5267.210☐	750	2220	2220	2220	2060	2040	1115	600	200

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
3 K 4	150	150	5264.211☐	5262.202☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	10.3
3 K 4	300	150	5264.212☐	5262.203☐	5267.207☐	36.2	49.6	51.0	42.4	28.3	35.2	15.5	19.7	10.3
3 K 4	600	150	5264.213☐	5262.204☐	5267.208☐	41.4	99.3	102.0	85.1	56.9	56.2	30.7	19.7	13.8
3 K 6	900	150	5264.214☐	5262.205☐	5267.209☐	41.4	148.9	153.1	127.2	85.1	84.5	46.2	19.7	13.8
3 K 6	1500	300	5264.215☐	5262.206☐	5267.210☐	51.7	153.1	153.1	153.1	142.0	140.7	76.9	41.4	13.8

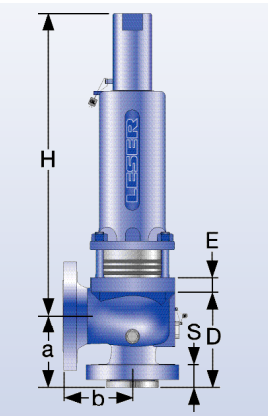
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design



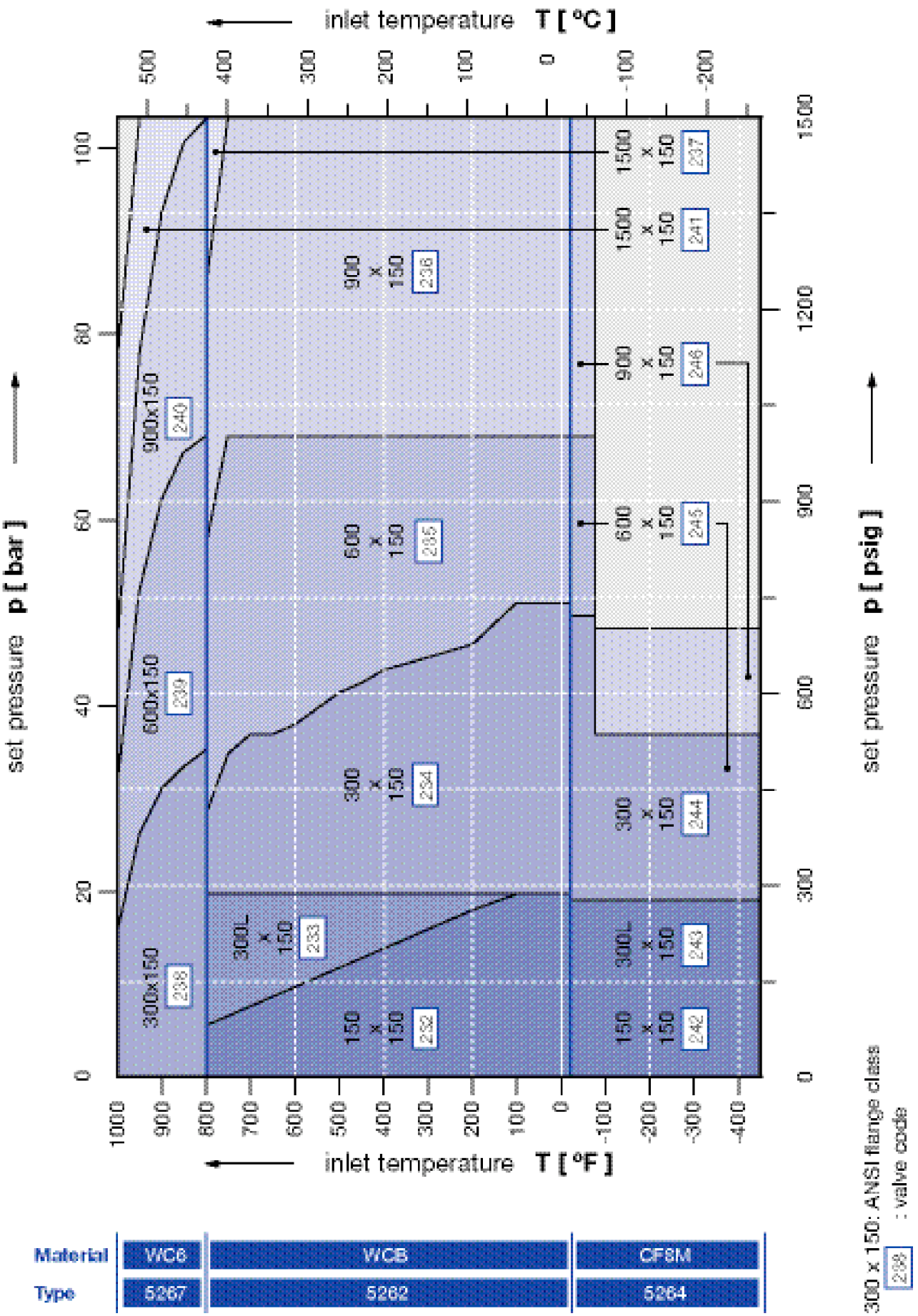
Balanced bellows design

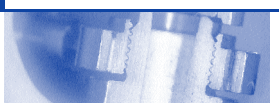
Orifice K – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	Bellows Design [lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
3 K 4	150	150	6 1/8	6 3/8	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	8 3/32	31/32	154.5	25 3/16	166.8
3 K 4	300	150	6 1/8	6 3/8	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	8 3/32	31/32	154.5	25 3/16	166.8
3 K 4[1]	600	150	6 1/8	6 3/8	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	8 3/32	31/32	154.5	25 3/16	166.8
3 K 4[2]	600	150	7 1/4	7 1/8	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	9 7/32	31/32	171.3	25 3/16	183.4
3 K 6[1]	900	150	7 1/4	7 1/8	2 9/16	23 11/16	9 3/8	5 1/2	Ø 23/32	9 7/32	31/32	220.9	25 3/16	233.0
3 K 6[2]	900	150	7 13/16	8 1/2	2 5/8	26 27/32	10 15/16	6 5/16	Ø 23/32	11 11/32	31/32	281.1	26 27/32	295.7
3 K 6	1500	300	7 3/4	8 1/2	2 9/16	26 27/32	10 15/16	6 5/16	Ø 23/32	11 9/32	31/32	281.1	26 27/32	295.7

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	Bellows Design [kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
3 K 4	150	150	156	162	49	602	238	140	Ø 18	206	25	70.1	640	75.7
3 K 4	300	150	156	162	49	602	238	140	Ø 18	206	25	70.1	640	75.7
3 K 4[1]	600	150	156	162	49	602	238	140	Ø 18	206	25	70.1	640	75.7
3 K 4[2]	600	150	184	181	49	602	238	140	Ø 18	234	25	77.7	640	83.2
3 K 6[1]	900	150	184	181	65	602	238	140	Ø 18	234	25	100.2	640	105.7
3 K 6[2]	900	150	198	216	67	682	278	160	Ø 18	288	25	127.5	682	134.1
3 K 6	1500	300	197	216	65	682	278	160	Ø 18	287	25	127.5	682	134.1

Notes: [1] dimensions for WC6 material
[2] dimensions for CF8M and WCB material


inlet temperature T [°C]
set pressure p [bar]
set pressure p [psig]
inlet temperature T [°F]
900x150 240
600x150 239
300x150 238
900 x 150 236
600 x 150 235
300 x 150 234
300L x 150 233
150 x 150 232
1500 x 150 237
1500 x 150 241
900 x 150 246
600 x 150 245
300 x 150 244
300L x 150 243
150 x 150 242
Material
Type
WC6
5267
WCB
5262
CF8M
5264
300 x 150: ANSI flange class
239 : valve code



Orifice L – Specification

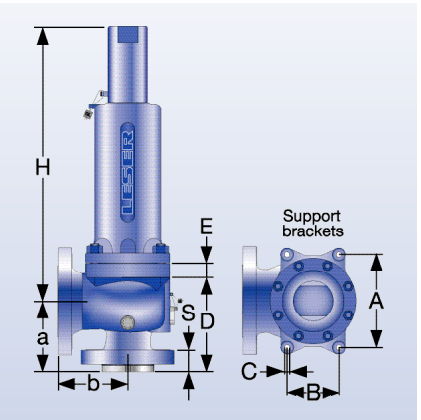
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
3 L 4	150	150	5264.242☐	5262.232☐	–	275	275	285	185	80	–	–	285	100
3 L 4	300L	150	5264.243☐	5262.233☐	–	275	275	285	285	285	–	–	285	100
4 L 6	300	150	5264.244☐	5262.234☐	5267.238☐	535	720	740	615	410	510	225	285	170
4 L 6	600	150	5264.245☐	5262.235☐	5267.239☐	535	1000	1000	1000	825	1000	445	285	170
4 L 6	900	150	5264.246☐	5262.236☐	5267.240☐	700	1500	1500	1500	1235	1500	670	285	170
4 L 6	1500	150	–	5262.237☐	5267.241☐	–	–	–	1500	1500	1500	1115	285	170

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
3 L 4	150	150	5264.242☐	5262.232☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	6.9
3 L 4	300L	150	5264.243☐	5262.233☐	–	19.0	19.0	19.7	19.7	19.7	–	–	19.7	6.9
4 L 6	300	150	5264.244☐	5262.234☐	5267.238☐	36.9	49.6	51.0	42.4	28.3	35.2	15.5	19,7	11.7
4 L 6	600	150	5264.245☐	5262.235☐	5267.239☐	36.9	68.9	68.9	68.9	56.9	68.9	30.7	19.7	11.7
4 L 6	900	150	5264.246☐	5262.236☐	5267.240☐	48.3	103.4	103.4	103.4	85.1	103.4	46.2	19.7	11.7
4 L 6	1500	150	–	5262.237☐	5267.241☐	–	–	–	103.4	103.4	103.4	76.9	19.7	11.7

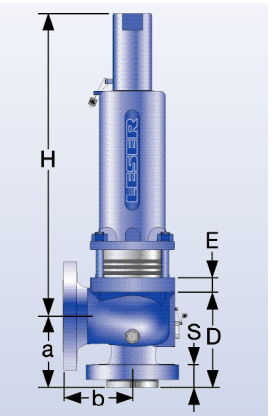
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design



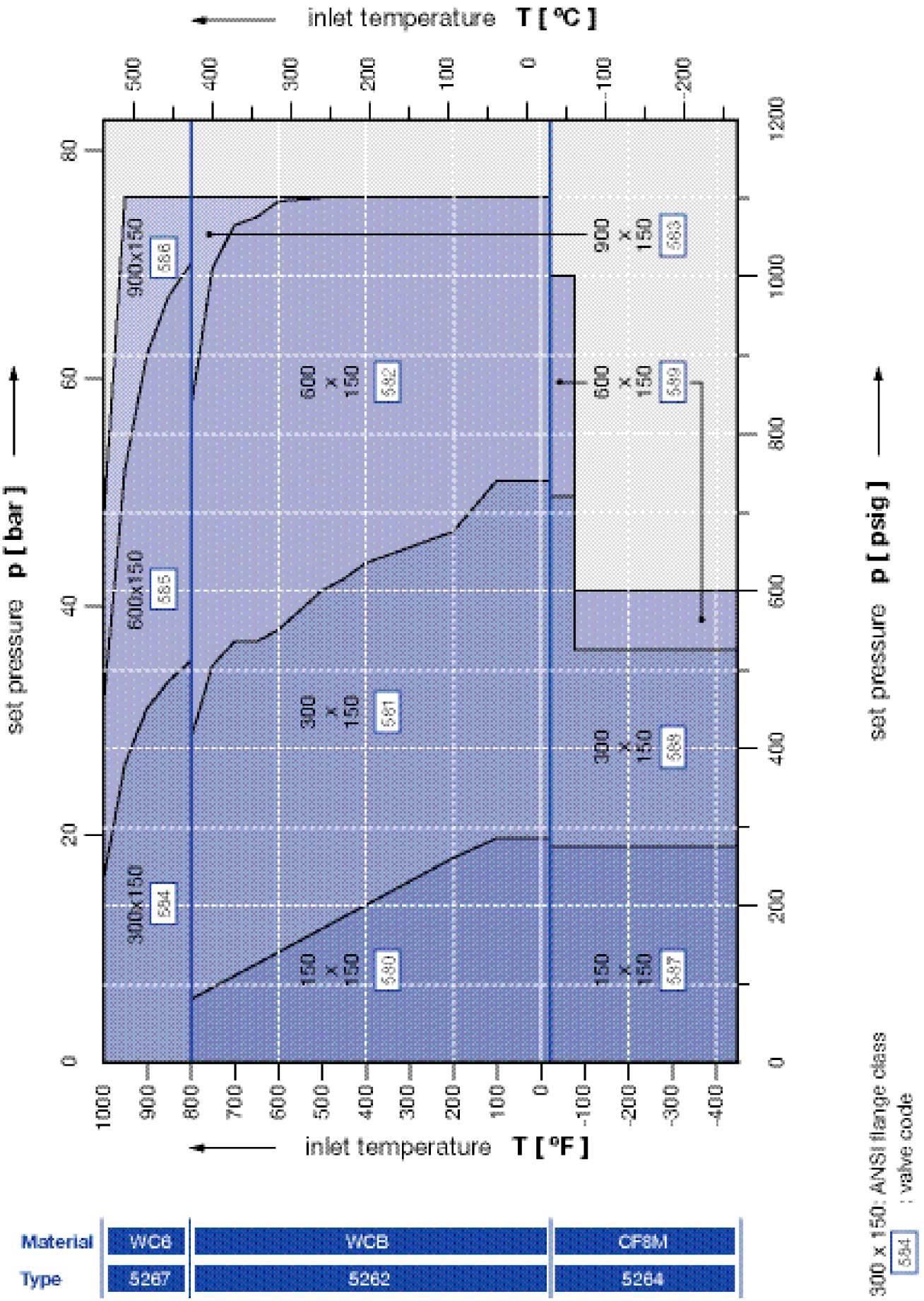
Balanced bellows design

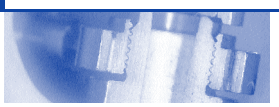
Orifice L – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	Bellows Design [lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
3 L 4	150	150	6 1/8	6 1/2	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	8 3/32	31/32	154.5	25 3/16	166.8
3 L 4	300L	150	6 1/8	6 1/2	1 15/16	23 11/16	9 3/8	5 1/2	Ø 23/32	8 3/32	31/32	154.5	25 3/16	166.8
4 L 6	300	150	7 1/16	7 1/8	1 15/16	26 17/32	10 15/16	6 5/16	Ø 23/32	10 5/16	31/32	247.1	27 13/16	261.7
4 L 6[1]	600	150	7 1/16	8	2 1/4	26 17/32	10 15/16	6 5/16	Ø 23/32	10 5/16	31/32	269.0	27 13/16	283.6
4 L 6[2]	600	150	7 1/8	8	2 5/16	26 17/32	10 15/16	6 5/16	Ø 23/32	10 3/8	31/32	269.0	27 13/16	283.6
4 L 6	900	150	7 3/4	8 3/4	2 13/16	26 17/32	10 15/16	6 5/16	Ø 23/32	11	31/32	295.6	27 13/16	310.2
4 L 6	1500	150	7 3/4	8 3/4	2 13/16	26 17/32	10 15/16	6 5/16	Ø 23/32	11	31/32	281.1	27 13/16	295.7

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	Bellows Design [kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
3 L 4	150	150	156	165	49	602	238	140	Ø 18	206	25	30.6	450	33.1
3 L 4	300L	150	156	165	49	602	238	140	Ø 18	206	25	30.6	450	33.1
4 L 6	300	150	179	181	49	674	278	160	Ø 18	262	25	44.6	562	48.4
4 L 6[1]	600	150	179	203	57	674	278	160	Ø 18	262	25	44.6	563	48.4
4 L 6[2]	600	150	181	203	59	674	278	160	Ø 18	264	25	44.6	562	48.4
4 L 6	900	150	197	222	72	674	278	160	Ø 18	280	25	62.2	563	65.3
4 L 6	1500	150	197	222	72	674	278	160	Ø 18	280	25	62.2	563	65.3

[1] dimensions for CF8M and WCB material
[2] dimensions for WC6 material


inlet temperature T [°C]
set pressure p [bar]
set pressure p [psig]
inlet temperature T [°F]
900x150 586
600x150 585
300x150 584
900 x 150 583
600 x 150 582
600 x 150 589
300 x 150 581
300 x 150 588
150 x 150 580
150 x 150 587
Material WC6 WCB CF8M
Type 5267 5262 5264
300 x 150: ANSI flange class
584 : valve code



Orifice M – Specification

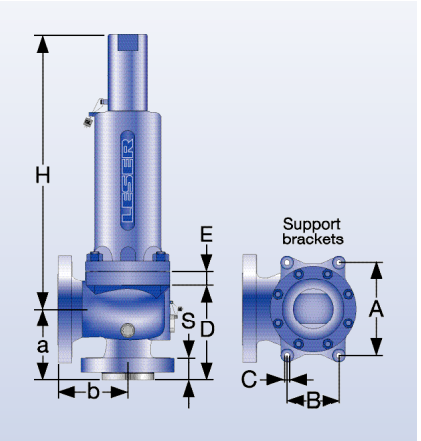
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
4 M 6	150	150	5264.587☐	5262.580☐	–	275	275	285	185	80	–	–	285	80
4 M 6	300	150	5264.588☐	5262.581☐	5267.584☐	525	720	740	615	410	510	225	285	160
4 M 6	600	150	5264.589☐	5262.582☐	5267.585☐	600	1000	1100	1100	825	1015	445	285	160
4 M 6	900	150	–	5262.583☐	5267.586☐	–	–	–	1100	1100	1100	670	285	160

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
4 M 6	150	150	5264.587☐	5262.580☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	5.5
4 M 6	300	150	5264.588☐	5262.581☐	5267.584☐	36.2	49.6	51.0	42.4	28.3	35.2	15.5	19.7	11.0
4 M 6	600	150	5264.589☐	5262.582☐	5267.585☐	41.4	68.9	75.8	75.8	56.9	70.0	30.7	19.7	11.0
4 M 6	900	150	–	5262.583☐	5267.586☐	–	–	–	75.8	75.8	75.8	46.2	19.7	11.0

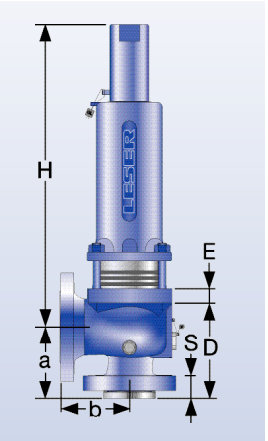
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

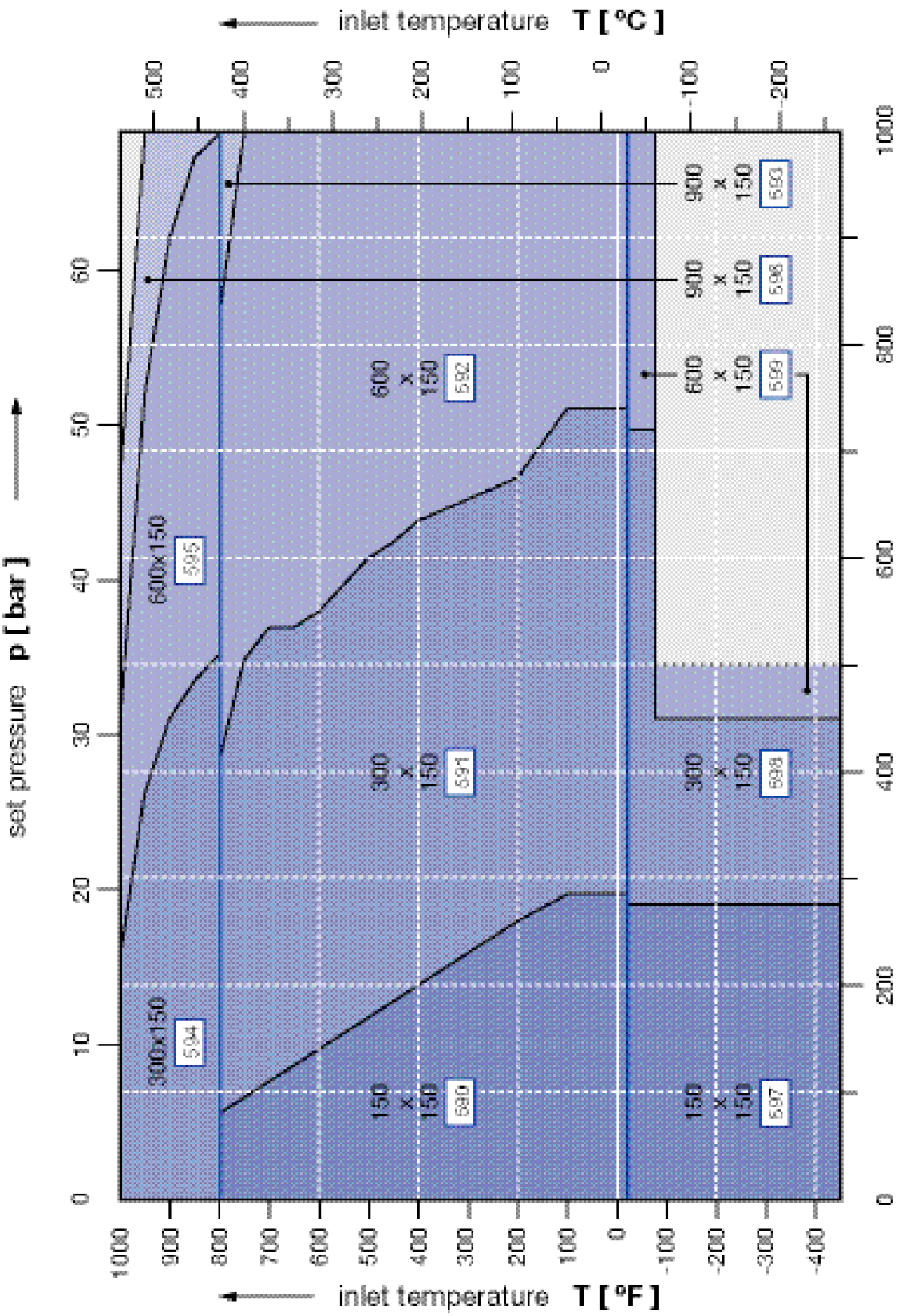


Balanced bellows design

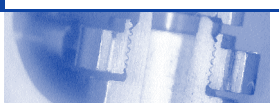
Orifice M – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	Bellows Design [lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
4 M 6	150	150	7	7 1/4	1 7/8	26 17/32	10 15/16	6 5/16	Ø 23/32	10 1/4	31/32	247.1	27 13/16	261.7
4 M 6	300	150	7	7 1/4	1 7/8	26 17/32	10 15/16	6 5/16	Ø 23/32	10 1/4	31/32	247.1	27 13/16	261.7
4 M 6	600	150	7	8	2 3/16	26 17/32	10 15/16	6 5/16	Ø 23/32	10 1/4	31/32	269.0	27 13/16	283.6
4 M 6	900	150	7 3/4	8 3/4	2 3/4	26 17/32	10 15/16	6 5/16	Ø 23/32	11	31/32	295.6	27 13/16	310.2

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	Bellows Design [kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
4 M 6	150	150	178	184	48	674	278	160	Ø 18	260	25	112.1	707	118.7
4 M 6	300	150	178	184	48	674	278	160	Ø 18	260	25	112.1	707	118.7
4 M 6	600	150	178	203	56	674	278	160	Ø 18	260	25	122.0	707	128.6
4 M 6	900	150	197	222	72	674	278	160	Ø 18	280	25	134.1	707	140.7



Material	WC6	WCB	CF8M
Type	5267	5262	5264



Orifice N – Specification

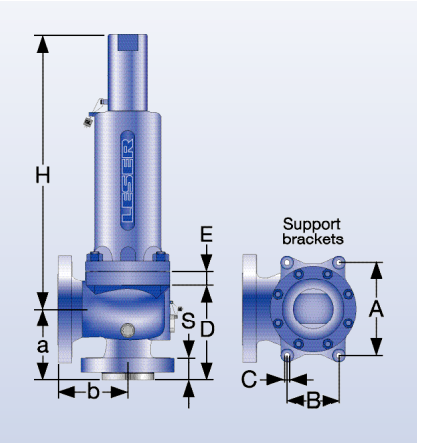
Valve Size	Flange Rating		Article No.			Max. set pressure [psig] CF8M		WCB			WC6[2]		Back pressure limits [psig]	
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
4 N 6	150	150	5264.597☐	5262.590☐	–	275	275	285	185	80	–	–	285	80
4 N 6	300	150	5264.598☐	5262.591☐	5267.594☐	450	720	740	615	410	510	225	285	160
4 N 6	600	150	5264.599☐	5262.592☐	5267.595☐	500	1000	1000	1000	825	1000	445	285	160
4 N 6	900	150	–	5262.593☐	5267.596☐	–	–	–	1000	1000	1000	670	285	160

Valve Size	Flange Rating		Article No.			Max. set pressure [bar] CF8M		WCB			WC6[2]		Back pressure limits [bar]	
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
4 N 6	150	150	5264.597☐	5262.590☐	–	19.0	19.0	19.7	12.8	5.5	–	–	19.7	5.5
4 N 6	300	150	5264.598☐	5262.591☐	5267.594☐	31.0	49.6	51.0	42.4	28.3	35.2	15.5	19.7	11.0
4 N 6	600	150	5264.599☐	5262.592☐	5267.595☐	34.5	68.9	68.9	68.9	56.9	68.9	30.7	19.7	11.0
4 N 6	900	150	–	5262.593☐	5267.596☐	–	–	–	68.9	68.9	68.9	46.2	19.7	11.0

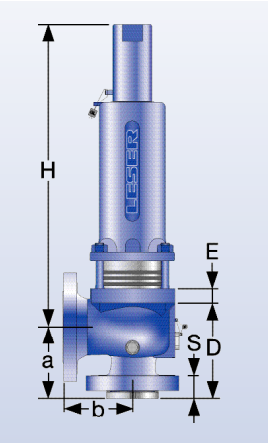
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

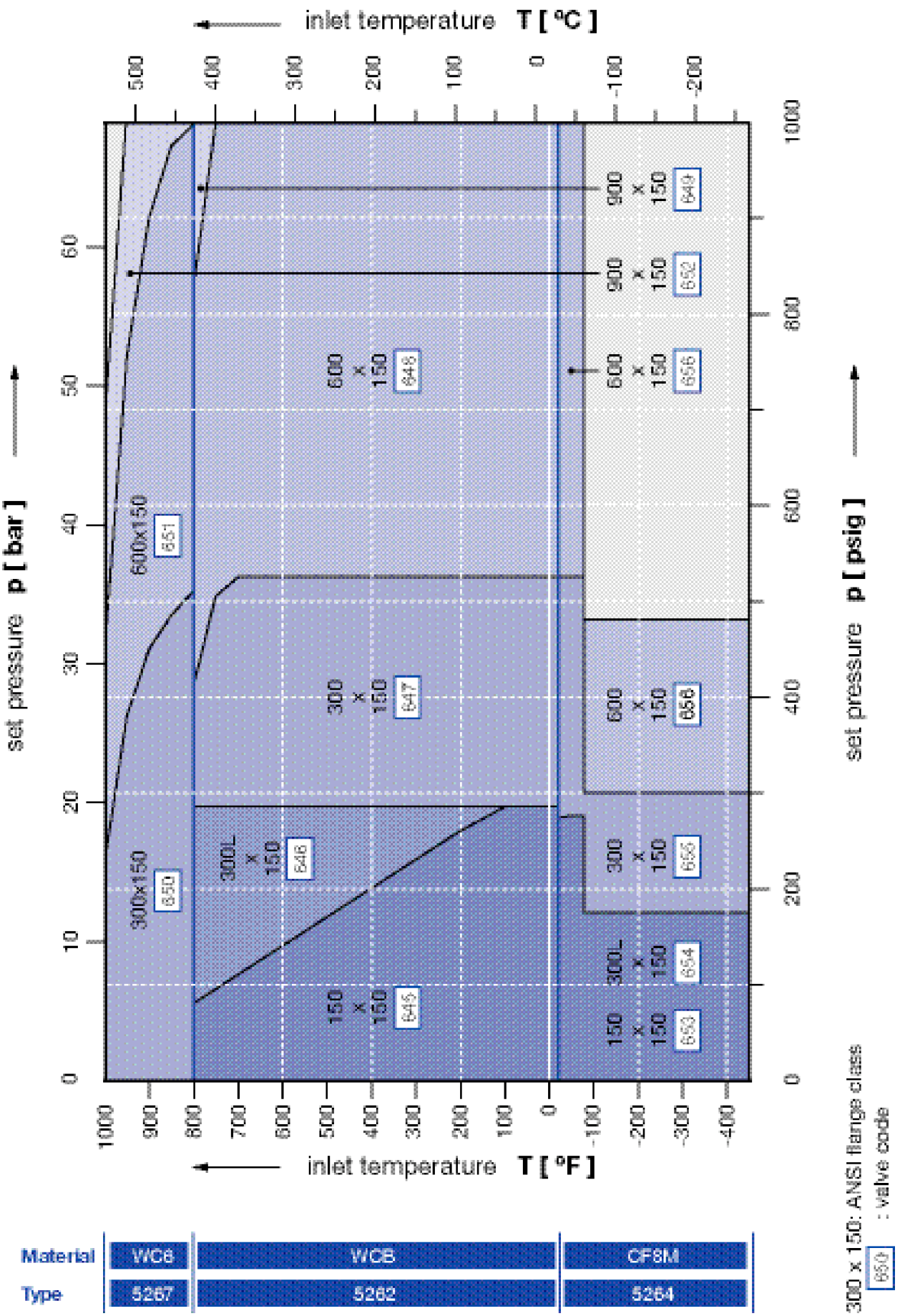


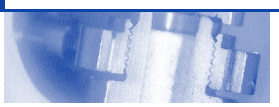
Balanced bellows design

Orifice N – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	[lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
4 N 6	150	150	7 3/4	8 1/4	1 7/8	26 17/32	10 15/16	6 5/16	Ø 23/32	11	31/32	283.5	27 13/16	298.1
4 N 6	300	150	7 3/4	8 1/4	1 7/8	26 17/32	10 15/16	6 5/16	Ø 23/32	11	31/32	283.5	27 13/16	298.1
4 N 6	600	150	7 3/4	8 3/4	2 3/4	26 17/32	10 15/16	6 5/16	Ø 23/32	11	31/32	295.6	27 13/16	310.2
4 N 6	900	150	7 3/4	8 3/4	2 3/4	26 17/32	10 15/16	6 5/16	Ø 23/32	11	31/32	295.6	27 13/16	310.2

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	[kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
4 N 6	150	150	197	210	48	674	278	160	Ø 18	280	25	128.6	707	135.2
4 N 6	300	150	197	210	48	674	278	160	Ø 18	280	25	128.6	707	135.2
4 N 6	600	150	197	222	72	674	278	160	Ø 18	280	25	134.1	707	140.7
4 N 6	900	150	197	222	72	674	278	160	Ø 18	280	25	134.1	707	140.7


inlet temperature T [°C]
set pressure p [bar]
set pressure p [psig]
inlet temperature T [°F]
600x150 651
300x150 650
300L x 150 646
300 x 150 647
600 x 150 648
150 x 150 645
900 x 150 649
900 x 150 652
600 x 150 656
600 x 150 656
300 x 150 655
300L x 150 654
150 x 150 653
300 x 150: ANSI flange class
650 : valve code
Material WC6 WCB CF8M
Type 5267 5262 5264



Orifice P – Specification

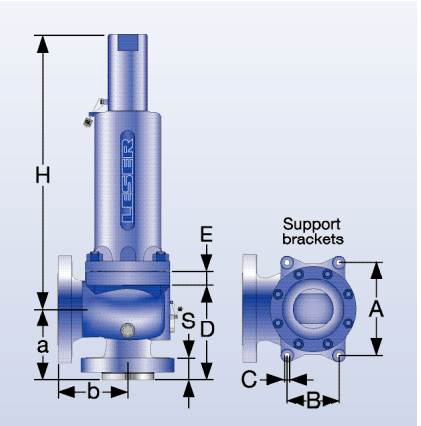
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
4 P 6	150	150	5264.653☐	5262.645☐	–	175	275	285	185	80	–	–	285	80
4 P 6	300L	150	5264.654☐	5262.646☐	–	175	275	285	28	285	–	–	285	80
4 P 6	300	150	5264.655☐	5262.647☐	5267.650☐	300	525	525	525	410	510	225	285	150
4 P 6	600	150	5264.656☐	5262.648☐	5267.651☐	480	1000	1000	1000	825	1000	445	285	150
4 P 6	900	150	–	5262.649☐	5267.652☐	–	–	–	1000	1000	1000	670	285	150

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
4 P 6	150	150	5264.653☐	5262.645☐	–	12.1	19.0	19.7	12.8	5.5	–	–	19.7	5.5
4 P 6	300L	150	5264.654☐	5262.646☐	–	12.1	19.0	19.7	19.7	19.7	–	–	19.7	5.5
4 P 6	300	150	5264.655☐	5262.647☐	5267.650☐	20.7	36.2	36.2	36.2	28.3	35.2	15.5	19.7	10.3
4 P 6	600	150	5264.656☐	5264.648☐	5267.651☐	33.1	68.9	68.9	68.9	56.9	68.9	30.7	19.7	10.3
4 P 6	900	150	–	5262.649☐	5267.652☐	–	–	–	68.9	68.9	68.9	46.2	19.7	10.3

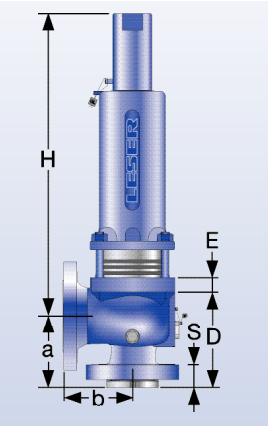
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

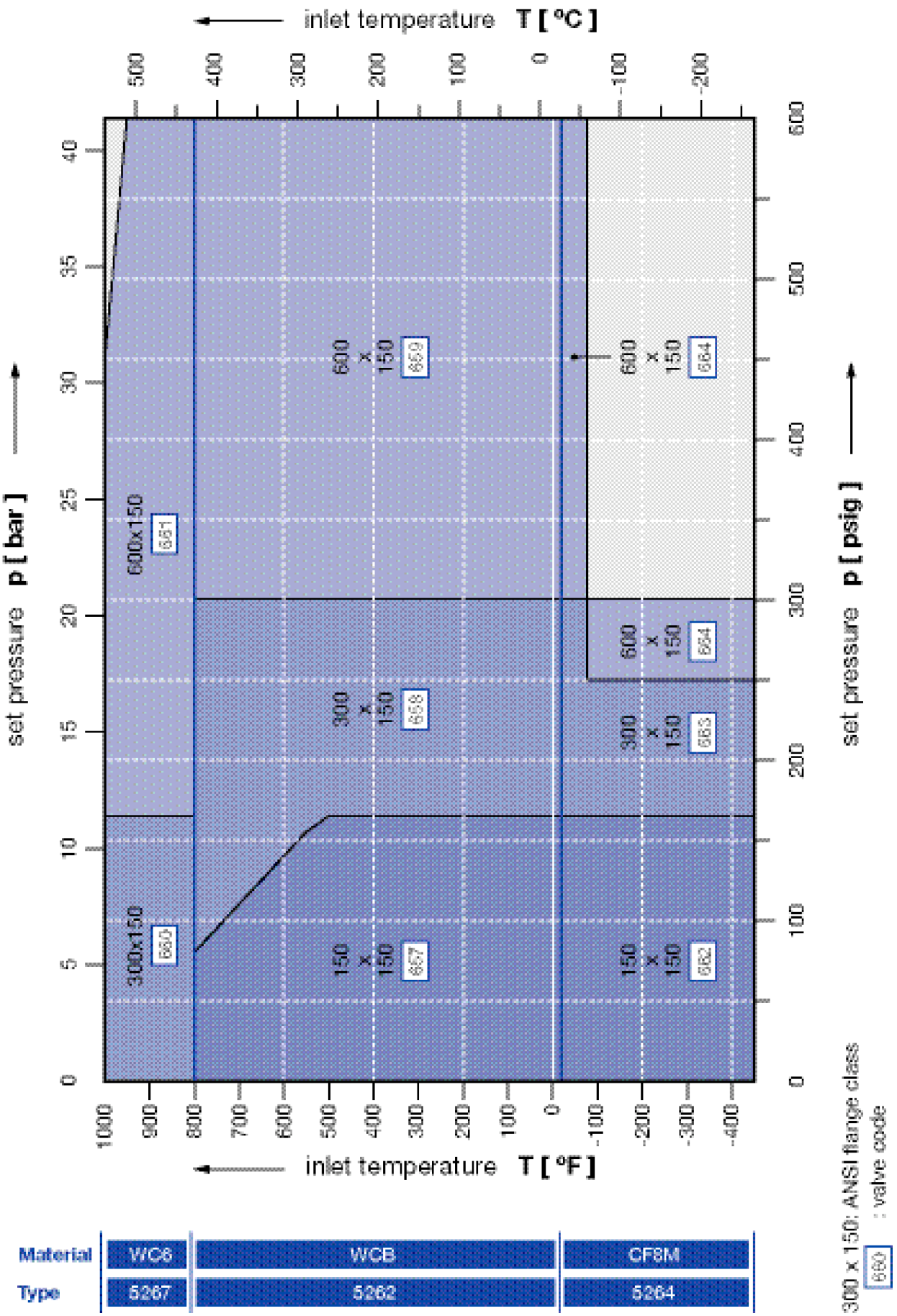


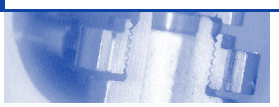
Balanced bellows design

Orifice P – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	Bellows Design [lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
4 P 6	150	150	7 1/8	9	1 7/8	26 17/32	10 15/16	6 5/16	Ø 23/32	10 5/16	31/32	237.4	27 13/16	253.1
4 P 6	300L	150	7 1/8	9	1 7/8	26 17/32	10 15/16	6 5/16	Ø 23/32	10 5/16	31/32	237.4	27 13/16	253.1
4 P 6	300	150	8 7/8	10	2 7/16	31 5/32	14 9/16	8 9/32	Ø 23/32	12 1/16	31/32	361.6	27 13/16	379.2
4 P 6	600	150	8 7/8	10	2 7/16	31 5/32	14 9/16	8 9/32	Ø 23/32	12 1/16	31/32	361.6	27 13/16	379.2
4 P 6	900	150	8 7/8	10	2 7/16	31 5/32	14 9/16	8 9/32	Ø 23/32	12 1/16	31/32	361.6	27 13/16	379.2

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	Bellows Design [kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
4 P 6	150	150	181	229	48	674	278	160	Ø 18	262	25	107.7	707	114.8
4 P 6	300L	150	181	229	48	674	278	160	Ø 18	262	25	107.7	707	114.8
4 P 6	300	150	225	254	62	791	370	210	Ø 18	306	25	164.0	850	172.0
4 P 6	600	150	225	254	62	791	370	210	Ø 18	306	25	164.0	850	172.0
4 P 6	900	150	225	254	62	791	370	210	Ø 18	306	25	164.0	850	172.0


inlet temperature T [°C]
500
400
300
200
100
0
-100
-200
set pressure p [bar]
40
35
30
25
20
15
10
5
0
600x150
661
300x150
660
600 x 150
659
600 x 150
664
300 x 150
658
300 x 150
663
150 x 150
657
150 x 150
662
set pressure p [psig]
600
500
400
300
200
100
0
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
inlet temperature T [°F]
Material
WC6
WCB
CF8M
Type
5267
5262
5264
300 x 150: ANSI flange class
660 : valve code



Orifice Q – Specification

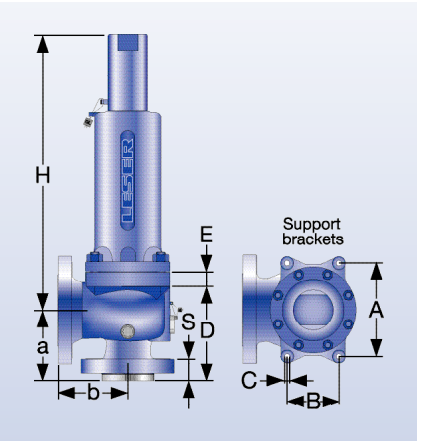
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
6 Q 8	150	150	5264.662☐	5262.657☐	–	165	165	165	165	80	–	–	115	70
6 Q 8	300	150	5264.663☐	5262.658☐	5267.660☐	250	300	300	300	300	165	165	115	115
6 Q 8	600	150	5264.664☐	5262.659☐	5267.661☐	300	600	600	600	600	600	445	115	115

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
6 Q 8	150	150	5264.662☐	5262.657☐	–	11.4	11.4	11.4	11.4	5.5	–	–	7.9	4.8
6 Q 8	300	150	5264.663☐	5262.658☐	5267.660☐	17.2	20.7	20.7	20.7	20.7	11.4	11.4	7.9	7.9
6 Q 8	600	150	5264.664☐	5262.659☐	5267.661☐	20.7	41.4	41.4	41.4	41.4	41.4	30.7	7.9	7.9

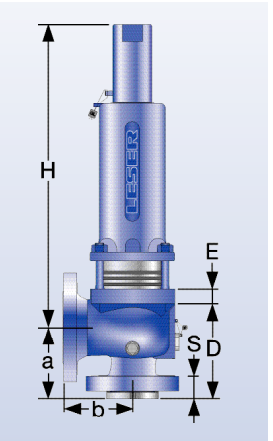
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

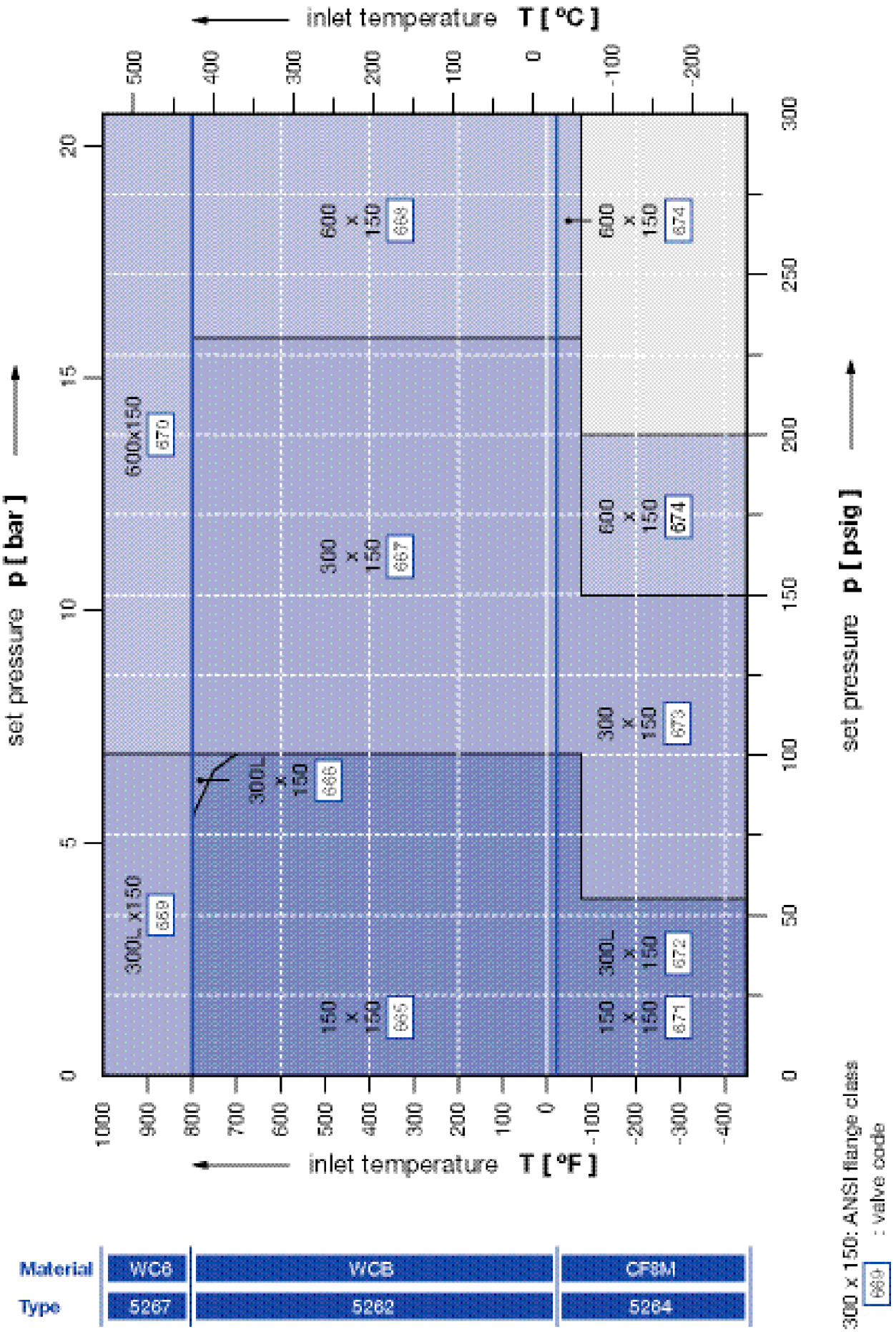


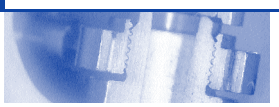
Balanced bellows design

Orifice Q – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	[lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
6 Q 8	150	150	9 7/16	9 1/2	2 11/16	32 5/32	14 9/16	8 9/32	Ø 23/32	13 5/8	31/32	487.2	35 9/32	507.0
6 Q 8	300	150	9 7/16	9 1/2	2 11/16	32 5/32	14 9/16	8 9/32	Ø 23/32	13 5/8	31/32	487.2	35 9/32	507.0
6 Q 8	600	150	9 7/16	9 1/2	2 11/16	32 5/32	14 9/16	8 9/32	Ø 23/32	13 5/8	31/32	487.2	35 9/32	507.0

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	[kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
6 Q 8	150	150	240	241	68	817	370	210	Ø 18	346	25	221.0	897	230.0
6 Q 8	300	150	240	241	68	817	370	210	Ø 18	346	25	221.0	897	230.0
6 Q 8	600	150	240	241	68	817	370	210	Ø 18	346	25	221.0	897	230.0


inlet temperature T [°C]
500
400
300
200
100
0
-100
-200
set pressure p [bar]
20
15
10
5
0
600x150
670
600 x 150
669
600 x 150
674
300 x 150
667
300L x 150
666
300 x 150
673
300L x 150
669
300L x 150
672
150 x 150
665
150 x 150
671
set pressure p [psig]
300
250
200
150
100
50
0
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
inlet temperature T [°F]
Material
WC6
WCB
CF8M
Type
5267
5262
5264
300 x 150: ANSI flange class
669 : valve code



Orifice R – Specification

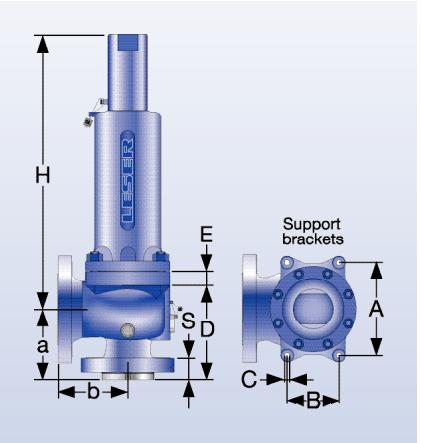
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
6 R 8	150	150	5264.671☐	5262.665☐	–	55	100	100	100	80	–	–	60	60
6 R 8	300L	150	5264.672☐	5262.666☐	5267.669☐	55	100	100	100	100	100	100	60	60
6 R 10	300	150	5264.673☐	5262.667☐	–	150	230	230	230	230	–	–	100	100
6 R 10	600	150	5264.674☐	5262.668☐	5267.670☐	200	300	300	300	300	300	300	100	100

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
6 R 8	150	150	5264.671☐	5262.665☐	–	3.8	6.9	6.9	6.9	5.5	–	–	4.1	4.1
6 R 8	300L	150	5264.672☐	5262.666☐	5267.669☐	3.8	6.9	6.9	6.9	6.9	6.9	6.9	4.1	4.1
6 R 10	300	150	5264.673☐	5262.667☐	–	10.3	15.9	15.9	15.9	15.9	–	–	6.9	6.9
6 R 10	600	150	5264.674☐	5262.668☐	5267.670☐	13.8	20.7	20.7	20.7	20.7	20.7	20.7	6.9	6.9

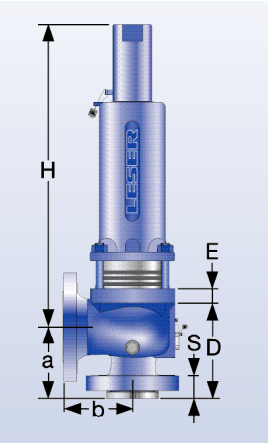
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design

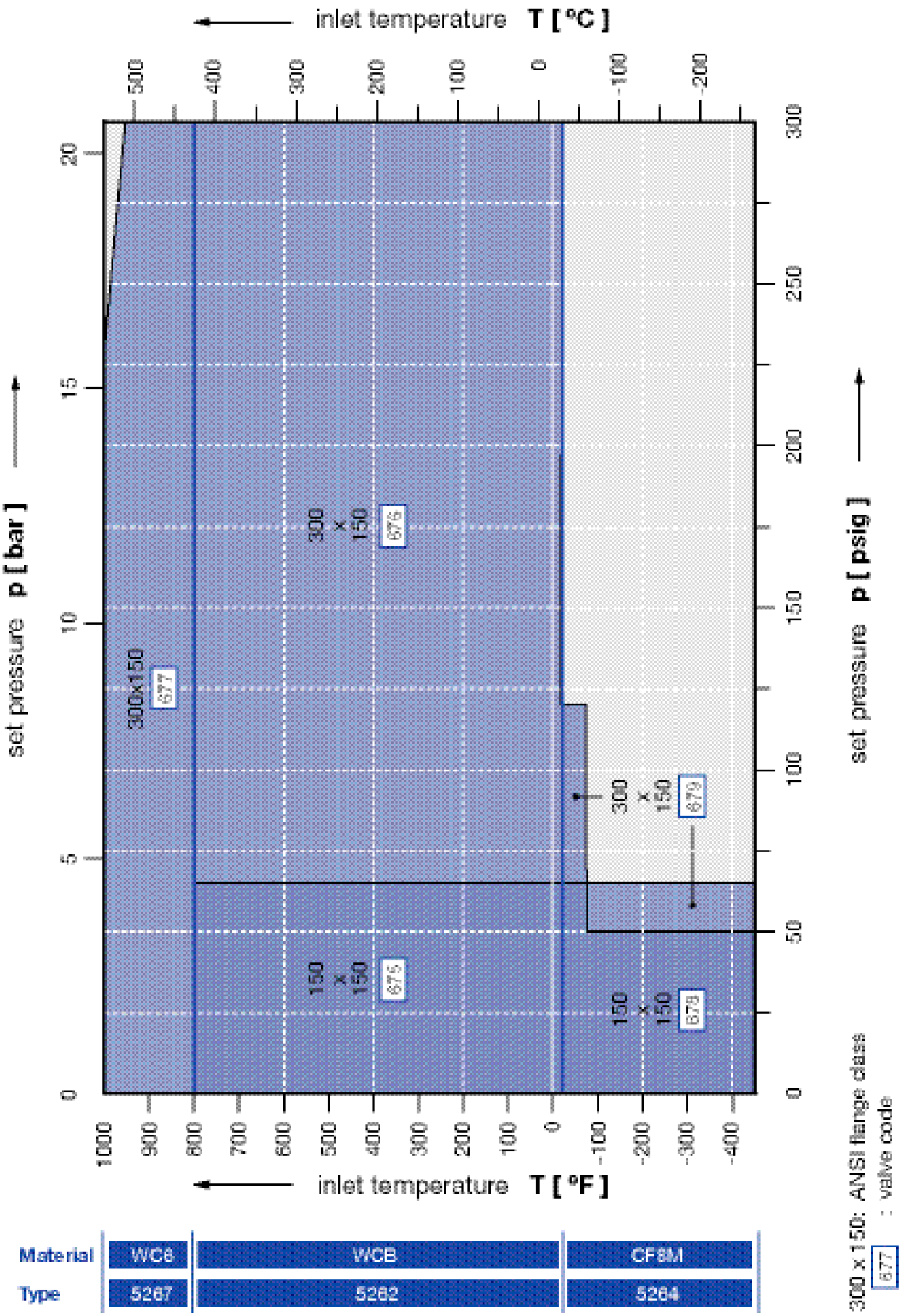


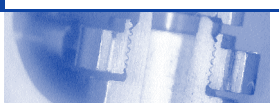
Balanced bellows design

Orifice R – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	[lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
6 R 8	150	150	9 7/16	9 1/2	2 11/16	32 5/32	14 9/16	8 9/32	Ø 23/32	13 5/8	31/32	487.2	35 9/32	507.0
6 R 8	300L	150	9 7/16	9 1/2	2 11/16	32 5/32	14 9/16	8 9/32	Ø 23/32	13 5/8	31/32	487.2	35 9/32	507.0
6 R 10	300	150	9 7/16	10 1/2	2 3/4	44 7/32	18 1/2	5 29/32	Ø 23/32	18 1/8	31/32	611.0	44 7/32	635.2
6 R 10	600	150	9 7/16	10 1/2	2 3/4	44 7/32	18 1/2	5 29/32	Ø 23/32	18 1/8	31/32	611.0	44 7/32	635.2

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	[kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
6 R 8	150	150	240	241	68	817	370	210	Ø 18	346	25	221.0	897.0	230.0
6 R 8	300L	150	240	241	68	817	370	210	Ø 18	346	25	221.0	897.0	230.0
6 R 10	300	150	240	267	70	1123	470	150	Ø 18	460	25	277.0	1123	288.0
6 R 10	600	150	240	267	70	1123	470	150	Ø 18	460	25	277.0	1123	288.0


inlet temperature T [°C]
500
400
300
200
100
0
-100
-200
set pressure p [bar]
20
15
10
5
0
set pressure p [psig]
300
250
200
150
100
50
0
300x150
677
300 x 150
675
300 x 150
679
150 x 150
675
150 x 150
679
1000
900
800
700
600
500
400
300
200
100
0
-100
-200
-300
-400
inlet temperature T [°F]
Material
WC6
WCB
CF8M
Type
5267
5262
5264
300 x 150: ANSI flange class
677
: valve code



Orifice T – Specification

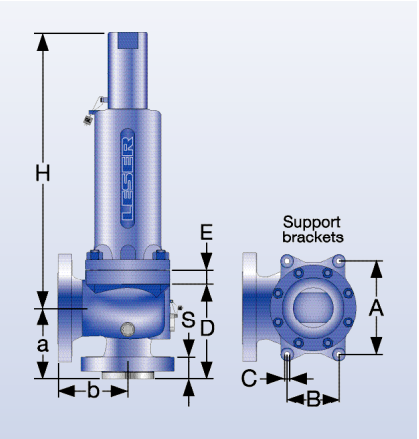
Valve Size	Flange Rating		Article No.			Max. set pressure [psig]							Back pressure limits [psig]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-76° F[1]	-21° F	100° F	450° F	800° F	800° F	1000° F	Conv.	Bellows
8 T 10	150	150	5264.678☐	5262.675☐	–	50	65	65	65	65	–	–	30	30
8 T 10	300	150	5264.679☐	5262.676☐	5267.677☐	65	120	300	300	300	300	225	100	100

Valve Size	Flange Rating		Article No.			Max. set pressure [bar]							Back pressure limits [bar]	
						CF8M		WCB			WC6[2]			
	Inlet	Outlet	CF8M	WCB	WC6	-60°C[1]	-29°C	38°C	232°C	427°C	427°C	538°C	Conv.	Bellows
8 T 10	150	150	5264.678☐	5262.675☐	–	3.4	4.5	4.5	4.5	4.5	–	–	2.1	2.1
8 T 10	300	150	5264.679☐	5262.676☐	5267.677☐	4.5	8.3	20.7	20.7	20.7	20.7	15.5	6.9	6.9

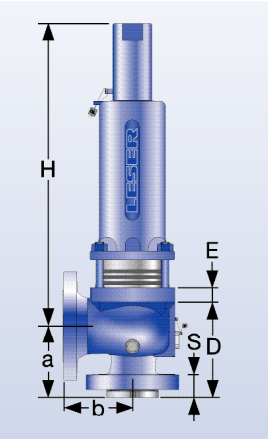
Notes: [1] Minimum Temperature: -450° F (-268° C)
[2] Bellows for spring heat protection recommended

☐ = **Add here code** for lifting device and bonnet:

Construction	Code	CF8M	WCB	WC6
closed bonnet, cap H2	2	✓	✓	✓
closed bonnet, plain lever H3	3	–	✓	✓
closed bonnet, packed lever H4	4	✓	✓	✓
open bonnet, plain lever H3	5	–	✓	✓



Conventional design



Balanced bellows design

Orifice T – Dimensions and Weights

Valve Size	Flange Rating		Dimensions [inch]									Weight [lbs]	Bellows Design [inch]	[lbs]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
8 T 10	150	150	10 7/8	11	2 7/16	44 7/32	18 1/2	5 29/32	Ø 23/32	19 9/16	31/32	633.0	44 7/32	657.2
8 T 10	300	150	10 7/8	11	2 7/16	44 7/32	18 1/2	5 29/32	Ø 23/32	19 9/16	31/32	633.0	44 7/32	657.2

Valve Size	Flange Rating		Dimensions [mm]									Weight [kg]	Bellows Design [mm]	[kg]
	Inlet	Outlet	a	b	s	H	A	B	C	D	E	m	H	m
8 T 10	150	150	276	279	62	1123	470	150	Ø 18	497	25	287.0	1123	298.0
8 T 10	300	150	276	279	62	1123	470	150	Ø 18	497	25	287.0	1123	298.0

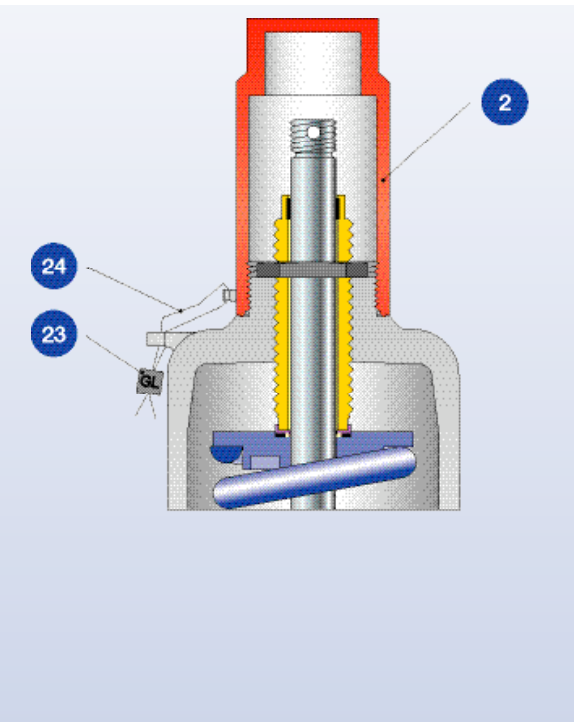
Accessories and Options
Caps and Levers

Available Lever Designs

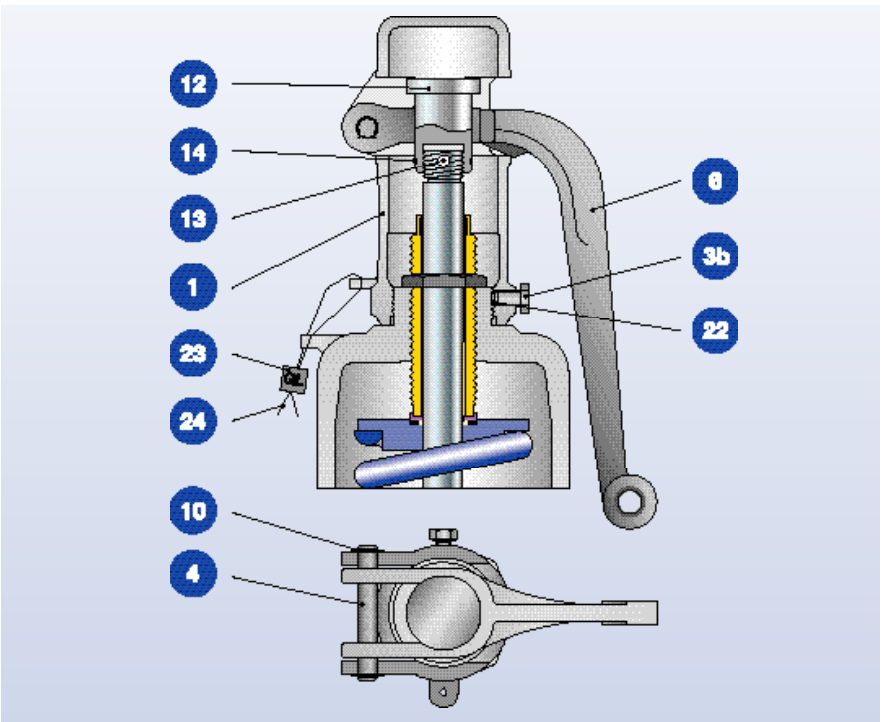
	Designation	Short Designation
Standard	Cap screwed Plain lever Packed lever	H2 H3 H4
Special	Cap bolted Bolted lifting device	H1 H6
Test Gag	Cap H2: Option Code J69 Packed l. H4: Option Code J70	

Materials subassembly Item 40

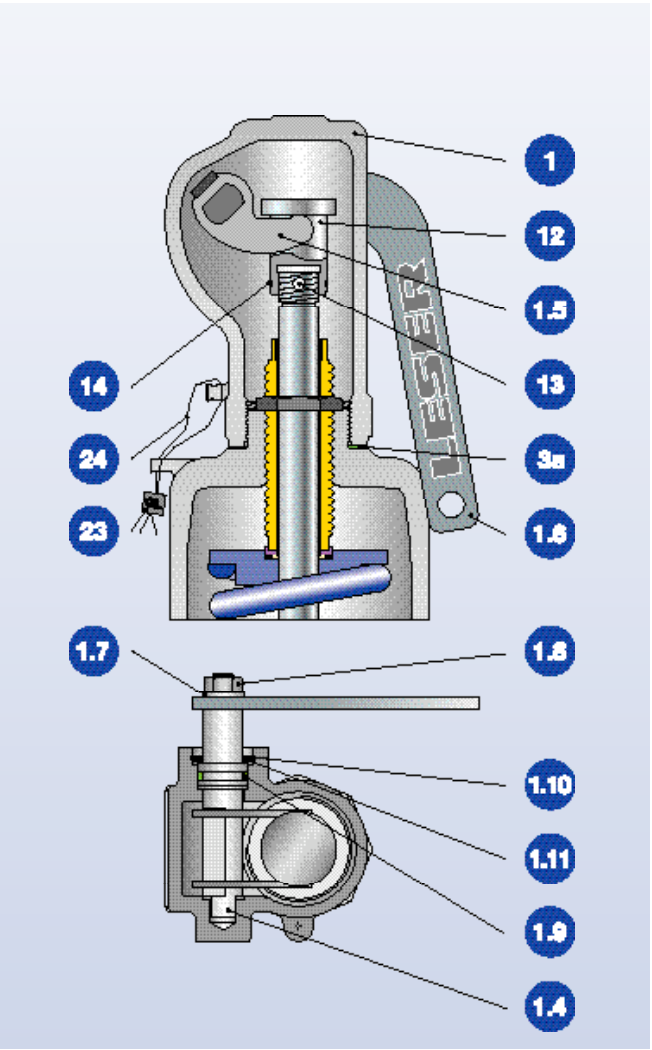
		Type 5262 / Type 5267			Type 5264	
Item	Component	Cap H2 + H1	Plain Lever H3	Packed Lever H4 + H6	Cap H2 + H1	Packed Lever H4 + H6
1	Lever Cover	–	Gr. 60-40-18	Gr. 60-40-18	–	CF8M
2	Cap	Carbon Steel	–	–	316L	–
3 a	Spacer	–	–	316L	–	316L
3 b	Hex Screw	–	B7	–	–	–
3 c	O-ring	–	–	Viton®	–	Viton®
4 / 1.4	Shaft / Bolt	–	Steel	Steel	–	316L
1.5	Lifting Fork	–	–	Carbon Steel	–	316L
6 / 1.6	Lever	–	Carbon Steel	Carbon Steel	–	316SS
1.7	Washer	–	–	Carbon Steel	–	316SS
1.8	Nut	–	–	2H	–	8M
1.9	O-ring	–	–	Viton®	–	–
1.9	Bushing	–	–	–	–	Graphite
10 / 1.10	Retaining Clip	–	Carbon Steel	Carbon Steel	–	–
1.10	Nut	–	–	–	–	316L
1.11	Support Ring	–	–	Carbon Steel	–	316SS
12	Spindle Cap	–	Carbon Steel	Carbon Steel	–	316L
13	Pin	–	316SS	316SS	–	316SS
14	Retaining Clip	–	316SS	316SS	–	316SS
20	Flange	Carbon Steel	–	Carbon Steel	316L	316L
21	Flange	Carbon Steel	–	Carbon Steel	316L	316L
22	Plug	–	Plastic	–	–	–
23	Seal	Plastic	Plastic	Plastic	Plastic	Plastic
24	Seal Wire	316SS	316SS	316SS	316SS	316SS
26	Stud	B7	–	B7	B8M	B8M
27	Nut	2H	–	2H	8M	8M
93	Test Gag	316SS	–	316SS	316SS	316SS
93.5	Washer	Fiber	–	Fiber	Fiber	Fiber



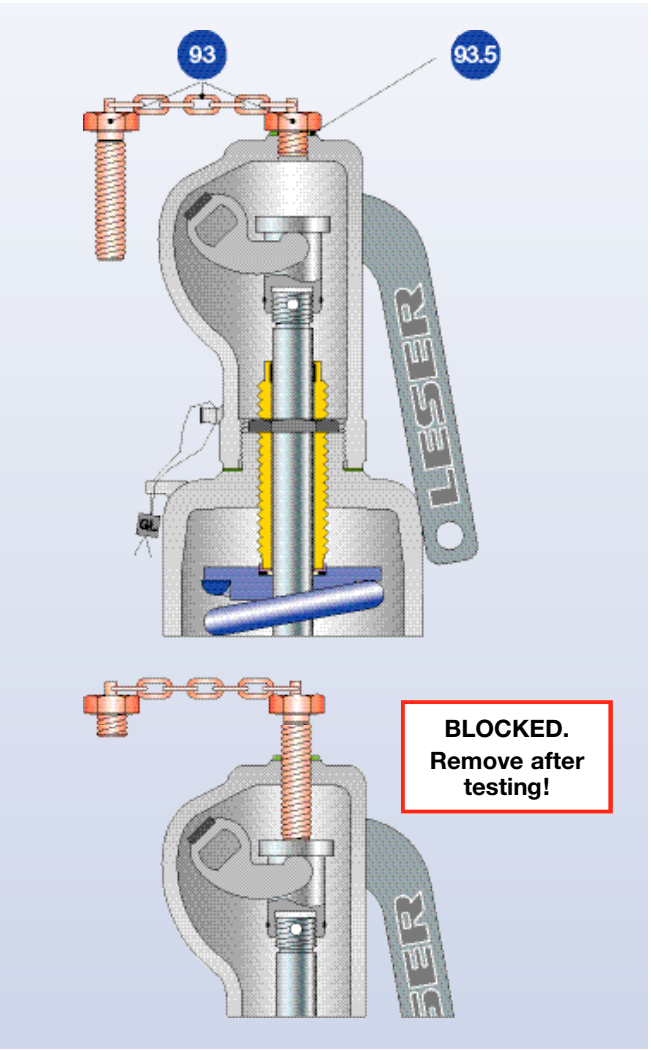
Cap H2



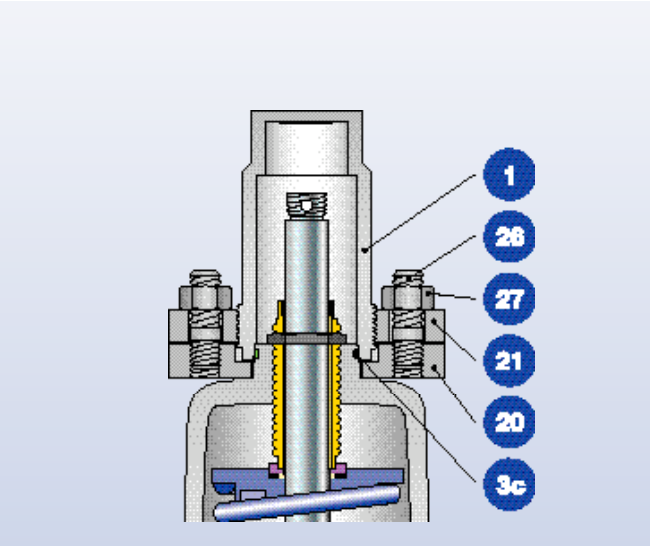
Plain lever H3



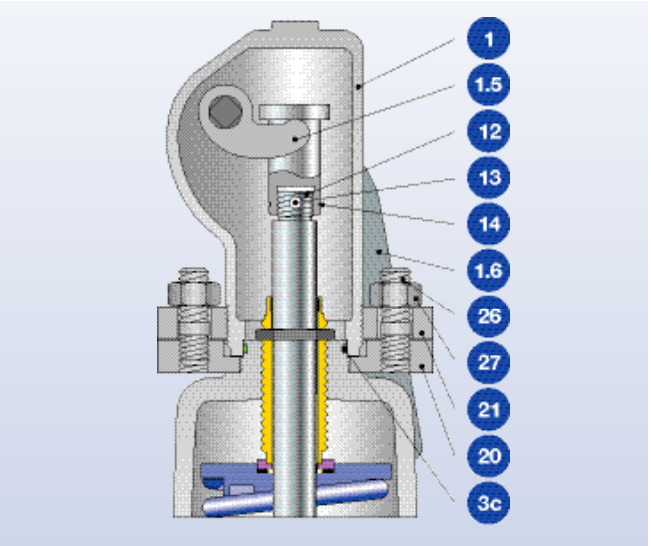
Packed lever H4



Test gag



Bolted Cap H1

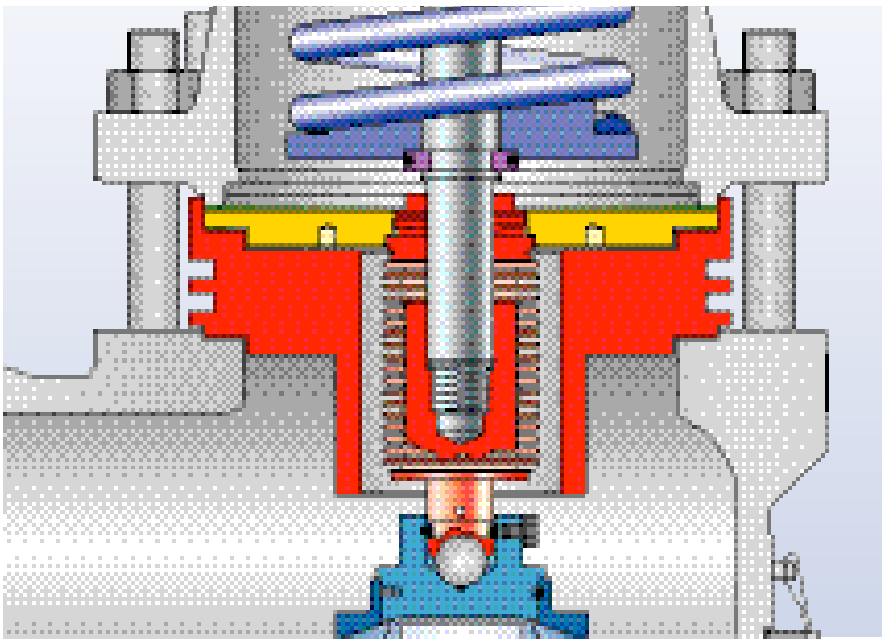


Bolted lifting device H6

Balanced Bellows

Application
Bellows protect the guides, moving parts and the spring from dirt, corrosion, impurities or temperature to guarantee the proper function of the valve. Additionally they provide for back pressure compensation.

Design
Type 526 with balanced bellows is provided with a bonnet spacer to house the bellows. The spacer serves for cooling and shields the bellows against turbulences during discharge to avoid vibration and to guarantee longer lifetime.



Minimum Set Pressures

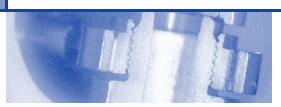
Type 526 Balanced Bellows Design				
Orifice	Minimum set pressure			
	Steam / Air		Water	
	[psig]	[bar]	[psig]	[bar]
D	51	3.5	51	3.5
E	51	3.5	51	3.5
F	29	2.0	29	2.0
G	46	3.2	41	2.8
H	41	2.8	41	2.8
J	51	3.5	73	5.0
K	32	2.2	36	2.5
L	51	3.5	51	3.5
M	38	2.6	32	2.2
N	26	1.8	26	1.8
P	32	2.2	32	2.2
Q	19	1.3	33	2.3
R	15	1.0	20	1.4
T	17	1.2	36	2.5

Materials and Limits of Application

	Standard	Hastelloy®	Inconel®
Bellows material	316L	Hastelloy® C	Inconel®
Bellows joint material	316L	Hastelloy® C	Inconel®
Temperature limits	up to 1000 °F		
Built up back pressure limit [1]	max. 35 % of set pressure, not to exceed max. bellows back pressure limit		
Option Codes			
Closed bonnet	J78	J78 + S15 (Hastelloy®)	J78 + S15 (Inconel®)
Open bonnet	J68	J68 + S15 (Hastelloy®)	J68 + S15 (Inconel®)
High temperature equipment (Type 5267 only)	J88	J88 + S15 (Hastelloy®)	J88 + S15 (Inconel®)

Note: [1]The so called built up back pressure limit defines the limit for which the proper function of the pressure relief valve is ensured. The back pressure limits in the API 526 refer only to the static stability of the bellows design and do not consider the influence of the backpressure on the opening and closing of a pressure relief valve.

Conversion kits are available for an easy change from a conventional design to a balanced bellows design. Conversion kits contain all necessary parts which must be replaced (bellows, spacer, spindle and gaskets).
Please refer to page 54 “Spare Parts”.

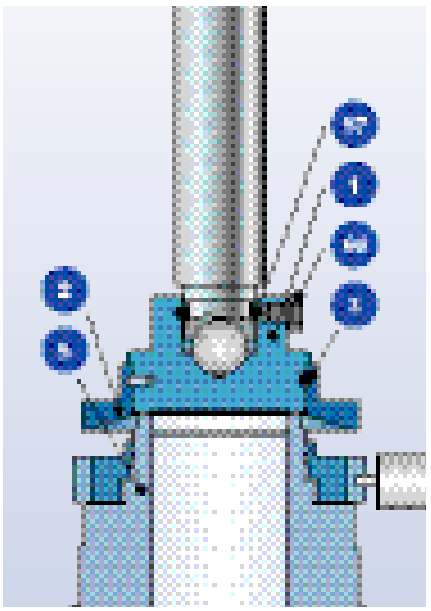


Metal Seat

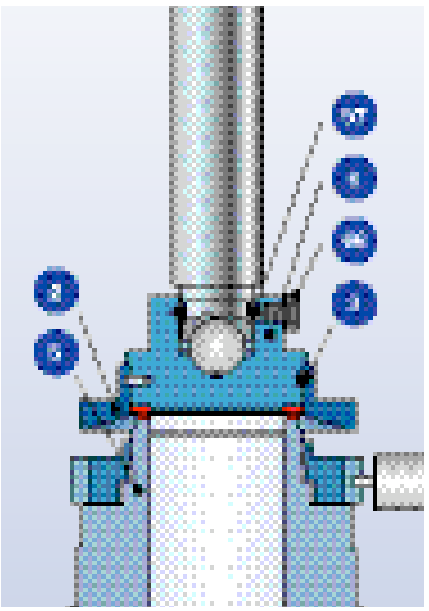
The LESER metal seats (disc and nozzle) are lapped to optical flatness to ensure a tight shut off. LESER safety relief valves are supplied with a standard leak tightness according to API 527.

Type 5262 / Type 5267
Standard material for the disc is a hardened stainless steel. The combination of the hardened disc material with the stainless steel seat material (316L or 316L stellited) provides for improved wear resistance and longer product life. Disc in 316L material is available on request.

Type 5264
Disc and seat are provided in 316L material for highest corrosion resistance. In addition to that the disc is stellited as a standard. Any other material which is available from bar stock can be supplied as well (e.g. Hastelloy®, Monel®, Alloy20,…).



Metal seat



Stellited sealing surfaces

Disc Materials subassembly Item 7

Item	Part Name	Type 5262 / 5267 Body Material: WCB/ WC6	Type 5264 Body Material: CF8M
1	Disc	Hardened stainless steel hardness 40 - 50 HRC	316L stellited hardness 40 - 45 HRC
2	Lifting aid	316L	316L
3	Retaining clip	316L	316L
57	Balls	Stainless steel	Stainless steel
66	Plug screw	Stainless steel	Stainless steel

Nozzle Materials (Item 5)

Flange Class	Type 5262 Body Material: WCB	Type 5267 Body Material: WC6	Type 5264 Body Material: CF8M
150 – 300	316L	316L stellited	316L
600	316L stellited	316L stellited	316L
900 – 2500	316L stellited	316L stellited	316L stellited

Stellited sealing surfaces
For high temperature service above 842 °F, or applications with abrasive fluids wear resistant sealing surfaces are recommended.
The sealing surfaces of stainless steel discs or nozzles can be stellited by build-up welding. The minimum thickness of the stellite is 0,06 inch.
In addition to the corrosion resistance, the stellited surface also offers a high resistance to impact and sudden changes in temperature.

All 316L stainless steel discs and many nozzles are stellited as a standard!

Please refer to pages 52/53 “Spare Parts”.

Soft Seal

O-Ring Disc
Disc with Sealing Ring

Application

Type 526 is provided with an optional soft seal disc for

- superior tightness
- maintained tightness close to the set pressure

Features and Benefits

- two designs with o-ring or sealing ring for extended application range
- minimized leakage and product loss
- large selection of soft seal materials
- simple replacement of soft seal
- standard ARP o-ring sizes
- one standard durometer per o-ring material
- reduced maintenance costs

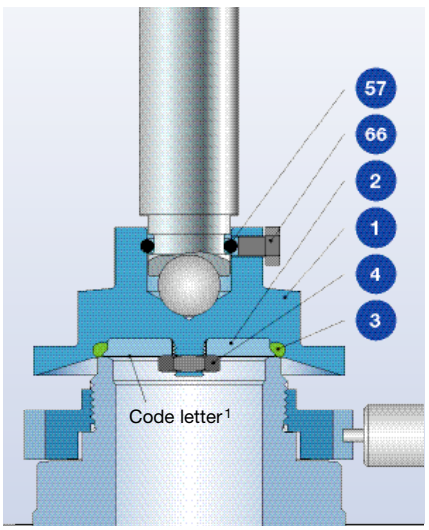
For temperature limits and medium resistance refer to the soft seal selection table.

Design and Availability

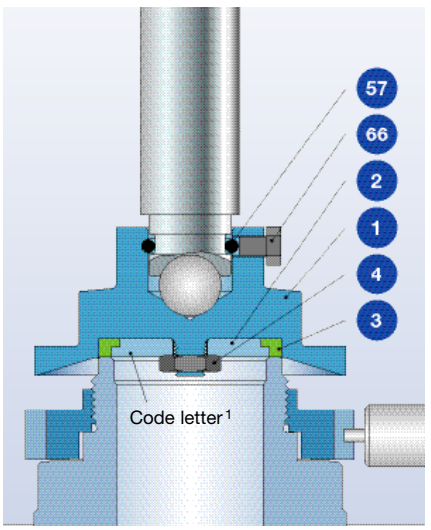
Orifice D through T

Disc Materials
subassembly Item 7

Item	Part Name	Material
1	Disc	316L
2	Retainer	316L
3	Soft seal	See soft seal selection table
4	Nut	8M
57	Balls	Stainless steel
66	Plug screw	Stainless steel



O-ring disc

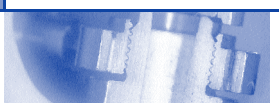


Disc with Sealing Ring

Note: [1]Code letter: Please refer to soft seal selection table

Disc with Sealing Ring

For applications, where the increased tightness of a soft seat seal is required but the temperature is too low or too high for an o-ring disc, a disc with an inserted sealing ring is the solution.



Soft Seal Selection

	Abbreviation ASTM 1418	Designation Trade name	Code-letter[1]	Option Code	T_{min} [°F]	T_{min} [°C]	T_{max} [°F]	T_{max} [°C]	Application[2]
O-ring	CR	Neoprene® (Chloroprene)	K	J21	-40	-40	212	100	Paraffin oil, silicone oil and grease, water and waterbased solvents, refrigerants, ozone
O-ring	NBR	Buna - N® (Nitrile-Butadiene)	N	J30	-13	-25	230	110	Hydraulic oil, vegetable and animal grease and oil
O-ring	EPDM	Buna - EP® (Ethylene-Propylene - Diene)	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
O-ring	FPM (FKM)	Viton® (Fluorocarbon)	L	J23	-4	-20	356	180	For high temperature service (no superheated steam), mineral oil and grease, silicone oil and grease, vegetable and animal grease and oil, ozone, FDA compliant compound available on request
O-ring	FFKM	Kalrez® (Perfluoro)	C	J20	32	0	482	250	Nearly all chemicals, standard compound is Kalrez® 6375 with steam resistance, FDA compliant compound available on request
Sealing ring	SP	VESPEL SP-1®[3] (Polyimide)	T	J49	-454	-270	572	300	High temperature and high pressure applications (no steam), for chemical resistance refer to manufacturers guide
Sealing ring	PCTFE	Kel-F® (Polychlorotri-fluoroethylene)	G	J48	-454	-270	400	204	Cryogenic and refrigeration application, flammable media, gaseous oxygene application up to 725 psig at 140 °F
Sealing ring	PTFE	Teflon® (Polytetrafluoroethylene)	A	J44	-300	-184	302	150	Nearly all chemicals
Other		Please contact factory							

Notes: [1] The code letters will be stamped on the retainer (Item 2). For soft seal materials other than listed the code letter X will be used.
[2] Pressure and temperature service must be considered in any case. Chemical resistance depends on O-ring manufacturer information. LESER can not take any warranty.
[3] Up to orifice G only.

Set Pressure Limits
O-ring disc

Orifice	Set Pressure min. [psig]	min. [bar]	max. [psig]	max. [bar]
D	4	0.3	1480	102
E	4	0.3	1480	102
F	4	0.3	1480	102
G	4	0.3	1480	102
H	4	0.3	1480	102
J	4	0.3	1480	102
K	4	0.3	1480	102
L	4	0.3	1100	75.8
M	4	0.3	1100	75.8
N	4	0.3	1000	68.9
P	4	0.3	1000	68.9
Q	4	0.3	600	41.3
R	4	0.3	300	20.6
T	4	0.3	300	20.6

Set Pressure and Size Limits
Sealing ring disc

Material	Pressure Range min. [psig]	min. [bar]	max. [psig]	max. [bar]	Size
VESPEL SP-1®	150	10	5800	400	D – G
Kel-F®	15	1	4350	300	D – T
Teflon®	15	1	145	10	D – T

Registered Trademarks	Company
Buna-N®, Teflon®, Viton®, VESPEL SP-1®, Neoprene®, Kalrez®	DuPont
Buna EP®	Bayer
Kel-F®	3M

Conversion
It is possible to change a standard disc into a soft seal design easily without changing any other part of the valve (single trim and same spring table). Please refer to page 52/53 Spare Parts.

Heating Jacket

Application
Safety valves in systems to be protected from media which are viscous, sticky, or have a tendency to crystallize out of solution can be fitted with a fabricated heating jacket.
The position of the heating connections is shown in figure 1 and 2.

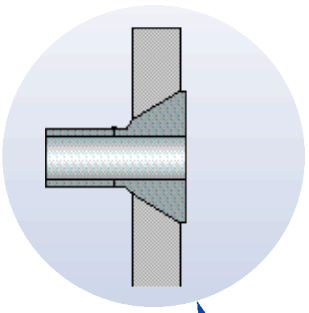
Balanced Bellows Design
For safety valves with balanced bellows, the bonnet spacer required to house the bellows is fitted with an additional heating jacket. Both heating jackets are joined by a tubing. The position of the heating connections is shown in the figure 3.

Specifications of the Heating Jacket
The operating data for the heating jacket are shown on a separate name plate.

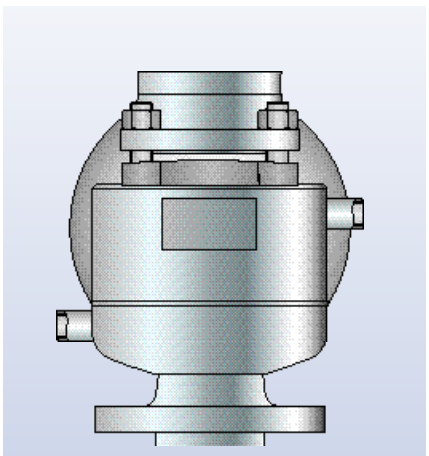
Valve Size	Operating Pressure p_{max} [psig]	[bar]	Operating Temperatures T_{max} [°F]	[°C]
1” to 2”	260	18	572°	300°
2 ½” to 4”	160	11	572°	300°

Available heating connections

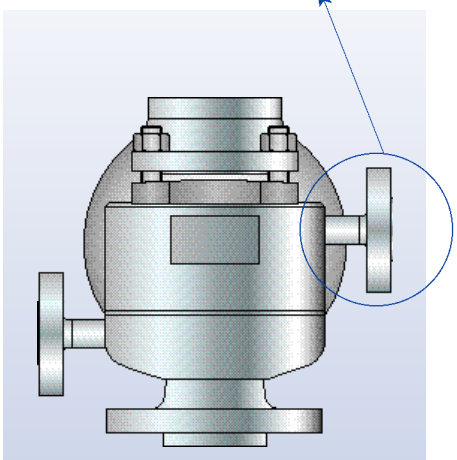
Connection	Option Code
Lap joint flanges	S01 + H32
Couplings FNPT	S01 + H30



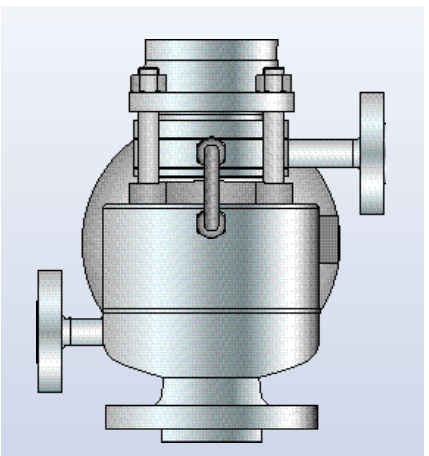
Lap joint flanges
Flanged heating connections are supplied as lap joint flanges for better alignment of the flange connection.



1. Heating Jacket with couplings



2. Heating Jacket with flanges

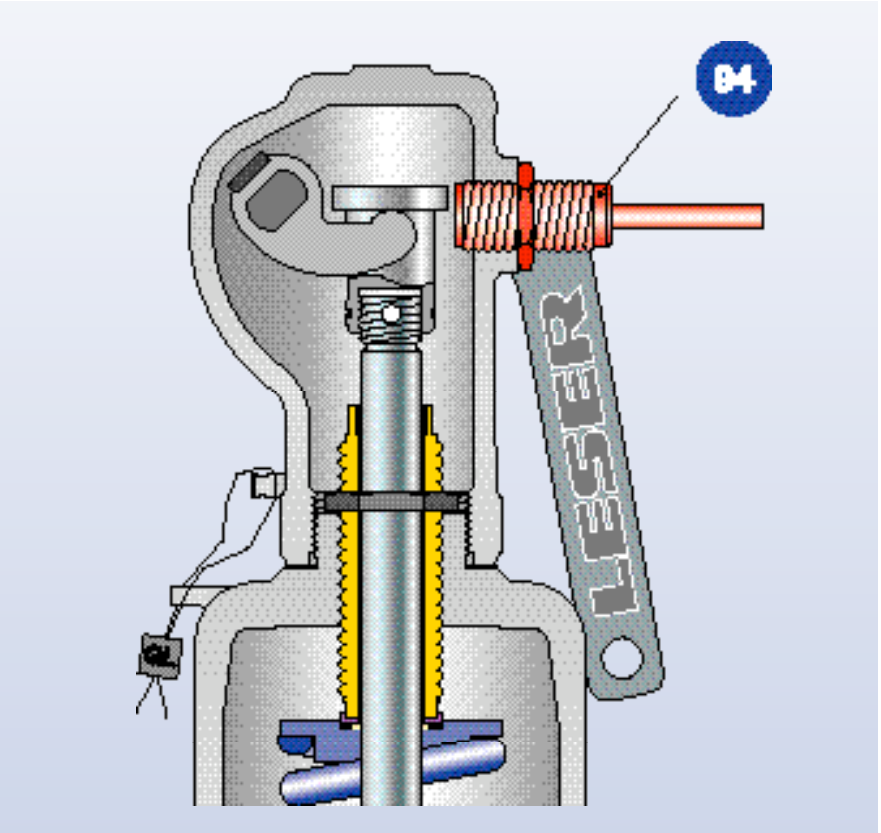


3. Heating Jacket for balanced bellows design

Lift Indicator
(proximity switch)

Lift indicators are an important component for automation. They are used to monitor operating status.
As an option, pressure relief valves can be provided with an inductive proximity switch.
The lift indicator will indicate an opening of the pressure relief valve when the vessel pressure has increased so that the valve opens with a “pop”.
LESER provides DC proximity switches type “N” using two-wire technology. These intrinsically safe proximity switches can be used in explosion hazard area zone 0. Other types of switches can be used as well.

The lift indicator option is available only in combination with the packed lever H4 either with or without proximity switch.
The connection size is M18 x 1.



Option	Option Code
Lifting device H4 with connection for lift indicator M18 x 1	J39
Lifting device H4 with connection for lift indicator M18 x 1 including proximity switch type PEPPERL + FUCHS NJ5-18GK-N (5 V to 25 V d.c.)	J93

DIN Flanges

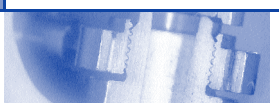
Type 526 flanges can be drilled according to DIN EN 1092-1 / DIN 2501. The following table shows the availability for the different orifices including the option codes (H10 – H52) for inlet and outlet flanges.

Explanations:

- White boxes with option code: connection is available
- Gray boxes without option code: connection is not available
- DIN EN 1092-1: for flange classes up to PN 100
- DIN 2501: for flange classes PN 160 and higher

Flanges according to DIN EN 1092-1 / DIN 2501

Orifice	Standard Valve Size and Class						Flange Drillings according to DIN EN 1092-1 / DIN 2501																Dimensions	
	Inlet		Outlet	Valve Code			Inlet										Outlet						Inlet	Outlet
	NPS [inch]	Standard flange class	NPS [inch]	Material WCB	WC6	CF8M	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100	PN 160	PN 250	PN 320	PN 400	PN 10	PN 16	PN 25	PN 40	PN 63		Center to face [mm]	Center to face [mm]
D	1	300	2	002	006	011	H47																105	114
	1	600	2	003	007	012					H11												105	114
	1 1/2	1500	2	004	008	013							H11	H12			H15						105	114
	1 1/2	2500	3	005	009	014									H13						H16		140	178
E	1	300	2	016	020	025	H47																105	114
	1	600	2	017	021	026					H11												105	114
	1 1/2	1500	2	018	022	027							H11	H12			H15						105	114
	1 1/2	2500	3	019	023	028									H13						H16		140	178
F	1 1/2	300L	2	030	–	040	H47																124	121
	1 1/2	300	2	031	035	041			H47														124	152
	1 1/2	1500	3	033	037	043					H11			H12			H15				H16		124	165
	1 1/2	2500	3	034	038	044									H13								140	178
G	1 1/2	300L	3	046	–	111	H47																124	121
	1 1/2	300	3	047	052	112			H47														124	152
	1 1/2	600	3	048	053	113					H11						H15						124	152
	1 1/2	900	3	049	054	114																	124	165
	2	1500	3	050	055	115								H12	H13						H16		156	172
	2	2500	3	051	056	116										H14							156	172
H	1 1/2	300L	3	143	–	153																	130	124
	2	300	3	144	148	154				H47	H10												130	124
	2	600	3	–	149	–											H15						130	124
	2	600	3	145	–	155																	154	162
	2	900	3	146	150	156							H11								H16		154	162
	2	1500	3	147	151	157								H12									154	162
J	2	300L	3	163	–	197				H47	H10												137	124
	3	600	4	165	169	199											H51		H15				184	181
	3	900	4	166	170	200							H11								H16		184	181
	3	1500	4	167	171	201								H12									184	181
K	3	300	4	203	207	212				H47									H15				156	162
	3	600	4	204	–	213					H10												184	181
	3	900	6	–	209	–											H51						184	181
	3	900	6	205	–	214						H11		H12					H15				198	216
	3	1500	6	206	210	215																	197	216



Orifice	Standard Valve Size and Class						Flange Drillings according to DIN EN 1092-1 / DIN 2501																Dimensions	
	Inlet		Outlet	Valve Code			Inlet										Outlet						Inlet	Outlet
	NPS [inch]	Standard flange class	NPS [inch]	Material WCB	WC6	CF8M	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100	PN 160	PN 250	PN 320	PN 400	PN 10	PN 16	PN 25	PN 40	PN 63		Center to face [mm]	Center to face [mm]
L	3	300L	4	233	–	243			H47		H10						H51		H15				156	165
	4	300	6	234	238	244	H45																179	181
	4	600	6	235	–	245						H11											179	203
	4	600	6	–	239	–																	181	203
	4	900	6	236	240	246								H12									197	222
	4	1500	6	237	241	–																	197	222
M	4	300	6	581	584	588	H45		H47		H10						H51						178	184
	4	600	6	582	585	589						H11											178	203
	4	900	6	583	586	–								H12									197	222
N	4	300	6	591	594	598	H45		H47		H10						H51						197	210
	4	600	6	592	595	599						H11											197	222
	4	900	6	593	596	–								H12									197	222
P	4	300L	6	646	–	654	H45		H47								H51						181	229
	4	300	6	647	650	655																	225	254
	4	600	6	648	651	656					H10	H11											225	254
	4	900	6	649	652	–							H11	H12									225	254
Q	6	300	8	658	660	663	H45		H47								H50	H51	H52				240	241
	6	600	8	659	661	664					H10	H11											240	241
R	6	300L	8	666	669	672	H45												H52				240	241
	6	300	10	667	–	673				H47	H10						H50	H51					240	267
	6	600	10	668	670	674																	240	267
T	8	300	10	676	677	679			H46	H47							H50	H51					276	279

Note: The pressure-temperature ratings according to ASME ANSI B16.34 do not apply for DIN Flanges.

Spare Parts

Discs – Metal to metal seat (Item 7)

Orifice	Body Material	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	WCB / WC6	225.0439.9000				225.0539.9000		225.0639.9000
	CF8M	225.0469.9000				225.0569.9000		225.0669.9000
E	WCB / WC6	225.0439.9000				225.0539.9000		225.0639.9000
	CF8M	225.0469.9000				225.0569.9000		225.0669.9000
F	WCB / WC6	225.0739.9000						225.0839.9000
	CF8M	225.0769.9000						225.0869.9000
G	WCB / WC6	225.1139.9000					225.1439.9000	
	CF8M	225.1169.9000					225.1469.9000	

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	WCB / WC6	225.1539.9000		225.1639.9000			
	CF8M	225.1569.9000		225.1669.9000			
J	WCB / WC6	225.1839.9000		225.1939.9000			
	CF8M	225.1869.9000		225.1969.9000			
K	WCB	225.2139.9000				225.2439.9000	
	WC6	225.2139.9000					225.2439.9000
	CF8M	225.2169.9000				225.2469.9000	

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	WCB / WC6	225.2539.9000		225.2639.9000		225.2839.9000	
	CF8M	225.2569.9000		225.2669.9000		225.2869.9000	
M	WCB / WC6	225.2939.9000				225.3139.9000	
	CF8M	225.2969.9000				–	
N	WCB / WC6	225.3239.9000					
	CF8M	225.3269.9000					
P	WCB / WC6	225.3439.9000		225.3539.9000			
	CF8M	225.3469.9000		225.3569.9000			
Q	WCB / WC6	225.3639.9000					
	CF8M	225.3669.9000					
R	WCB / WC6	225.3739.9000		225.3839.9000			
	CF8M	225.3769.9000		225.3869.9000			
T	WCB / WC6	225.3969.9000					
	CF8M	225.3969.9000					

Disc Material	Type
Hardened stainless steel	5262 / 5267
316L stellited	5264

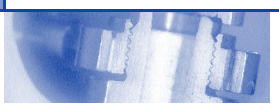
Discs – Soft seal, disc material: 316L (Item 7)

Orifice	Body Material	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	all	205.0149.90X1				205.0249.90X1		on request
E	all	205.0149.90X1				205.0249.90X1		on request
F	all	205.0349.90X1						205.0549.90X1
G	all	205.0649.90X1					on request	

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	all	205.0849.90X1		205.0949.90X1		205.1049.90X1	
J	all	205.1149.90X1		205.1249.90X1		on request	
K	WCB	205.1349.90X1					205.1549.90X1
	WC6						
	CF8M						

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	all	205.1649.90X1		205.1749.90X1		on request	
M	all	205.1949.90X1				on request	
N	all	205.2149.90X1			on request		
P	all	205.2349.90X1		205.2449.90X1			
Q	all	205.2549.90X1					
R	all	205.2649.90X1		on request			
T	all	205.2849.90X1					

O-ring material code:	D (EPDM)	X: 4
	K (CR)	X: 5
	L (FPM)	X: 7
	C (FFKM)	X: 9
Durometer:	70-75 IRHD	



O-Rings – Soft seal seat (Item 7.3)

Orifice	Body Material	Flange Class 150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	all	502.0171.26X1 ARP 115 0.674 x 0.103						
E	all	502.0171.26X1 ARP 115 0.674 x 0.103						
F	all	502.0202.26X1 ARP 117 0.799 x 0.103						
G	all	502.0249.35X1 ARP 214 0.984 x 0.139						

Orifice	Body Material	Flange Class 150x150	300Lx150	300x150	600x150	900x150	1500x300
H	all	502.0313.35X1 ARP 218 1.234 x 0.139					
J	all	502.0408.35X1 ARP 223 1.609 x 0.139					
K	all	502.0472.35X1 ARP 225 1.859 x 0.139					

Orifice	Body Material	Flange Class 150x150	300Lx150	300x150	600x150	900x150	1500x150
L	all	502.0567.35X1 ARP 228 2.234 x 0.139					
M	all	502.0628.53X1 ARP 333 2.475 x 0.210					
N	all	502.0692.53X1 ARP 335 2.725 x 0.210					
P	all	502.0850.53X1 ARP 340 3.350 x 0.210					
Q	all	502.1104.53X1 ARP 348 4.350 x 0.210					
R	all	502.1327.53X1 ARP 355 5.225 x 0.210					
T	all	502.1664.53X1 ARP 363 6.475 x 0.210					

O-ring material code:	D (EPDM)	X: 4
	K (CR)	X: 5
	L (FPM)	X: 7
	C (FFKM)	X: 9
Durometer:	70-75 IRHD	

Nozzles – material: 316L (Item 5)

Orifice	Body Material	Flange Class 150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	WCB	207.2049.9000		*207.2069.9000*		*207.2269.9000*		*207.2769.9000*
	WC6							
	CF8M							
E	WCB	207.2049.9000		*207.2069.9000*		*207.2269.9000*		*207.2769.9000*
	WC6							
	CF8M							
F	WCB	207.2349.9000		*207.2369.9000*				*207.2869.9000*
	WC6							
	CF8M							
G	WCB	207.2449.9000		*207.2469.9000*			*207.3269.9000*	
	WC6							
	CF 8M							

Orifice	Body Material	Flange Class 150x150	300Lx150	300x150	600x150	900x150	1500x300
H	WCB / CF8M	207.2549.9000		207.2949.9000		*207.3169.9000*	
	WC6			*207.2969.9000*			
J	WCB/WC6/ CF8M	207.3049.9000		*207.3569.9000*			
K	WCB / CF8M	207.3349.9000				*207.4169.9000*	*207.4269.9000*
	WC6			*207.3369.9000*	*207.3669.9000*		

Orifice	Body Material	Flange Class 150x150	300Lx150	300x150	600x150	900x150	1500x150
L	WCB / CF8M	207.3449.9000		*207.3769.9000*		*207.4369.9000*	
	WC6				*207.3969.9000*		
M	WCB/WC6/ CF8M	*207.3869.9000*				*207.4469.9000*	
N	WCB/WC6/ CF8M	*207.4069.9000*					
P	WCB/WC6/ CF8M	*207.4569.9000*		*207.4669.9000*			
Q	WCB/WC6/ CF8M	*207.4769.9000*					
R	WCB / CF8M	*207.4869.9000*		*207.5769.9000*			
	WC6						
T	WCB / CF8M	*207.5969.9000*					
	WC6						

All *highlighted nozzles* are stellited additionally as a standard.

207.2069.9000 = stellited

Bellows and Bellows Conversion Kits – material 316L (Item 15)

Orifice	Part	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	bellows	400.8349.0021			400.8349.0000			
	conversion kit	on request			on request			
E	bellows	400.8349.0021			400.8349.0000			
	conversion kit	on request			on request			
F	bellows	400.8449.0021			400.8449.0000			
	conversion kit	on request			on request			
G	bellows	400.8549.0021			400.8549.0000			
	conversion kit	on request			on request			

Orifice	Part	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	bellows	400.8549.0021		400.8749.0000			
	conversion kit	on request		on request			
J	bellows	400.8849.0000					
	conversion kit	on request					
K	bellows	400.8949.0021			400.8949.0000		
	conversion kit	on request			on request		

Orifice	Part	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	bellows	400.9049.0000		400.9149.0000			
	conversion kit	on request		on request			
M	bellows	400.9249.0021			400.9249.0000		
	conversion kit	on request			on request		
N	bellows	400.9349.0021			400.9349.0000		
	conversion kit	on request			on request		
P	bellows	400.9449.0000		400.9549.0000			
	conversion kit	on request		on request			
Q	bellows	400.9649.0000					
	conversion kit	on request					
R	bellows	400.9749.0021		400.9749.0000			
	conversion kit	on request		on request			
T	bellows	400.9849.0000					
	conversion kit	on request					

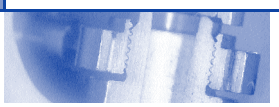
Gaskets – body / bonnet, material graphite / 316L (Item 60)

Orifice	Body Material	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	all	500.0807.0000				500.1207.0000		
E	all	500.0807.0000				500.1207.0000		
F	all	500.1207.0000						
G	all	500.1207.0000					500.1607.0000	

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	all	500.1207.0000		500.1607.0000			
J	all	500.1607.0000		500.1907.0000			
K	all	500.1907.0000				500.2107.0000[1]	

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	all	500.1907.0000		500.2107.0000			
M	all	500.2107.0000					
N	all	500.2107.0000					
P	all	500.2107.0000		500.2207.0000			
Q	all	500.2207.0000					
R	all	500.2207.0000		500.2807.0000			
T	all	500.2807.0000					

Note: [1] 900x150 in WC6: 500.1907.0000



Balls – material 316 SS (Item 57)

Orifice	Body Material	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	all	Ø 3 mm 510.0604.0000 12 pieces						
E	all							
F	all							
G	all							

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	all	Ø 3 mm · 510.0604.0000 12 pieces		Ø 3 mm 510.0604.0000 15 pieces			
J	all						
K	all						

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	all	Ø 3 mm 510.0604.0000 15 pieces					
M	all						
N	all						
P	all						
Q	all						
R	all						
T	all						

Plug screw (Item 66)
451.0114.0000
(size: M 5 x 6)

Balls – material 316 (Item 61)

Orifice	Body Material	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	all	Ø 9 mm 510.0204.0000						
E	all							
F	all							
G	all							

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	all	Ø 9 mm · 510.0204.0000					
J	all	Ø 15 mm 510.0404.0000					
K	all						

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	all	Ø 15 mm 510.0404.0000					
M	all						
N	all						
P	all						
Q	all						
R	all						
T	all						

Split Rings – material 316L (Item 14)

Orifice	Body Material	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	all	251.0249.0000						
E	all							
F	all							
G	all						251.0349.0000	

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	all	251.0249.0000		251.0349.0000			
J	all	251.0349.0000		251.0449.0000			
K	all						

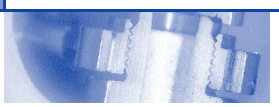
Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	all	251.0449.0000					
M	all						
N	all						
P	all			251.0549.0000			
Q	all						
R	all			251.1949.0000			
T	all						

Needle Bearings – material 316 SS (Item 69)

Orifice	Body Material	Flange Class						
		150x150	300Lx150	300x150	600x150	900x300	1500x300	2500x300
D	all	250.0749.0000						
E	all							
F	all							
G	all						250.0849.0000	

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x300
H	all	250.0749.0000		250.0849.0000			
J	all	250.0849.0000		250.0949.0000			
K	all						

Orifice	Body Material	Flange Class					
		150x150	300Lx150	300x150	600x150	900x150	1500x150
L	all	250.0949.0000					
M	all						
N	all						
P	all						
Q	all	250.1049.0000					
R	all						
T	all						



Spare Parts Recommendations

The following recommendations for spare parts should be taken as a guideline. The actual needs for the replacement of parts depend on various conditions like

- operating temperature
- set pressure and operating pressure
- fluid
- environment
- material selection

These operating conditions have a significant influence on the product life of safety relief valves.

Recommended spare parts for 1 year operation

Item	Part
7	Disc
60	Gasket

Recommended spare parts for more than 1 year operation

Item	Part
5	Nozzle
7	Disc
15	Bellows (if applicable)
60	Gasket

Further to that we recommend to stock items 14 (Split rings), 57 (Balls), 61 (Ball) for assembly purposes.

Rework of seat and disc

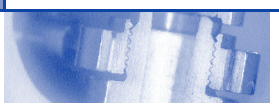
Minor damages on the seating surfaces of nozzle and disc can be repaired by lapping or by machining and successive lapping.
For this purpose LESER offers lapping stamps as well as lapping paste.

Lapping Stamps

Orifice	Designation and size	Part-no.
D + E	Lapping stamp orifice D + E	445.1359.0000
F + G	Lapping stamp orifice F + G	445.1459.0000
H	Lapping stamp orifice H	445.1559.0000
J	Lapping stamp orifice J	445.1659.0000
K	Lapping stamp orifice K	445.1759.0000
L + M	Lapping stamp orifice L + M	445.1859.0000
N	Lapping stamp orifice N	445.1959.0000
P	Lapping stamp orifice P	445.2059.0000
Q + R	Lapping stamp orifice Q + R	445.2259.0000
T	Lapping stamp orifice T	445.2359.0000

Lapping Paste

Lapping paste	Supplying-lot	Designation	Application
Tetraboron paste “WL” F 800	Tubes to 100 g net	F grinding-paste 800	Primary lapping
Tetraboron paste “WL” F 1200	Tubes to 100 g net	F grinding-paste 1200	Finishing



Approvals

Approvals and Coefficients of discharge

Country	Code	Fluid	Approval No.	Orifice	Coefficient of Discharge ASME certified K	Coefficient of Discharge ASME measured K_D	Coefficient of Discharge API K_d
United States	ASME VIII	S / G	M37224	E – T	0.801	0.890	0.975
		L	M37235	E – T	0.579	0.643	0.650
		S / G	M37246	D	0.455	0.506	0.975
		L	M37257	D	0.343	0.381	0.650
Canada	CRN	S / G / L	OG0873.9C		Refer to ASME-code		

Country	Code	Fluid	Approval No.	Orifice	Coefficient of Discharge α_D
Europe	PED 97/23/EC (CE-marking)	S / G	072020111 Z0008/0/26	E – T	0.8
		L		E – T	0.58
		S / G		D	0.45
		L		D	0.32
Germany	AD-2000 Merkblatt A2	S / G / L	TUEV SV 1082	Refer to PED 97/23/EC	
Others	China:	SQL BPV			
	CIC (Russia):	GOST, GOSGORTECHNADZOR			
	Poland:	UDT			
	Hungary:	TMB			
	Prequalifications:	Shell Global Solutions, Total Fina Elf and others			
	Classification authorities:	LROS, GL, DNV, BV			

Orifice Areas and Orifice Diameters

Orifice Letter	Sizing according to ASME VIII with ASME K: Actual Orifice Area A_0 [inch²]	Actual Orifice Area A_0 [mm²]	Actual Orifice Diameter d_0 [inch]	Actual Orifice Diameter d_0 [mm]	Sizing according to API 520 with API K_d: Effective Orifice Area A_0 [inch²]	Effective Orifice Area A_0 [mm²]	Effective Orifice Diameter d_0 [inch]	Effective Orifice Diameter d_0 [mm]
D	0.239	154	0.551	14.0	0.110	71	0.374	9.5
E	0.239	154	0.551	14.0	0.196	126	0.500	12.7
F	0.394	254	0.709	18.0	0.307	198	0.625	15.9
G	0.616	398	0.886	22.5	0.503	325	0.800	20.3
H	0.975	629	1.11	28.3	0.785	506	1.000	25.4
J	1.58	1018	1.42	36.0	1.287	830	1.280	32.5
K	2.25	1452	1.69	43.0	1.838	1186	1.530	38.9
L	3.48	2248	2.11	53.5	2.853	1841	1.906	48.4
M	4.43	2856	2.37	60.3	3.600	2323	2.141	54.5
N	5.30	3421	2.60	66.0	4.340	2800	2.351	59.7
P	7.79	5027	3.15	80.0	6.380	4116	2.850	72.4
Q	13.55	8742	4.15	105.5	11.050	7129	3.751	95.3
R	19.48	12568	4.98	126.5	16.000	10323	4.514	114.6
T	31.75	20485	6.36	161.5	26.000	16774	5.754	146.1

Remark

Sizing according to API 520: use effective orifice areas according to API 526 and API K_d.
Sizing according to ASME VIII: use actual orifice areas and ASME certified K.
Sizing according to AD-2000 Merkblatt A2: use actual orifice areas and coefficient of discharge α_D.

STEAM

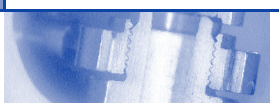
ASME Section VIII [lb/h]

Capacities US Units

Set Pressure [psig]	Orifice [Inch²] D	E	F	G	H	J	K	L	M	N	P	Q	R	T
	0.239	0.239	0.394	0.616	0.975	1.578	2.251	3.484	4.426	5.303	7.791	13.550	19.481	31.752
15	182	320	529	827	1308	1972	3019	4673	5937	7112	10449	18172	25920	42584
20	210	369	610	954	1509	2374	3483	5392	6850	8206	12056	20967	29907	49133
30	266	468	773	1208	1911	3188	4412	6829	8675	10393	15270	26556	37879	62231
40	327	576	952	1488	2353	3992	5433	8410	10684	12799	18805	32704	46649	76639
50	389	684	1131	1767	2796	4778	6454	9991	12693	15206	22341	38853	55419	91046
60	450	792	1310	2047	3238	5511	7476	11572	14701	17612	25876	45001	64189	105454
70	512	901	1489	2327	3681	6241	8497	13154	16710	20018	29412	51150	72959	119862
80	573	1009	1668	2606	4123	6970	9519	14735	18718	22424	32947	57298	81729	134270
90	635	1117	1847	2886	4565	7677	10540	16316	20727	24831	36482	63446	90499	148678
100	696	1226	2026	3165	5008	8401	11561	17897	22736	27237	40018	69595	99269	163086
120	819	1442	2384	3725	5893	9848	13604	21059	26753	32050	47088	81891	116809	191902
140	942	1659	2742	4284	6777	11291	15647	24221	30770	36862	54159	94188	134348	220717
160	1065	1875	3100	4843	7662	12734	17690	27384	34787	41675	61230	106485	151888	249533
180	1188	2092	3458	5403	8547	14137	19732	30546	38804	46487	68301	118782	169428	278349
200	1311	2308	3816	5962	9432	15576	21775	33708	42821	51300	75371	131078	186968	307165
220	1434	2525	4174	6521	10317	17014	23818	36870	46839	56112	82442	143375	204508	335980
240	1557	2741	4532	7081	11202	18454	25861	40032	50856	60925	89513	155672	222048	364796
260	1680	2958	4890	7640	12086	19895	27904	43195	54873	65737	96584	167969	239587	393612
280	1803	3174	5248	8199	12971	21338	29946	46357	58890	70550	103654	180265	257127	422428
300	1926	3391	5605	8759	13856	22783	31989	49519	62907	75362	110725	192562	274667	451243
320	2049	3607	5963	9318	14741	24162	34032	52681	66924	80175	117796	204859		
340	2172	3824	6321	9877	15626	25607	36075	55844	70942	84987	124866	217155		
360	2295	4041	6679	10436	16511	27055	38117	59006	74959	89800	131937	229452		
380	2418	4257	7037	10996	17395	28506	40160	62168	78976	94612	139008	241749		
400	2541	4474	7395	11555	18280	29959	42203	65330	82993	99425	146079	254046		
420	2664	4690	7753	12114	19165	31415	44246	68492	87010	104237	153149	266342		
440	2787	4907	8111	12674	20050	32875	46289	71655	91027	109050	160220	278639		
460	2910	5123	8469	13233	20935	34338	48331	74817	95045	113862	167291	290936		
480	3033	5340	8827	13792	21819	35804	50374	77979	99062	118675	174362	303233		
500	3156	5556	9185	14352	22704	37170	52417	81141	103079	123487	181432	315529		
600	3771	6639	10975	17148	27128	44556	62631	96953	123165	147550	216786	377013		
700	4386	7722	12765	19945	31553	52048	72845	112764	143250	171613	252140			
800	5001	8804	14554	22741	35977	59488	83059	128575	163336	195675	287493			
900	5616	9887	16344	25538	40401	67205	93273	144386	183422	219738	322847			
1000	6231	10970	18134	28334	44825	75065	103486	160197	203508	243800	358201			
1100	6846	12053	19924	31131	49249	82844	113700	176008	223594					
1200	7461	13135	21713	33927	53673	91007	123914	191819						
1300	8076	14218	23503	36724	58097	99358	134128	207630						
1400	8679	15279	25257	39465	62433	107914	144138	223126						
1500	9351	16462	27212	42519	67266	116363	155295	240397						
2000	12929	22761	37626	58790	93006	164691	214721							
2500	17110	30121	49792	77799	123079	227959								

Capacities for saturated steam according to ASME Section VIII (UV) based on set pressure plus 10 % overpressure.

Capacities at 30 psig and bellow are based on 3 psig overpressure.



STEAM

ASME Section VIII [kg / h]

Capacities Metric Units

Set Pressure [bar]	Orifice [mm²]													
	D	E	F	G	H	J	K	L	M	N	P	Q	R	T
	154	154	254	398	629	1018	1452	2248	2856	3421	5027	8742	12568	20485
1	81.2	143	236	369	584	945	1349	2088	2652	3177	4668	8119	11581	19026
2	118	208	343	537	849	1374	1960	3034	3854	4617	6784	11798	16829	27647
3	158	279	461	720	1138	1842	2628	4068	5168	6192	9097	15820	22566	37073
4	199	350	578	904	1430	2313	3300	5109	6490	7775	11424	19867	28339	46557
5	239	421	696	1088	1721	2785	3973	6150	7813	9359	13751	23915	34111	56040
6	280	492	814	1272	2012	3256	4645	7191	9135	10943	16078	27962	39884	65524
7	320	564	932	1456	2303	3727	5317	8231	10457	12527	18405	32009	45657	75008
8	361	635	1050	1640	2594	4198	5990	9272	11779	14111	20732	36056	51429	84492
9	401	706	1167	1824	2886	4670	6662	10313	13101	15695	23059	40103	57202	93976
10	442	777	1285	2008	3177	5141	7334	11354	14423	17279	25387	44150	62975	103459
12	523	920	1521	2376	3759	6083	8679	13435	17067	20447	30041	52244	74520	122427
14	604	1063	1756	2744	4342	7026	10024	15517	19712	23614	34695	60338	86065	141394
16	685	1205	1992	3113	4924	7968	11368	17598	22356	26782	39349	68432	97611	160362
18	765	1348	2228	3481	5507	8911	12713	19680	25000	29950	44003	76526	109156	179329
20	846	1490	2463	3849	6089	9853	14057	21761	27644	33118	48658	84621	120701	198297
22	927	1633	2699	4217	6671	10796	15402	23842	30289	36285	53312	92715		
24	1008	1775	2935	4585	7254	11738	16747	25924	32933	39453	57966	100809		
26	1089	1918	3170	4953	7836	12681	18091	28005	35577	42621	62620	108903		
28	1170	2060	3406	5322	8419	13623	19436	30087	38221	45789	67274	116997		
30	1251	2203	3641	5690	9001	14566	20781	32168	40865	48956	71929	125091		
32	1332	2345	3877	6058	9584	15508	22125	34250	43510	52124	76583	133185		
34	1413	2488	4113	6426	10166	16451	23470	36331	46154	55292	81237	141280		
36	1494	2630	4348	6794	10748	17393	24815	38413	48798	58460	85891	149374		
38	1575	2773	4584	7162	11331	18335	26159	40494	51442	61628	90545	157468		
40	1656	2915	4819	7530	11913	19278	27504	42576	54087	64795	95200	165562		
50	2061	3628	5998	9371	14825	23990	34227	52983	67308	80634	118471			
60	2466	4341	7176	11212	17737	28703	40950	63391	80529	96473	141742			
70	2871	5054	8354	13053	20650	33415	47673	73798	93750					
80	3275	5766	9532	14894	23562	38127	54396	84206						
90	3680	6479	10710	16734	26474	42840	61120	94613						
100	4092	7204	11908	18607	29436	47633	67958	105199						
110	4540	7993	13212	20644	32660	52850	75401							
120	5002	8805	14555	22742	35978	58220	83063							
130	5479	9645	15943	24911	39410	63773	90985							
140	5974	10518	17386	27166	42977	69545	99220							
150	6493	11431	18896	29525	46708	75584	107835							
160	7040	12394	20488	32012	50643	81951								
170	7622	13419	22182	34660	54832	88729								
180	8250	14523	24008	37512	59344	96031								
190	8936	15731	26004	40631	64279									
200	9700	17077	28229	44107										

Capacities for saturated steam according to ASME Section VIII (UV) based on set pressure plus 10 % overpressure.

Capacities at 2,07 bar (30 psig) and below are based on 0,207 bar (3 psig) overpressure.

AIR

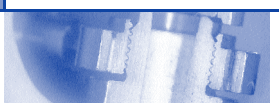
ASME Section VIII [S.C.F.M.]

Capacities US Units

Set Pressure [psig]	Orifice [Inch²] D	E	F	G	H	J	K	L	M	N	P	Q	R	T
	0.239	0.239	0.394	0.616	0.975	1.578	2.251	3.484	4.426	5.303	7.791	13.550	19.481	31.752
15	64.7	114	188	293	464	606	1072	1660	2108	2526	3711	6455	9207	15126
20	74.6	131	217	339	536	733	1237	1915	2433	2915	4282	7447	10623	17452
30	94.5	166	274	429	679	993	1567	2425	3081	3692	5424	9433	13455	22104
40	116	205	338	528	836	1254	1930	2987	3795	4546	6679	11617	16570	27222
50	138	243	401	627	993	1509	2293	3548	4508	5401	7935	13801	19685	32340
60	160	282	465	727	1150	1748	2655	4110	5221	6256	9191	15985	22800	37457
70	182	320	528	826	1307	1987	3018	4672	5935	7111	10447	18169	25915	42575
80	204	359	592	925	1464	2225	3381	5233	6648	7965	11702	20353	29030	47693
90	226	398	655	1025	1622	2464	3744	5795	7361	8820	12958	22537	32145	52810
100	248	436	719	1124	1779	2703	4107	6356	8075	9675	14214	24720	35260	57928
120	291	513	846	1322	2093	3180	4832	7479	9501	11384	16725	29088	41490	68163
140	335	590	973	1521	2407	3658	5558	8602	10928	13094	19237	33456	47720	78399
160	379	667	1100	1720	2722	4136	6284	9725	12355	14803	21748	37824	53950	88634
180	423	744	1227	1918	3036	4613	7009	10848	13782	16512	24260	42192	60180	98869
200	466	821	1354	2117	3350	5091	7735	11972	15208	18222	26771	46560	66410	109105
220	510	898	1481	2315	3665	5568	8460	13095	16635	19931	29282	50928	72641	119340
240	554	975	1608	2514	3979	6046	9186	14218	18062	21641	31794	55296	78871	129575
260	598	1052	1735	2712	4293	6523	9912	15341	19489	23350	34305	59663	85101	139811
280	642	1129	1862	2911	4607	7001	10637	16464	20915	25060	36817	64031	91331	150046
300	685	1206	1989	3110	4922	7479	11363	17587	22342	26769	39328	68399	97561	160281
320	729	1283	2116	3308	5236	7956	12088	18710	23769	28479	41840	72767		
340	773	1361	2243	3507	5550	8434	12814	19833	25196	30188	44351	77135		
360	817	1438	2370	3705	5865	8911	13540	20956	26622	31897	46863	81503		
380	860	1515	2497	3904	6179	9389	14265	22079	28049	33607	49374	85871		
400	904	1592	2624	4102	6493	9866	14991	23202	29476	35316	51886	90239		
420	948	1669	2751	4301	6807	10344	15717	24325	30902	37026	54397	94606		
440	992	1746	2878	4499	7122	10822	16442	25448	32329	38735	56908	98974		
460	1035	1823	3005	4698	7436	11299	17168	26572	33756	40445	59420	103342		
480	1079	1900	3132	4897	7750	11777	17893	27695	35183	42154	61931	107710		
500	1123	1977	3259	5095	8065	12254	18619	28818	36609	43863	64443	112078		
600	1342	2362	3894	6088	9636	14642	22247	34433	43743	52411	77000	133917		
700	1561	2747	4529	7081	11208	17030	25875	40048	50877	60958	89557			
800	1779	3133	5164	8074	12779	19418	29503	45664	58010	69505	102114			
900	1998	3518	5799	9067	14351	21806	33131	51279	65144	78052	114672			
1000	2217	3903	6434	10059	15922	24194	36759	56895	72278	86599	127229			
1100	2436	4288	7069	11052	17493	26581	40387	62510	79411					
1200	2655	4673	7704	12045	19065	28969	44016	68125						
1300	2873	5059	8339	13038	20636	31357	47644	73741						
1400	3092	5444	8974	14031	22208	33745	51272	79356						
1500	3311	5829	9609	15024	23779	36133	54900	84971						
2000	4405	7755	12784	19988	31637	48072	73040							
2500	5499	9681	15960	24952	39494	60011								
3000	6593	11607	19135	29916										
3500	7687	13533	22310	34881										
4000	8781	15459	25485											
4500	9876	17385	28660											
5000	10970	19311	31835											
5500	12064	21237												
6000	13158	23163												

Capacities for air according to ASME Section VIII (UV), based on set pressure plus 10 % overpressure at 60 °F.

Capacities at 30 psig and below are based on 3 psig overpressure.



AIR

ASME Section VIII [m_n^3/h]

Capacities Metric Units

Set Pressure [bar]	Orifice [mm^2]													
	D	E	F	G	H	J	K	L	M	N	P	Q	R	T
	154	154	254	398	629	1018	1452	2248	2856	3421	5027	8742	12568	20485
1	109	191	315	492	779	1261	1799	2785	3538	4239	6228	10831	15449	25380
2	158	278	458	716	1133	1833	2615	4047	5141	6160	9050	15739	22449	36881
3	211	372	614	959	1519	2458	3506	5427	6894	8260	12135	21105	30103	49455
4	266	467	771	1205	1907	3087	4403	6815	8657	10373	15239	26504	37803	62107
5	320	563	928	1450	2296	3715	5300	8203	10421	12486	18343	31903	45504	74758
6	374	658	1085	1696	2684	4344	6197	9591	12184	14599	21448	37302	53205	87409
7	428	753	1242	1941	3073	4973	7094	10979	13948	16711	24552	42700	60906	100061
8	482	848	1399	2187	3461	5602	7991	12367	15711	18824	27656	48099	68606	112712
9	536	944	1556	2432	3850	6230	8887	13756	17475	20937	30761	53498	76307	125364
10	590	1039	1713	2678	4238	6859	9784	15144	19238	23050	33865	58897	84008	138015
12	698	1229	2027	3168	5015	8117	11578	17920	22765	27276	40073	69695	99409	163318
14	806	1420	2341	3659	5792	9374	13372	20696	26292	31502	46282	80493	114811	188620
16	915	1610	2655	4150	6569	10631	15166	23473	29819	35728	52490	91291	130212	213923
18	1023	1801	2968	4641	7346	11889	16959	26249	33346	39954	58699	102088	145613	239226
20	1131	1991	3282	5132	8123	13146	18753	29025	36873	44180	64907	112886	161015	264529
22	1239	2182	3596	5623	8900	14404	20547	31802	40400	48406	71116	123684		
24	1347	2372	3910	6114	9677	15661	22341	34578	43927	52632	77325	134482		
26	1456	2562	4224	6605	10454	16919	24135	37355	47454	56857	83533	145280		
28	1564	2753	4538	7095	11231	18176	25928	40131	50981	61083	89742	156077		
30	1672	2943	4852	7586	12008	19434	27722	42907	54508	65309	95950	166875		
32	1780	3134	5166	8077	12785	20691	29516	45684	58036	69535	102159	177673		
34	1888	3324	5480	8568	13562	21949	31310	48460	61563	73761	108367	188471		
36	1997	3515	5794	9059	14339	23206	33104	51236	65090	77987	114576	199269		
38	2105	3705	6108	9550	15115	24464	34897	54013	68617	82213	120784	210066		
40	2213	3896	6422	10041	15892	25721	36691	56789	72144	86439	126993	220864		
50	2754	4848	7992	12495	19777	32009	45660	70671	89779	107568	158036			
60	3295	5800	9562	14950	23662	38296	54629	84553	107414	128698	189078			
70	3836	6753	11132	17404	27547	44584	63598	98434	125049					
80	4377	7705	12702	19858	31432	50871	72567	112316						
90	4918	8657	14272	22313	35317	57158	81536	126198						
100	5458	9609	15841	24767	39201	63446	90505	140080						
110	5999	10562	17411	27222	43086	69733	99474							
120	6540	11514	18981	29676	46971	76021	108443							
130	7081	12466	20551	32130	50856	82308	117412							
140	7622	13418	22121	34585	54741	88596	126381							
150	8163	14371	23691	37039	58625	94883	135350							
160	8704	15323	25261	39494	62510	101171								
170	9245	16275	26830	41948	66395	107458								
180	9786	17228	28400	44403	70280	113745								
190	10327	18180	29970	46857	74165									
200	10868	19132	31540	49311										
250	13572	23894	39389	61583										
300	16277	28655	47239											
350	18982	33416												
400	21686	38178												

Capacities for air according to ASME Section VIII (UV), based on set pressure plus 10 % overpressure at 16 °C.

Capacities at 2,07 bar (30 psig) and below are based on 0,207 bar (3 psig) overpressure.

WATER

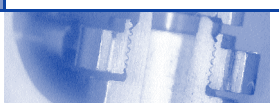
ASME Section VIII [US - G.P.M.]

Capacities US Units

Set Pressure [psig]	Orifice [Inch²]													
	D	E	F	G	H	J	K	L	M	N	P	Q	R	T
	0.239	0.239	0.394	0.616	0.975	1.578	2.251	3.484	4.426	5.303	7.791	13.550	19.481	31.752
15	13.2	22.3	36.7	57.4	90.8	147	210	325	412	494	726	1262	1800	2958
20	14.9	25.2	41.5	64.9	103	166	237	367	466	558	820	1427	2035	3343
30	17.9	30.1	49.7	77.7	123	199	284	439	558	669	983	1709	2438	4005
40	20.6	34.8	57.4	89.7	142	230	328	507	645	772	1135	1973	2815	4624
50	23.1	38.9	64.2	100	159	257	367	567	721	863	1269	2206	3147	5170
60	25.3	42.6	70.3	110	174	281	402	621	789	946	1390	2417	3447	5664
70	27.3	46.0	75.9	119	188	304	434	671	853	1022	1501	2611	3724	6117
80	29.2	49.2	81.1	127	201	325	464	718	912	1092	1605	2791	3981	6540
90	30.9	52.2	86.1	135	213	345	492	761	967	1158	1702	2960	4222	6936
100	32.6	55.0	90.7	142	225	363	518	802	1019	1221	1794	3120	4450	7312
120	35.7	60.3	99.4	155	246	398	568	879	1116	1338	1965	3418	4875	8009
140	38.6	65.1	107	168	266	430	613	949	1206	1445	2123	3692	5266	8651
160	41.2	69.6	115	179	284	460	656	1015	1289	1545	2269	3947	5629	9248
180	43.7	73.8	122	190	301	488	695	1076	1367	1638	2407	4186	5971	9809
200	46.1	77.8	128	201	318	514	733	1135	1441	1727	2537	4413	6294	10340
220	48.4	81.6	135	210	333	539	769	1190	1512	1811	2661	4628	6601	10845
240	50.5	85.3	141	220	348	563	803	1243	1579	1892	2779	4834	6895	11327
260	52.6	88.7	146	229	362	586	836	1294	1643	1969	2893	5031	7176	11790
280	54.6	92.1	152	237	376	608	867	1342	1705	2043	3002	5221	7447	12235
300	56.5	95.3	157	246	389	629	898	1390	1765	2115	3107	5404	7708	12664
320	58.3	98.4	162	254	402	650	927	1435	1823	2184	3209	5582		
340	60.1	101	167	262	414	670	956	1479	1879	2252	3308	5753		
360	61.9	104	172	269	426	689	983	1522	1934	2317	3404	5920		
380	63.6	107	177	277	438	708	1010	1564	1987	2380	3497	6082		
400	65.2	110	181	284	449	727	1037	1605	2038	2442	3588	6240		
420	66.8	113	186	291	460	745	1062	1644	2089	2503	3677	6394		
440	68.4	115	190	298	471	762	1087	1683	2138	2561	3763	6545		
460	69.9	118	195	304	482	779	1112	1721	2186	2619	3848	6692		
480	71.4	121	199	311	492	796	1136	1758	2233	2675	3931	6836		
500	72.9	123	203	317	502	813	1159	1794	2279	2731	4012	6977		
600	79.9	135	222	347	550	890	1270	1965	2496	2991	4394	7643		
700	86.3	146	240	375	594	961	1371	2123	2696	3231	4747			
800	92.2	156	257	401	635	1028	1466	2269	2883	3454	5074			
900	97.8	165	272	426	674	1090	1555	2407	3058	3663	5382			
1000	103	174	287	449	710	1149	1639	2537	3223	3862	5673			
1100	108	183	301	470	745	1205	1719	2661	3380					
1200	113	191	314	491	778	1259	1796	2779						
1300	118	198	327	511	809	1310	1869	2893						
1400	122	206	339	531	840	1360	1939	3002						
1500	126	213	351	549	870	1407	2008	3107						
2000	146	246	406	634	1004	1625	2318							
2500	163	275	454	709	1123	1817								
3000	179	301	497	777										
3500	193	326	537	839										
4000	206	348	574											
4500	219	369	609											
5000	231	389	642											
5500	242	408												
6000	253	426												

Capacities for water according to ASME Section VIII (UV), based on set pressure plus 10 % overpressure at 68 °F.

Capacities at 30 psig and below are based on 3 psig overpressure.



WATER

ASME Section VIII [10^3 kg/h]

Capacities Metric Units

Set Pressure [bar]	Orifice [mm^2]													
	D	E	F	G	H	J	K	L	M	N	P	Q	R	T
	154	154	254	398	629	1018	1452	2248	2856	3421	5027	8742	12568	20485
1	2.95	4.99	8.22	12.9	20.3	32.9	47.0	72.7	92.4	111	163	283	403	663
2	4.00	6.75	11.1	17.4	27.5	44.5	63.5	98.3	125	150	220	382	545	896
3	4.89	8.25	13.6	21.3	33.6	54.5	77.7	120	153	183	269	468	667	1096
4	5.64	9.52	15.7	24.5	38.9	62.9	89.7	139	176	211	310	540	770	1265
5	6.31	10.6	17.6	27.4	43.4	70.3	100	155	197	236	347	604	861	1415
6	6.91	11.7	19.2	30.1	47.6	77.0	110	170	216	259	380	661	943	1550
7	7.46	12.6	20.8	32.5	51.4	83.2	119	184	233	280	411	714	1019	1674
8	7.98	13.5	22.2	34.7	54.9	88.9	127	196	249	299	439	764	1089	1789
9	8.46	14.3	23.6	36.8	58.3	94.3	135	208	265	317	466	810	1155	1898
10	8.92	15.1	24.8	38.8	61.4	99.4	142	220	279	334	491	854	1218	2001
12	9.77	16.5	27.2	42.5	67.3	109	155	240	305	366	538	935	1334	2192
14	10.6	17.8	29.4	45.9	72.7	118	168	260	330	395	581	1010	1441	2367
16	11.3	19.0	31.4	49.1	77.7	126	179	278	353	423	621	1080	1540	2531
18	12.0	20.2	33.3	52.1	82.4	133	190	295	374	448	659	1145	1634	2684
20	12.6	21.3	35.1	54.9	86.9	141	201	310	394	473	694	1207	1722	2829
22	13.2	22.3	36.8	57.6	91.1	147	210	326	414	496	728	1266		
24	13.8	23.3	38.5	60.1	95.2	154	220	340	432	518	761	1323		
26	14.4	24.3	40.0	62.6	99.1	160	229	354	450	539	792	1377		
28	14.9	25.2	41.5	64.9	103	166	237	367	467	559	821	1429		
30	15.5	26.1	43.0	67.2	106	172	246	380	483	579	850	1479		
32	16.0	26.9	44.4	69.4	110	178	254	393	499	598	878	1527		
34	16.4	27.8	45.8	71.6	113	183	262	405	514	616	905	1574		
36	16.9	28.6	47.1	73.6	117	189	269	417	529	634	931	1620		
38	17.4	29.4	48.4	75.7	120	194	276	428	544	651	957	1664		
40	17.8	30.1	49.7	77.6	123	199	284	439	558	668	982	1708		
50	19.9	33.7	55.5	86.8	137	222	317	491	624	747	1098			
60	21.9	36.9	60.8	95.1	150	244	347	538	683	818	1202			
70	23.6	39.8	65.7	103	163	263	375	581	738					
80	25.2	42.6	70.2	110	174	281	401	621						
90	26.8	45.2	74.5	116	184	298	426	659						
100	28.2	47.6	78.5	123	194	314	449	694						
110	29.6	49.9	82.3	129	204	330	470							
120	30.9	52.2	86.0	134	213	344	491							
130	32.2	54.3	89.5	140	222	358	511							
140	33.4	56.3	92.9	145	230	372	531							
150	34.6	58.3	96.1	150	238	385	549							
160	35.7	60.2	99.3	155	246	398								
170	36.8	62.1	102	160	253	410								
180	37.8	63.9	105	165	261	422								
190	38.9	65.6	108	169	268									
200	39.9	67.3	111	174										
250	44.6	75.3	124	194										
300	48.9	82.5	136											
350	52.8	89.1												
400	56.4	95.2												

Capacities for water according to ASME Section VIII (UV), based on set pressure plus 10 % overpressure at 20 °C.

Capacities at 2,07 bar (30 psig) and below are based on 0,207 bar (3 psig) overpressure.

Specification Sheet

Please fax to: 636 326 9185
or your local representative

Company: Phone: Page: of

Location: Fax:

Name: e-mail:

Reference: Date:

GENERAL

1	■	Item No.:	9	■	Basis of Selection: Code: ☐ ASME VIII
2	■	Tag No.:			☐ PED 97/23/EC (CE-marking) ☐ Fire
3	■	Customer:			☐ Two phase flow
4	●	Equipment:			☐ other:
5	●	Enquiry / Order No.:	10	■	Documentation: Material test report
6	●	Delivery time:			☐ body ☐ bonnet ☐ nozzle
7	●	Number of valves:			☐ other:
8	●	Number of spare valves:			

SERVICE CONDITIONS

11	■	Fluid and state: ☐ Steam (S)			☐ Gas (G) ☐ Liquid (L) ☐ Two phase
12	■	Molecular weight:	19	■	Required capacity / units:
13	●	Coefficient C:	20	●	Operating pressure:
14	●	Ratio of specific heats k:	21	●	Cold diff. set pressure / units:
15	●	Compressibility factor Z:	22	■	Const. back pressure / units:
16	■	Spec. gravity / units:	23	■	Var. back pressure / units:
17	●	Viscosity / units:	24	●	Overpressure: ☐ 10 % ☐ ..... %
18	■	Relieving temperature / units:	25	●	Blowdown: ☐ 7 % ☐ 10 %
					☐ 20% ☐ ..... %

VALVE CONSTRUCTION

26	●	Orifice Designation:	
27	●	Flange **inlet**	Flange **outlet**
28	●	Size:	Size:
29	●	Flange class:	Flange class:
30	●	Facing type: ☐ RF ☐ RJ ☐ other:	Facing type: ☐ RF ☐ RJ ☐ other:

MATERIALS

31	●	LESER Material Code ☐ 2: WCB ☐ 4: CF8M ☐ 7: WC6			
32	■	Body:	37	●	Bellows: ☐ 316L ☐ Hastelloy®
33	●	Bonnet:			☐ Inconel® ☐ other:
34	●	Nozzle: ☐ 316L ☐ other:	38	●	Spring: ☐ high temp. alloy steel ☐ stainless steel
35	●	Disc (metal): ☐ SS hardened ☐ 316L			☐ other:
		☐ other:	39	●	Comply with NACE MR 0175 ☐ Yes ☐ No
36	●	Soft seat seal: ☐ CR ☐ NBR ☐ EPDM			☐ Teflon® ☐ Vespel SP-1®
		☐ FPM ☐ FFKM ☐ other:			☐ Kel-F®

ACCESSORIES AND OPTIONS

40	■	Lifting lever: ☐ cap H2 ☐ plain H3 ☐ packed H4	42	●	Bellows: ☐ yes ☐ no
41	●	Test gag: ☐ yes ☐ no	43	●	Others (specify):

SIZING AND SELECTION

44	▲	Required orifice area / units:
45	▲	Selected orifice area / units:
46	▲	Coeff. of discharge:
47	▲	Calculated capacity / units:

■ Please fill in these fields in any case.
● Please fill in these fields if possible.
▲ These fields will be completed by the supplier.

Order Code

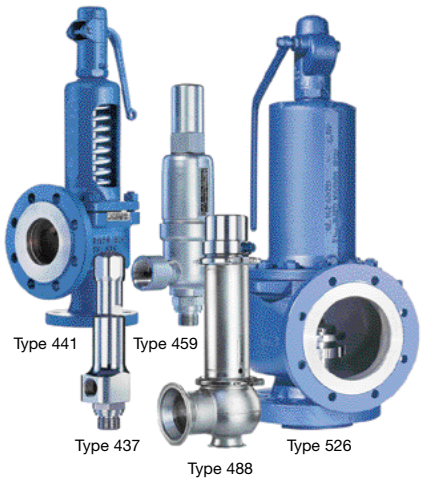
5	2	6	.																				
Article No.								Set Pressure		Connections		Options						Documentation			Code and Medium		

First in safety …

… a not so brief history of LESER

History

The company started in 1818 as a brass foundry and over the decades developed a product portfolio of components for mechanical equipment and machines during the “industrial revolution”. At first LESER specialized on tough applications and its level gauges for steam boilers were famous. Soon, the company delivered their first safety valve and as a consequence of quick growing industrialization and improving demand for safety, LESER rapidly became the specialist for safety valves.



Safe solutions from the specialist

Today, LESER´s product range includes 23 different designs with a variety of materials and sizes from 1/2” to 16”, providing safe solutions for almost every application with

- Full lift safety valves
- High-pressure safety valves
- Safety valves according to API 526
- Relief and safety relief valves
- Clean service safety relief valves
- Safety valves for critical service conditions
- Safety valves according to special standards and regulation
- Safety valves with supplementary pneumatic load
- Special versions

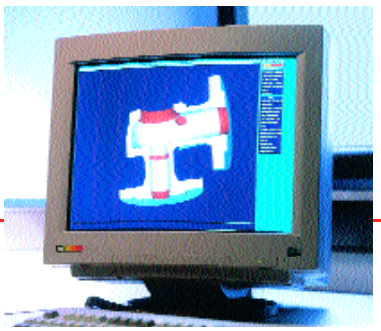
Where to find LESER

Headquartered in Germany, with a state-of-the-art factory and more than 250 employees, LESER is present through subsidiaries and qualified partners in over 40 countries, providing products and services worldwide.

For the nearest source please contact us at:

LESER LLC
1664 Headland Drive
Fenton, MO 63026
Phone: 636 - 343 - 8766
Fax: 636 - 326 - 9185
e-mail: sales@leserusa.com
www.leserusa.com

LESER’s factory today



LESER Headquarter
1818 – 1914

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LESER

The Safety Valve

LESER LLC
1664 Headland Drive
Fenton, MO 63026
Phone: 636 - 343 - 8766
Fax: 636 - 326 - 9185
e-mail: sales@leserusa.com
www.leserusa.com