Type 438

Safety Relief Valves – spring loaded

Metric Units

Facts

LESER

The-Safety-Valve.com

LWN 461.04-E

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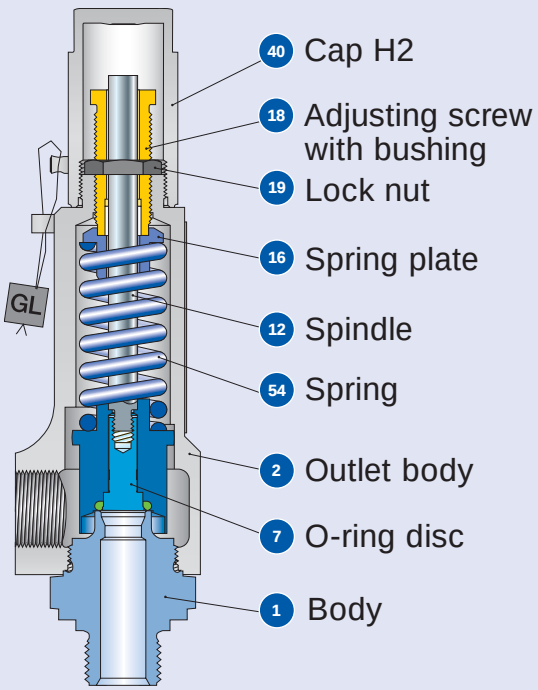
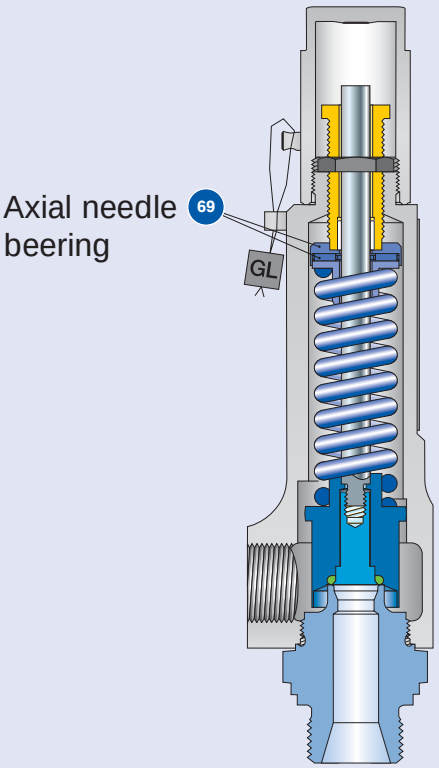
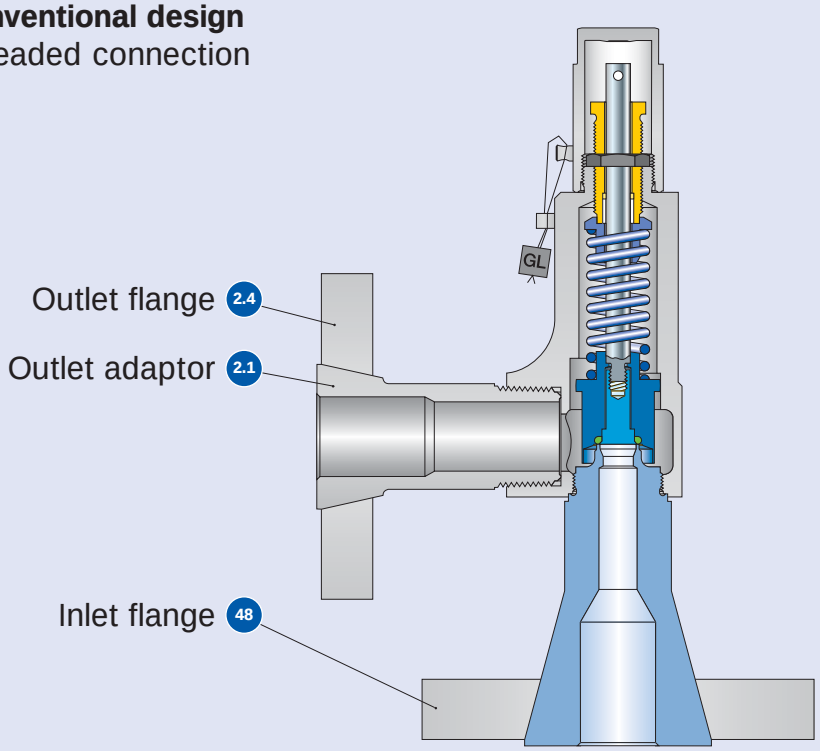
Available designs



Conventional design
Threaded connection



Long version
Threaded connection



Conventional design
Flange connection

Available designs – materials

Materials

Item	Component	Remarks	Type 4383	Type 4384
1	Base / Inlet body	Threaded connection	1.4104 SA 479 430	1.4404 SA 479 316L
		Flange connection	1.4404 SA 479 316L	1.4404 SA 479 316L
		Long version	1.4404 SA 479 316L	1.4404 SA 479 316L
2	Outlet body		1.4104 SA 479 430	1.4404 SA 479 316L
2.1	Outlet adaptor	Flange connection	1.4404 316L	1.4404 316L
2.4	Outlet flange	Flange connection	1.4404 316L	1.4404 316L
7	O-ring disc		1.4404 SA 479 316L	1.4404 SA 479 316L
7.4	Soft seal O-ring	“N”	NBR Nitrile-Butadiene	NBR Nitrile-Butadiene
		“K”	CR Chloroprene	CR Chloroprene
		“D”	EPDM Ethylen-Propylene-Diene	EPDM Ethylen-Propylene-Diene
		“L”	FKM Fluorocarbon	FKM Fluorocarbon
		“C”	FFKM Perflouro	FFKM Perflouro
12	Spindle		1.4021 420	1.4404 316L
16	Spring plate		1.4104 Chrome steel	1.4404 316L
18	Adjusting screw with bushing		1.4104 / PTFE Chrome steel / PTFE	1.4404 / PTFE 316L / PTFE
19	Lock nut		1.0718 Steel	1.4404 316L
40	Cap H2		1.0718 Steel	1.4404 316L
48	Inlet flange	Flange connection	1.4404 316L	1.4404 316L
54	Spring		1.4310 Stainless steel	1.4310 Stainless steel
57	Pin		1.4310 Stainless steel	1.4310 Stainless steel
61	Ball		1.3541 Hardened stainless steel	1.4401 316
69	Axial needle beering	Long version	1.4404 316L	1.4404 316L

Please notice:

- Modifications reserved by LESER.
- LESER can upgrade materials without notice.
- Every part can be replaced by other material acc. to customer specification.

How to order – Article numbers

Article numbers

		Conventional design	Long version
Actual Orifice diameter d_0 [mm]		10	10
Actual Orifice area A_0 [mm²]		78,5	78,5
Actual Orifice diameter d_0 [inch]		0,394	0394
Actual Orifice area A_0 [inch²]		0,122	0,122
O-ring material		NBR “N” J30	NBR “N” J30
		CR “K” J21	CR “K” J21
		EPDM “D” J22	EPDM “D” J22
		FKM “L” J23	FKM “L” J23
		FFKM “C” J20	FFKM “C” J20
Base / Inlet body material: 1.4104 (430)			
H2	Art.-No. **4383.**	**2862**	**2872**
H3 p_{max} **= 10 bar$_g$**	Art.-No. **4383.**	**2863**	**2873**
H4	Art.-No. **4383.**	**2864**	**2874**
p [bar$_g$]	S/G/L	**5 – 93**	**93 – 180**
p [psig]	S/G/L	**72,5 – 1349**	**1349 – 2611**
Base / Inlet body material: 1.4404 (316L)			
H2	Art.-No. **4374.**	**2982**	**2992**
H4	Art.-No. **4374.**	**2984**	**2994**
p [bar$_g$]	S/G/L	**5 – 68**	**68 – 180**
p [psig]	S/G/L	**72,5 – 986**	**986 – 2611**

Dimensions and weights – Metric Units

Threaded connections

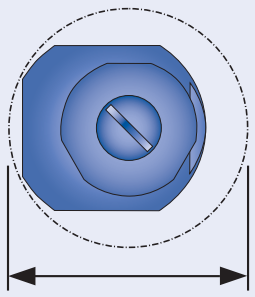
			Conventional design			Long version		
Size Outlet body			1/2"	3/4"	1"	1/2"	3/4"	1"
Actual Orifice diameter d_0 [mm]			10	10	10	10	10	10
Actual Orifice area A_0 [mm²]			78,5	78,5	78,5	78,5	78,5	78,5
Weight	[kg]		1,2	1,6	1,6	1,4	2,1	2,1
Required installation diameter	[mm]		65	80	80	65	80	80
Inlet thread "Female"								
DIN ISO 228-1 Center to face	[mm]	**G** Inlet a	45	55	55	45	55	55
		Outlet b	30	37	37	30	37	37
Height	[mm]	H max.	210	220	220	230	240	240
ISO 7-1/BS 21 Center to face	[mm]	**Rc** Inlet a	45	55	55	45	55	55
		Outlet b	30	37	37	30	37	37
Height	[mm]	H max.	210	220	220	230	240	240
ANSI/ASME B1.20.1 Center to face	[mm]	**NPT** Inlet a	45	55	55	45	55	55
		Outlet b	30	37	37	30	37	37
Height	[mm]	H max.	210	220	220	230	240	240
Inlet thread "Male"								
DIN ISO 228-1 Center to face	[mm]	**G** Inlet a	33	33	36	33	33	36
		Outlet b	30	37	37	30	37	37
ISO 7-1/BS 21 Center to face	[mm]	**R** Inlet a	31	31	34	31	31	34
		Outlet b	30	37	37	30	37	37
ANSI/ASME B1.20.1 Center to face	[mm]	**NPT** Inlet a	31	31	34	31	31	34
		Outlet b	30	37	37	30	37	37

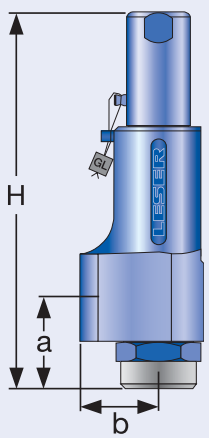
Height inlet thread "Male"

			Conventional design				Long version			
Inlet thread		Size	3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
DIN ISO 228-1	[mm]	**G** H max.	210	212	214	216	230	232	234	236
ISO 7-1/BS 21	[mm]	**R** H max.	–	215	216	219	–	235	236	239
ASME B1.20.1	[mm]	**NPT** H max.	–	218	218	223	–	238	238	243

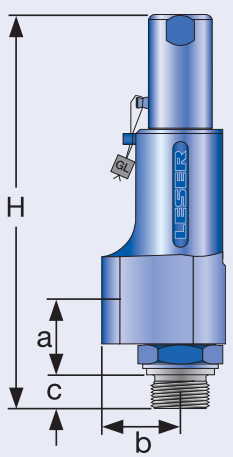
Length of screwed end "c" inlet thread "Male"

Inlet thread		Size	3/8"	1/2"	3/4"	1"
DIN ISO 228-1	[mm]	**G**	12	14	16	18
ISO 7-1/BS 21	[mm]	**R**	–	19	20	23
ASME B1.20.1	[mm]	**NPT**	–	22	22	27

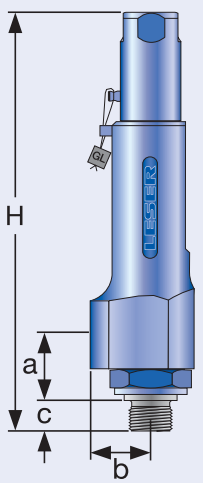




Conventional design – Female thread



Conventional design – Male thread



Long version – male thread

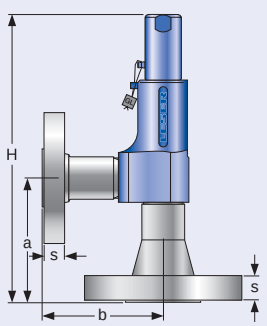
Dimensions and weights – Metric Units

Flanged connection

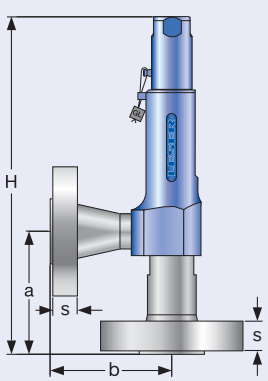
			Conventional design	Long version
Actual Orifice diameter d_0 [mm]			10	10
Actual Orifice area A_0 [mm²]			78,5	78,5
DIN ISO 1092-1 (Available flange sizes refer to page 04/05)				
			Flange rating PN 40	
Center to face	[mm]	Inlet a	100	100
		Outlet b	100	100
Height [H4]	[mm]	H max.	263	284
			Flange rating ≥ PN 160	
Center to face	[mm]	Inlet a	103	103
		Outlet b	100	100
Height [H4]	[mm]	H max.	266	287
ASME B 16.5 (Available flange sizes refer to page 04/05)				
			Flange rating class 150	
Center to face	[mm]	Inlet a	100	100
		Outlet b	100	100
Height [H4]	[mm]	H max.	263	284
			Flange rating class ≥ 300	
Center to face	[mm]	Inlet a	103	103
		Outlet b	100	100
Height [H4]	[mm]	H max.	266	287
Weight				
For the calculation of the total weight please use the Formular: $W_T = W_N + W_F$ (Inlet) + W_F (Outlet)				
Weight net (without inlet and outlet flange)	[kg]	W_N	2,4	2,8

Flange dimensions and availability

			DIN ISO 1092-1 / Flange rating PN					ASME B16.5 / Flange rating class						
		Size	40	160	250	320	400	Size	150	300	600	900	1500	2500
DN 15								**NPS 1/2"**						
Flange thickness	[mm]	s	18	22	26	26	30		14	18		26		30,2
Weight slip on flange	[kg]	W_F	0,8	1,2	2,5	2,5	3,6		0,6	0,9		2,1		3
Available at Inlet			✓	✓	✓	✓	✓		✓	✓		✓		✓
Available at Outlet			✓	✓	✓				✓	✓		✓		
DN 20								**NPS 3/4"**						
Flange thickness	[mm]	s	20	22					15	18		25,4		32
Weight slip on flange	[kg]	W_F	1,1	1,3					0,8	1,4		2,3		3,5
Available at Inlet			✓	✓					✓	✓		✓		✓
Available at Outlet			✓	✓					✓	✓		✓		
DN 25								**NPS 1"**						
Flange thickness	[mm]	s	22	26	30	36	40		17	21,5		32,5		40
Weight slip on flange	[kg]	W_F	1,3	2,6	3,5	5	7,5		1	2,1		4,1		5,1
Available at Inlet			✓	✓	✓	✓	✓		✓	✓		✓		✓
Available at Outlet			✓	✓	✓	✓	✓		✓	✓		✓		



Conventional design



Long version

Pressure temperature ratings

Metric Units

		Conventional design				Long version			
Actual Orifice diameter d_0 [mm]		10				10			
Actual Orifice Area A_0 [mm²]		78,5				78,5			
Body material: 1.4104 (430)									
Base / Inlet Body	Connection size	3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
	Pressure rating	PN 320				PN 320			
Outlet body	Pressure rating	PN 160				PN 160			
Minimum set pressure	p [bar$_g$] S/G/L	5				93			
Maximum set pressure	p [bar$_g$] S/G/L	10 only H3 93				180			
Temperature acc. to DIN EN	min [°C]	-10				-10			
	max [°C]	+150				+150			
Temperature acc. to ASME	min [°C]	-29				-29			
	max [°C]	+150				+150			
Body material: 1.4404 (316L)									
Base / Inlet Body	Connection size	3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
	Pressure rating	PN 320				PN 320			
Outlet body	Pressure rating	PN 160				PN 160			
Minimum set pressure	p [bar$_g$] S/G/L	5				68			
Maximum set pressure	p [bar$_g$] S/G/L	10 only H3 68				180			
Temperature acc. to DIN EN	min [°C]	-45				-45			
	max [°C]	+150				+150			
Temperature acc. to ASME	min [°C]	-268				-268			
	max [°C]	+150				+150			

US Units

		Standard				Long version			
Actual Orifice diameter d_0 [inch]		0,394				0,394			
Actual Orifice area A_0 [inch²]		0,122				0,122			
Body material: 1.4104 (430)									
Base / Inlet Body	Connection size	3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
Minimum set pressure	p [psig] S/G/L	72,5				1349			
Maximum set pressure	p [psig] S/G/L	145 only H3 1349				2611			
Temperature acc. to DIN EN	min [°F]	+14				+14			
	max [°F]	+302				+302			
Temperature acc. to ASME	min [°F]	-20				-20			
	max [°F]	+302				+302			
Body material: 1.4404 (316L)									
Base / Inlet Body	Connection size	3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
Minimum set pressure	p [psig] S/G/L	72,5				986			
Maximum set pressure	p [psig] S/G/L	145 only H3 986				2611			
Temperature acc. to DIN EN	min [°F]	-49				-49			
	max [°F]	+302				+302			
Temperature acc. to ASME	min [°F]	-450				-450			
	max [°F]	+302				+302			

The temperature is limited by soft seal material. The stated values are valid for EPDM.

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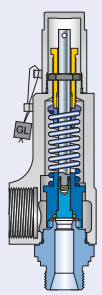
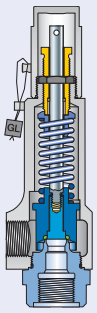
Available Options

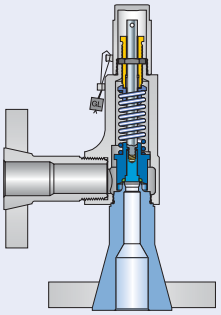
Male thread



Female thread

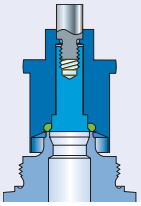


Flanged version



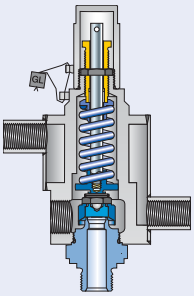
Soft seal o-ring disc

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



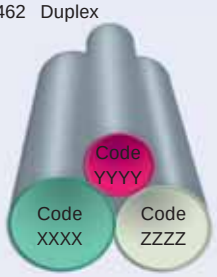
Heating jacket

H29



Special material

2.4610 Hastelloy® C4
2.4360 Monel® 400
1.4462 Duplex



Application range of conventional design and long version

Application range

Type 4383

Conventional design

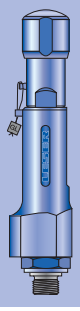
S/G/L

Act. Orifice diameter	d_0 [mm]	10
	[inch]	0,394
Act. Orifice area	A_0 [mm²]	78,5
	[inch²]	0,122

Components	Materials
Base / Inlet Body	1.4104 SA 479 430
Disc	1.4404 SA 479 316L

Long version

S/G/L



Act. Orifice diameter	d_0 [mm]	10
	[inch]	0,394
Act. Orifice area	A_0 [mm²]	78,5
	[inch²]	0,122

Components	Materials
Base / Inlet Body	1.4104 SA 479 430
Disc	1.4404 SA 479 316L

0		**986**	**1349**	**2611**
0		**68**	**93**	**180**

Set pressure p [psig]

Set pressure p [bar]

Type 4384

Conventional design

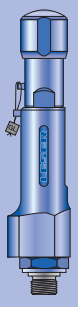
S/G/L

Act. Orifice diameter	d_0 [mm]	10
	[inch]	0,394
Act. Orifice area	A_0 [mm²]	78,5
	[inch²]	0,122

Components	Materials
Base / Inlet Body	1.4404 SA 479 316L
O-ring disc	1.4404 SA 479 316L

Long version

S/G/L

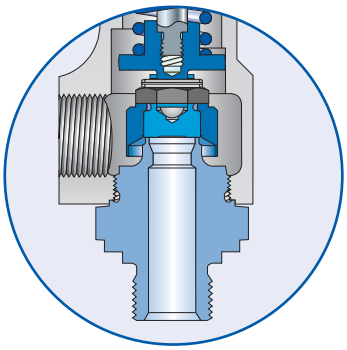


Act. Orifice diameter	d_0 [mm]	10
	[inch]	0,394
Act. Orifice area	A_0 [mm²]	78,5
	[inch²]	0,122

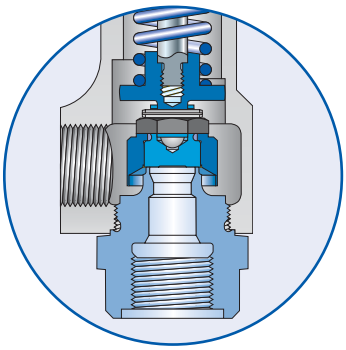
Components	Materials
Base / Inlet Body	1.4404 SA 479 316L
O-ring disc	1.4404 SA 479 316L

Available connections

For dimensions and weights refer to:
Type 437 – page 01/08 + 01/10
Type 438 – page 02/08 + 02/10
Type 439 – page 03/08 + 03/10



Male thread



Female thread

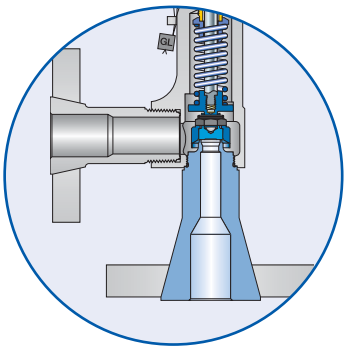
Threaded connections

		Available for complete 437 series			
	Valve size	Option code	Inlet	Option code	Outlet
Male thread DIN ISO 228-1					
G	$^3/_8$"	V49	✓	–	–
	$^1/_2$ "	V54	✓	–	–
	$^3/_4$"	V55	✓	–	–
	1"	V56	✓	–	–
Female thread DIN ISO 228-1					
G	$^1/_2$"	V50	✓	V65	✓
	$^3/_4$"	V51	✓	V76	✓
	1"	V52	✓	V66	✓
Male thread DIN ISO 7-1/BS 21					
R/BSPT	$^1/_2$"	V30	✓	–	–
	$^3/_4$"	V31	✓	–	–
	1"	V32	✓	–	–
Female thread DIN ISO 7-1/BS 21					
Rc/BSPT	$^1/_2$"	V38	✓	V34	✓
	$^3/_4$"	V39	✓	V35	✓
	1"	V40	✓	V36	✓
Male thread ANSI/ASME B1.20.1					
NPT	$^1/_2$"	V61	✓	–	–
	$^3/_4$"	V62	✓	–	–
	1"	V63	✓	–	–
Female thread ANSI/ASME B1.20.1					
NPT	$^1/_2$"	V58	✓	V70	✓
	$^3/_4$"	V59	✓	V71	✓
	1"	V60	✓	V72	✓

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

Available connections

For dimensions and weights refer to:
Type 437 – page 01/09 + 01/11
Type 438 – page 02/09 + 02/11
Type 439 – page 03/09 + 03/11



Flanged version

Flanged connections

Available for complete 437 series

	PN	Option code	Inlet	Option code	Outlet
DIN ISO 1092-1 (PN > 100: DIN 2501)					
DN 15	**40**	I21	✓	I40	✓
	160	I22	✓	I41	✓
	250	I23	✓	I42	✓
	320	I24	✓	–	–
	400	I25	✓	–	–
DN 20	**40**	I26	✓	I43	✓
	160	I27	✓	I44	✓
	250	–	–	–	–
DN 25	**40**	I31	✓	I46	✓
	160	I32	✓	I47	✓
	250	I33	✓	I48	✓
	320	I34	✓	–	–
	400	I35	✓	–	–

	Class	Option code	Inlet	Option code	Outlet
ANSI/ASME B 16.5					
NPS $^1/_2$"	**150**	V01	✓	V24	✓
	300	V02	✓	V13	✓
	600	V02	✓	V13	✓
	900	V03	✓	V14	✓
	1500	V03	✓	–	–
	2500	V04	–	–	–
NPS $^3/_4$"	**150**	V05	✓	V15	✓
	300	V06	✓	V16	✓
	600	V06	✓	V16	✓
	900	V07	✓	V17	✓
	1500	V07	✓	–	–
	2500	V08	✓	–	–
NPS 1"	**150**	V09	✓	V18	✓
	300	V10	✓	V19	✓
	600	V10	✓	V19	✓
	900	V11	✓	V20	✓
	1500	V11	✓	–	–
	2500	V12	✓	–	–

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