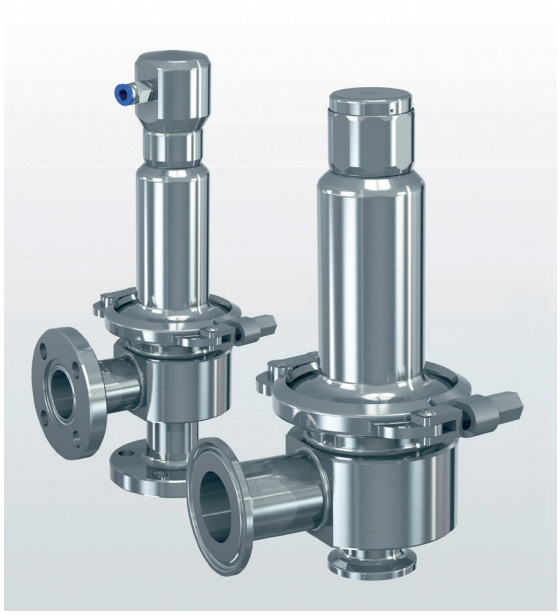
→ Series Hygienic 400

Hygienic 400

Safety valve made of stainless steel, angle type, with stainless steel spring



CE 0035 TS EAC

MATERIAL

EDELSTAHL Rostfrei® FDA

SPECIFICATION

DN 20 – DN 50	–40°C to + 200°C	0,4 – 16 bar
	depending on version	depending on valve pressure range and operating temperature

SUITABLE FOR

Liquids	neutral and non-neutral	
Air, gases and vapours	neutral and non-neutral	
Steam		

EXAMPLES OF USE

For the protection of:
- processes, plants and containers in the food and pharmaceutical industry for air, neutral and non-neutral vapours and gases, steam and liquids

taking into account the operation- and plant-specific regulations and making use of the suitable valve version and sealing material.

- Food industry
- Breweries and beverage industry
- Pharmaceutical industry
- Cosmetic industry
- Medical technology
- Clean Service applications

FEATURES

- Smooth and faultless surface finish optimized for cleaning process
- Minimal dead space in inlet area and no gaps in the valve
- Exposed and rinsed o-ring seals
- Shape of valve body avoids forming of puddles in the valve
- Adjustable and settable during operation
- Possible to carry-out CIP/SIP by lifting the disc from the seat
- Gap-free installation of seals
- Surface roughness in the primary area Ra < 0.75µm
- Optional: electropolished and/or mechanically polished
- Moulded diaphragm for separating the product space from the springhousing
- Dead space ratio L/D ~ 1,5

For explanation see chapter 1.1 General information on the hygienic valves.
Definition of surface quality and options according to Chapter 1.1 Table V-301.

APPROVALS

TÜV-Type test approval 2062	**D/G, F, F/K/S**
EU type examination	**S/G, L, F/K/S**
TSG ZF001-2006	**S/G, L, F/K/S**
TR ZU 032/2013 - TR ZU 010/2011	**S/G, L, F/K/S**
Requirements	
DIN EN ISO 4126-1	TRD 421
PED 2014/68/EU	AD 2000 Data sheet A2
TRB 801 No. 22 and 23	KGS AA 319
Additional hygienic requirements	
EG No. 852/2004	GS-NG 2 and 5
DIN EN 1672-2	EHEDG Aseptik
9. GPSGV	
Classification society	
DNV	DNV
Bureau Veritas	BV
Registro Italiano Navale	RINA

MATERIALS

Component	Material	DIN EN	ASME
Body	Stainless steel	1.4435	316 L
Inner parts, wetted	Stainless steel	1.4435	316 L
Upper section, other inner parts	Stainless steel	1.4404	316 L
Spring	Stainless steel	1.4310	302
Bellows	Stainless steel	1.4571	316 Ti

b	Standard with bellows	for neutral and non-neutral media and/or counter pressure up to ≤ 30% of the set pressure, but max. 4 bar. Spring, moving parts and the environment are protected from being affected by the medium.

Parts which are difficult to clean in the guide, the spring housing and the spindle / disc combination are protected against soiling by stainless steel bellows

■ MEDIUM

GF	gaseous and liquid	Air, vapours, gases, liquids and - depending on safety valve version and seal - also for steam

■ TYPE OF LIFTING MECHANISM

K	Standard with twist-type lifting mechanism
P	Pneumatic lifting device (available for valves with set pressure ≤ 8bar)

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

Nominal diameter DN		**20**								
Connection type		**DIN**				**ISO**			**ASME**	
Inlet DN (NPS)		DN 20	DN 25	DN 32	DN 40	DN 15	DN 20	DN 25	1“	1½“
Outlet DN (NPS)	**25**	■	■			■	■	■		
	32	■	■	■			■	■		
	40 (1½“)			■	■			■	■	■
	50 (2“)			■	■					■

You can find more connection types **here**

■ TYPE OF CONNECTION INLET / OUTLET

KLSDIN / KLSDIN	Standard	Clamp connection / Clamp connection	DIN 32676 -A/ DIN 32676-A	Pipe Standard DIN 11850-2 / 11866-A
GS1 / GS1		Threaded ferrule connection / Threaded ferrule connection	DIN 11851 / DIN 11851	Pipe Standard DIN 11850-2 / 11866-A
KS1 / KS1		Taper nipple / Taper nipple	DIN 11851 / DIN 11851	Pipe Standard DIN 11850-2 / 11866-A
A-BKS1 / A-BKS1		Aseptic collar clamp connection / Aseptic collar clamp connection	DIN 11864-3 / DIN 11864-3 DIN 11853-3 / DIN 11853-3	Pipe Standard DIN 11850-2 / 11866-A
A-GS1 / A-GS1		Aseptic threaded ferrule connection / Aseptic threaded ferrule connection	DIN 11864-1 / DIN 11864-1 DIN 11853-1 / DIN 11853-1	Pipe Standard DIN 11850 / 11866
A-BF1 / A-BF1		Aseptic flanged connection / Aseptic flanged connection	DIN 11864-2 / DIN 11864-2 DIN 11853-2 / DIN 11853-2	Pipe Standard DIN 11850-2 / 11866-A

■ SEALS

FKM	Fluorcarbon	Elastomere moulded seal	FDA, USP, 3-A, ADI-free	–20°C to +200°C
EPDM	Ethylene propylene diene	Elastomere moulded seal	FDA	–40°C to +170°C

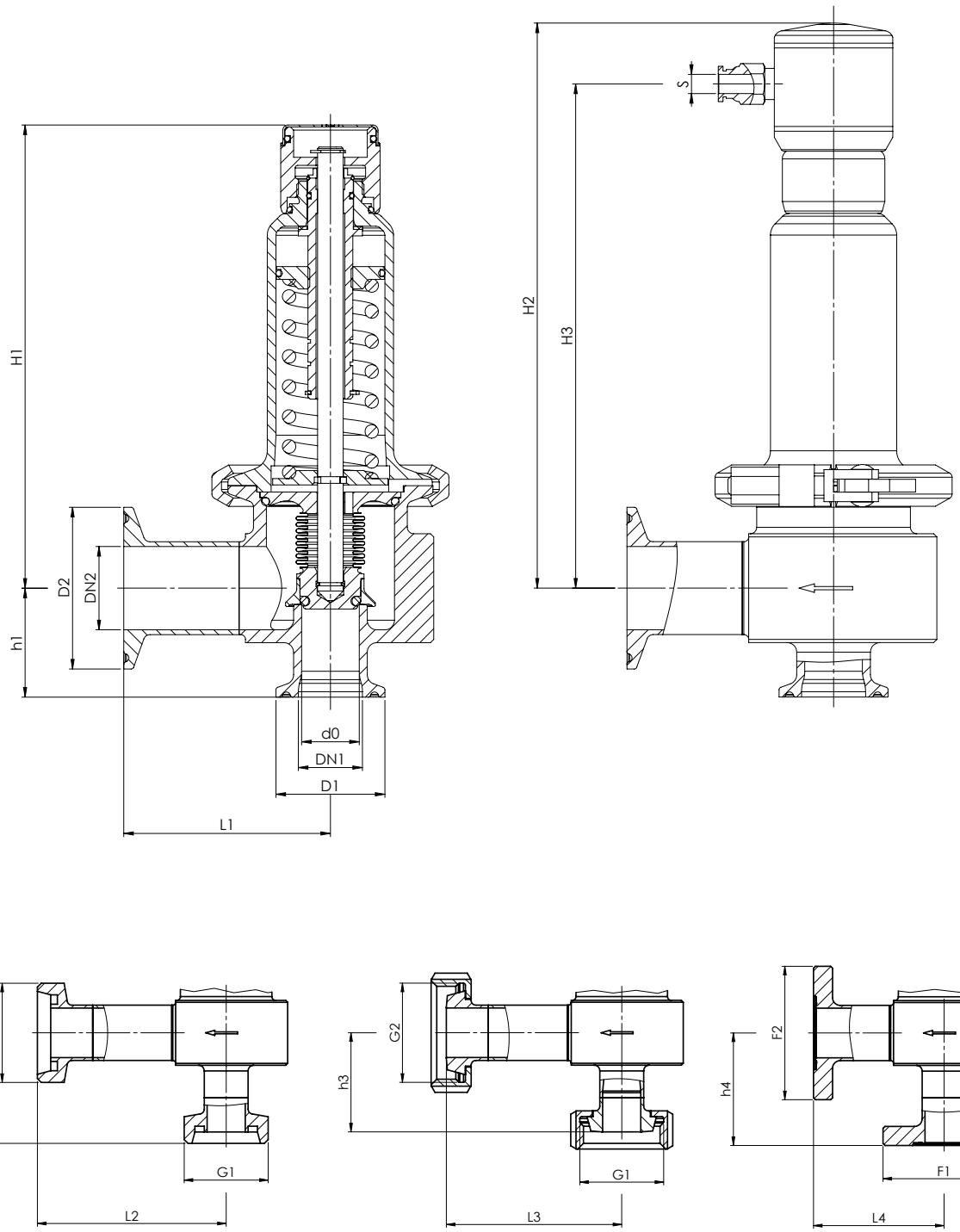
Series Hygienic 400: Connection, installation dimensions, ranges of adjustment

Nominal diameter	DN	20								
Connection[1]		Clamp connection DIN 32676-A			Threaded ferrule connection DIN 11851-SC					
Connection inlet	DN1	20	25, 32, 40	40	20	20	25	32	40	40
	D1	34	50,5	50,5	-	-	-	-	-	-
	G1	-	-	-	Rd 44 x 1/6	Rd 44 x 1/6	Rd 52 x 1/6	Rd 58 x 1/6	Rd 65 x 1/6	Rd 65 x 1/6
	F1	-	-	-	-	-	-	-	-	-
Connection outlet	DN2	25, 32	25, 32, 40	50	25	32	25	32	40	50
	D2	50,5	50,5	64	-	-	-	-	-	-
	G2	-	-	-	Rd 52 x 1/6	Rd 58 x 1/6	Rd 52 x 1/6	Rd 58 x 1/6	Rd 65 x 1/6	Rd 78 x 1/6
	F2	-	-	-	-	-	-	-	-	-
Installation dimensions in mm	L1	64	64	58	-	-	-	-	-	-
	L2	-	-	-	99	102	99	102	103	105
	L3	-	-	-	-	-	-	-	-	-
	L4	-	-	-	-	-	-	-	-	-
	h1	34	34	34	-	-	-	-	-	-
	h2	-	-	-	58	58	63	66	67	67
	h3	-	-	-	-	-	-	-	-	-
	h4	-	-	-	-	-	-	-	-	-
	H1	145	145	145	145	145	145	145	145	145
	H2[3]	176	176	176	176	176	176	176	176	176
	H3[3]	157	157	157	157	157	157	157	157	157
Compressed air connection in mm	S	6	6	6	6	6	6	6	6	6
Performance values	α_w / K_{dr} (F)[2]	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
	α_w / K_{dr} (D/G)[2]	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55
	do	18	18	18	18	18	18	18	18	18
Weight	kg	1,8	1,8	2,0	1,9	1,9	2,0	2,0	2,2	2,3
Range of adjustment	bar	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16

Series Hygienic 400: Connection, installation dimensions, ranges of adjustment

Nominal diameter	DN	20											
Connection[1]		Taper nipple DIN 11851-SD						Aseptic flanged connection DIN 11864-BF					
Connection inlet	DN1	20	20	25	32	40	40	20	20	25	32	40	40
	D1	-	-	-	-	-	-	-	-	-	-	-	-
	G1	Rd 44 x 1/6	Rd 44 x 1/6	Rd 52 x 1/6	Rd 58 x 1/6	Rd 65 x 1/6	Rd 65 x 1/6	-	-	-	-	-	-
	F1	-	-	-	-	-	-	64	64	70	76	82	82
Connection outlet	DN2	25	32	25	32	40	50	25	32	25	32	40	50
	D2	-	-	-	-	-	-	-	-	-	-	-	-
	G2	Rd 52 x 1/6	Rd 58 x 1/6	Rd 52 x 1/6	Rd 58 x 1/6	Rd 65 x 1/6	Rd 78 x 1/6	-	-	-	-	-	-
	F2	-	-	-	-	-	-	70	76	70	76	82	94
Installation dimensions in mm	L1	-	-	-	-	-	-	-	-	-	-	-	-
	L2	-	-	-	-	-	-	-	-	-	-	-	-
	L3	92	95	92	95	96	98	-	-	-	-	-	-
	L4	-	-	-	-	-	-	68	95	68	95	95	95
	h1	-	-	-	-	-	-	-	-	-	-	-	-
	h2	-	-	-	-	-	-	-	-	-	-	-	-
	h3	52	52	56	59	60	60	-	-	-	-	-	-
	h4	-	-	-	-	-	-	59	59	58	59	59	59
	H1	145	145	145	145	145	145	145	145	145	145	145	145
	H2[3]	176	176	176	176	176	176	176	176	176	176	176	176
	H3[3]	157	157	157	157	157	157	157	157	157	157	157	157
Compressed air connection in mm	S	6	6	6	6	6	6	6	6	6	6	6	6
Performance values	α_w / K_{dr} (F)[2]	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
	α_w / K_{dr} (D/G)[2]	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55
	do	18	18	18	18	18	18	18	18	18	18	18	18
Weight	kg	2,0	2,0	2,1	2,3	2,4	2,6	2,2	2,3	2,3	2,4	2,5	2,6
Range of adjustment	bar	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16	0,4 - 16

[1] Other connection types / sizes possible, dimensioning according to separate dimensional drawing.
[2] Coefficients of flow for D/G and F valid from 4.5 bar. For lower pressures, see specifications in the performance table.
[3] Details for version with pneumatic lifting.



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Series 400 ■ INDIVIDUAL SELECTION / VALVE CONFIGURATION

Series	Valve version	Medium	Lifting device	Nominal diameter DN	Connection type Inlet	Connection type Outlet	Connection type Inlet	Connection type Outlet	Seal	Options	Set pressure
400	b	GF	K	20	*GS1*	*GS1*	*25*	*25*	*FKM*	*P09*	*2,5*
400	b	GF	K	20	*KLSDIN*	*KLSDIN*	*25*	*25*	*EPDM*	*P07*	*3,2*
400	b	GF	K	20							
400	b	GF	K	20							
400	b	GF	K	20							

■ PROPERTIES
DEFINITION OF SURFACE QUALITY AND OPTIONS ACCORDING TO CHAPTER 1.1 TABLE V-301

P01	Oil- and grease-free production	☐			☐
P05	Quality of surfaces in contact with media in inlet Ra <=0,375	☐			☐
P07	Electropolished surfaces	☐			☐
P09	Surfaces mechanically and electropolished	☐			☐

■ CERTIFICATES / APPROVALS

C01	Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2)	☐	**C06**	ATEX evaluation acc. to 2014/34/EU	☐
C02	Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1)	☐	**C07**	SIL evaluation relating to IEC 61508-2	☐
C03	Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part)	☐	**C09**	Seat tightness test with helium, leak detection method under vacuum incl. Factory Inspection Certificate 3.1 acc. to DIN EN 10204	☐
C04	TÜV/DEKRA individual inspection acc. EN 10204 3.2 (TÜV/DEKRA-APZ)	☐	**C10**	Certificate of oil- and grease free production	☐
C05	Sealing material Manufacturer certification (FDA, USP 3, 3-A,…), Please indicate description of certificate:	☐			☐

■ ADMISSIONS / ACCREDITATIONS

AA1	EC Type examination acc. to Directive 2014/68/EU	☐	**AK1**	Det Norske Veritas (DNV) type approval	☐
AA2	TÜV component test acc. to VdTÜV specification sheet SV 100	☐	**AK2**	Lloyd's Register (LR) type approval	☐
AA4	EAC - certificate/declaration with passport for the valve and laser marking of the valve	☐	**AK3**	American Bureau of Shipping (ABS) type approval	☐
AA5	Manufacture License of Special Equipment People's Republic of China (ML)	☐	**AK4**	Bureau Veritas (BV) type approval	☐
		☐	**AK5**	Russian Maritime Register of Shipping (RMRS) type approval	☐
		☐	**AK6**	Registro Italiano Navale (RINA) type approval	☐
		☐	**AL**	Individual inspection by notified body inspector – (body to be indicated):	☐

■ ENQUIRY

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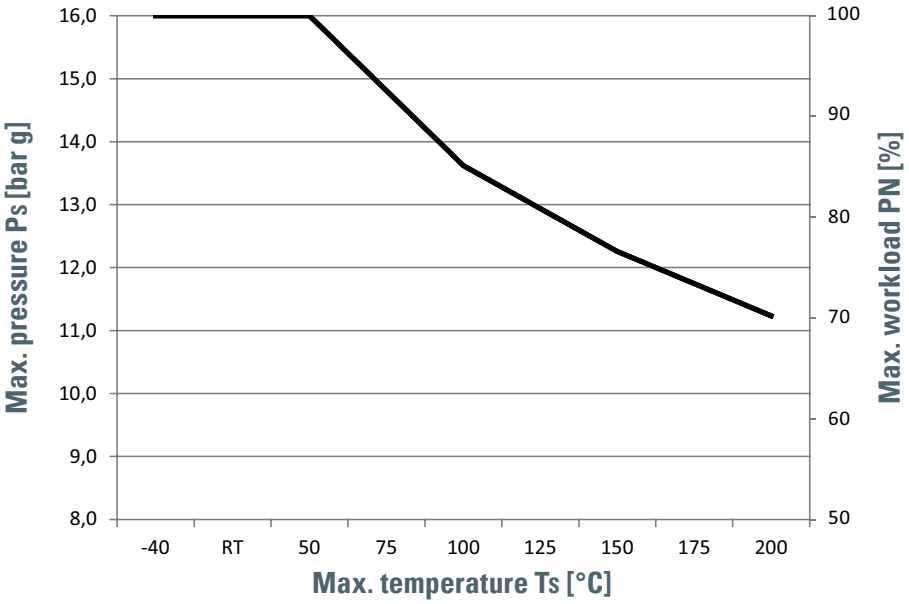
CAPACITY TABLE ACC. TO ISO 4126-1 / AD2000 A2

Series Hygienic 400: Blowing-off rates at 10% above set pressure

Nominal diameter DN		20		
		d0 = 18 mm		
Set pressure bar (g)		I	II	III
	0,4	79,7	65,7	2,5
	0,7	111,0	89,1	3,2
	1,0	137,4	109,4	3,8
	1,5	184,9	146,1	4,6
	2,0	263,8	207,2	6,7
Air I	2,5	314,5	245,9	7,5
Nm³/h	3,0	388,5	302,5	9,1
	3,5	440,8	342,0	9,8
Steam II	4,0	493,7	381,9	10,5
kg/h	4,5	547,2	422,1	11,1
	5,0	620,4	477,4	12,1
Water III	5,5	672,9	516,7	12,7
m³/h	6,0	725,4	555,8	13,3
	6,5	777,9	595,1	13,9
	7,0	830,4	634,2	14,4
	7,5	882,9	673,3	14,9
	8,0	935,4	712,4	15,4
	8,5	987,9	751,4	15,8
	9,0	1040,3	790,4	16,3
	9,5	1092,8	829,4	16,8
	10,0	1145,3	868,4	17,2
	11,0	1250,3	946,5	18,0
	12,0	1355,3	1024,4	18,8
	13,0	1460,3	1102,1	19,6
	14,0	1565,3	1180,2	20,3
	15,0	1670,3	1258,3	21,1
	16,0	1775,3	1336,1	21,8

Pressure-/ temperature rating

PN 16 | Material: 1.4404 / 1.4435



Control air pneumatic lifting device (max. 6 bar)

