Type 437

Safety Relief Valves – spring loaded

Metric Units

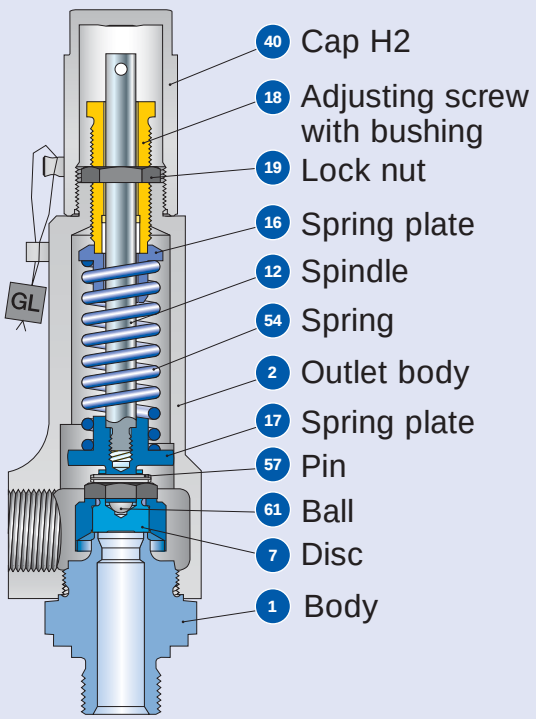
Facts

LESER

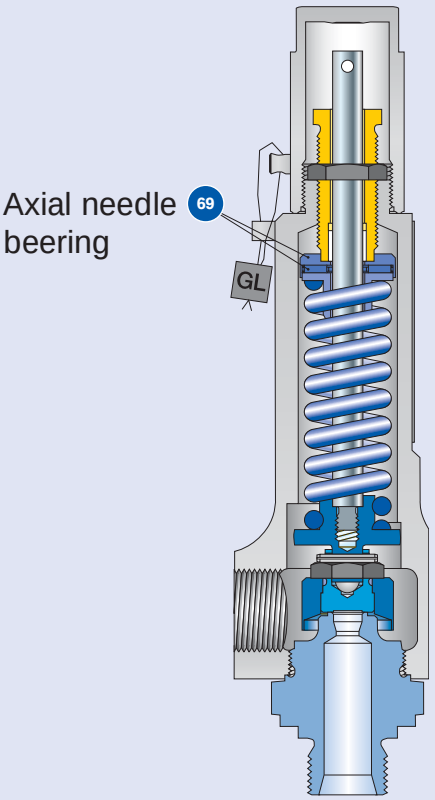
The-Safety-Valve.com

LWN 461.01-E

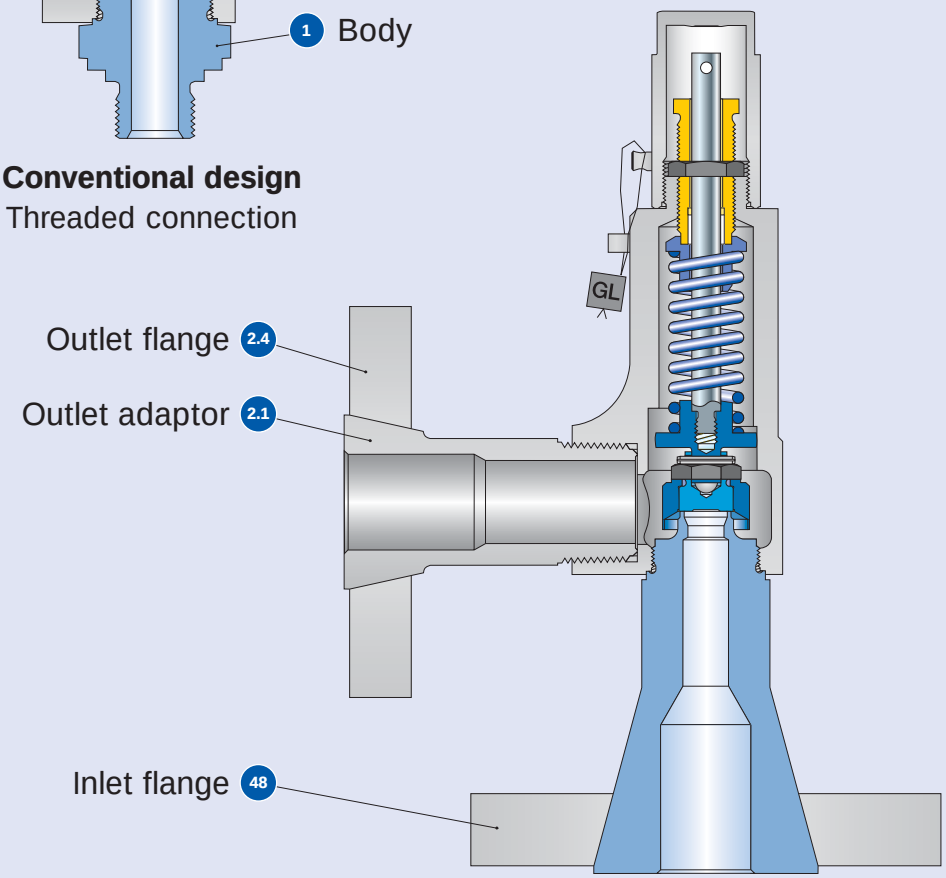
Available designs



Conventional design
Threaded connection



Long version
Threaded connection



Conventional design
Flange connection

Available designs – materials

Materials

Item	Component	Remarks	Type 4373	Type 4374
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 Stellited SA 479 316L Stellited	1.4404 Stellited SA 479 316L Stellited
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	Disc		1.4122 Hardened stainless steel	1.4404 SA 316L
		Long version	1.4404 Stellited 316L Stellited	1.4404 Stellited 316L Stellited
12	Spindle		1.4021 420	1.4404 316L
16/17	Spring plate		1.4104 Chrome steel	1.4404 316L
18	Adjusting screw with bushing		1.4104 / PTFE Chrome steel / PTFE	1.4104 / 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
Actual Orifice diameter d_0 [mm]		10
Actual Orifice area A_0 [mm²]		78,5
Actual Orifice diameter d_0 [inch]		0,394
Actual Orifice area A_0 [inch²]		0,122
Base / Inlet body material: 1.4104 (430)		
H2	Art.-No. **4373.**	**2602**
H3 p_{max} = 10 bar_g	Art.-No. **4373.**	**2603**
H4	Art.-No. **4373.**	**2604**
p [bar_g]	S/G/L	**0,1 – 93**
p [psig]	S/G/L	**1,5 – 1349**
Base / Inlet body material: 1.4404 (316L)		
H2	Art.-No. **4374.**	**3142**
H4	Art.-No. **4374.**	**3144**
p [bar_g]	S/G/L	**0,1 – 68**
p [psig]	S/G/L	**1,5 – 986**

Article numbers

		Long version		
Actual Orifice diameter d_0 [mm]		6	6	10
Actual Orifice area A_0 [mm²]		28,3	28,3	78,5
Actual Orifice diameter d_0 [inch]		0,236	0,236	0,394
Actual Orifice area A_0 [inch²]		0,044	0,044	0,122
Base / Inlet body material: 1.4104 (430)				
H2	Art.-No. **4373.**	**2622**	**–**	**2612**
H4	Art.-No. **4373.**	**2624**	**–**	**2614**
p [bar_g]	S/G/L	**180 – 365**	**–**	**93 –180**
p [psig]	S/G/L	**2611 – 5294**	**–**	**1349 – 2611**
Base / Inlet body material: 1.4404 (316L)				
H2	Art.-No. **4374.**	**3122**	**3132**	**3153**
H4	Art.-No. **4374.**	**3124**	**3134**	**3154**
p [bar_g]		**S/G 180 – 365**	**L 180 – 380[1)]**	**S/G/L 68 –180**
p [psig]		**S/G 2611 – 4786**	**L 2611 – 5511**	**S/G/L 986 – 2611**

[1)] At the moment no TÜV approval, useable for thermal expansion.
Use “Long version” only for set pressure exeeding set pressure range of “Standard” model.
For selection of inlet and outlet connection please refer to page 04/04 – 04/05.

Dimensions and weights – Metric Units

Threaded connections

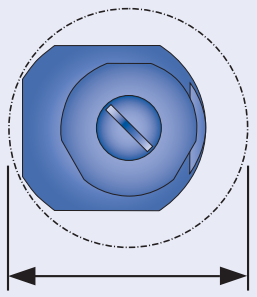
			Conventional design			Long version					
Size Outlet body			1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1"
Actual Orifice diameter d_0 [mm]			10	10	10	6	6	6	10	10	10
Actual Orifice area A_0 [mm²]			78,5	78,5	78,5	28,3	28,3	28,3	78,5	78,5	78,5
Weight		[kg]	1,2	1,6	1,6	1,4	2,1	2,1	1,4	2,1	2,1
Required installation diameter		[mm]	65	80	80	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	45	55	55
		Outlet b	30	37	37	30	37	37	30	37	37
Height	[mm]	H max.	210	220	220	230	240	240	230	240	240
ISO 7-1/BS 21 Center to face	[mm]	**Rc** Inlet a	45	55	55	45	55	55	45	55	55
		Outlet b	30	37	37	30	37	37	30	37	37
Height	[mm]	H max.	210	220	220	230	240	240	230	240	240
ANSI/ASME B1.20.1 Center to face	[mm]	**NPT** Inlet a	45	55	55	45	55	55	45	55	55
		Outlet b	30	37	37	30	37	37	30	37	37
Height	[mm]	H max.	210	220	220	230	240	240	230	240	240
Inlet thread "Male"											
DIN ISO 228-1 Center to face	[mm]	**G** Inlet a	33	33	36	33	33	36	33	33	36
		Outlet b	30	37	37	30	37	37	30	37	37
ISO 7-1/BS 21 Center to face	[mm]	**R** Inlet a	31	31	34	31	31	34	31	31	34
		Outlet b	30	37	37	30	37	37	30	37	37
ANSI/ASME B1.20.1 Center to face	[mm]	**NPT** Inlet a	31	31	34	31	31	34	31	31	34
		Outlet b	30	37	37	30	37	37	30	37	37

Height inlet thread "Male"

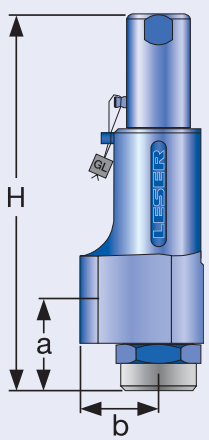
				Conventional design				Long version			
Inlet thread			Size	3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
DIN ISO 228-1	[mm]	**G**	H max.	210	212	214	216	230	232	234	236
ISO 7-1/BS 21	[mm]	**R**	H max.	–	215	216	219	–	235	236	239
ASME B1.20.1	[mm]	**NPT**	H max.	–	218	218	223	–	238	238	243

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

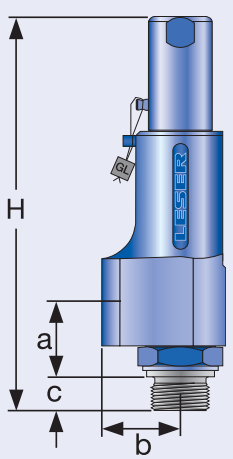
Inlet thread			Size	3/8"	1/2"	3/4"	1"
DIN ISO 228-1	[mm]	**G**		12	14	16	18
ISO 7-1/BS 21	[mm]	**R**		–	19	20	23
ASME B1.20.1	[mm]	**NPT**		–	22	22	27



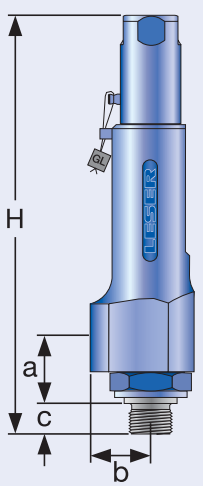
Required installation diameter



Conventional design – Female thread



Conventional design – Male thread



Long version – male thread

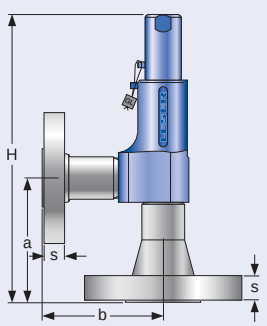
Dimensions and weights – Metric Units

Flanged connection

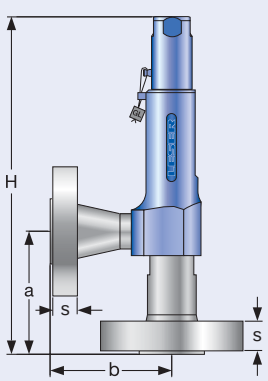
			Conventional design		Long version	
Actual Orifice diameter d_0 [mm]			6	10	6	10
Actual Orifice area A_0 [mm²]			28,3	78,5	28,3	78,5
DIN ISO 1092-1 (Available flange sizes refer to page 04/05)						
			Flange rating PN 40			
Center to face	[mm]	Inlet a	100	100	100	100
		Outlet b	100	100	100	100
Height [H4]	[mm]	H max.	263	263	284	284
			Flange rating ≥ PN 160			
Center to face	[mm]	Inlet a	103	103	103	103
		Outlet b	100	100	100	100
Height [H4]	[mm]	H max.	266	266	287	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	100	100
		Outlet b	100	100	100	100
Height [H4]	[mm]	H max.	263	263	284	284
			Flange rating class ≥ 300			
Center to face	[mm]	Inlet a	103	103	103	103
		Outlet b	100	100	100	100
Height [H4]	[mm]	H max.	266	266	287	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	2,4	2,8	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

Type 437

LESER

Pressure temperature ratings

Metric Units

Actual Orifice diameter d_0 [mm]		6				10			
Actual Orifice Area A_0 [mm²]		28,3				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 400				PN 250			
Outlet body	Pressure rating	PN 160				PN 160			
Minimum set pressure	p [bar_g] S/G/L	180 [S/G only]				0,1			
Maximum set pressure	p [bar_g] S/G/L	365 [S/G only]				10 only H3 180			
Temperature acc. to DIN EN	min [°C]	-10				-10			
	max [°C]	+220				+220			
Temperature acc. to ASME	min [°C]	-29				-29			
	max [°C]	+220				+220			
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 400				PN 250			
Outlet body	Pressure rating	PN 160				PN 160			
Minimum set pressure	p [bar_g] S/G/L	180 [S/G only]				0,1			
Maximum set pressure	p [bar_g] S/G/L	365 [S/G only]				10 only H3 180			
Temperature acc. to DIN EN	min [°C]	-270				-270			
	max [°C]	+280				+280			
Temperature acc. to ASME	min [°C]	-268				-268			
	max [°C]	+280				+280			

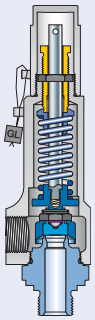
US Units

Actual Orifice diameter d_0 [inch]		0,236				0,394			
Actual Orifice area A_0 [inch²]		0,044				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 [bar_g] S/G/L	2610				1,			
Maximum set pressure	p [bar_g] S/G/L	5294				145 only H3 2610			
Temperature acc. to DIN EN	min [°F]	+14				+14			
	max [°F]	+428				+428			
Temperature acc. to ASME	min [°F]	-20				-20			
	max [°F]	+428				+428			
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 [bar_g] S/G/L	2610				1,5			
Maximum set pressure	p [bar_g] S/G/L	5294				145 only H3 2610			
Temperature acc. to DIN EN	min [°F]	-450				-450			
	max [°F]	+536				+536			
Temperature acc. to ASME	min [°F]	-450				-450			
	max [°F]	+536				+536			

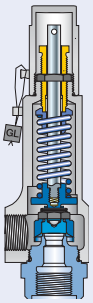
LESER

Available Options

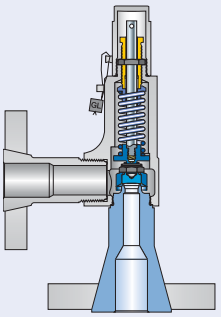
Male thread



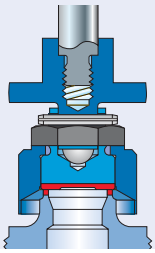
Female thread



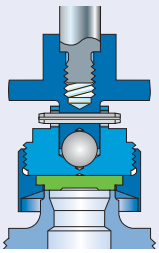
Flanged version



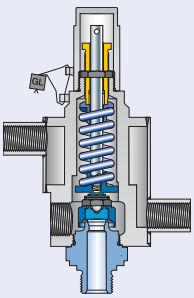
Stellited sealing surface
J25: Disc stellited
L20: Base/inlet body



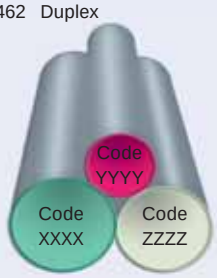
Disc with inserted sealing plate
J44: PTFE-FDA “A”
J48: PCTFE “G”
J49: VESPEL-SP1 “T”



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 4373

Conventional design

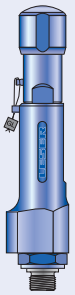
S/G/L

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	1.4122 Hardened stainless steel

Long version

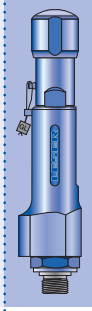
S/G/L



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	1.4122 Hardened stainless steel

S/G



Act. Orifice diameter	d_0 [mm]	6
	[inch]	0,236
Act. Orifice area	A_0 [mm²]	28,3
	[inch²]	0,044

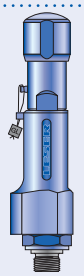
Components	Materials
Base / Inlet Body	1.4404 Stellited SA 479 316L Stellited
Disc	1.4404 Stellited SA 479 316L Stellited

Set pressure p [psig]	**0**	**986**	**1349**	**2611**	**4786**	**5294**	**5511**
Set pressure p [bar]	**0**	**68**	**93**	**180**	**330**	**365**	**380**

Type 4374

Conventional design

S/G/L

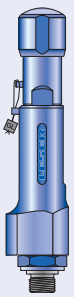


Act. Orifice diameter	d_0 [mm]	10
	[inch]	0,394
Act. Orifice area	A_0 [mm²]	78,5
	[inch²]	0,122

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

Long version

S/G/L

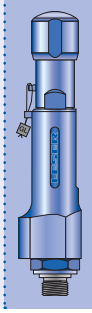


Act. Orifice diameter	d_0 [mm]	10
	[inch]	0,394
Act. Orifice area	A_0 [mm²]	78,5
	[inch²]	0,122

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

S/G

Also useable above 330 bar (4786 psig) but TÜV requirements will not be fulfilled

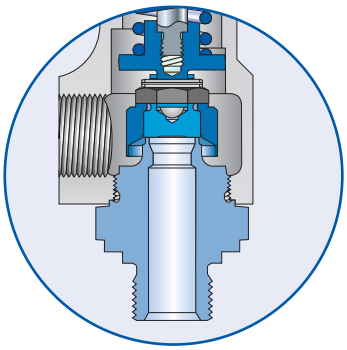


Act. Orifice diameter	d_0 [mm]	6
	[inch]	0,236
Act. Orifice area	A_0 [mm²]	28,3
	[inch²]	0,044

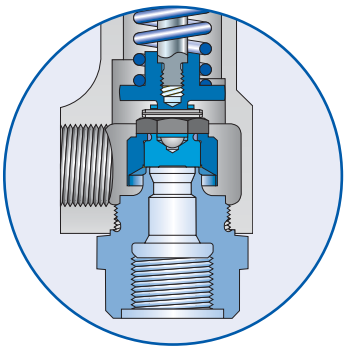
Components	Materials
Base / Inlet Body	1.4404 Stellited SA 479 316L Stellited
Disc	1.4404 Stellited SA 479 316L Stellited

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

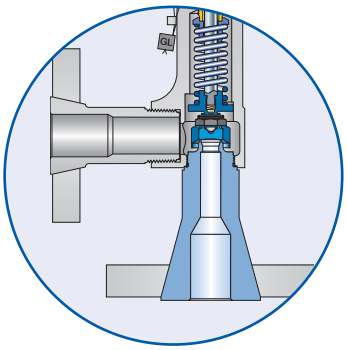
Threaded connections

		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).