KLINGER Schöneberg

INDUSTRIAL VALVES

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KLINGER SCHÖNEBERG GmbH
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trusted. worldwide.

KLINGER SCHÖNEBERG

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KLINGER GROUP

Visionary through tradition

KLINGER is one of the world's leading manufacturers and distributors of state of the art Sealing, Fluid Control and Instrumentation solutions. A pioneer in gasket technology, KLINGER was founded in 1886 and is a family owned business.

Today KLINGER is a global group with roughly 40 companies providing their partners with unique expertise and professional advice at 60+ manufacturing, distribution and service sites worldwide. This long-established company counts leading business from the petrochemical, chemical, infrastructure and transport industries as its customers. KLINGER employs roughly 2,300 people worldwide and has an annual turnover of approximately 520 million Euros (2018).

€ 520 Mio.
annual sales

520 million Euro were generated by the KLINGER Group in fiscal year 2018

2,400
employees

2,400 employees work for the KLINGER Group worldwide

80
countries of the world to which the Group has already exported

18
production locations worldwide

for seals, valves and instrumentation

60+
countries worldwide hosting subsidiaries or a representative of the KLINGER Group

KLINGER SCHÖNEBERG GMBH

Connect with Quality!

KLINGER SCHÖNEBERG GmbH is a flexible, medium-sized company with a focus on the research, development, production and distribution of industrial valves, especially ball valves and pneumatic actuators.

Bases on this performance, our “customized products” help us to be a leader in the area of special valves for customers specific problem solutions. Our technical plant engineering knows how makes possible to work closely in project teams together with the customer for the detailed plant engineering of valves.
The wide and depth of our product range is very interesting for our customers to get all different kind of ball valves technique out of one hand acc. their technical demands.

The international character of the worldwide independent KLINGER companies network built up the safety for the worldwide logistics to the locations of our customers.

The location of research, development, production and logistics is in Graben-Neudorf near to Karlsruhe. At our location Graben-Neudorf you will find our buildings on an area of 5,200 m² and the building itself includes our offices, storage and production on an area of 4,200 m².

Over two decades of experience and more than 12,000 different product designs form the basis for a quick response and mutual success.

Quality is not just an optional equipment but a guaranteed product-feature.

Certificates and Approvals:

» Quality-Management acc. to DIN EN ISO 9001:2015
» Certified acc. to API Q1 and 6D
» PED 2014/68/EU, Module H and H1
» WHG §19a approval (water-resources law)
» Allowance for the re-stamping of products by TÜV
» TR CU 010/2011 and TR CU 032/2013 - Russian Gost R Certificate
» CRN certified for all regions of Canada
» TTC - Chinese Type Test Certificate

RESEARCH AND DEVELOPMENT

The heart of the development department is a design department equipped with 7 CAD-work stations. Auto-CAD mechanical (2D-system, current version) as well as Autodesk Inventor (3D-system, current version) are in use. New products are not delivered to customers without thorough testing, as they first have to be approved inhouse under the most realistic possible conditions.

PRODUCTION

We are a traditional German company and manufacture our products in Graben-Neudorf near Karlsruhe. As a result, we can guarantee our customers the highest level of quality. Our machines are state of the art and are operated by the best trained employees.

SALES AND TECHNICAL ADVICE

Sales and technical advice is provided by a highly qualified sales team at KLINGER’s tradition location in Idstein.
Our sales representatives are available to provide technical explanations, clarifications and after-sales support.

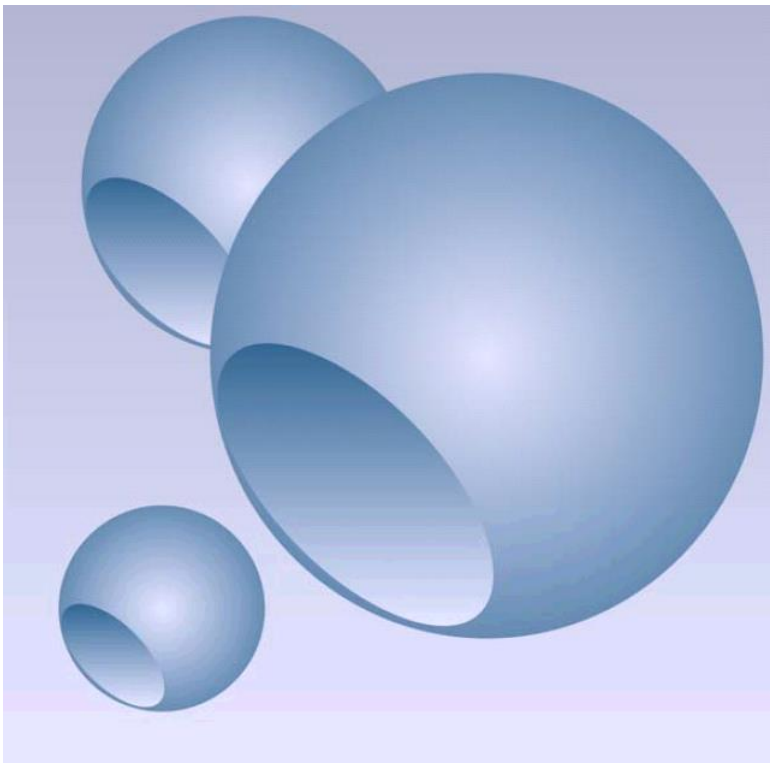
QUALITY ASSURANCE

The QA department of KLINGER SCHÖNEBERG GmbH currently consist three employees.
The latest CNC technique is in use. NDE tests, such as: PMI, VT and PT are carried out extensively in house.
All relevant test respectively measurement equipment is calibrated and controlled by an independent test laboratory.

OVERVIEW PRODUCT LINES

KLINGER Schöneberg

INTEC



BALL VALVES INTEC

Overview about the several Product lines

INTEC K100	Mini plant ball valve	DN 8 – DN 20
INTEC K200	2-piece flanged ball valve	DN 15 – DN 500
INTEC K400	Multiple way ball valve	DN 15 – DN 150
INTEC K500	Tank bottom ball valve	DN 80/50 – DN 200/150
INTEC K600	Pressure gauge ball valve	DN 15 – DN 100
INTEC K700	Sampling device ball valve	DN 15 – DN 200
INTEC K800	3-piece high-pressure ball	DN 15 – DN 200

Accessories

INTEC 10	stem extension without top flange
INTEC 11	stem extension with top flange
INTEC 12	stem extension with top flange, double-sealed
INTEC 13	installation kit for actuator
INTEC 15	handle extension
INTEC 20	grid unit
INTEC 30	locking device
INTEC 40	spring closing unit
INTEC 50	thermo protection tube
INTEC 60	hand lever with bayonet locking
INTEC 60/ES	hand lever with bayonet locking and limit switch box

Product description code for INTEC K100

INTEC K1··	Mini plant ball valve
INTEC K· 10	with female threaded ends
INTEC K· 20	with male threaded ends
INTEC K· 30	one side with female threaded end and other side with male threaded end
INTEC K· 40	with pipe screwing light / heavy series acc. to DIN 2352
INTEC K· 50	with clamping ring connection
INTEC K··· -S	special alloy, special design, special face to face dimensions, higher pressure

Example:	**INTEC K110**	Mini plant ball valve with female threaded ends
	INTEC K120-S	Mini plant ball valve with male threaded ends, material 1.4462

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BALL VALVES INTEC

Product description code for INTEC K200, K400, K500 und K800

INTEC K2··	2-piece flanged ball valve
INTEC K4··	Multiple way ball valve
INTEC K5··	Tank bottom ball valve
INTEC K8··	3-piece flanged ball valve
INTEC K· 0·	floating ball
INTEC K· 1·	trunnion mounted ball, both sides spring loaded seatring
INTEC K· 2·	floating ball, single side spring loaded seatring
INTEC K· 3·	trunnion mounted ball, single side spring loaded seatring, free outlet
INTEC K·· 0	soft seated (KF/KFM, reinforced or virginal)
INTEC K·· 1	metal seated
INTEC K·· 2	carbon seated
INTEC K·· 3	ceramic seated
INTEC K·· 4	PEEK seated
INTEC K··· -S	special alloy, special design, special face to face dimensions, higher pressure
INTEC K··· -K	wafer type
INTEC K200-K-E	economic wafer type
INTEC K200-S-D	steam ball valve
INTEC K200-S-DB	double block and bleed ball valve

Example:		
	INTEC K220	2-piece flanged ball valve, floating ball, single side spring loaded seatring, soft seated
	INTEC K214-S	2-piece flanged b. v., trunnion mounted ball, both sides spring loaded seatring, PEEK seated, material 1.4462
	INTEC K410	Multiple way ball valve, trunnion mounted ball, both sides spring loaded seatring, soft seated
	INTEC K413-S	Multiple way b. v., trunnion mounted ball, both sides spring loaded seatring, ceramic seated, material 3.7035
	INTEC K524	Tank bottom ball valve, floating ball, single side spring loaded seatring, PEEK seated
	INTEC K531-S	Tank bottom ball valve, trunnion mounted ball, single side spring loaded seatring, free outlet, metal seated, material 1.4462
	INTEC K822	3-piece high-pressure ball valve, floating ball, single side spring loaded seatring, carbon seated
	INTEC K813-S	3-piece high-pressure b. v., trunnion mounted ball, both sides spring loaded seatring, ceramic seated, PN 160

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BALL VALVES INTEC

Product description code for INTEC K600

INTEC K6··/· - ·	Pressure gauge ball valve
INTEC K610/· - ·	connection acc. to DIN 16288, collar cap with cap nut
INTEC K620/· - ·	flange acc. to EN 1092 / collar cap with cap nut
INTEC K640/· - ·	connection acc. to EN 1092, pipe screwing light/heavy series acc. to DIN 2353
INTEC K6··/2-·	without vent bore
INTEC K6··/3-·	with vent bore
INTEC K6··/4-·	with vent bore and expansions tube
INTEC K6··/· -1	expansions tube M6
INTEC K6··/· -2	expansions tube G1/8“, handle be able to lock in opened and closed position, vent screw O-ring sealed
INTEC K6··/· -· -S	special alloy, special design, special face to face dimensions, higher pressure

Example:	**INTEC K610/2**	Pressure gauge ball valve, connection acc. to DIN 16288, collar cap with cap nut, without vent bore
	INTEC K640/4-2-S	Pressure gauge ball valve, connection acc. to EN 1092, expansions tube G1/8“, handle be able to lock in opened and closed position, plug screw o-ring sealed, material 1.4462

Product description code for INTEC K700

INTEC K7··	Sampling device ball valve
INTEC K· 3·	ball bore 30 mm, sample volume per switch cycle 10 / 15 / 25 ml
INTEC K· 4·	ball bore 40 mm, sample volume per switch cycle 40 / 50 / 70 ml
INTEC K·· 0	soft seated (KF/KFM, reinforced or virginal)
INTEC K·· 1	metal seated
INTEC K·· 2	carbon seated
INTEC K·· 3	ceramic seated
INTEC K·· 4	PEEK seated
INTEC K··· -S	special alloy, special design, special face to face dimensions, higher pressure
INTEC K··· -B	tank bottom connection

Example:	**INTEC K744**	Sampling device ball valve, ball bore 40 mm, sample volume per switch cycle 40 / 50 / 70 ml, PEEK seated

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FLANGED BALL VALVES

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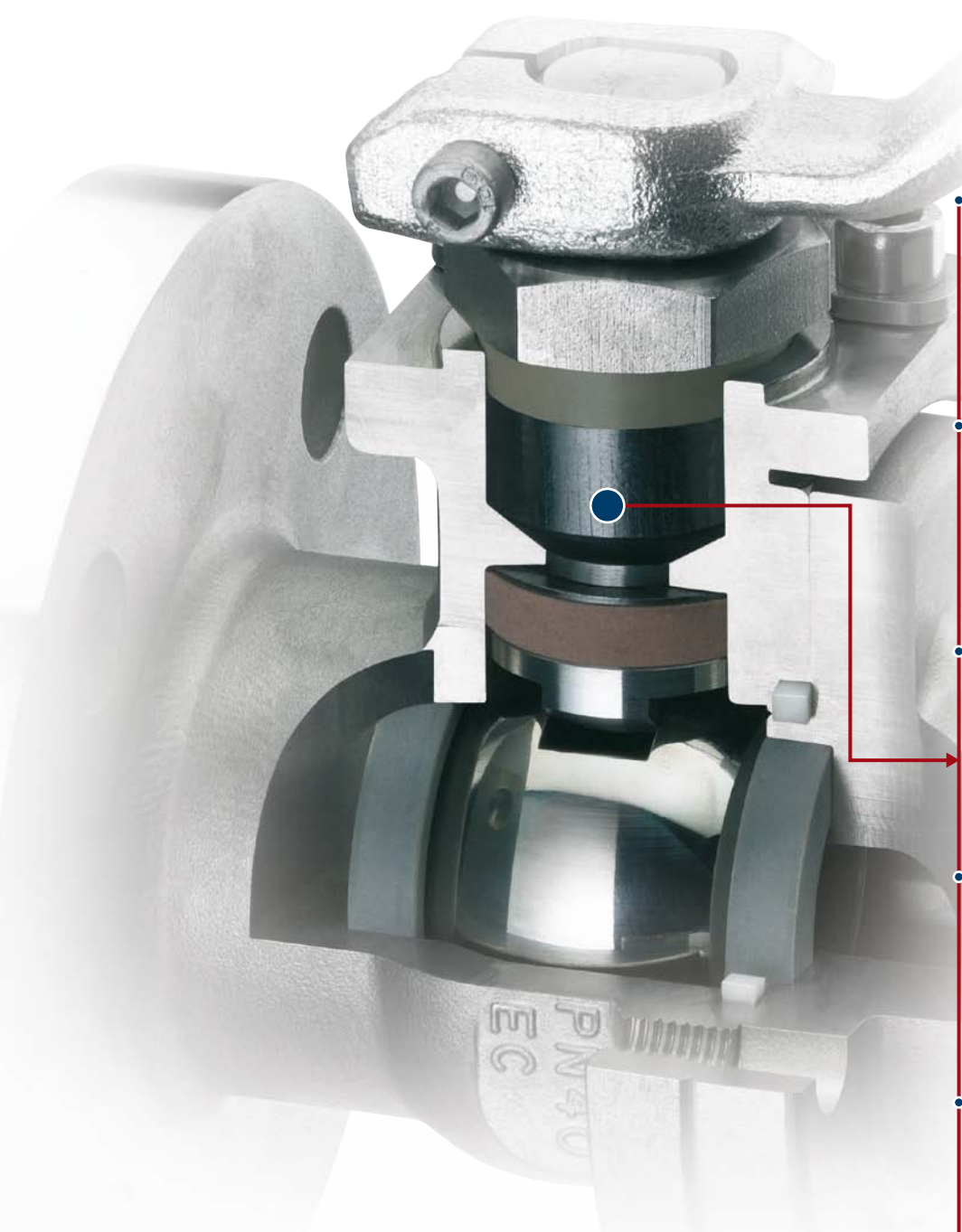
	INTEC K200	2-piece flanged ball valves
	INTEC K230/K231	2-piece flanged ball valves, free outlet
	INTEC K200-K	Wafer type ball valves
	INTEC K204-S-D	Steam ball valves
	INTEC K400	Multiple way ball valves
	INTEC K500	Tank bottom ball valves
	INTEC K700	Sampling device ball valves
	INTEC K811	High-pressure ball valves

KLINGER Schöneberg



INTEC K200

INTEC K200-K

INTEC K230/K231

INTEC K400

INTEC K500

INTEC K700

INTEC K800

For your functionality and plant safety:

- reinforced stem design for more safety in automation
- dynamic primary sealing by floating ring principle
- German clean air act approval acc. to VDI 2440

For reduction of your type variations:

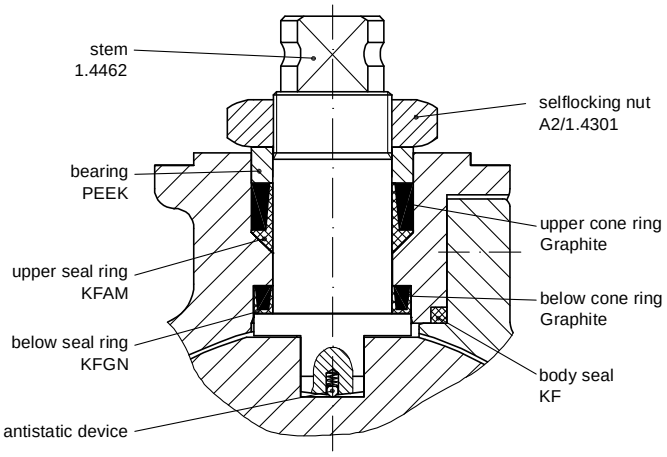
- Fire-safe/ Clean Air act design – all in one – the best standard
- FDA conformity for pharmaceutical application
- system construction unit of all components for reduction of storage costs

INTEC ball valves system technology in one hand

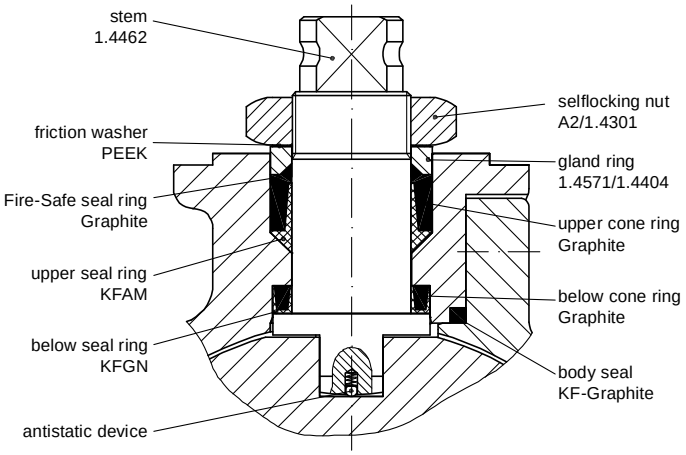
BALL VALVES INTEC

Stuffing box stem sealing systems
German clean air act certification acc. to VDI 2440

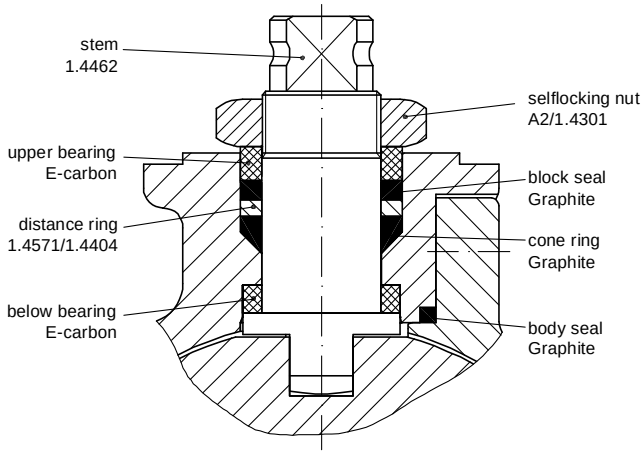
Standard



Fire-Safe



High Temperature



Subject to modification. 01/2017

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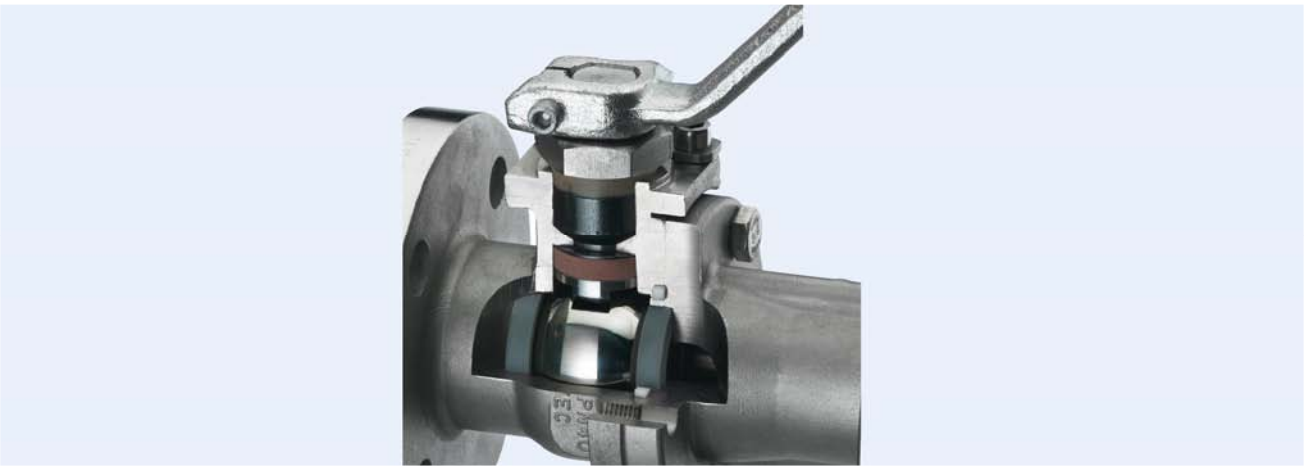
INTEC K200

High end ball valves for the chemical industry. One concept for all!



Proven design with perfect technical functionality. The ball valves are available in various material combinations and with different features.

Type:	2-piece flanged ball valve
Nominal sizes:	DN 15 - DN 500 NPS ½“ - NPS 20“
Pressure range:	PN 16 and PN 40 ANSI Class 150 and Class 300
Temperature:	up to +400°C
Material of body:	stainless steel, carbon steel
End connections:	flanges acc. to EN 1092 / flanges acc. to ANSI B 16.5
FTF:	acc. to EN 558, GR.1 and GR.27 / acc. to ANSI B 16.10
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, spring close unit - automatical return handle (“dead man handle”), gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cycles -40°C up to +220°C
- Fire-Safe acc. to API 607 and DIN EN ISO 10497
- classification acc. to SIL 2
- ATEX 2014/34/EU
- Type-test approval mark No. TÜV.A.318-15
- Type-test approval mark No. TÜ.AGG.431-09 for tanks for conveyance of dangerous goods (optional)
- Type Test Certificate TTC (optional)
- certified acc. to API 6D (optional)

Special designs:

- wide range of special materials

Product advantages:

- approvals acc. to virtually regulations
- system construction unit of all components for reduction of storage costs
- no o-rings - universal applicable
- stuffing box system absolutely ageing resistant
- system design in a Graphite/KF cone ring principle
- real primary sealing, no friction washer or bearing ring using of the floating ring seal principle (Graphite cone ring in KFGN-profile)
- stem material Duplex (1.4462), using of best knowledge of the pump technology
- reinforced stem design for more safety in automation
- FDA conformity for pharmaceutical application (optional)
- FDA conformity for oxygen (optional)

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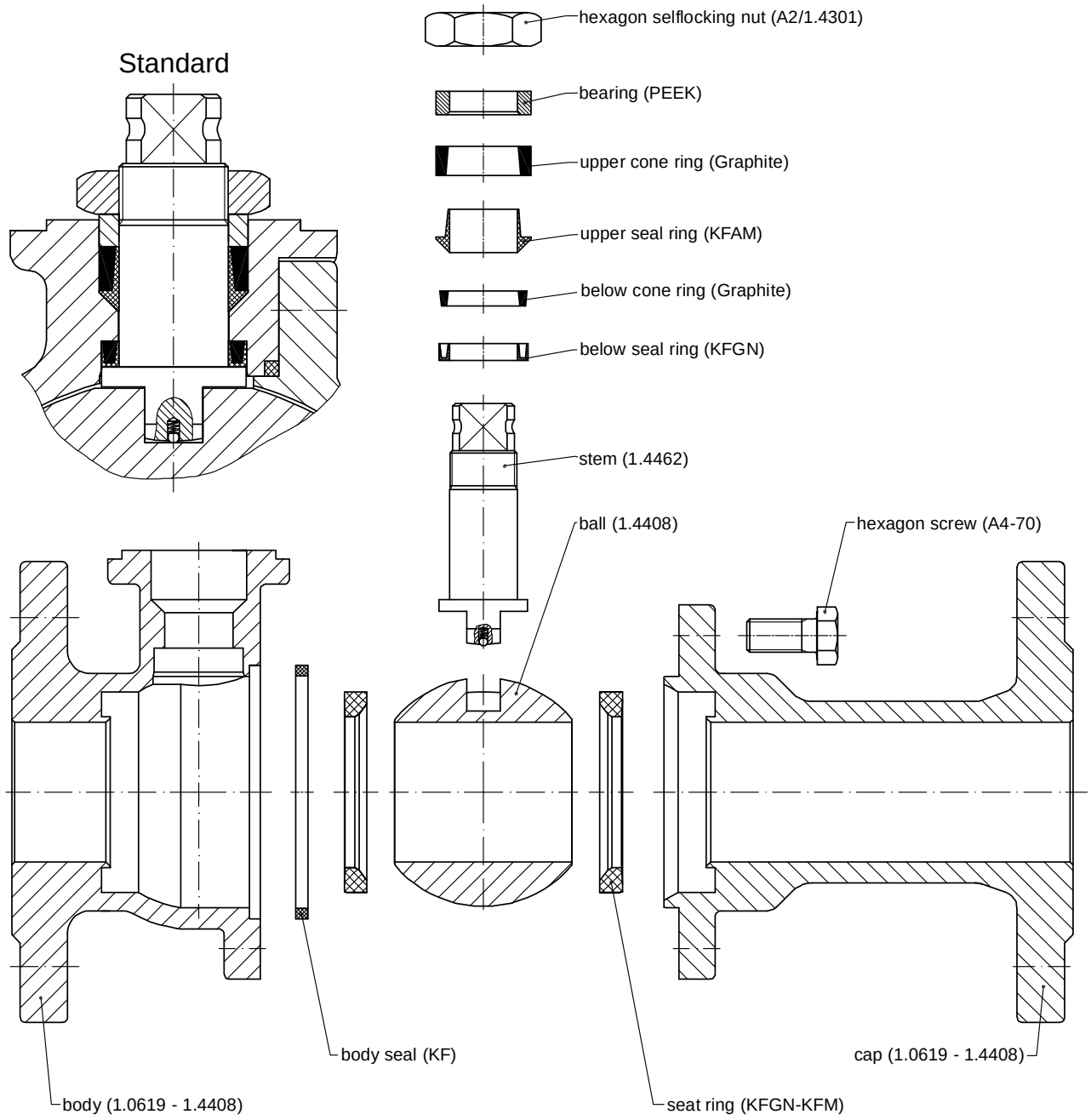
BALL VALVES INTEC K200

Detail arrangement
Standard
German clean air act certification acc. to VDI 2440



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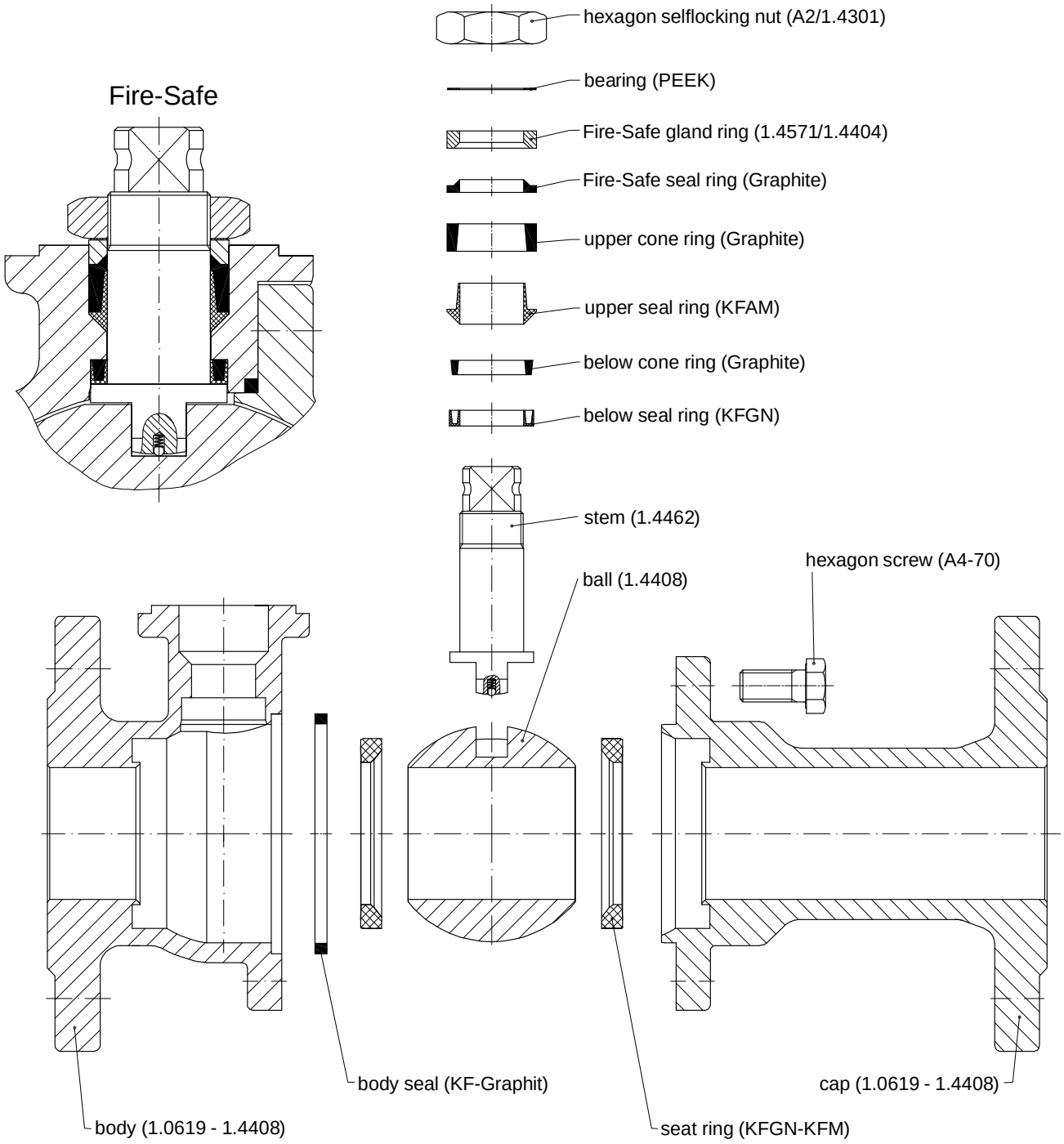
BALL VALVES INTEC K200

Detail arrangement
Fire-Safe
German clean air act certification acc. to VDI 2440



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INTEC K200, K220, K210, K224, K214

Seat ring system soft seated or PEEK seated.

Type:	2-piece flanged ball valve
Nominal sizes:	DN 15 - DN 500 NPS ½“ - NPS 20“
Pressure range:	PN 16 and PN 40 ANSI Class 150 and Class 300
Temperature:	up to +260°C
Material of body:	stainless steel, carbon steel
End connections:	flanges acc. to EN 1092 / flanges acc. to ANSI B 16.5
FTF:	acc. to EN 558, GR.1 and GR.27 / acc. to ANSI B 16.10
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, spring close unit - automatical return handle (“dead man handle”), gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cycles -40°C up to +220°C
- Fire-Safe acc. to API 607 and DIN EN ISO 10497
- classification acc. to SIL 2
- ATEX 2014/34/EU
- Type-test approval mark No. TÜV.A.318-15
- Type-test approval mark No. TÜ.AGG.431-09 for tanks for conveyance of dangerous goods (optional)
- Type Test Certificate TTC (optional)
- certified acc. to API 6D (optional)

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Special advantages:

- three side chambering of the seat ring
- reduction of abrasion, microdiffusion and operating torque
- best experiences in the chemical industry are made
- wide range of sealing materials:
  - KFM
  - KFGN (nitrogenium sintered)
  - KFCM (for steam application)
  - PEEK (continuous operation up to +260°C)

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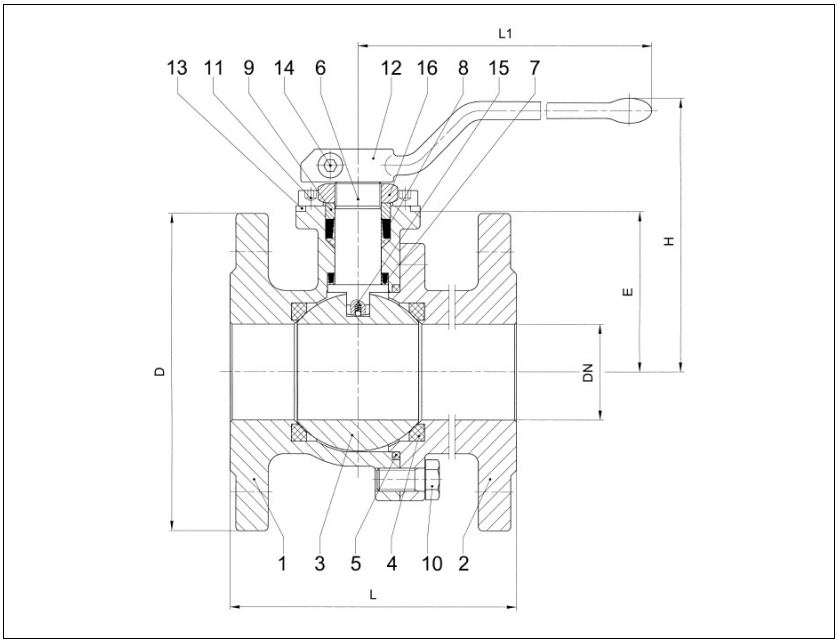
BALL VALVES INTEC

K200, DN15 - DN100, PN16/40
floating ball, soft seated



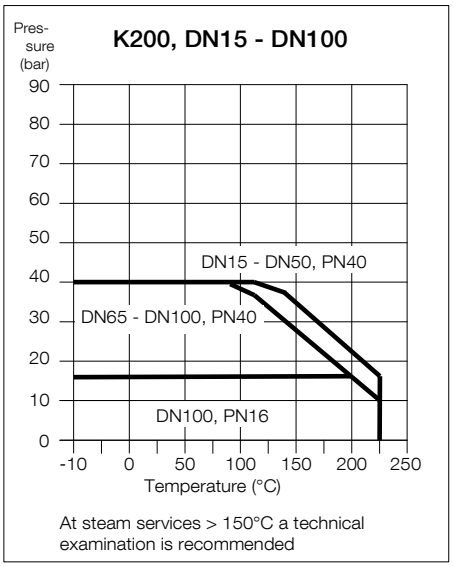
Flanged ball valve
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, vacuum-tight, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, seat full chambered, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to API 607 and DIN EN ISO 10497, with lever.

Marking: INTEC K200

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFGN/KFM	
5	body seal	KF	
6	stem	1.4462	
7	below seal	KFGN/Graphite	
8	upper seal	KFAM/Graphite	
9	bearing	PEEK	
10	hex. screw	A4-70	
11	allen screw	A2-70	
12	lever	1.4408/1.4308/steel zincplated	
13	stopper	1.4301	
14	allen screw	A2-70	
15	antistatic element	1.4401/1.4571/1.4404	
16	hex. nut self-locking	A2/1.4301	
Fire-Safe design			
5	combined body seal	KF-Graphite	
9	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	



At steam services > 150°C a technical examination is recommended

Dimensions

DN mm	PN	dimensions (mm) H	L1	L GR.1	L GR.27	D	E	top flange ISO	torque Nm**	weight kg GR.1	GR.27
15	40	95	160	130	115	95	39.5	F05	9	3.0	2.9
20	40	105	160	150	120	105	46.0	F05	10	4.0	3.7
25	40	114	180	160	125	115	49.5	F05	14	4.9	4.6
32	40	130	180	180	130	140	59.0	F05	17	6.7	6.4
40	40	135	300	200	140	150	76.0	F07	37	9.3	8.8
50	40	143	300	230	150	165	83.5	F07	45	13.0	12.1
65	40	155	300	290	170	185	94.0	F07	65	17.0	16.0
80	40	197	500	310	180	200	102.5	F10	109	26.0	23.0
100	16	215	500	350	190	220	120.5	F10	148	33.0	30.0
100	40	215	500	350	190	235	120.5	F10	148	34.0	32.0

** Necessary torque measured with treated water at Δ P = 16 bar and room temperature.

Ordering example:
INTEC K200, DN50, PN40, GR.27, 1.4408, Fire-Safe

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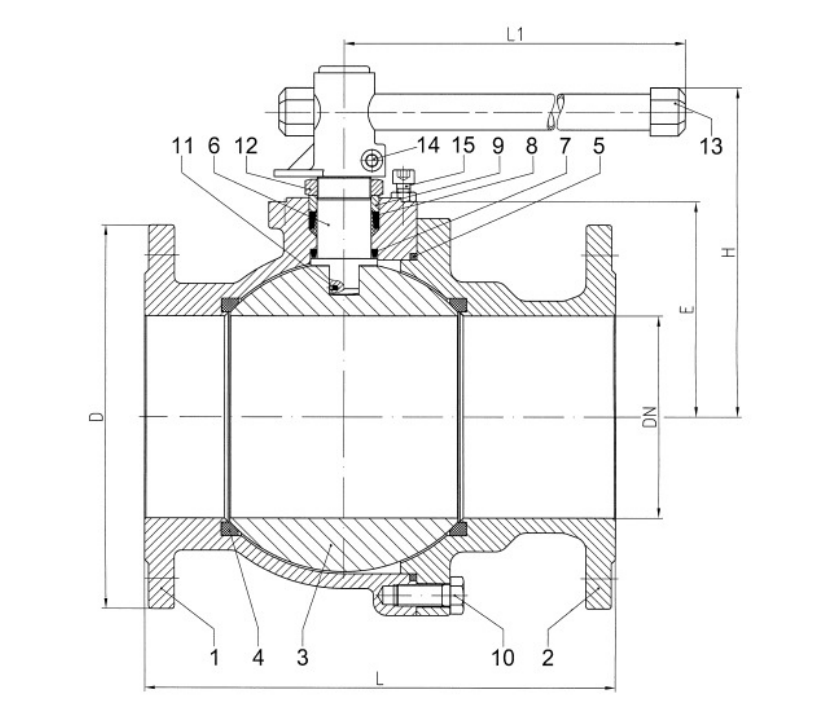
BALL VALVES INTEC

K200, DN125 - DN200, PN16/40
floating ball, soft seated



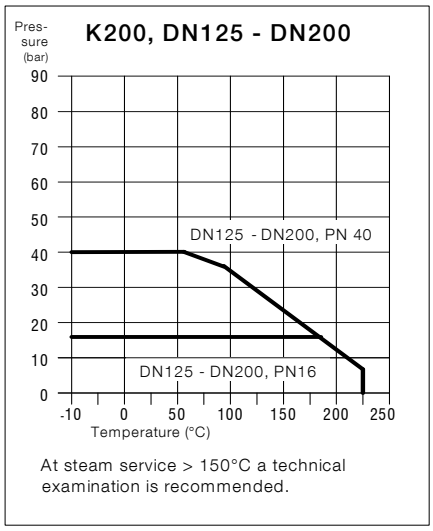
Flanged ball valve
full bore
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.27, full bore, blow-out-proof stem, vacuum-tight, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, seat full chambered, stem packing Graphite/ KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K200

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFGN/KFM	
5	body seal	KF	
6	stem	1.4462	
7	below seal	KFGN/Graphite	
8	upper seal	KFAM/Graphite	
9	bearing	PEEK	
10	hex. screw	A4-70	
11	antistatic element	1.4401/1.4571/1.4404	
12	hex. screw self-locking	A2/1.4301	
13	lever	1.4408/1.4308/steel zincplated	
14	allen screw	A2-70	
15	stopper	A2	
Fire-Safe design			
5	combined body seal	KF-Graphite	
9	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K200, DN150, PN40, GR.27, 1.4408, Fire-Safe

Dimensions

DN mm	PN	dimensions (mm) H	L1	L	D	E	top flange ISO	torque Nm**	weight kg
125	16	263	700	325	250	164	F12	260	56
125	40	263	700	325	270	164	F12	260***	58
150	16	265	700	350	285	160	F12	286	80
150	40	265	700	350	300	181	F12	286***	85
200	16	340	1000	400	340	225	F14	442	152
200	40	340	1000	400	375	225	F14	442***	160

** Necessary torque measured with treated water at Δ P = 16 bar and room temperature.

*** PN 40 gearbox recommended.

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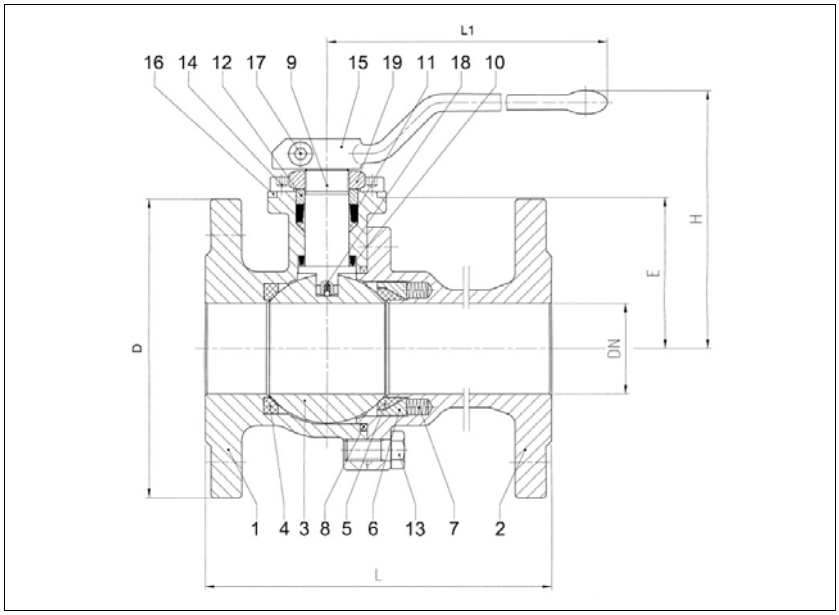
BALL VALVES INTEC

K220, DN15 - DN100, PN16/40
floating ball, soft seated,
single side spring loaded seat ring



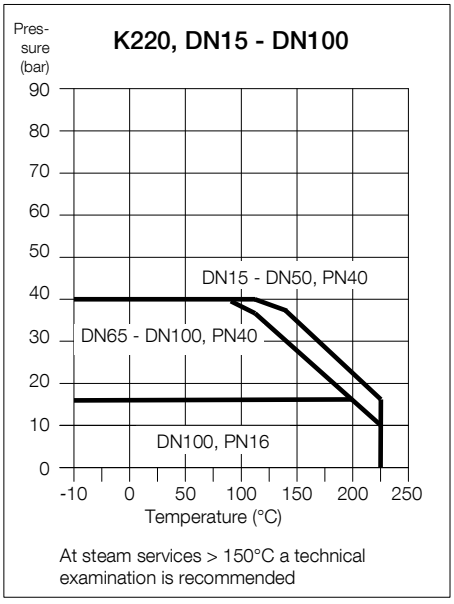
Flanged ball valve
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, seat full chambered, single side spring loaded seat ring, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K220

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFGN/KFM	
5	spring loaded seat ring	KFGN/KFM	
6	seat bearing ring	1.4571/1.4404	
7	spiral spring	1.4401	
8	body seal	KF	
9	stem	1.4462	
10	below seal	KFGN/Graphite	
11	upper seal	KFAM/Graphite	
12	bearing	PEEK	
13	hex. screw	A4-70	
14	allen screw	A2-70	
15	lever	1.4408/1.4308/steel zincplated	
16	stopper	1.4301	
17	allen screw	A2-70	
18	antistatic element	1.4401/1.4571/1.4404	
19	hex. nut self-locking	A2/1.4301	
Fire-Safe design			
7	spiral spring	Inconel X750	
8	combined body seal	KF-Graphite	
9	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	



Dimensions

DN mm	PN	dimensions (mm) H	L1	L GR.1	L GR.27	D	E	top flange ISO	torque Nm**	weight kg GR.1	GR.27
15	40	95	160	130	115	95	39.5	F05	9	3.0	2.9
20	40	105	160	150	120	105	46.0	F05	10	4.0	3.7
25	40	114	180	160	125	115	49.5	F05	14	4.9	4.6
32	40	130	180	180	130	140	59.0	F05	17	6.7	6.4
40	40	135	300	200	140	150	76.0	F07	37	9.3	8.8
50	40	143	300	230	150	165	83.5	F07	45	13.0	12.1
65	40	155	300	290	170	185	94.0	F07	65	17.0	16.0
80	40	197	500	310	180	200	102.5	F10	109	26.0	23.0
100	16	215	500	350	190	220	120.5	F10	148	33.0	30.0
100	40	215	500	350	190	235	120.5	F10	148	34.0	32.0

** Necessary torque measured with treated water at Δ P = 16 bar and room temperature.

Ordering example:
INTEC K220, DN50, PN40, GR.27, 1.4408, Fire-Safe

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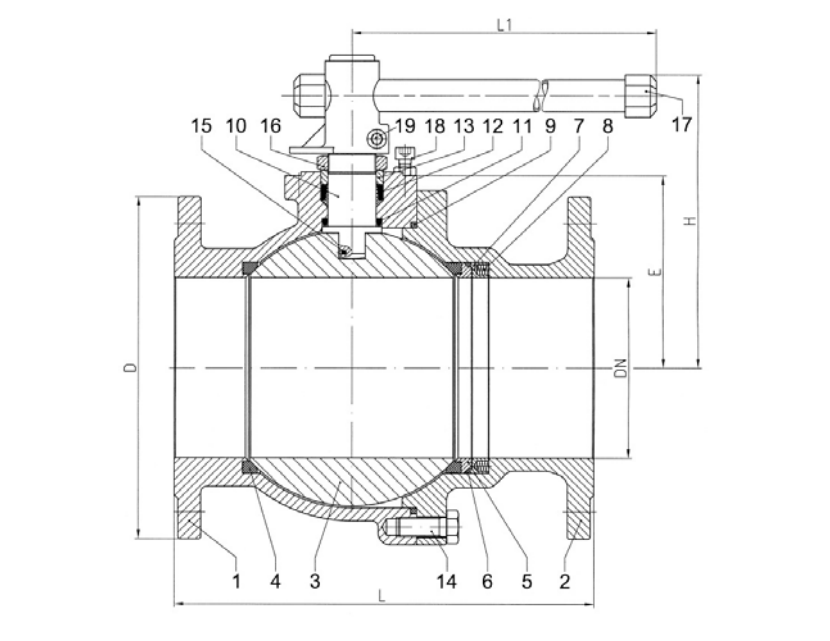
BALL VALVES INTEC

K220, DN125 - DN200, PN16/40
with floating ball, soft seated,
single side spring loaded seat ring



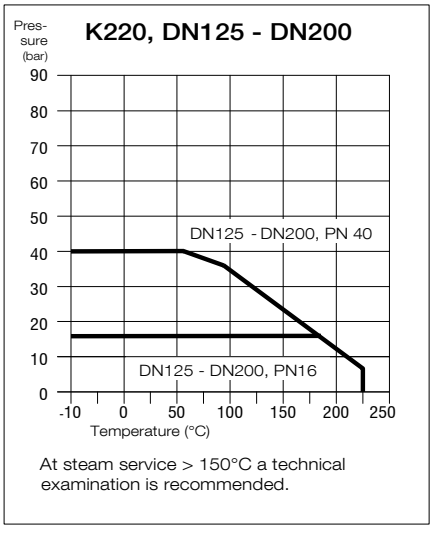
Flanged ball valve
full bore
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, seat full chambered, single side spring loaded seat ring, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K220

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFGN/KFM	
5	seat bearing ring	1.4571/1.4404	
6	seat seal	KF	
7	follower ring	1.4571/1.4404	
8	spiral spring	1.4401	
9	body seal	KF	
10	stem	1.4462	
11	below seal	KFGN/Graphite	
12	upper seal	KFAM/Graphite	
13	bearing	PEEK	
14	hex. screw	A4-70	
15	antistatic element	1.4401/1.4571/1.4404	
16	hex. nut self-locking	A2/1.4301	
17	lever	1.4408/1.4308/steel zincplated	
18	stopper	A2	
19	allen screw	A2-70	
Fire-Safe design			
6	seat seal	Graphite	
8	spiral spring	Inconel X750	
9	combined body seal	KF-Graphite	
13	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K220, DN150, PN40, GR.27, 1.4408, Fire-Safe

Dimensions

DN mm	PN	dimensions (mm) H	L1	L	D	E	top flange ISO	torque Nm**	weight kg
125	16	263	700	325	250	164	F12	260	56
125	40	263	700	325	270	164	F12	260***	58
150	16	265	700	350	285	160	F12	286	80
150	40	265	700	350	300	181	F12	286***	85
200	16	340	1000	400	340	225	F14	442	152
200	40	340	1000	400	375	225	F14	442***	160

** Necessary torque measured with treated water at Δ P = 16 bar and room temperature.

*** PN40 gearbox recommended.

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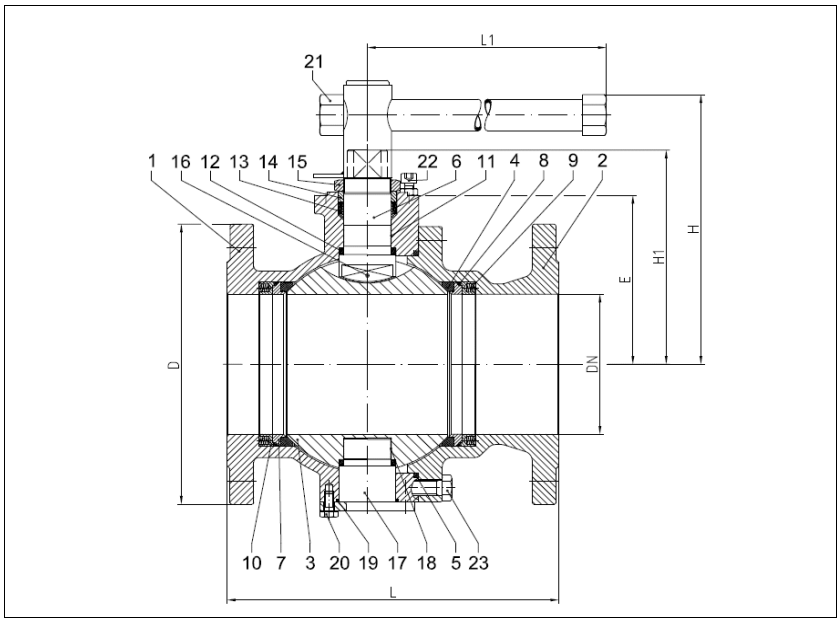
BALL VALVES INTEC

K210, DN80 - DN250, PN16/40
trunnion mounted ball, soft seated, both sides spring loaded seat rings

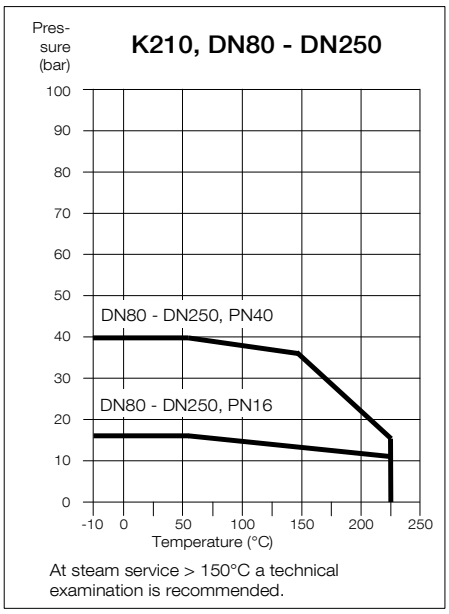


Flanged ball valve
full bore
face to face acc. to EN 558, GR.1
face to face acc. to EN 558, GR.27
flanges acc. to EN 1092

Specification:
Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seats full chambered, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to API 607 and DIN EN ISO 10497, with lever.

Marking: INTEC K210

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFGN/KFM	
5	body seal	KF	
6	stem	1.4462	
7	seat bearing ring	1.4571/1.4404	
8	seat seal	KF	
9	spiral spring	1.4401	
10	follower ring	1.4571/1.4404	
11	stem bearing	1.4401/KF	
12	below seal	KFGN/Graphite	
13	upper seal	KFAM/Graphite	
14	bearing	PEEK	
15	hex. nut self-locking	A2/1.4301	
16	antistatic element	1.4401/1.4571/1.4404	
17	trunnion (up to DN125 with screwed end))	1.4571/1.4404	
18	bearing	1.4401/KF	
19	trunnion seal	KF	
20	hex. screw (as from DN150)	A4-70	
21	lever	1.4408/1.4308/steel zincplated	
22	stopper	A2	
23	hex. screw	A4-70	
Fire-Safe design			
5	combined body seal	KF-Graphite	
8	seat seal	Graphite	
9	spiral spring	Inconel X750	
11	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	
19	trunnion seal	KF-Graphite	



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K210, DN100, PN40, GR. 27, 1.4408, Fire-Safe

Other flange connections and materials on request.

Dimensions

DN mm	PN	dimensions (mm) H	L1	L (GR. 1)	L (GR. 27)	D	E	H1	top flange ISO	torque Nm *	weight kg GR. 1	GR. 27
80	40	194	500	310	180	200	112.5	155	F10	170	24	23
100	16	221.5	500	350	190	220	137	179.5	F12	140	32.5	31.5
100	40	221.5	500	350	190	235	137	179.5	F12	255	33.5	33
125	16	246.5	700	-	325	250	164	206.5	F12	185	-	56.5
125	40	246.5	700	-	325	270	164	206.5	F12	370	-	58.5
150	16	263	700	-	350	285	181	229.5	F12	265	-	81
150	40	263	700	-	350	300	181	229.5	F12	565**	-	85
200	16	304	1000	-	400	340	225	284.5	F14	490	-	153
200	40	304	1000	-	400	375	225	284.5	F14	1110**	-	161
250	16	340.5	1200	-	450	405	261.5	321	F14/F16	760**	-	256
250	40	340.5	1200	-	450	450	261.5	321	F14/F16	1735**	-	274

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.

** gearbox recommended

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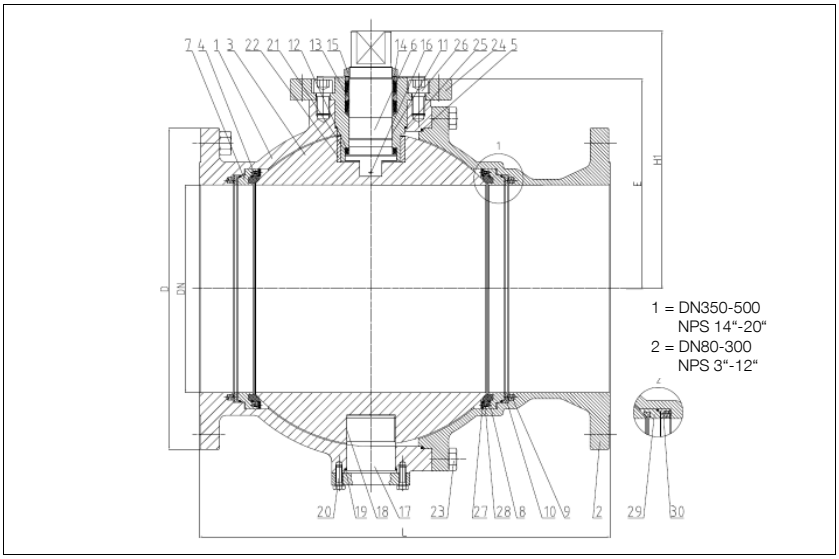
BALL VALVES INTEC

K210, DN300 - DN500, PN16/40
trunnion mounted ball, soft seated, both sides spring loaded seat rings

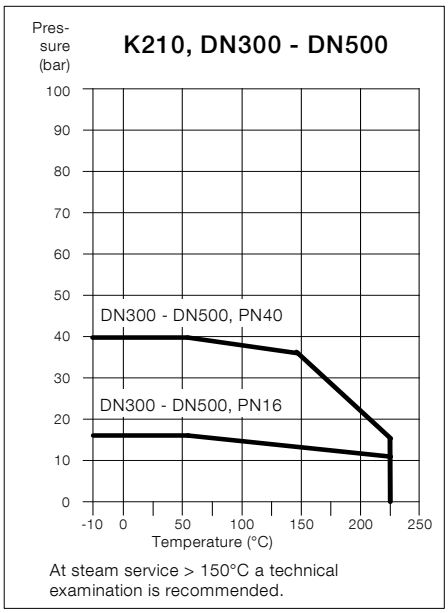


Flanged ball valve
full bore
face to face acc. to EN 558, GR.27
flanges acc. to EN 1092

Specification:
Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seats full chambered, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to API 607 and DIN EN ISO 10497.

Marking: INTEC K210

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFM	
5	body seal	KF	
6	stem	1.4462	
7	seat bearing ring	1.4571/1.4404	
8	seat seal	KF	
9	spiral spring	1.4401	
10	follower ring	1.4571/1.4404	
11	stem bearing	1.4401/KF	
12	below seal	KFGN/Graphite	
13	upper seal	KFAM/Graphite	
14	bearing	PEEK	
15	hex. nut self-locking	A2/1.4301	
16	antistatic element	1.4401/1.4571/1.4404	
17	trunnion	1.4571/1.4404	
18	bearing	1.4401/KF	
19	trunnion seal	KF	
20	hex. screw	A4-70	
21	friction washer	PEEK	
22	ball bearing	PEEK	
23	hex. screw	A4-70	
24	stuffing box	1.4571/1.4404	
25	stuffing box seal	KF	
26	allen screw	A4-70	
27	stop plate	1.4571/1.4404	
28	countersunk screw	A4-70	
29	seat bearing ring	1.4571/1.4404	
30	spring washer	1.4571/1.4404	
Fire-Safe design			
5	combined body seal	KF-Graphite	
8	seat seal	Graphite	
9	spiral spring	Inconel X750	
11	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	
19	trunnion seal	Graphite	
25	stuffing box seal	KF-Graphite	



At steam service > 150°C a technical examination is recommended.

Dimensions

DN	PN	dimensions (mm)				top flange	torque	weight
mm		L	D	E	H1	ISO	Nm *	kg
300	16	500	460	311	400	F16	1364**	343
300	40	500	515	311	400	F16/F25	3239**	380
350	16	550	520	350	439	F25	1970**	505
350	40	550	580	350	439	F25	4613**	615
400	16	762	580	388.5	477.5	F25-F30	2540**	692
400	40	762	660	388.5	477.5	F25-F30	5950**	772
500	16	914	715	485	589	F25-F30	4890**	1363
500	40	914	755	485	589	F30/F35	11600**	1438

Ordering example:
INTEC K210, DN400, PN40,
GR. 27, 1.4408, Fire-Safe

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.

** gearbox recommended

Other flange connections and materials on request.

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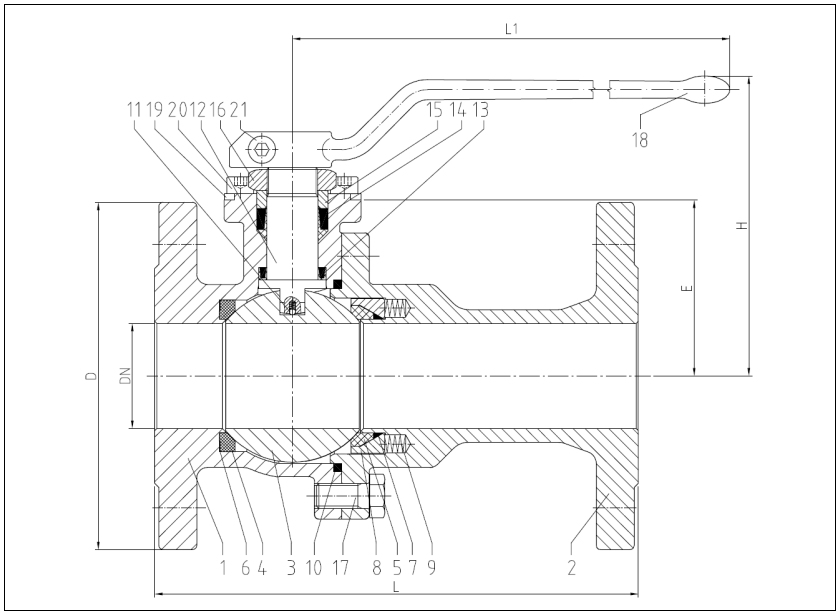
BALL VALVES INTEC

K224, DN15 - DN100, PN16/40
floating ball, PEEK seated,
single side spring loaded seat ring



Flanged ball valve
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

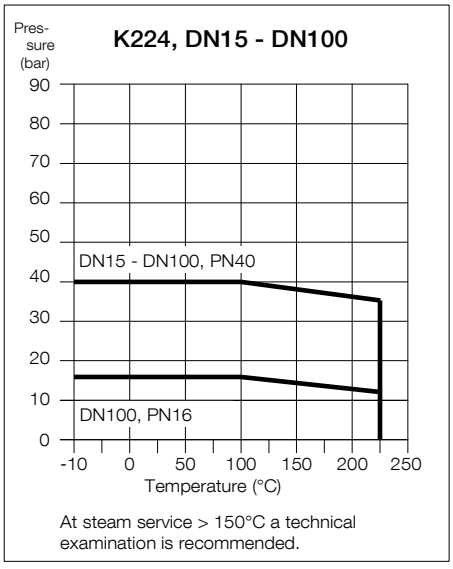
Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, seat full chambered, single side spring loaded seat ring, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Also possible as high-temperature version up to +260°C.

Marking: INTEC K224

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	PEEK / PEEK mod.	
5	spring loaded seat	PEEK / PEEK mod.	
6	seat back seal	Graphite	
7	seat seal	KF	
8	seat bearing ring	1.4571/1.4404	
9	spiral spring	1.4401	
10	body seal	KF	
11	antistatic element	1.4401/1.4571/1.4404	
12	stem	1.4462	
13	below seal	KFGN/Graphite	
14	upper seal	KFAM/Graphite	
15	upper stem bearing	PEEK	
16	hex. nut self-locking	A2/1.4301	
17	hex. screw	A4-70	
18	lever	1.4408/1.4308/steel zincplated	
19	stopper	1.4301	
20	allen screw	A2-70	
21	allen screw	A2-70	
Fire-Safe design			
7	seat seal	Graphite	
9	spiral spring	Inconel X750	
10	combined body seal	KF-Graphite	
12	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	



Dimensions

DN mm	PN	dimensions (mm) H	L1	L GR.1	L GR.27	D	E	top flange ISO	torque Nm**	ca. weight kg GR.1	GR.27
15	40	95	160	130	115	95	39.5	F05	12	3.0	2.9
20	40	105	160	150	120	105	46	F05	16	4.0	3.7
25	40	114	180	160	125	115	49.5	F05	23	4.9	4.6
32	40	130	180	180	130	140	59	F05	35	6.7	6.4
40	40	135	300	200	140	150	76	F07	70	9.3	8.8
50	40	143	300	230	150	165	83.5	F07	101	13.0	12.1
65	40	155	300	290	170	185	94	F07	180	17.0	16.0
80	40	197	500	310	180	200	102.5	F10	327	26.0	23.0
100	16	215	500	350	190	220	120.5	F10	257	33.0	30.0
100	40	215	500	350	190	235	120.5	F10	517	34.0	32.0

** Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature

Ordering example:
INTEC K224, DN50, PN40, GR.27, 1.4408, Fire-Safe

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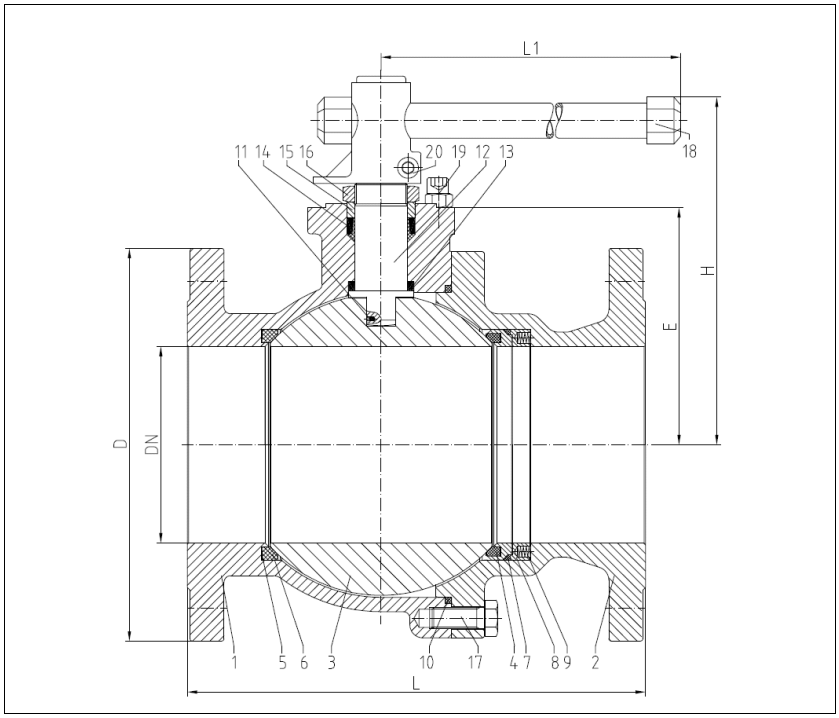
BALL VALVES INTEC

K224, DN125 - DN200, PN10/16
floating ball, PEEK seated,
single side spring loaded seat ring



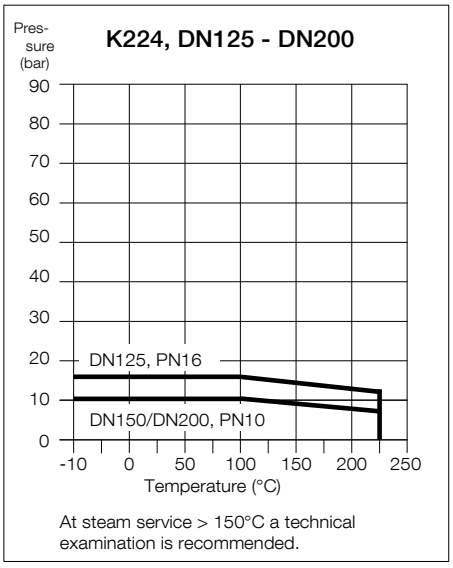
Flanged ball valve
full bore
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.27, full bore, blow-out-proof sem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, seats full chambered, single side spring loaded seat ring, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC K224

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat (flanged)	PEEK/ Graphite/ 1.4571 - 1.4404 PEEK mod./ Graphite/ 1.4571 - 1.4404	
5	seat back seal	Graphite	
6	seat	PEEK / PEEK mod.	
7	seat seal	KF	
8	follower ring	1.4571/1.4404	
9	spiral spring	1.4401	
10	body seal	KF	
11	antistatic element	1.4401/1.4571/1.4404	
12	stem	1.4462	
13	below seal	KFGN/Graphite	
14	upper seal	KFAM/Graphite	
15	upper stem bearing	PEEK	
16	hex. nut self-locking	A2/1.4301	
17	hex. screw	A4-70	
18	lever	1.4408/1.4308/steel zincplated	
19	stopper	A2	
20	allen screw	A2-70	
Fire-Safe design			
7	seat seal	Graphite	
9	spiral spring	Inconel X750	
10	combined body seal	KF-Graphite	
12	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K224, DN150, PN10, GR.27, 1.4408, Fire-Safe

Dimensions

DN mm	PN	dimensions (mm) H	 L1	 L	 D	 E	top flange ISO	torque Nm*	ca. weight kg
125	16	263	700	325	250	164	F12	475**	56
150	10	265	700	350	285	160	F12	362**	80
200	10	340	1000	400	340	225	F14	558**	152

* Necessary torque measured with treated water at Δ P acc. pressure class and room temperature.

** gearbox recommended

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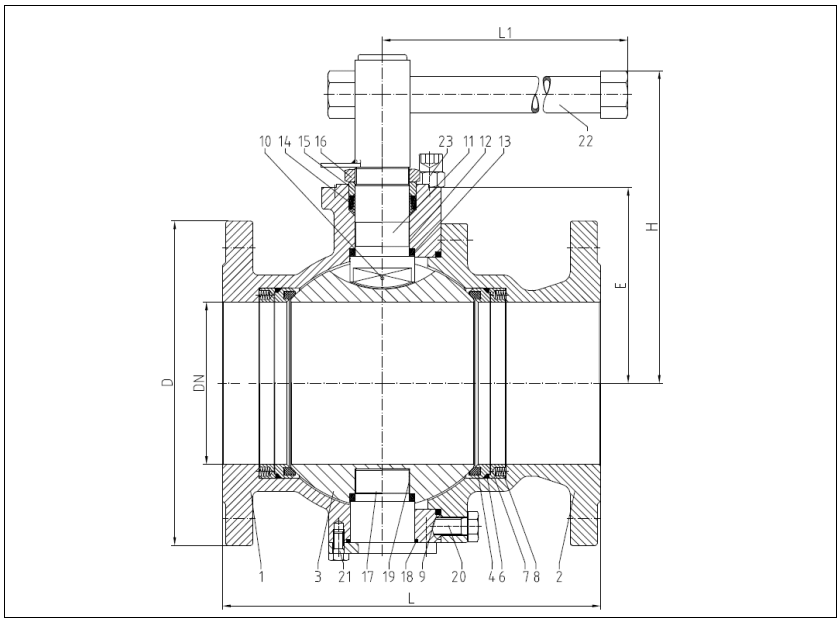
BALL VALVES INTEC

K214, DN80 - DN250, PN16/40
trunnion mounted ball, PEEK seated, both sides spring loaded seat rings



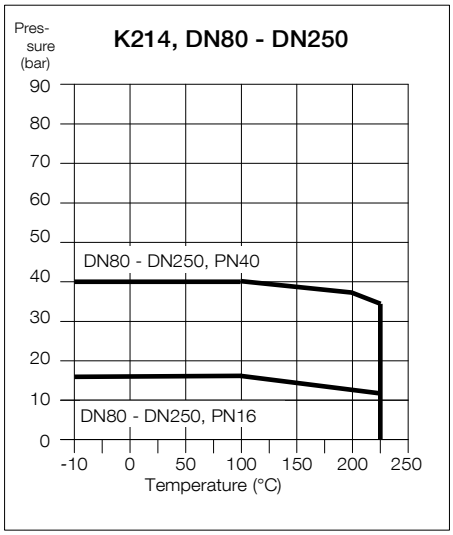
Flanged ball valve
full bore
face to face acc. to EN 558, GR.1
face to face acc. to EN 558, GR.27
flanges acc. to EN 1092

Specification:
Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seats full chambered, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Also possible as high-temperature version up to +260°C.

Marking: INTEC K214

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat (flanged)	PEEK/Graphite/1.4571-1.4404 PEEK mod./Graphite/1.4571-1.4404	
6	seat seal	KF	
7	follower ring	1.4571/1.4404	
8	spiral spring	1.4401	
9	body seal	KF	
10	antistatic element	1.4401/1.4571/1.4404	
11	stem	1.4462	
12	below stem bearing	1.4401/KF	
13	below seal	KFGN/Graphite	
14	upper seal	KFAM/Graphite	
15	upper stem bearing	PEEK	
16	hex. nut self-locking	A2/1.4301	
17	trunnion	1.4571/1.4404	
18	trunnion seal	KF	
19	bearing	1.4401/KF	
20+21	hex. screw	A4-70	
22	lever	1.4408/1.4308/steel zincplated	
23	stopper	A2	
Fire-Safe design			
5	combined body seal	KF-Graphite	
6	seat seal	Graphite	
8	spiral spring	Inconel X750	
11	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	
18	trunnion seal	KF-Graphite	



Ordering example:
INTEC K214, DN100, PN40, GR.27, 1.4408, Fire-Safe

Other flange connections and materials on request.

Dimensions

DN mm	PN	dimensions (mm) H	L1	L GR. 1	L GR. 27	D	E	H1	top flange ISO	torque Nm *	ca. weight kg GR. 1	GR. 27
80	40	194	500	310	180	200	112.5	155	F10	294**	26	24
100	16	221.5	500	350	190	220	137	179.5	F12	238**	34	32
100	40	221.5	500	350	190	235	137	179.5	F12	456**	35	34
125	16	246.5	700	-	325	250	164	206.5	F12	255**	-	57
125	40	246.5	700	-	325	270	164	206.5	F12	521**	-	60
150	16	263	700	-	350	285	181	229.5	F12	359**	-	80
150	40	263	700	-	350	300	181	229.5	F12	780**	-	85
200	16	304	1000	-	400	340	225	284.5	F14	683**	-	140
200	40	304	1000	-	400	375	225	284.5	F14	1558**	-	150
250	16	340.5	1200	-	450	405	261.5	321	F14	1092**	-	245
250	40	340.5	1200	-	450	450	261.5	321	F14	2511**	-	250

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature

** gearbox recommended

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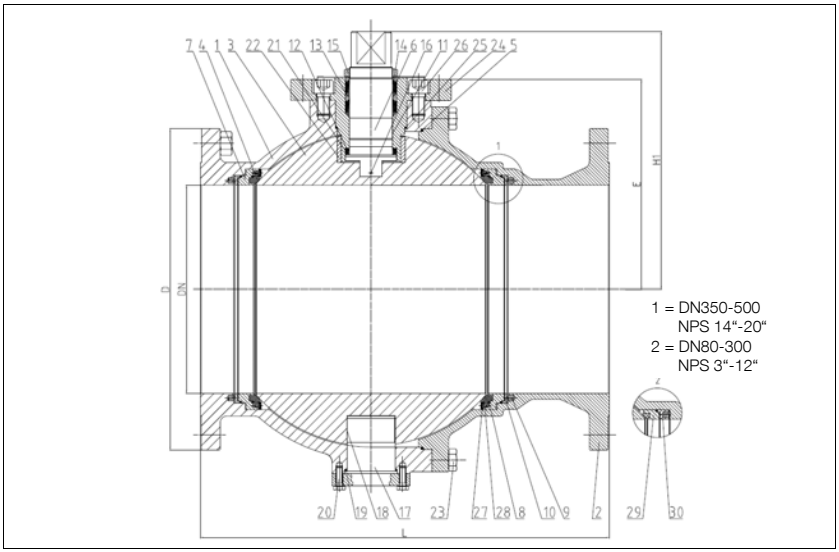
BALL VALVES INTEC

K214, DN300 - DN500, PN16/40
trunnion mounted ball, PEEK seated, both sides spring loaded seat rings

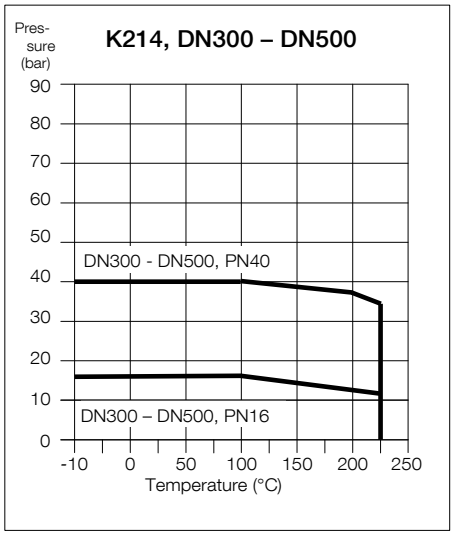


Flanged ball valve
full bore
face to face acc. to EN 558, GR.27
face to face acc. to EN 1092

Specification:
Two-piece ball valve acc. to EN 1092, face to face dimensions acc. to EN 558, GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seats full chambered, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air acr VDI 2440.

Marking: INTEC K214

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	PEEK	
5	body seal	KF	
6	stem	1.4462	
7	seat bearing ring	1.4571/1.4404	
8	seat seal	KF	
9	spiral spring	1.4401	
10	follower ring	1.4571/1.4404	
11	stem bearing	1.4401/KF	
12	below seal	KFGN/Graphite	
13	upper seal	KFAM/Graphite	
14	bearing	PEEK	
15	hex. nut self-locking	A2/1.4301	
16	antistatic element	1.4401/1.4571/1.4404	
17	trunnion	1.4571/1.4404	
18	bearing	1.4401/KF	
19	trunnion seal	KF	
20	hex. screw	A4-70	
21	friction washer	PEEK	
22	ball bearing	PEEK	
23	hex. screw	A4-70	
24	stuffing box	1.4571/1.4404	
25	stuffing box seal	KF	
26	allen screw	A4-70	
27	stop plate	1.4571/1.4404	
28	countersunk screw	A4-70	
29	seat bearing ring	1.4571/1.4404	
30	spring washer	1.4571/1.4404	
Fire-Safe design			
5	combined body seal	KF-Graphite	
8	seat seal	Graphite	
9	spiral spring	Inconel X750	
11	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	
19	trunnion seal	Graphite	
25	stuffing box seal	KF-Graphite	



Ordering example:
INTEC K214, DN400, PN40, GR. 27, 1.4408, Fire-Safe

Dimensions

DN mm	PN	dimensions (mm) L	D	E	H1	top flange ISO	torque Nm *	ca. weight kg
300	16	500	460	311	400	F16	1789**	343
300	40	500	515	311	400	F16/F25	4226**	380
350	16	550	520	350	439	F25	2711**	505
350	40	550	580	350	439	F25	6270**	615
400	16	762	580	388.5	477.5	F25-F30	3496**	692
400	40	762	660	388.5	477.5	F25-F30	8106**	772
500	16	914	715	485	589	F25-F30	6394**	1363
500	40	914	755	485	589	F30/F35	15076**	1438

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.

** gearbox recommended

Other flange connections and materials on request.

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INTEC K221, K211

Seat ring system metal seated.

Type:	2-piece flanged ball valve
Nominal sizes:	DN 15 - DN 300 NPS ½“ - NPS 12“
Pressure range:	PN 16 and PN 40 ANSI Class 150 and Class 300
Temperature:	up to +400°C
Material of body:	stainless steel, carbon steel
End connections:	flanges acc. to EN 1092 / flanges acc. to ANSI B 16.5
FTF:	acc. to EN 558, GR.1 and GR.27 / acc. to ANSI B 16.10
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, spring close unit - automatical return handle (“dead man handle”), gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cycles -40°C up to +220°C
- Fire-Safe acc. to API 607 and DIN EN ISO 10497
- Type-test approval mark No. TÜV.A.318-15
- classification acc. to SIL 2
- ATEX 2014/34/EU
- Type Test Certificate TTC (optional)
- certified acc. to API 6D (optional)

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Product advantages:

- seat ring and ball hard metal coated
- sleeken seat and ball polished
- high precision beared ball
- spring loaded, spiral springs chambered
- no use of disc springs to forcing the seat ring
- no dangerous because of crevice corrosion
- gas-tight
- high working life
- different coatings available

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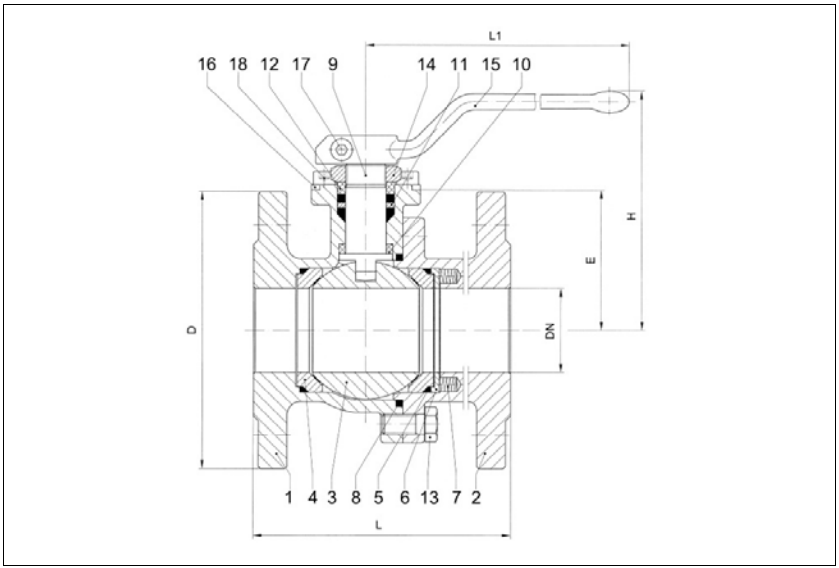
BALL VALVES INTEC

K221, DN15 - DN100, PN16/40
floating ball, metal seated,
single side spring loaded seat ring



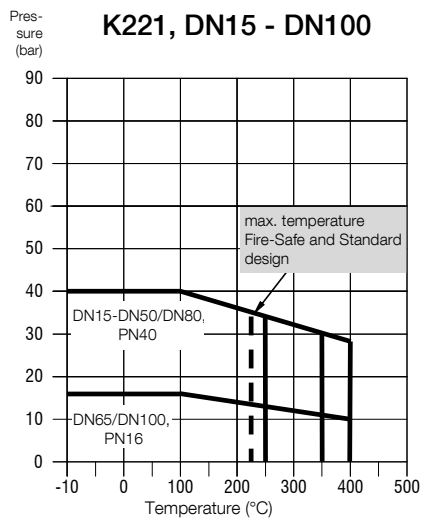
No.	Part	Material			Material		
High temperature design							
1	body	1.0619			1.4408		
2	cap	1.0619			1.4408		
3	ball	1.4408 hard facing metal coated					
4	seat	1.4571/1.4404 hard facing metal coated					
5	seat seal	Graphite					
6	follower ring	1.4571/1.4404					
7	spiral spring	Inconel X750					
8	body seal	Graphite					
9	stem	< 250°C	350°C	400°C	< 250°C	350°C	400°C
		1.4462	1.4313	1.4980	1.4462	1.4980	1.4980
10	below seal	E-carbon					
11	upper seal	1.4571/1.4404/Graphite					
12	bearing	E-carbon					
13	hex. screw	A4-70					
14	hex. nut self-locking	A2/1.4301					
15	lever	1.4408/1.4308/steel zincplated					
16	stopper	1.4301					
17	allen screw	A2-70					
18	allen screw	A2-70					
Fire-Safe design							
8	combined body seal	KF-Graphite					
10	below seal	KFGN/Graphite					
11	upper seal	KFAM/Graphite					
12	Fire-Safe seal	Graphite					
	ring	1.4571/1.4404					
	thrust washer	PEEK					
Standard design							
5	seat seal	KF					
8	body seal	KF					
10	below seal	KFGN/Graphite					
11	upper seal	KFAM/Graphite					
12	bearing	PEEK					

Flanged ball valve
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), anti-static device, free of non ferrous metals, seat 1.4571/1.4404 hard facing metal coated, stem packing cone ring construction acc. to temperature use, dynamic loaded adjustable, single side spring loaded seat ring, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K221



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K221, DN50, PN40, GR.27, 1.4408, high temperature, 1.4980 (stem)

Dimensions

DN mm	PN	dimensions (mm) H	L1	L (GR. 1)	L (GR. 27)	D	E	top flange ISO	torque Nm *	weight kg (GR. 1)	(GR. 27)
15	40	95	160	130	115	95	39.5	F05	28	3.0	2.9
20	40	105	160	150	120	105	46.0	F05	36	4.0	3.7
25	40	114	180	160	125	115	49.5	F05	49	4.9	4.6
32	40	130	180	180	130	140	59.0	F05	71	6.7	6.4
40	40	135	300	200	140	150	76.0	F07	121	9.3	8.8
50	40	143	300	230	150	165	83.5	F07	180	13.0	12.1
65	16**	155	300	290	170	185	94.0	F07	179	16.0	15.0
80	40	197	500	310	180	200	102.5	F10	484	26.0	23.0
100	16**	215	500	350	190	220	120.5	F10	441	33.0	30,0

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.

** PN 40 flanges on request.

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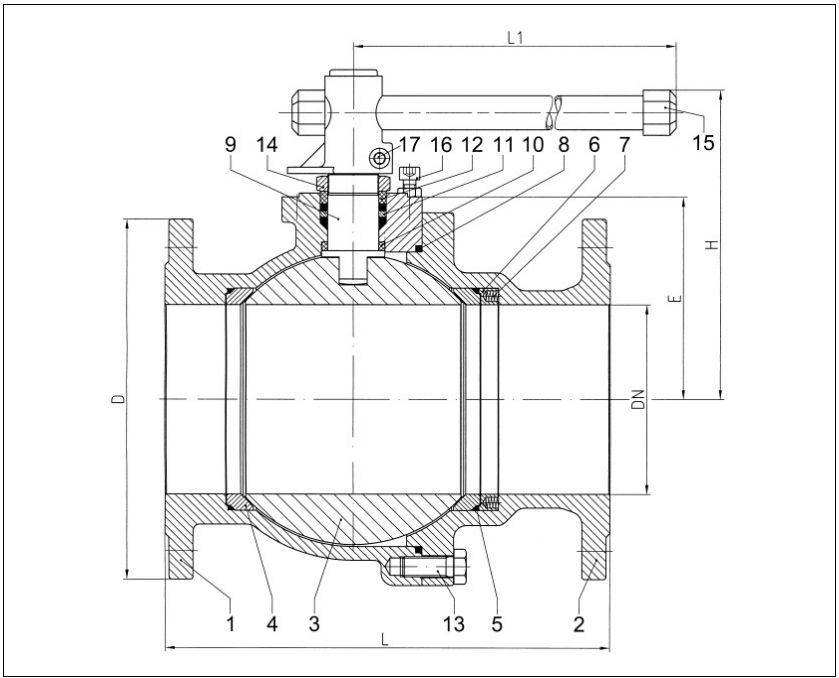
BALL VALVES INTEC

K221, DN125 - DN200, PN10/16
with floating ball, metal seated, single side spring loaded seat ring



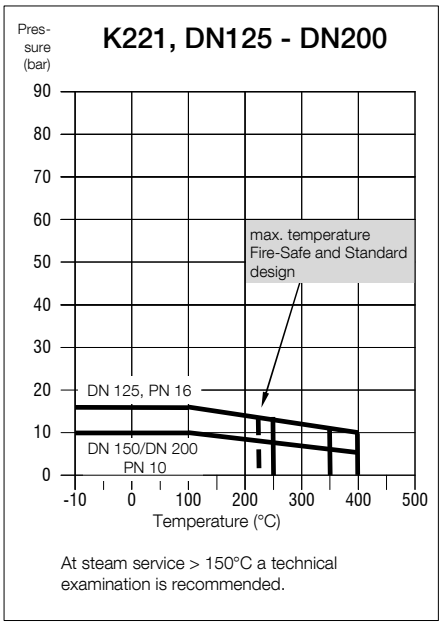
Flanged ball valve
full bore
face to face acc. to EN 558, GR. 27
flanges acc. to EN 1092

Specification:

Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), anti-static device, free of non ferrous metals, seat 1.4571/1.4404 hard facing metal coated, stem packing cone ring construction acc. to temperature use, dynamic loaded adjustable, single side spring loaded seat ring, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K221

No.	Part	Material			Material		
High temperature design							
1	body	1.0619			1.4408		
2	cap	1.0619			1.4408		
3	ball	1.4408 hard facing metal coated					
4	seat	1.4571/1.4404 hard facing metal coated					
5	seat seal	Graphite					
6	follower ring	1.4571/1.4404/1.4408					
7	spiral spring	Inconel X750					
8	body seal	Graphite					
9	stem	< 250°C	350°C	400°C	< 250°C	350°C	400°C
		1.4462	1.4313	1.4980	1.4462	1.4980	1.4980
10	below seal	E-carbon					
11	upper seal	1.4571/1.4404/Graphite					
12	bearing	E-carbon					
13	hex. screw	A4-70					
14	hex. nut self-locking	A2/1.4301					
15	lever	1.4408/1.4308/steel zincplated					
16	stopper	A2					
17	allen screw	A2-70					
Fire-Safe design							
8	combined body seal	KF-Graphite					
10	below seal	KFGN/Graphite					
11	upper seal	KFAM/Graphite					
12	Fire-Safe seal ring	Graphite					
		1.4571/1.4404					
	thrust washer	PEEK					
Standard design							
5	seat seal	KF					
8	body seal	KF					
10	below seal	KFGN/Graphite					
11	upper seal	KFAM/Graphite					
12	bearing	PEEK					



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K221, DN150, PN10, GR. 27, 1.4408, high temperature, 1.4980 (stem)

Dimensions

DN mm	PN	dimensions (mm) H	L1	L	D	E	top flange ISO	torque Nm*	weight kg
125	16	263	700	325	250	164	F12	722**	56
150	10	265	700	350	285	160	F12	743**	80
200	10	340	1000	400	340	225	F14	1602**	152

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.

** gearbox recommended.

PN16/PN40 flange connection on request.

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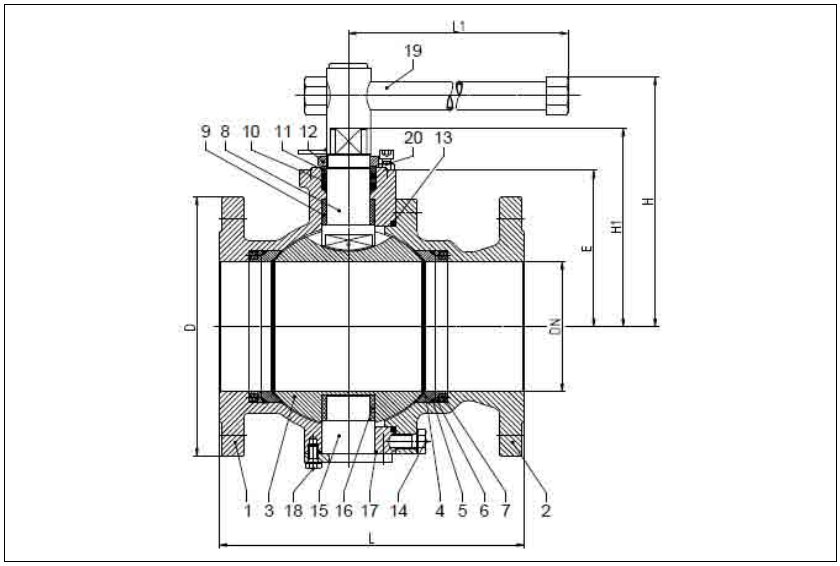
BALL VALVES INTEC

K211, DN80 - DN300, PN16/40
trunnion mounted ball, metal seated, both sides spring loaded seat rings

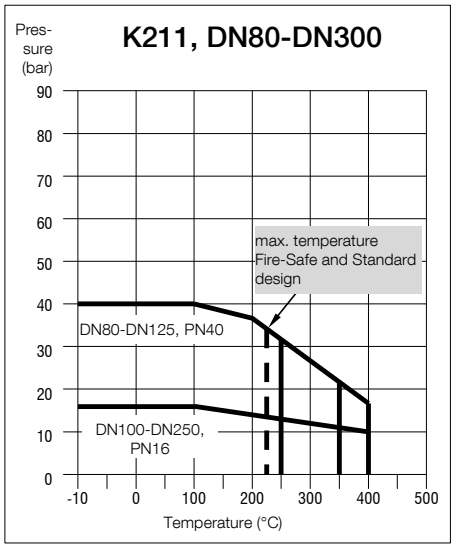


Flanged ball valve
full bore
face to face acc. to EN 558, GR.1
face to face acc. to EN 558, GR.27
flanges acc. to EN 1092

Specification:
Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seat 1.4571/1.4404 hard facing metal coated, stem packing cone ring system acc. temperature use, dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K211

No.	Part	Material			Material		
High temperature design							
1	body	1.0619			1.4408		
2	cap	1.0619			1.4408		
3	ball	1.4408 hard facing metal coated					
4	seat	1.4571/1.4404 hard facing metal coated					
5	bearing ring seal	Graphite					
6	thrust collar	1.4571/1.4404					
7	spiral spring	Inconel X750					
8	stem	250°C	350°C	400°C	250°C	350°C	400°C
		1.4462	1.4313	1.4980	1.4462	1.4980	1.4980
9	stem bearing	E-carbon					
10	stem seal	1.4571/1.4404/Graphite					
11	bearing	E-carbon					
12	hex. nut self-locking	A2/1.4301					
13	body seal	Graphite					
14	hex. screw	A4-70					
15	bearing neck (< DN125 with screwed end)	1.4571/1.4404					
16	bearing	E-carbon					
17	trunnion seal	Graphite					
18	hex. screw (as from DN150)	A4-70					
19	lever	1.4408/1.4308/steel zincplated					
20	stopper	A2					
Fire-Safe design							
9	below stem seal	KFGN/Graphite					
	bearing	1.4401/KF					
10	upper stem seal	KFAM/Graphite					
11	Fire-Safe seal	Graphite					
	ring	1.4571/1.4404					
	thrust washer	PEEK					
13	combined body seal	KF-Graphite					
16	bearing	1.4401/KF					
Standard design							
5	bearing ring seal	KF					
7	spiral spring	1.4401					
9	below stem seal	KFGN/Graphite					
	bearing	1.4401/KF					
10	upper stem seal	KFAM/Graphite					
11	bearing	PEEK					
13	body seal	KF					
16	bearing	1.4401/KF					
17	trunnion seal	KF					



Ordering example:
INTEC K211, DN125, PN40, GR.27, 1.4404, Fire-Safe, 1.4980 (stem)

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.
** Gearbox recommended
*** free stem, gearbox/automation necessary

Dimensions

DN mm	PN	dimensions (mm) H	L1	L GR. 1	L GR. 27	D	E	H1	top flange ISO	torque Nm *	ca. weight kg GR. 1	GR. 27
80	40	194.0	500	310	180	200	112.5	155.0	F10	355**	26	24
100	16	221.5	500	350	190	220	137.0	179.5	F12	265	34	32
100	40	221.5	500	350	190	235	137.0	179.5	F12	510**	35	34
125	16	246.5	700	-	325	250	164.0	206.5	F12	350	-	57
125	40	246.5	700	-	325	270	164.0	206.5	F12	725**	-	60
150	16	263.0	700	-	350	285	181.0	229.5	F12	485**	-	80
200	16	304.0	1000	-	400	340	225.0	284.5	F14	935**	-	140
250	16	340.5	1200	-	450	405	261.5	321.0	F14	1525**	-	250
300	16	- ***	- ***	-	500	460	311.0	400.0	F16	o.R.**	-	320

Other flange connections and materials on request.

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INTEC K230, K231, K234

Free outlet, clearance volume free. Critical medias safe handling!

The ball valve revolution for all condition of aggregation. Fields of application: production of catalysers, transport of solids (bulk material transport systems), gaseous medias with contend of solid, solid/liquid applications, crystallising medias.

Type:	2-piece fanged ball valve
Nominal sizes:	DN 50 - DN 500 NPS 2“ - NPS 20“
Pressure range:	PN 16 and PN 40 ANSI Class 150 and Class 300
Temperature:	up to +400°C
Material of body:	stainless steel., carbon steel
End connections:	flanges acc. to EN 1092 / flanges acc. to ANSI B 16.5
FTF:	acc. to EN 558, GR.1 and GR.27 / acc. to ANSI B 16.10
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, spring close unit - automatical return handle (“dead man handle”), gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cycles -40°C up to +220°C
- Fire-Safe acc. to API 607 and DIN EN ISO 10497
- classification acc. to SIL 2
- ATEX 2014/34/EU
- Type-test approval mark No. TÜV.A.318-15
- Type Test Certificate TTC (optional)
- certified acc. to API 6D (optional)

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Product advantages:

- equipped with all advantages of series INTEC K200
- also metal to metal tight acc. to EN 12266-1, leak rate A
- free outlet for all kinds of solid
- clearance volume free
- wide range of special materials

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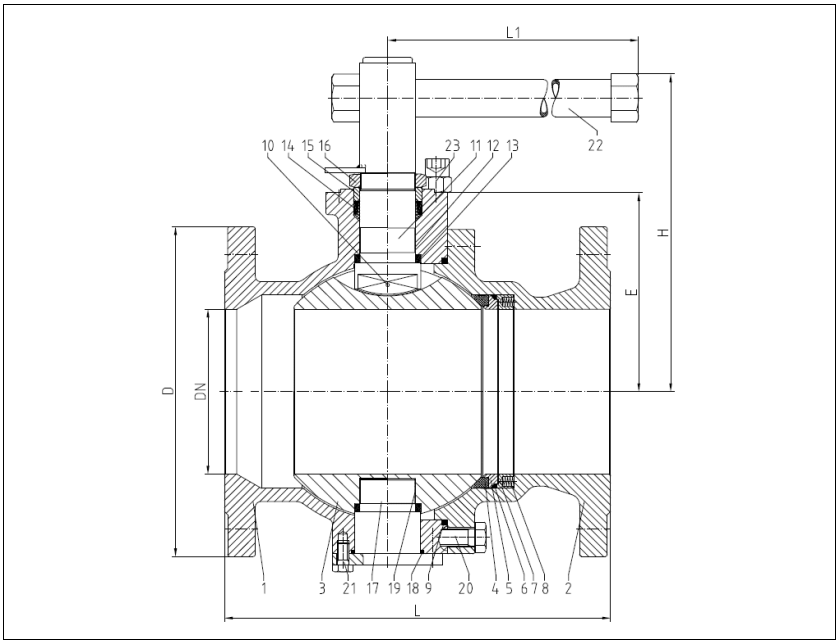
BALL VALVES INTEC

K230, DN80 - DN250, PN16/40
trunnion mounted ball, soft seated
single side spring loaded seat ring, free outlet

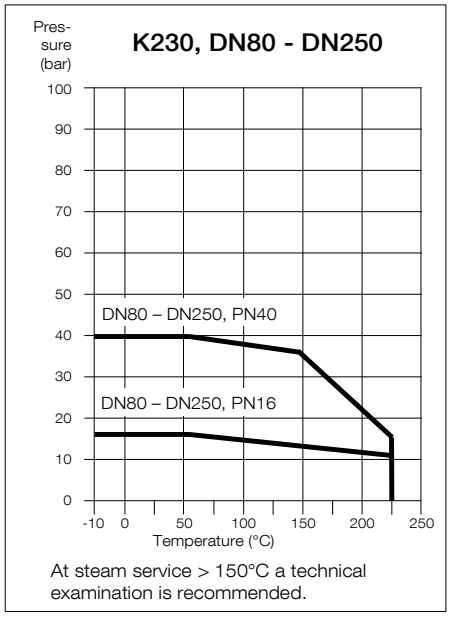


Flanged ball valve
full bore
face to face acc. to EN 558, GR.1
face to face acc. to EN 558, GR.27
flanges acc. to EN 1092

Specification:
Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR. 1/GR. 27, full bore, free outlet, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seat full chambered, stem packing Graphite/ KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to API 607 and DIN EN ISO 10497, with lever.

Marking: INTEC K230

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFGN/KFM	
5	seat bearing ring	1.4571/1.4404	
6	seat seal	KF	
7	follower ring	1.4571/1.4404	
8	spiral spring	1.4401	
9	body seal	KF	
10	antistatic element	1.4401/1.4571/1.4404	
11	stem	1.4462	
12	below stem bearing	1.4401/KF	
13	below seal	KFGN/Graphite	
14	upper seal	KFAM/Graphite	
15	upper stem bearing	1.4401/KF	
16	hex. nut self-locking	A2/1.4301	
17	bearing neck	1.4571/1.4404	
18	trunnion seal	KF	
19	bearing	1.4401/KF	
20+21	hex. screw	A4-70	
22	lever	1.4408/1.4308/steel zincplated	
23	stopper	A2	
Fire-Safe design			
6	seat seal	Graphite	
8	spiral spring	Inconel X750	
9	combined body seal	KF-Graphite	
11	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	
18	trunnion seal	KF-Graphite	



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K230, DN200, PN40,
GR. 27, 1.4408, Fire-Safe

Other flange connections and materials on request.

Dimensions

DN	PN	dimensions (mm)							top flange	torque	ca. weight kg	
mm		H	L1	L GR. 1	L GR. 27	D	E	H1	ISO	Nm *	GR. 1	GR. 27
80	40	194	500	310	180	200	112,5	155	F10	160	26	24
100	16	221.5	500	350	190	220	137	179.5	F12	130	33	32
100	40	221.5	500	350	190	235	137	179.5	F12	245	34	33
125	16	246.5	700	-	325	250	164	206.5	F12	175	-	57
125	40	246.5	700	-	325	270	164	206.5	F12	360	-	59
150	16	263	700	-	350	285	181	229.5	F12	255	-	81
150	40	263	700	-	350	300	181	229.5	F12	555**	-	85
200	16	304	1000	-	400	340	225	284.5	F14	480	-	153
200	40	304	1000	-	400	375	225	284.5	F14	1100**	-	161
250	16	340.5	1200	-	450	405	261.5	321	F14/F16	750**	-	258
250	40	340.5	1200	-	450	450	261.5	321	F14/F16	1725**	-	274

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature

** gearbox recommended

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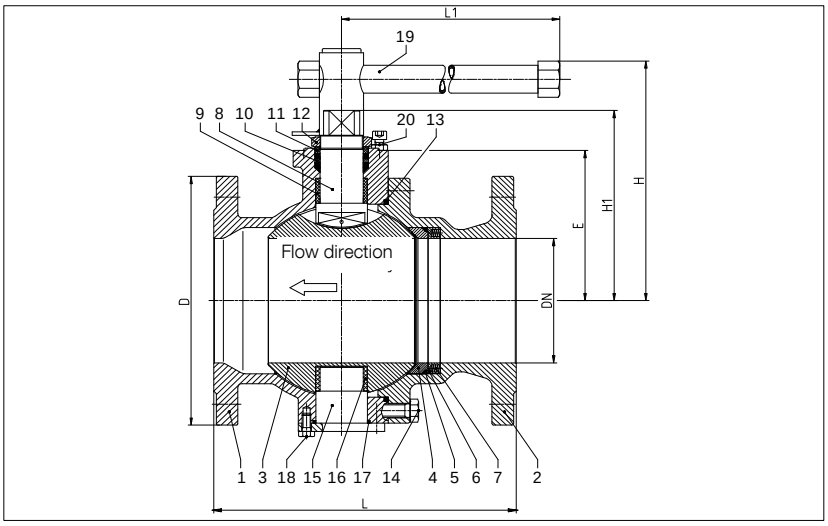
BALL VALVES INTEC

K231, DN80 - DN300, PN16/40
trunnion mounted ball, metal seated, single side spring loaded seat ring, free outlet

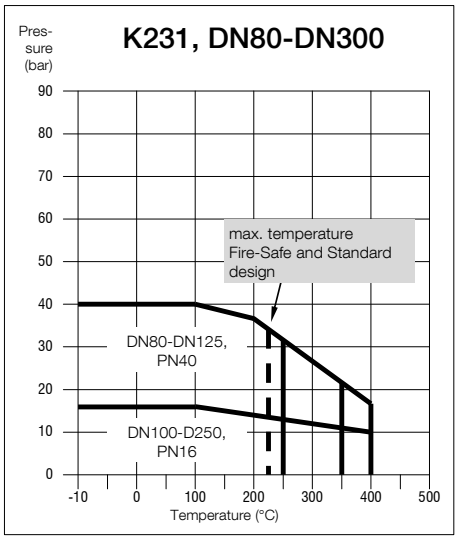


No.	Part	Material			Material		
High temperature design							
1	body	1.0619			1.4408		
2	cap	1.0619			1.4408		
3	ball	1.4408 hard facing metal coated					
4	seat	1.4571/1.4404 hard facing metal coated					
5	bearing ring seal	Graphite					
6	thrust collar	1.4571/1.4404					
7	spiral spring	Inconel X750					
8	stem	250°C	350°C	400°C	250°C	350°C	400°C
		1.4462	1.4313	1.4980	1.4462	1.4980	1.4980
9	stem bearing	E-carbon					
10	stem seal	1.4571/1.4404/Graphite					
11	bearing	E-carbon					
12	hex. nut self-locking	A2/1.4301					
13	body seal	Graphite					
14	hex. screw	A4-70					
15	bearing neck (< DN125 with screwed end)	1.4571/1.4404					
16	bearing	E-carbon					
17	trunnion seal	Graphite					
18	hex. screw (as from DN150)	A4-70					
19	lever	1.4408/1.4308/steel zincplated					
20	stopper	A2					
Fire-Safe design							
9	below stem seal	KFGN/Graphite					
	bearing	1.4401/KF					
10	upper stem seal	KFAM/Graphite					
11	Fire-Safe seal	Graphite					
	ring	1.4571/1.4404					
	thrust washer	PEEK					
13	combined body seal	KF-Graphite					
16	bearing	1.4401/KF					
Standard design							
5	bearing ring seal	KF					
7	spiral spring	1.4401					
9	below stem seal	KFGN/Graphite					
	bearing	1.4401/KF					
10	upper stem seal	KFAM/Graphite					
11	bearing	PEEK					
13	body seal	KF					
16	bearing	1.4401/KF					
17	trunnion seal	KF					

Flanged ball valve
full bore
face to face acc. to EN 558, GR.1
face to face acc. to EN 558, GR.27
flanges acc. to EN 1092

Specification:
Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, free outlet, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seat 1.4571/1.4404 hard facing metal coated, stem packing cone ring construction acc. to temperature use, dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K231



Ordering example:
INTEC K231, DN125, PN40, GR.27, 1.4408, high temperature, 1.4980 (stem)

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.
** gearbox recommended
*** free stem, gearbox/automation necessary
Other flange connections and materials on request.

Dimensions

DN mm	PN	dimensions (mm) H	L1	L GR. 1	L GR. 27	D	E	H1	top flange ISO	torque Nm *	ca. weight kg GR. 1	GR. 27
80	40	194.0	500	310	180	200	112.5	155.0	F10	325**	26	25
100	16	221.5	500	350	190	220	137.0	179.5	F12	240	34	33
100	40	221.5	500	350	190	235	137.0	179.5	F12	490**	35	34
125	16	246.5	700	-	325	250	164.0	206.5	F12	330	-	58
125	40	246.5	700	-	325	270	164.0	206.5	F12	700**	-	60
150	16	263.0	700	-	350	285	181.0	229.5	F12	465**	-	84
200	16	304.0	1000	-	400	340	225.0	284.5	F14	910**	-	156
250	16	340.5	1200	-	450	405	261.5	321.0	F14	1470**	-	260
300	16	- ***	- ***	-	500	460	311.0	400.0	F16	o.r. ***	-	320

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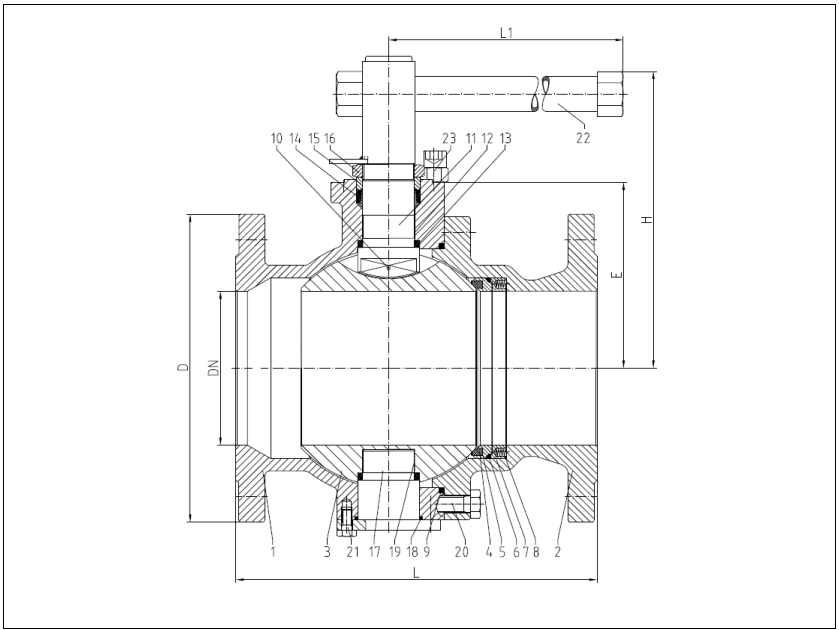
BALL VALVES INTEC

K234, DN80 - DN250, PN16/40
trunnion mounted ball, PEEK seated,
single side spring loaded seat ring, free outlet

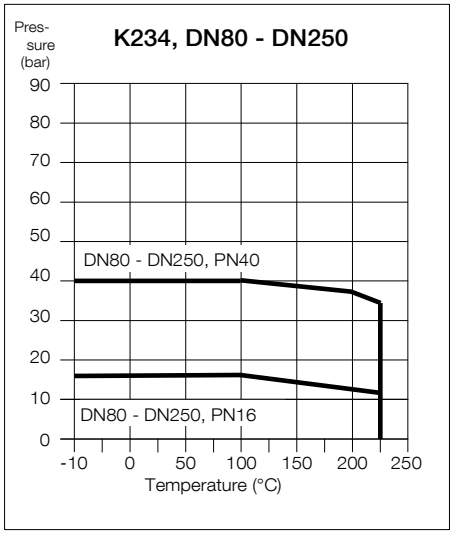


Flanged ball valve
Full bore
Face to face acc. to EN 558, GR.1
Face to face acc. to EN 558, GR.27
Flanges acc. to EN 1092

Specification:
Two-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, free outlet, blow-out-proof stem, body material stainless steel (1.4408) or carbon steel (1.0619), antistatic device, free of non ferrous metals, trunnion mounted ball, seat full chambered, stem packing Graphite/ KFGN/ KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC K234

No.	Part	Material	Material
Standard design			
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat (flanged)	PEEK/ Graphite/ 1.4571-1.4404 PEEK mod./ Graphite/ 1.4571-1.4404	
5	seat back seal	Graphite	
6	seat seal	KF	
7	follower ring	1.4571/1.4404	
8	spiral spring	1.4401	
9	body seal	KF	
10	antistatic element	1.4401/1.4571/1.4404	
11	stem	1.4462	
12	upper stem bearing	1.4401/KF	
13	below seal	KFGN/Graphite	
14	upper seal	KFAM/Graphite	
15	upper stem bearing	PEEK	
16	hex. nut self-locking	A2/1.4301	
17	bearing neck	1.4571/1.4404	
18	trunnion seal	KF	
19	bearing	1.4401/KF	
20+21	hex. screw	A4-70	
22	lever	1.4408/1.4308/steel zincplated	
23	stopper	A2	
Fire-Safe design			
6	seat seal	Graphite	
8	spiral spring	Inconel X750	
9	combined body seal	KF-Graphite	
11	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	
18	trunnion seal	KF-Graphite	



Ordering example:
INTEC K234, DN100, PN40, GR.27, 1.4408, Fire-Safe

Other flange connections and materials on request.

Dimensions

DN mm	PN	dimensions (mm) H	L1	L GR. 1	L GR. 27	D	E	H1	top flange ISO	torque Nm *	ca. weight kg GR. 1	GR. 27
80	40	194	500	310	180	200	112.5	155	F10	274**	26	24
100	16	221.5	500	350	190	220	137	179.5	F12	218**	33	32
100	40	221.5	500	350	190	235	137	179.5	F12	436**	34	33
125	16	246.5	700	-	325	250	164	206.5	F12	235**	-	57
125	40	246.5	700	-	325	270	164	206.5	F12	501**	-	59
150	16	263	700	-	350	285	181	229.5	F12	339**	-	81
150	40	263	700	-	350	300	181	229.5	F12	760**	-	85
200	16	304	1000	-	400	340	225	284.5	F14	663**	-	153
200	40	304	1000	-	400	375	225	284.5	F14	1538**	-	161
250	16	340.5	1200	-	450	405	261.5	321	F14	1072**	-	258
250	40	340.5	1200	-	450	450	261.5	321	F14	2491**	-	274

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature

** gearbox recommended

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trusted. worldwide.

INTEC K200-K

Wafer type ball valve of the modular INTEC system technology!

Equipped with all advantages of the INTEC K200 as well as face to face dimensions acc. to EN 558, Gr.107, this wafer type ball valve is the favourite for special materials in all chemical plants.

Type:	Wafer type ball valve
Nominal size:	DN 15 - DN 80
Pressure range:	PN 16 and PN 40
Temperature:	up to +400°C
Material of body	stainless steel, carbon steel
End connections:	flanges acc. to EN 1092
Optional:	bearing version
FTF:	acc. to EN 558, GR.107
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, spring close unit - automatical return handle ("dead man handle"), gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cylces -40°C up to +220°C
- Fire-Safe acc. to DIN EN ISO 10497
- ATEX 2014/34/EU

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Product advantages:

- equipped with all advantages of series INTEC K200
- face to face dimensions acc. to EN 558, GR.107
- wide range of special materials
- top flange DIN EN ISO 5211

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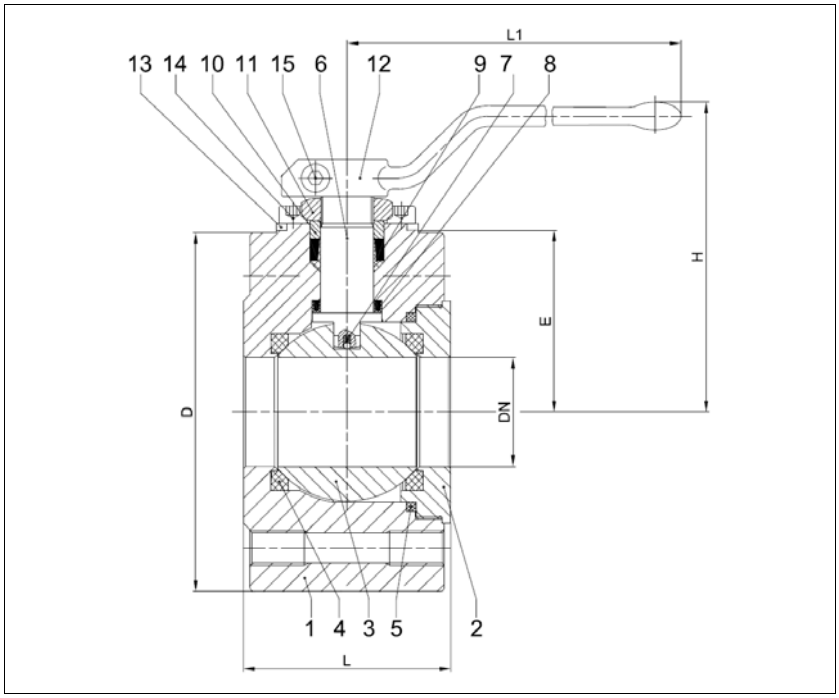
BALL VALVES INTEC

K200-K, DN15 - DN80, PN40
floating ball, soft seated



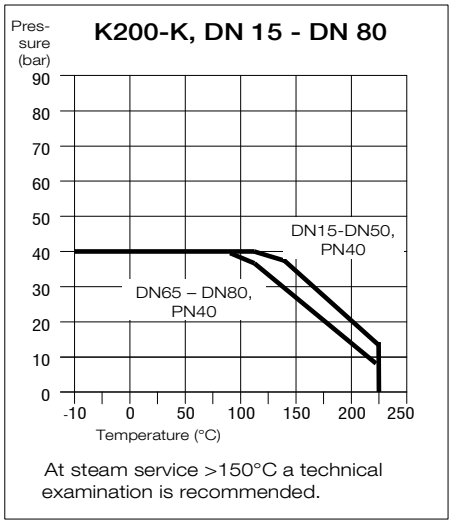
Wafer type ball valve
full bore
face to face acc. to EN 558, GR. 107
flanges acc. to EN 1092

Specification:

One-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.107, full bore, blow-out-proof stem, body material stainless steel (1.4571/1.4404) or carbon steel (1.0460), antistatic device, free on non ferrous metals, flange facing without interruption, cap mounted on block, body seal contact arrangement full chambered, seat full chambered, stem packing Graphite/KFGN/ KFAM system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to DIN EN ISO 10497, with lever.

Marking: INTEC K200-K

No.	Part	Material code	Material code
Standard design			
1	body	1.0460	1.4571/1.4404
2	cap	1.0460	1.4571/1.4404
3	ball	1.4408	
4	seat	KFGN/KFM	
5	body seal	KF	
6	stem	1.4462	
7	antistatic element	1.4401/1.4571/1.4404	
8	below seal	KFGN/Graphite	
9	upper seal	KFAM/Graphite	
10	bearing	PEEK	
11	hex. nut self-locking	A2/1.4301	
12	lever	1.4408/1.4308/steel zincplated	
13	stopper	1.4301	
14	allen screw	A2-70	
15	allen screw	A2-70	
Fire-Safe design			
5	combined body seal	KF-Graphite	
9	Fire-Safe seal	Graphite	
	ring	1.4571/1.4404	
	thrust washer	PEEK	



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	PN	dimensions (mm) H	L1	L	D	E	top flange ISO	torque Nm**	weight kg
15	40	95	160	50	95	39.5	F05	10	2.8
20	40	105	160	50	105	46.0	F05	16	3.3
25	40	114	180	60	115	49.5	F05	29	4.8
32	40	130	180	65	140	59.0	F05	46	7.6
40	40	135	300	80	150	76.0	F07	55	10.5
50	40	143	300	95	165	83.5	F07	88	14.8
65	40	155	300	110	185	94.0	F07	143	20.7
80	40	197	500	145	200	102.5	F10	208	30.6

** Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.

Ordering example:
INTEC K200-K, DN50, PN40, 1.0460, Fire-Safe

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INTEC K204-S-D

Steam ball valve, which protects your resources!

The maintenance-free steam ball valve for the safe relaxation of steam-prominent elastomere hoses.

Type:	Steam ball valve
Nominal sizes:	DN 25/20
Pressure gauge:	PN 25
Temperature:	up to +210°C
Material of body:	stainless steel
End connections:	inlet with flange connection acc. to EN 1092, outlet with threaded end G ¾“ acc. to EN ISO 228-1, outlet pressure relief connection threaded end G ¼“ acc. to EN ISO 228-1
FTF:	acc. to producers standard
Accessories:	hand lever extension

Certificates and Approvals:

» qualified for steam application (internal tests)

Product advantages:

» safe pressure relief of steam hoses
» saving of time acc. to self pressure relief
» increase the service life of steam hoses

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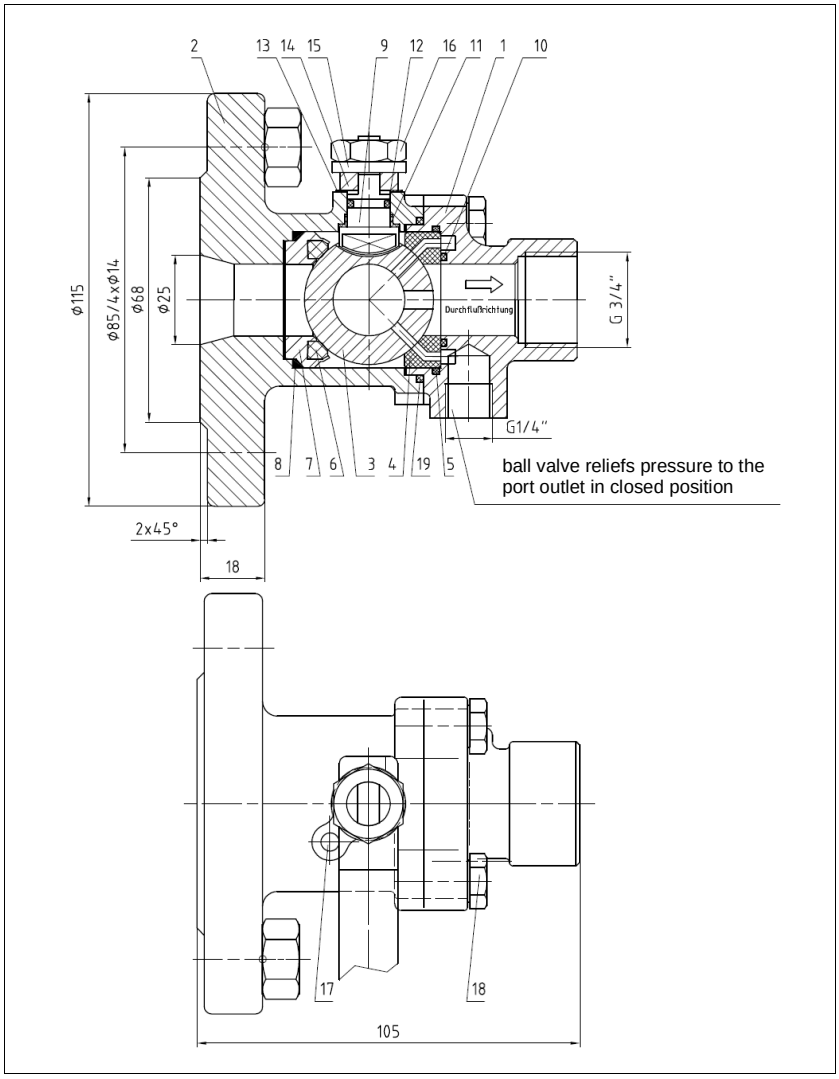
BALL VALVES INTEC

K204-S-D, DN25/20, PN25
with outlet pressure relief connection

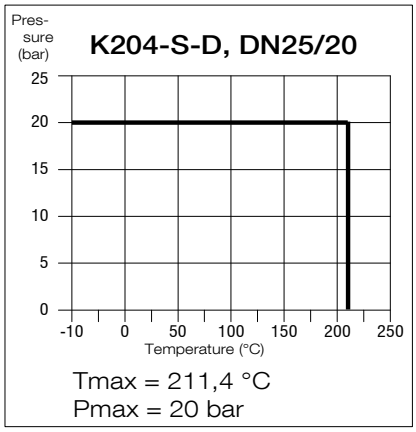


Steam ball valve
reduced bore
inlet with flange connection acc. to EN 1092
outlet with threaded end G ¾“
outlet pressure relief connection threaded end G ¼”
face to face dimensions acc. to producers standard

Specification:
Two-piece split body steam ball valve, inlet with flange connection acc. to EN 1092, outlet with threaded end G¾“ and outlet with automatic pressure relief in closed position, connection threaded end G ¼“, reduced bore, body material stainless steel (1.4408), free of non-ferrous metals, inlet seat ring KFCM, outlet seat ring made of modified PEEK, maintenance free shaft sealing with friction washer and o-ring, approved by PED, with lever.

Marking: INTEC
Type: K204-S-D

No.	Part	Material
1	body	1.4408
2	cap	1.4408
3	ball	1.4408
4	seat outlet	PEEK-mod.
5	o-ring	EPDM peroxyd. cross linked
6	seat inlet	KFC
7	seat bearing ring	1.4571/1.4404
8	seat	Graphite
9	stem	1.4462
10	o-ring	EPDM peroxyd. cross linked
11	friction washer	KFSM
12	o-ring	EPDM peroxyd. cross linked
13	thrust washer	PEEK
14	lever	1.4301/plasticised PVC
15	clamping washer	A2
16	hex. nut	A2
17	stopper	1.4571/1.4404
18	hex. screw	A4-70
19	body seal	KF



Ordering example:
INTEC K204-S-D, DN25/20, PN25, 1.4408

Subject to modification. 07/2017

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INTEC K400

Multiple way ball valve of the modular INTEC system technology!

The universal multiple way ball valve in the unit construction system of the INTEC K200 series.
With 3-, 4- or 5-way applications, your medium is safety in flow!

Type:	Multiple way ball valve
Nominal sizes:	DN 15 - DN 150 NPS ½“ - NPS 6“
Pressure range:	PN 16 - PN160 ANSI Class 150, Class 300, Class 600 and Class 900
Temperature:	up to +400°C
Material of body:	stainless steel, carbon steel
End connections:	flanges acc. to EN 1092 / flanges acc. to ANSI B 16.5
FTF:	acc. to EN 558, GR.1 / acc. to ANSI B 16.10
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, spring close unit - automatical return handle (“dead man handle”), gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cycles -40°C up to +220°C
- ATEX 2014/34/EU

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.
- higher pressure ratings and temperatures on request
- other face to face dimensions on request

Product advantages:

- equipped with all advantages of series INTEC K200
- full bore
- T- or L-bore
- overlap free ports available
- top flange DIN EN ISO 5211

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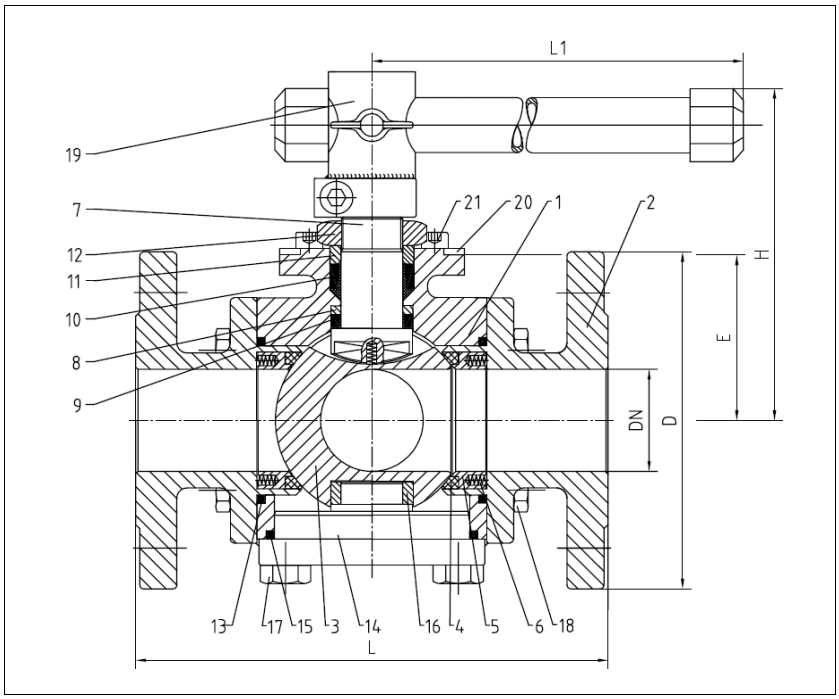
BALL VALVES INTEC

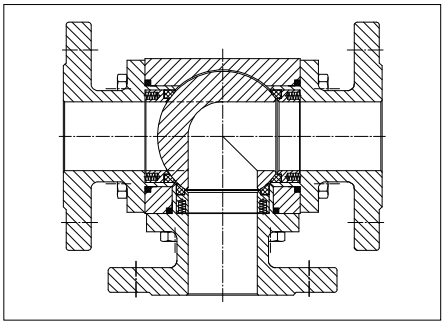
K410, DN15 - DN100, PN16/40
trunnion mounted, soft seated, spring loaded seat rings



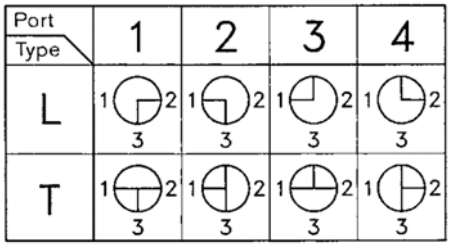
3-way ball valve with flanges
full bore
face to face acc. to EN 558, GR.1
flanges acc. to EN 1092

Specification:
3-way ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1, full bore, ball with L- or T-bore, blow-out-proof stem, body material stainless steel (1.4408/1.4571/1.4404) or carbon steel (1.0619/1.0460), antistatic device, free of non ferrous metals, seats full chambered, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Bezeichnung: INTEC K410



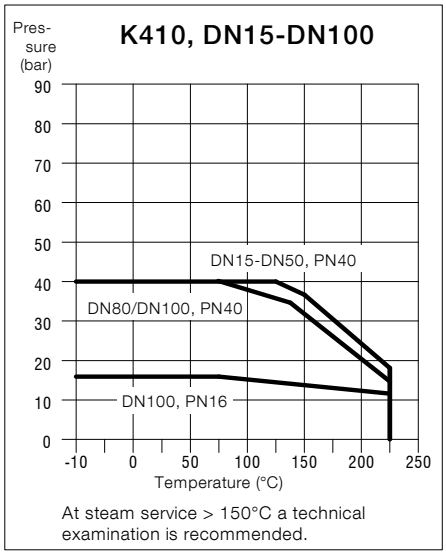
No.	Part	Material	Material
1	body	1.0619/1.0460	1.4408/1.4571/1.4404
2	cap	1.0619/1.0460	1.4408/1.4571/1.4404
3	ball	1.4408/1.4571/1.4404	
4	seat	KFGN/KFM	
5	seat bearing ring	1.4571/1.4404	
6	spiral spring	1.4401	
7	stem	1.4462	
8	below stem bearing	PEEK	
9	below seal	KFGN/Graphite	
10	upper seal	KFAM/Graphite	
11	upper stem bearing	PEEK	
12	hex. nut self-locking	A2/1.4301	
13	body seal	KF	
14	bearing neck	1.4408/1.4571/1.4404	
15	trunnion seal	KF	
16	bearing	PEEK	
17	hex. screw	A4-70	
18	hex. screw	A4-70	
19	lever	1.4408/1.4308/steel zincplated	
20	stopper	1.4301	
21	allen screw	A2-70	



Dimensions

DN	PN	dimensions (mm)					top flange	torque	weight
mm		H	L1	L	D	E	ISO	Nm*	kg
15	40	119.5	180	130**/210	95	55.0	F05	25	8.5
25	40	124.5	300	160	115	65.0	F07	46	10.0
40	40	171.0	500	200	150	76.5	F10	91	20.1
50	40	175.5	500	230	165	81.0	F10	95	24.4
80	40	204.0	700	310	200	120.0	F12	197	35.5
100	40	218.0	700	350	235	134.0	F12	243	48.2
100	16	218.0	700	350	220	134.0	F12	133	45.5

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature
** Compact type



Ordering example:
INTEC K410, DN50, PN40, Gr.1, 1.4408

Subject to technical modification. 08/2018

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INTEC K410-S

Manifold ball valve. Precision of sampling, also applicable for online-Analysis.

- Overlap free multiple ports available with L-bore (e.g. DN 10, eightfold samplings)
- Absolutely clearance volume minimized
- Body, screwed insert and trunnion ball made of stainless steel (1.4571/1.4404)
- With double bearings of trunnion ball with PEEK
- Stem material Duplex (1.4462), using of best knowledge of the pump technology
- Optimized conception between preliminary tension and elastic force of the stuffing box without using of disc springs and elastomers
- Stuffing box system absolutely ageing resistant
- System design in a graphite/KF cone ring principle
- Real primary sealing, no friction washer or bearing ring using of the floating ring seal principle (graphite cone ring in KFG-profile)
- Three side chambering of the seat rings
- Using of nitrogenium sintered high quality KFGN
- Reduction of abrasion, microdiffusion and operating torque
- Certified acc. to German clean air act VDI 2440, 100.000 cycles, -40°C up to +220°C
- Hand lever with stop bolt of secure lock of the several indexing position
- Extreme low torque guarantee a high operating convenience
- Best experiences in the chemical industry are made
- Automation on request

Materials, nominal sizes and design on request.
Please talk to us, our experts will be pleased to advice you.

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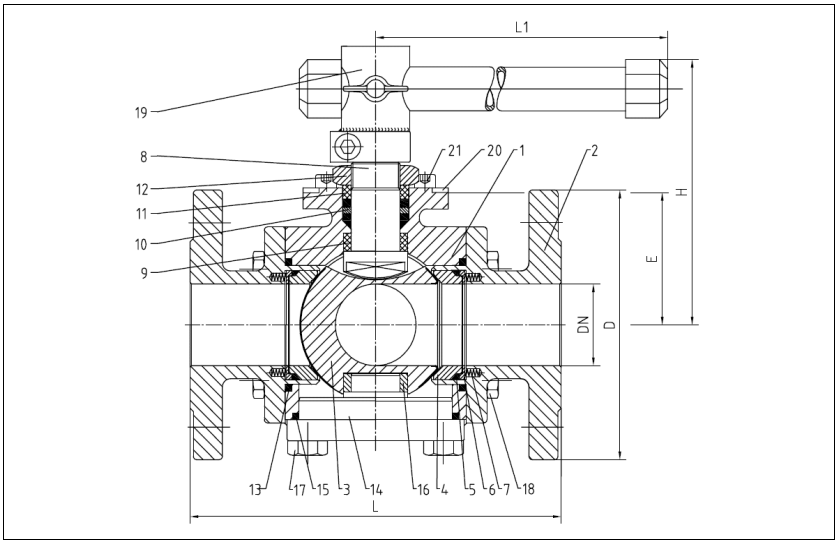
BALL VALVES INTEC

K411, DN15 - DN100, PN16/40
trunnion mounted ball, metal seated, spring loaded seat rings

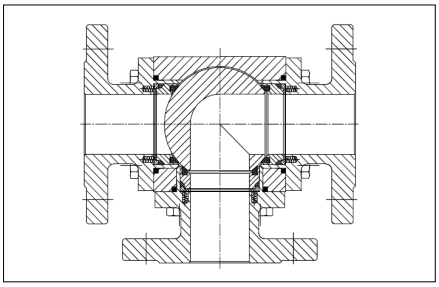


3-way ball valve with flanges
full bore
face to face acc. to EN 558, GR.1
flanges acc. to EN 1092

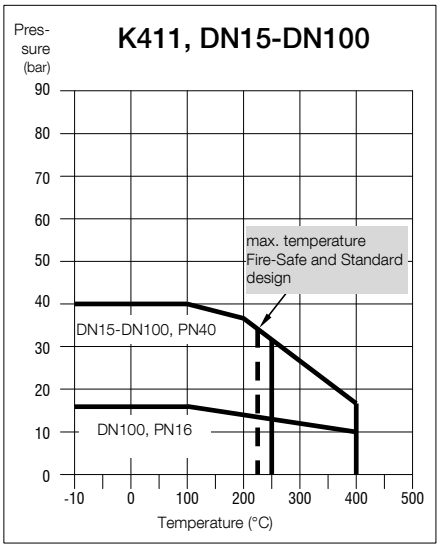
Specification:
3-way ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1, full bore, ball with L- or T-bore, blow-out-proof stem, body material stainless steel (1.4408/ 1.4571/1.4404) or carbon steel (1.0619/1.0460), antistatic device, free of non ferrous metals, trunnion mounted ball, seats 1.4571/1.4404 hard facing metal coated, stem packing cone ring system acc. to temperature use, dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC K411

No.	Part	Material		Material
High-temperature design				
1	body	1.0619/1.0460		1.4408/1.4571/1.4404
2	cap	1.0619/1.0460		1.4408/1.4571/1.4404
3	seal	1.4408/1.4571/1.4404 hard facing metal coated		
4	seat	1.4408/1.4571/1.4404 hard facing metal coated		
5	seat seal	Graphite		
6	follower ring	1.4571/1.4404		
7	spiral spring	Inconel X750		
8	stem	250°C	350°C	400°C
		1.4462	1.4980	1.4980
9	below stem bearing	E-carbon		
10	stem seal	1.4571/1.4404/Graphite		
11	upper stem bearing	E-carbon		
12	hex. nut self-locking	A2/1.4301		
13	body seal	Graphite		
14	bearing neck	1.4571/1.4404		
15	trunnion seal	Graphite		
16	bearing	E-carbon		
17+18	hex. screw	A4-70		
19	lever	1.4408/1.4308/steel zincplated		
20	stopper	1.4301		
21	allen screw	A2-70		
Fire-Safe design				
9	below stem seal	KFGN/Graphite		
	bearing	PEEK		
10	upper stem seal	KFAM/Graphite		
11	Fire-Safe seal	Graphite		
	ring	1.4571/1.4404		
	thrust washer	PEEK		
13	combined body seal	KF-Graphite		
16	bearing	PEEK		
Standard design				
5	seat seal	KF		
7	spiral spring	1.4401		
9	below stem seal	KFGN/Graphite		
	bearing	PEEK		
10	upper stem seal	KFAM/Graphite		
11	bearing	PEEK		
13	body seal	KF		
15	trunnion seal	KF		
16	bearing	PEEK		



Port / Type	1	2	3	4
L	1 2 3	1 2 3	1 2 3	1 2 3
T	1 2 3	1 2 3	1 2 3	1 2 3



Dimensions

DN mm	PN	dimensions (mm) H	L1	L	D	E	top flange ISO	weight kg
15	40	119.5	180	130**/210	95	55.0	F05	8.5
25	40	124.5	300	160	115	65.0	F07	10.0
40	40	171.0	500	200	150	76.5	F10	20.1
50	40	175.5	500	230	165	81.0	F10	24.4
80	40	204.0	700	310	200	120.0	F12	35.5
100	40	218.0	700	350	235	134.0	F12	48.2
100	16	218.0	700	350	220	134.0	F12	45.5

** wafer type

Ordering example:
INTEC K411, DN50, PN40, Gr.1, 1.4408

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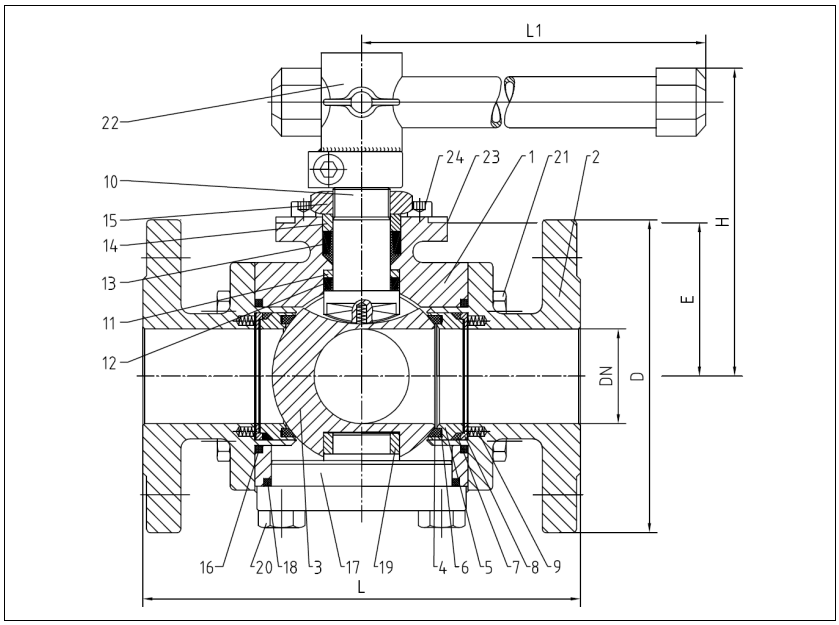
BALL VALVES INTEC

K414, DN15 - DN100, PN16/40
trunnion mounted, PEEK seated, spring loaded seat rings



No.	Part	Material	Material
Standard design			
1	body	1.0619/1.0460	1.4408/1.4571/1.4404
2	cap	1.0619/1.0460	1.4408/1.4571/1.4404
3	ball	1.4408/1.4571/1.4404	
4	seat	PEEK	
5	seat bearing ring	1.4571/1.4404	
6	seat back seal	Graphite	
7	seat seal	KF	
8	follower ring	1.4571/1.4404	
9	spiral spring	1.4401	
10	stem	1.4462	
11	below stem bearing	PEEK	
12	below seal	KFGN/Graphite	
13	upper seal	KFAM/Graphite	
14	upper stem bearing	PEEK	
15	hex. nut self-locking	A2/1.4301	
16	body seal	KF	
17	bearing neck	1.4571/1.4404	
18	trunnion seal	KF	
19	bearing	PEEK	
20+21	hex. screw	A4-70	
22	lever	1.4408/1.4308/steel zincplated	
23	stopper	1.4301	
24	allen screw	A2-70	
Fire-Safe design			
7	seat seal	Graphite	
9	spiral spring	Inconel X750	
16	combined body seal	KF-Graphite	
18	trunnion seal	KF-Graphite	
14	Fire-Safe seal ring	Graphite	
	thrust washer	1.4571/1.4404	
		PEEK	

Dimensions

DN mm	PN	dimensions (mm) H	L1	L	D	E	top flange ISO	weight kg
15	40	119.5	180	130**/210	95	55.0	F05	8.5
25	40	124.5	300	160	115	65.0	F07	10.0
40	40	171.0	500	200	150	76.5	F10	20.1
50	40	175.5	500	230	165	81.0	F10	24.4
80	40	204.0	700	310	200	120.0	F12	35.5
100	40	218.0	700	350	235	134.0	F12	48.2
100	16	218.0	700	350	220	134.0	F12	45.5

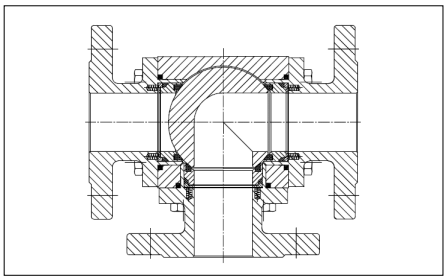
** wafer type

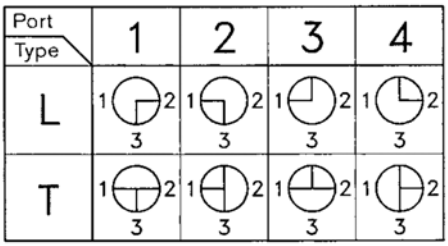
3-way ball valve with flanges
full bore
face to face acc. to EN 558, GR.1
flanges acc. to EN 1092

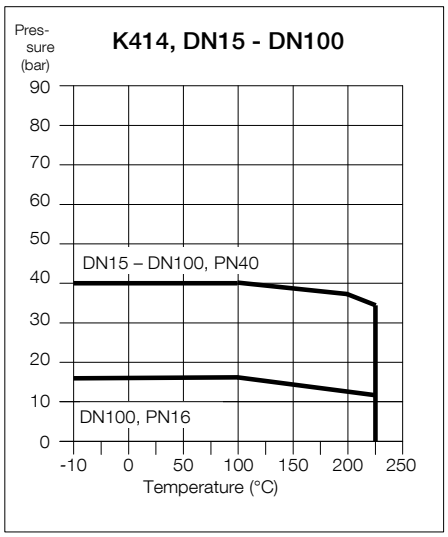
Specification:
3-way ball valve with flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1, full bore, ball with L- or T-bore, blow-out-proof stem, body material stainless steel (1.4408/1.4571/1.4404) or carbon steel (1.0619/1.0460), antistatic device, free of non ferrous metals, trunnion mounted ball, seats full chambered, stem packing Graphite/KFGN/KFAM cone ring system dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Also possible as high temperature version up to +260°C.

Marking: INTEC K414







Ordering example:
INTEC K414, DN50, PN40, GR.1, 1.4408

Subject to technical modification. 10/2019

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INTEC K500

Tank bottom ball valve of the modular INTEC system technology!

The stem is angularly placed and thus a marsh free installation and trouble free automation is possible.

Type:	Tank bottom ball valve
Nominal sizes:	DN 80/50 - DN 200/150
Pressure range:	PN 10 and PN 16
Temperature:	up to +400°C
Material of body	stainless steel
End connections:	flanges acc. to EN 1092, tank connections: DIN 28140 (drain valve), DIN 28117 (loose flange)
FTF:	acc. to EN 558, GR.13
Accessories:	heating jacket, flushing connection

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cycles -40°C up to +220°C
- ATEX 2014/34/EU

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Product advantages:

- equipped with all advantages of series INTEC K200
- individual connections on request
- clearance volume minimized
- marsh free installation
- trouble free automation
- metal seated up to +400°C

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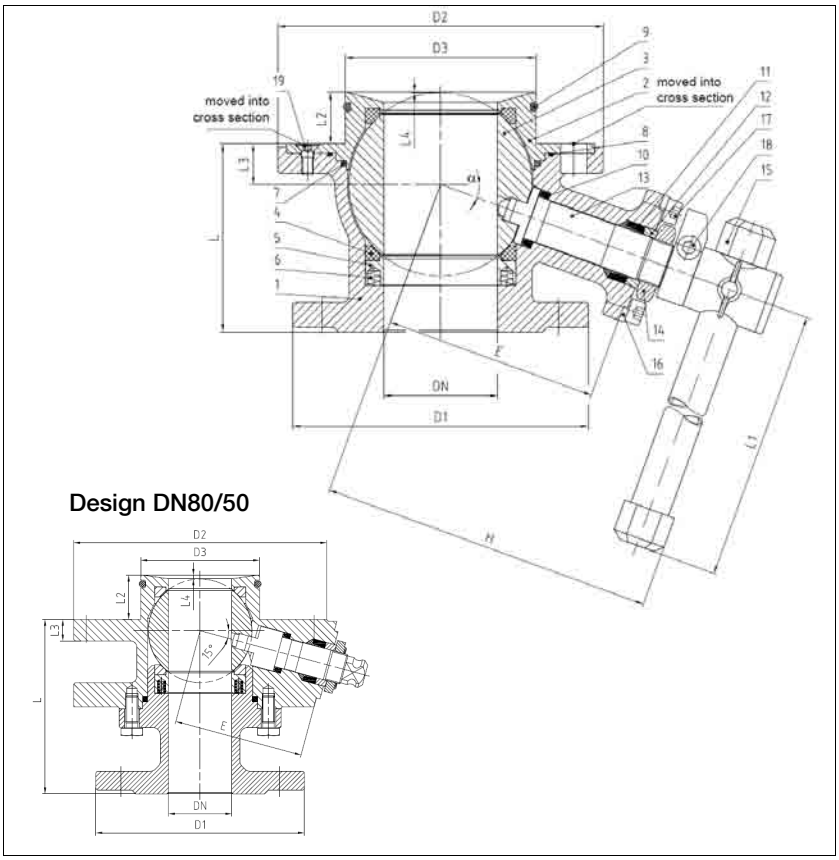
BALL VALVES INTEC

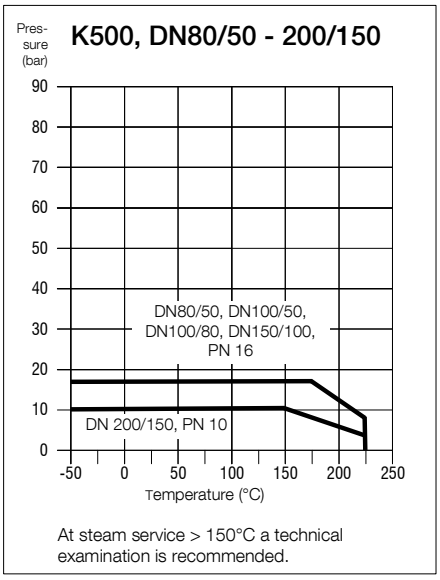
K500, DN80/50 - DN200/150, PN10/16
floating ball, soft seated, single side spring loaded seat ring
Tank connection acc. to DIN 28140 part 1



Tank bottom ball valves with flanges
full bore
face to face acc. to EN 558, GR. 13
flanges acc. to EN 1092

Specification:
Tank bottom ball valve with two-piece body, outlet flange acc. to EN 1092, face to face dimension acc. to EN 558, GR.13, full bore, body material stainless steel (1.4408/1.4571/ 1.4404), antistatic device, free of non ferrous metals, tank connection acc. to DIN 28140 part 1, single spring loaded seat ring, stem sealing maintenance free, dynamic loaded adjustable, stem is angularly placed and thus a marsh free installation and trouble free automation is possible, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440,
Fire-Safe design, with lever.

Marking: INTEC K500



At steam service > 150°C a technical examination is recommended.

No.	Part	Material
1	body	1.4408/1.4571/1.4404
2	cap	1.4408/1.4571/1.4404
3	ball	1.4408
4	seat	KFM/KFGN
5	seat bearing ring	1.4571/1.4404
6	spiral spring	1.4401
7	body seal	KF
8	O-ring	Viton
9	O-ring	Viton
10	below seal	KFGN/Graphite
11	upper seal	KFAM/Graphite
12	bearing	PEEK
13	stem	1.4462
14	hex. nut self locking	A2/1.4301
15	lever	1.4408/1.4308
16	stopper	1.4301
17	allen screw	A2-70
18	allen screw	A2-70
19	countersunk screw	A4-70

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature

**Outlet flange Compact design with threaded holes. Also available in flange version, then with length = 138 mm

*** No FTF standard

Dimensions

DN	PN	dimensions (mm)											top flange	torque	weight
mm		H	L1	L2	L3	L4	L	E	D1	D2	D3	α	ISO	Nm*	kg
80/50	16	184.0	300	35	17	3.0	114**	102.5	165	200	94	15°	F07	45	11.8
100/50	16	178.0	300	35	27	29.8	127	118.5	165	220	129	15°	F07	45	16.0
100/80	16	339.0	500	35	27	0.3	127	144.5	200	220	129	20°	F10	90	17.5
150/100	16	368.5	500	40	41	0.5	140	174.0	220	285	179	20°	F10	130	43.0
200/150	10	405.0	700	40	76	1.0	200***	206.0	285	340	233	15°	F12	220	66.0

Ordering example:
INTEC K500, DN100/80, PN16, GR.13, 1.4408

Subject to modification. 07/2018

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INTEC K700

Sampling device ball valve of the modular INTEC system technology!

This assembling device ball valve owned an extremely big outlet with pressure relief of the sampling flask.
The sealing systems and also the body materials can be designed acc. to medium requirements.
This sampling device unit is available for plant lines from DN 15 up to DN 200. Cavity filler design is available.
Flask connection with thread acc. to DIN 168 or spring loaded disk is possible.

Type:	Sampling device ball valve
Nominal sizes:	DN 15 - DN 200
Pressure range:	PN 16 and PN 40
Temperature:	up to +400°C
Material of body:	stainless steel
End connections:	flanges acc. to EN 1092
FTF:	acc. to EN 558, GR.1 and GR.27
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, bottle support with spring loaded disc, metal bottle with bayonet locking, protection cover with bayonet locking, protection box made of stainless steel for vacuum or pressure relief, hollow needle system for septum-bottle

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440, 100.000 cycles -40°C up to +220°C
- ATEX 2014/34/EU

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Product advantages:

- equipped with all advantages of series INTEC K200
- extremely big outlet
- sealing systems and body materials can be designed acc. to medium requirements
- cavity filler design is available
- bottle connection with thread acc. to DIN 168 or with spring loaded disk
- various threaded connections on request

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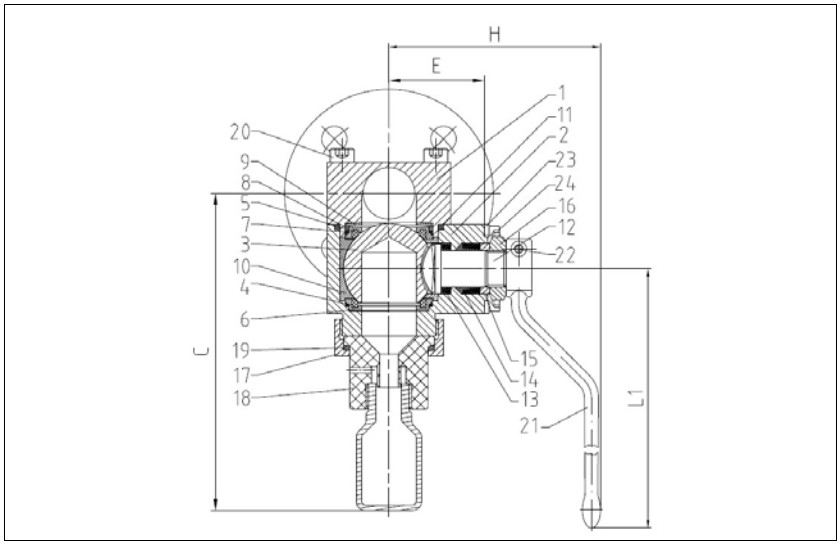
BALL VALVES INTEC

K730, DN15 - DN200, PN 16/40
Sample volume per switch cycle 10, 15 or 25 ml, soft seated



No.	Part	Material
design PN 16		
1	adapter	1.4571/1.4404/1.4408
2	body	1.4571/1.4404/1.4408
3	ball	1.4571/1.4404
4	seat exit port	KFM
5	seat entry port	KFM
6	seat bearing ring	1.4571/1.4404
7	bearing ring seal	KF
8	follower ring	1.4571/1.4404
9	plate spring	Inconel 718
10	spherical cap	1.4571/1.4404
11	body seal	KF
12	stem	1.4462
13	below seal	KFGN/Graphite
14	upper seal	KFAM/Graphite
15	bearing	PEEK
16	hex. nut self-locking	A2/1.4301
17	cap nut	1.4301
18	bottle adapter	KFGN
19	o-ring	Viton
20	allen screw	A4-70
21	lever	1.4408
22	allen screw	A2-70
23	stopper	1.4301
24	allen screw	A2-70
design PN 40		
4	seat exit port	PEEK

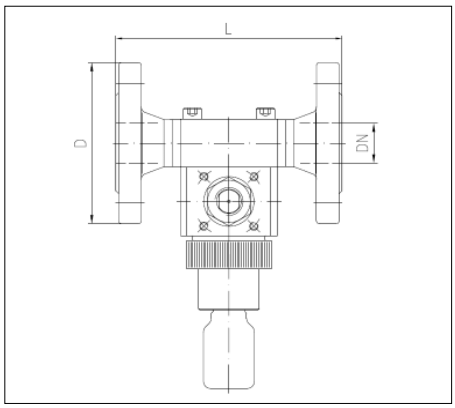
Dimensions

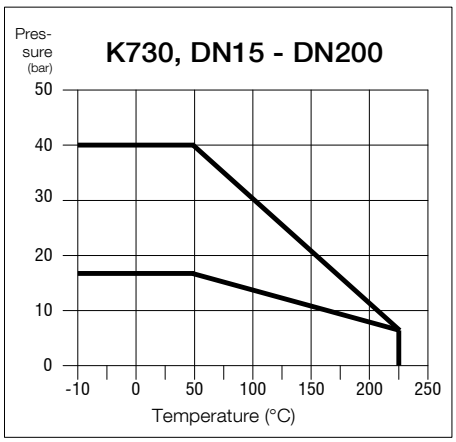
DN mm	PN	dimensions (mm) H	L1	L (GR.1)	L (GR.27)	D	E	C sample bottle 25 ml (GL25)	50 ml (GL32)	100 ml (GL45)
15	16/40	116.5	180	130	-	95	52.5	170.3	187.3	200.3
20	16/40	116.5	180	150	-	105	52.5	172.5	189.5	202.5
25	16/40	116.5	180	160	-	115	52.5	175.1	192.1	205.1
32	16/40	116.5	180	180	-	140	52.5	177.6	194.6	207.6
40	16/40	116.5	180	200	140	150	52.5	180.5	197.5	210.5
50	16/40	116.5	180	230	150	165	52.5	186.75	203.75	216.75
65	16/40	216.5*	180	290	170	185	52.5	198.1	215.1	228.1
80	16/40	216.5*	180	310	180	200	52.5	209.5	226.5	239.5
100	16/40	216.5*	180	350	190	200/235	52.5	223.4	240.4	253.4
125	16/40	216.5*	180	-	325	250/270	52.5	237.3	254.5	267.5
150	16/40	216.5*	180	-	350	285/300	52.5	252.0	269.0	282.0
200	16/40	216.5*	180	-	400	340/375	52.5	266.4	283.4	296.4

Sampling device ball valve with flanges acc. to EN 1092
connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27

Specification:
Sampling device ball valve with flanges acc. to EN 1092, connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4571/ 1.4404/1.4408), antistatic device, free of non ferrous metals, ball with pocket hole for a defined sample volume of 10, 15, 25 ml, cavity reduced through spherical cap, seat fully chambered, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC 730





* incl. 100 mm stem extension.

Protection box, safety cover and/or heating jacket on request.

- special material on request.

Ordering example:
INTEC K730, DN50, PN16, GR.1, 25 ml, GL 25

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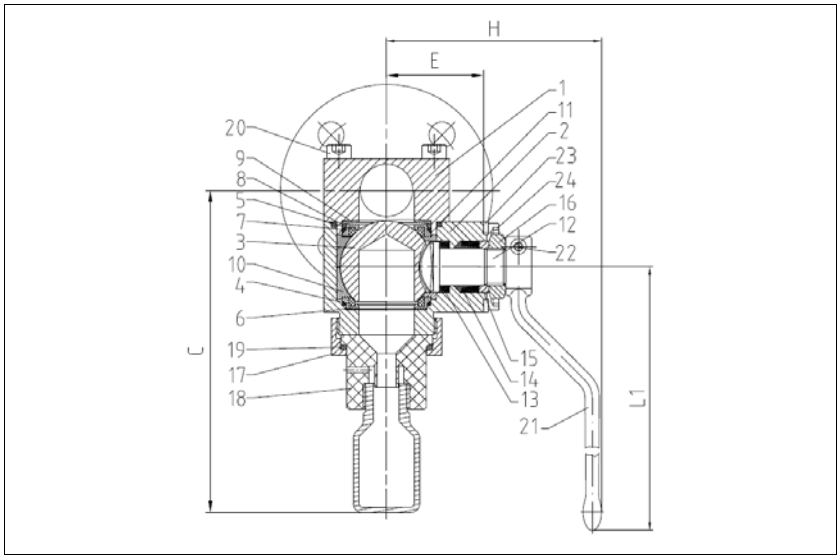
BALL VALVES INTEC

K740, DN15 - DN200, PN 16/40
Sample volume per switch cycle 40, 50 or 70 ml, soft seated



No.	Part	Material
design PN 16		
1	adapter	1.4571/1.4404/1.4408
2	body	1.4571/1.4404/1.4408
3	ball	1.4571/1.4404
4	seat exit port	KFM
5	seat entry port	KFM
6	seat bearing ring	1.4571/1.4404
7	bearing ring seal	KF
8	follower ring	1.4571/1.4404
9	plate spring	Inconel 718
10	spherical cap	1.4571/1.4404
11	body seal	KF
12	stem	1.4462
13	below seal	KFGN/Graphite
14	upper seal	KFAM/Graphite
15	bearing	PEEK
16	hex. nut self-locking	A2/1.4301
17	cap nut	1.4301
18	bottle adapter	KFGN
19	o-ring	Viton
20	allen screw	A4-70
21	lever	1.4408
22	allen screw	A2-70
23	stopper	1.4301
24	allen screw	A2-70
design PN 40		
4	seat exit port	PEEK

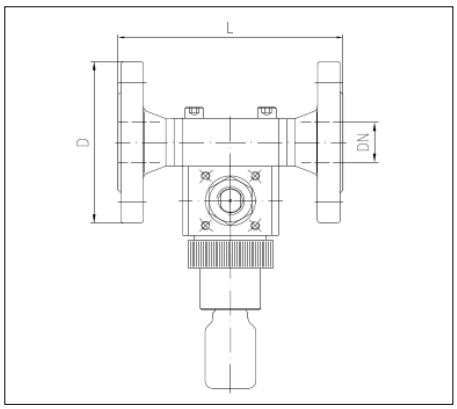
Dimensions

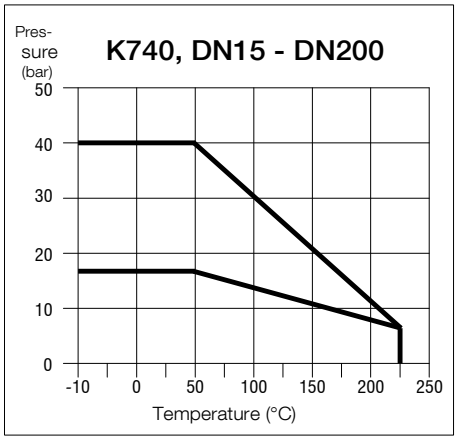
DN mm	PN	dimensions (mm) H	L1	L (GR.1)	L (GR.27)	D	E	C sample bottle 50 ml (GL32)	100 ml (GL45)	250 ml (GL45)
15	16/40	125.5	300	160**	-	95	66.5	227	238	275
20	16/40	125.5	300	160**	-	105	66.5	227	238	275
25	16/40	125.5	300	160	-	115	66.5	227	238	264
32	16/40	125.5	300	180	-	140	66.5	228	239	272
40	16/40	125.5	300	200	140	150	66.5	231	242	275
50	16/40	125.5	300	230	150	165	66.5	237	248	281
65	16/40	225.5*	300	290	170	185	66.5	244	255	288
80	16/40	225.5*	300	310	180	200	66.5	252	263	296
100	16/40	225.5*	300	350	190	200/235	66.5	269	280	313
125	16/40	225.5*	300	-	325	250/270	66.5	284	295	328
150	16/40	225.5*	300	-	350	285/300	66.5	299	310	343
200	16/40	225.5*	300	-	400	340/375	66.5	334	345	378

Sampling device ball valve with flanges acc. to EN 1092
connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27

Specification:
Sampling device ball valve with flanges acc. to EN 1092, connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4571/1.4404/1.4408), antistatic device, free of non ferrous metals, ball with pocket hole for a defined sample volume of 40, 50, 70 ml, cavity reduced through spherical cap, seat fully chambered, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC K740





* incl. 100 mm stem extension.
Protection box, safety cover and/or heating jacket on request.
** special lengths
- special material on request.

Ordering example:
INTEC K740, DN50, PN16, GR.1, 50 ml, GL 32

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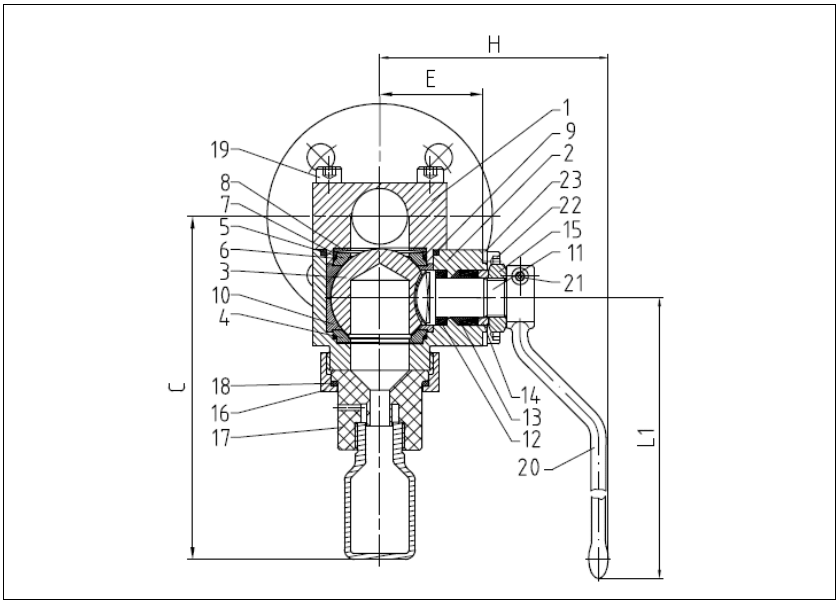
BALL VALVES INTEC

K731, DN15 - DN200, PN16/40
Sample volume per switch 10, 15 or 25 ml, metal seated



No.	Part	Material
1	adapter	1.4571/1.4404/1.4408
2	body	1.4571/1.4404/1.4408
3	ball	1.4571/1.4404 hard facing metal coated
4	seat exit port	1.4571/1.4404 hard facing metal coated
5	seat entry port	1.4571/1.4404 hard facing metal coated
6	bearing ring seal	KF
7	follower ring	1.4571/1.4404
8	plate spring	Inconel 718
9	body seal	KF
10	spherical cap	1.4571/1.4404
11	stem	1.4462
12	below seal	KFGN/Graphite
13	upper seal	KFAM/Graphite
14	upper stem bearing	PEEK
15	hex. nut self-locking	A2/1.4301
16	cap nut	1.4301
17	bottle adapter	KFGN
18	o-ring	Viton
19	allen screw	A4-70
20	lever	1.4408
21	allen screw	A2-70
22	allen screw	A2-70
23	stopper	1.4301

Dimensions

DN mm	PN	dimensions (mm) H	L1	L (GR.1)	L (GR.27)	D	E	C sample bottle 25 ml (GL25)	50 ml (GL32)	100 ml (GL45)
15	16/40	116.5	250	130	-	95	52.5	170.3	187.3	200.3
20	16/40	116.5	250	150	-	105	52.5	172.5	189.5	202.5
25	16/40	116.5	250	160	-	115	52.5	175.1	192.1	205.1
32	16/40	116.5	250	180	-	140	52.5	177.6	194.6	207.6
40	16/40	116.5	250	200	140	150	52.5	180.5	197.5	210.5
50	16/40	116.5	250	230	150	165	52.5	186.75	203.75	216.75
65	16/40	216.5*	250	290	170	185	52.5	198.1	215.1	228.1
80	16/40	216.5*	250	310	180	200	52.5	209.5	226.5	239.5
100	16/40	216.5*	250	350	190	200/235	52.5	223.4	240.4	253.4
125	16/40	216.5*	250	-	325	250/270	52.5	237.3	254.5	267.5
150	16/40	216.5*	250	-	350	285/300	52.5	252.0	269.0	282.0
200	16/40	216.5*	250	-	400	340/375	52.5	266.4	283.4	296.4

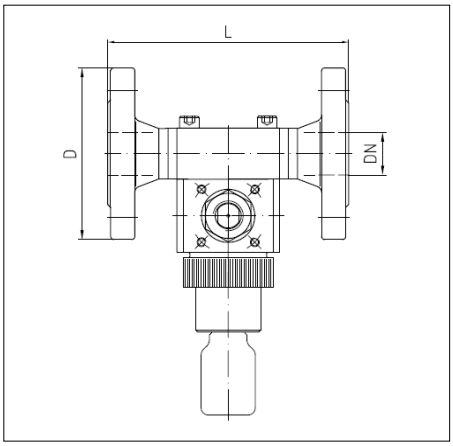
* incl. 100 mm stem extension.
Protection box, safety cover and/or heating jacket on request.
- special material on request.

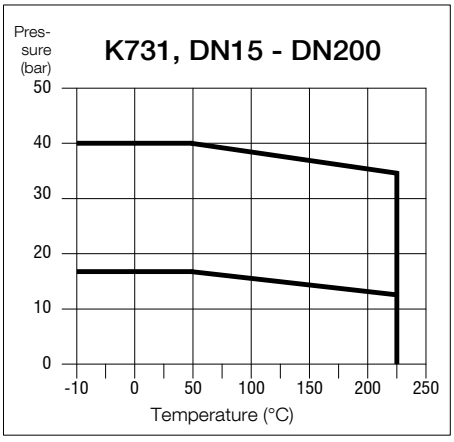
Sampling device ball valve
with flanges acc. to EN 1092
connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27

Specification:
Sampling device ball valve with flanges acc. to EN 1092, connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4571/ 1.4404/1.4408), antistatic device, free of non ferrous metals, ball with pocket hole for a defined sample volume of 10, 15, 25 ml, cavity reduced through spherical cap, seats 1.4571/1.4404 hard facing metal coated, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

High-temperature design up to +400°C on request.

Marking: INTEC K731





Ordering example:
INTEC K731, DN50, PN16, GR.1, 25 ml, GL 25

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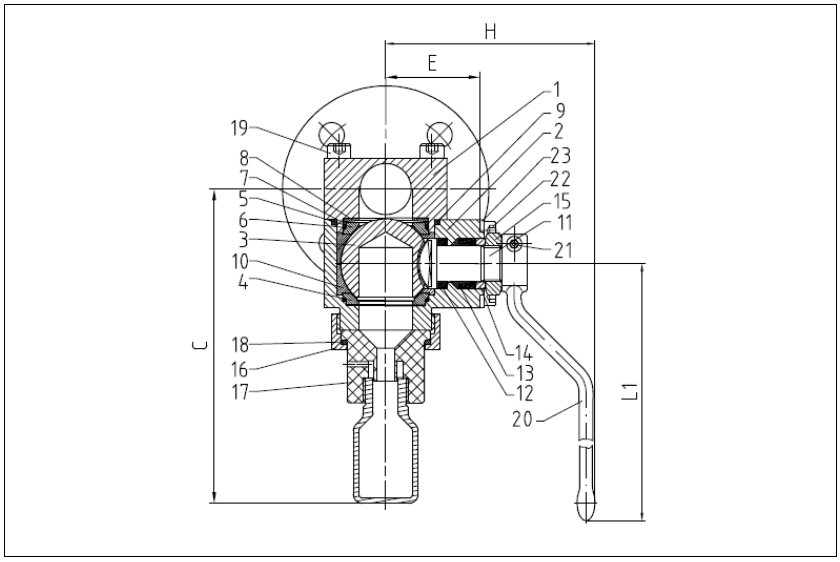
BALL VALVES INTEC

K741, DN15 - DN200, PN16/40
Sample volume per switch 40, 50 or 70 ml, metal seated



No.	Part	Material
1	adapter	1.4571/1.4404/1.4408
2	body	1.4571/1.4404/1.4408
3	ball	1.4571/1.4404 hard facing metal coated
4	seat exit port	1.4571/1.4404 hard facing metal coated
5	seat entry port	1.4571/1.4404 hard facing metal coated
6	bearing ring seal	KF
7	follower ring	1.4571/1.4404
8	plate spring	Inconel 718
9	body seal	KF
10	spherical cap	1.4571/1.4404
11	stem	1.4462
12	below seal	KFGN/Graphite
13	upper seal	KFAM/Graphite
14	upper stem bearing	PEEK
15	hex. screw self-locking	A2/1.4301
16	cap nut	1.4301
17	bottle adapter	KFGN
18	o-ring	Viton
19	allen screw	A4-70
20	lever	1.4408
21	allen screw	A2-70
22	allen screw	A2-70
23	stopper	1.4301

Dimensions

DN mm	PN	dimensions (mm) H	L1	L (GR.1)	L (GR.27)	D	E	C sample bottle 50 ml (GL32)	100 ml (GL45)	250 ml (GL45)
15	16/40	125.5	360	160**	-	95	66.5	227	238	275
20	16/40	125.5	360	160**	-	105	66.5	227	238	275
25	16/40	125.5	360	160	-	115	66.5	227	238	264
32	16/40	125.5	360	180	-	140	66.5	228	239	272
40	16/40	125.5	360	200	140	150	66.5	231	242	275
50	16/40	125.5	360	230	150	165	66.5	237	248	281
65	16/40	225.5*	360	290	170	185	66.5	244	255	288
80	16/40	225.5*	360	310	180	200	66.5	252	263	296
100	16/40	225.5*	360	350	190	200/235	66.5	269	280	313
125	16/40	225.5*	360	-	325	250/270	66.5	284	295	328
150	16/40	225.5*	360	-	350	285/300	66.5	299	310	343
200	16/40	225.5*	360	-	400	340/375	66.5	334	345	378

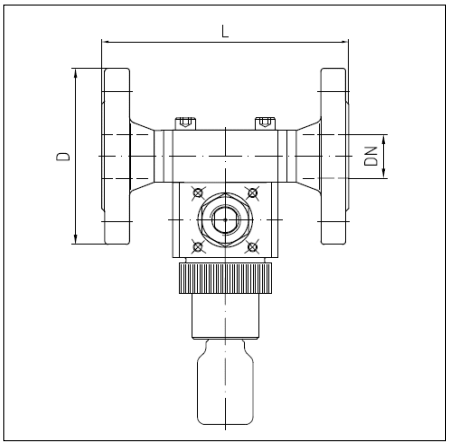
* incl. 100 mm stem extension.
Protection box, safety cover and/or heating jacket on request.
** special lengths.
- special material on request.

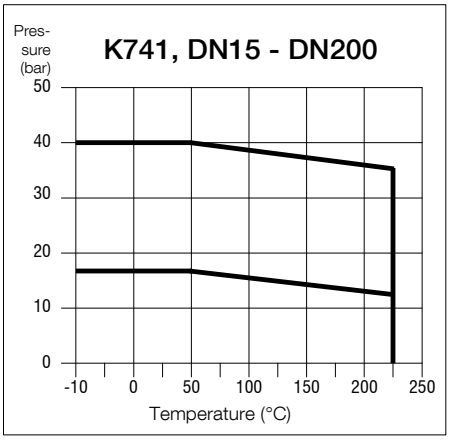
Sampling device ball valve
with flanges acc. to EN 1092
connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45
full bore
face to face acc. to EN 558, GR. 1
face to face acc. to EN 558, GR. 27

Specification:
Sampling device ball valve with flanges acc. to EN 1092, connection thread for sample bottle acc. to DIN 168 GL 25, GL 32, GL 45, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4571/ 1.4404/1.4408), antistatic device, free of non ferrous metals, ball with pocket hole for a defined sample volume of 40, 50, 70 ml, cavity reduced through spherical cap, seats 1.4571/1.4404 hard facing metal coated, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

High-temperature design up to +400°C on request.

Marking: INTEC K741





Ordering example:
INTEC K741, DN50, PN16, GR.1,
50 ml, GL 32

Subject to modification. 05/2017

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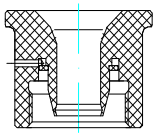
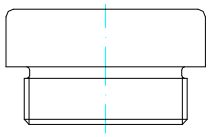
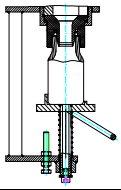
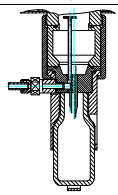
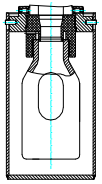
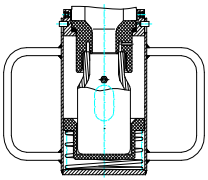
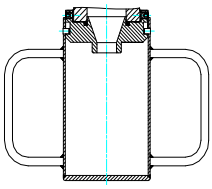
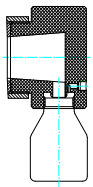
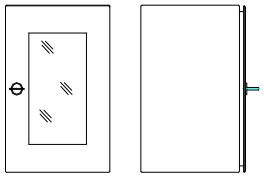
BALL VALVES INTEC

Adapter versions for
Sampling device ball valves Type INTEC K730ff / INTEC K740ff

Adapter version	Adapter material	Drawing
Bottle adapter GL25 (DIN 168) with vent bore	KFA / KFGN	
Bottle adapter GL32 (DIN 168) with vent bore	KFA / KFGN	
Bottle adapter GL45 (DIN 168) with vent bore	KFA / KFGN	
Plug screw for GL25, GL32, GL45 (DIN 168)	KF	
Bottle support, spring loaded for GL25, GL32, GL45 (DIN 168)	KFA / KFGN	
Hollow needle system for septum-bottle (1.4571 or special material)	1.4571 or special material	
Protection cover with bayonet locking (1.4301) for GL25, GL32, GL45 (DIN 168)	KFA / KFGN	
Protection cover, bottle support spring loaded with bayonet locking (1.4301) for GL25, GL32, GL45 (DIN 168)	KFA / KFGN	
Metal bottle with bayonet locking (1.4571 or special material)	1.4571 or special material	
Swing adapter for angular and vertical piping	KFA / KFGN	
Protection box (1.4301 or plastic)		

Subject to modification. 04/2017

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INTEC K811

3-piece high-pressure ball valve of the modular INTEC system technology!

High precision bearings and both sides spring loaded seat ring elements are responsible for a safety handling in all applications of the high pressure ranges.

Type:	3-piece high-pressure ball valve
Nominal sizes:	DN 16, DN 24, DN 30, DN 45
Pressure range:	PN 325
Temperature:	up to +400°C
Material of body:	stainless steel, carbon steel
End connections:	flanges acc. to BASF-WN 18011
FTF:	acc. to EN 558, GR.2
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440,
- ATEX 2014/34/EU

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Product advantages:

- equipped with all advantages of series INTEC K200
- two-piece split body or three-piece split body design
- extreme long-life acc. high precision bearing of the stem
- optimized arrangement of the bearing forces
- leakage rate A

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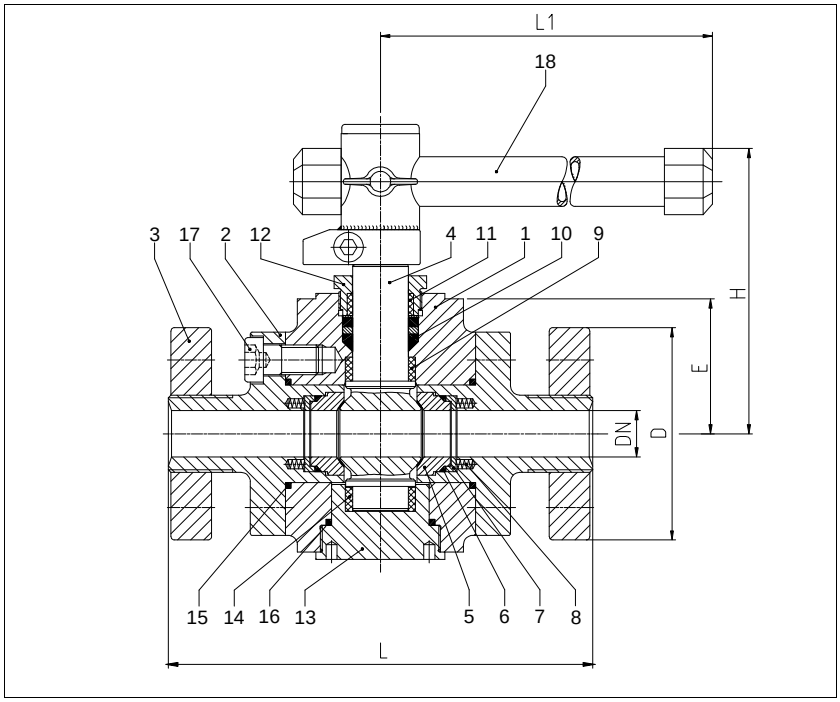
BALL VALVES INTEC

K811, DN16/DN24/DN30/DN45, PN325
trunnion mounted ball, metal seated, both sides spring loaded seat rings

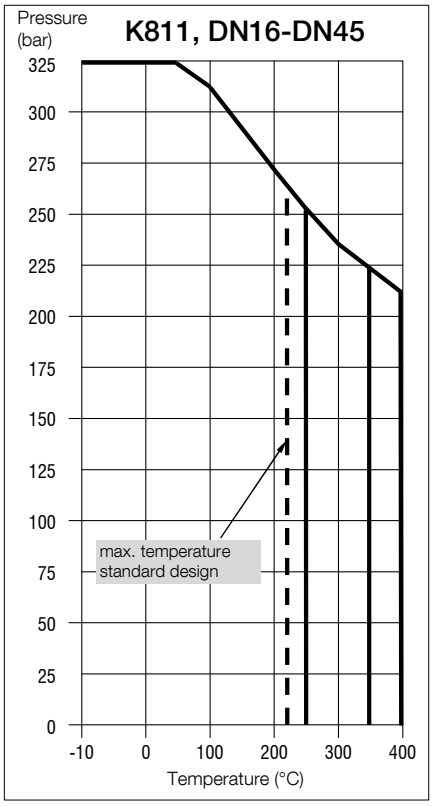


3-piece high-pressure ball valve
with flanges
full bore
face to face acc. to producers standard flanges acc. to BASF-WN 18 011

Specification:
3-piece high-pressure ball valve, flanges acc. to BASF-WN 18 011, face to face dimensions acc. to producers standard, full bore, ball and stem one unit, blow-out-proof stem, body material stainless steel (1.4571/1.4404) or carbon steel (1.0460), antistatic device, free of non ferrous metals, seat 1.4571/1.4404 hard facing metal coated, stem packing cone ring construction acc. to temperature use, dynamic loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC K811

No.	Part	Material			Material		
High temperature design							
1	body	1.0460			1.4571/1.4404		
2	cap	1.0460			1.4571/1.4404		
3	screwed flange	1.7258			1.7258		
4	ball-stem unit	250°C	350°C	400°C	250°C	350°C	400°C
	hard facing metal coated	1.4462	1.4313	1.4980	1.4462	1.4980	1.4980
5	seat	1.4571/1.4404 hard facing metal coated					
6	bearing ring seal	Graphite					
7	follower ring	1.4571/1.4404					
8	spiral spring	Inconel X750					
9	below stem bearing	E-carbon					
10	upper stem seal	1.4571/1.4404/Graphite					
11	upper stem bearing	E-carbon					
12	stuffing box screw	1.4571/1.4404					
13	bearing neck	1.4571/1.4404					
14	trunnion bearing	E-carbon					
15	body seal	Graphite					
16	trunnion seal	Graphite					
17	hex. nut	1.7258					
18	lever	1.4408/1.4308/steel zincplated					
Standard design							
8	spiral spring	1.4401					
9	below stem bearing	PEEK					
10	upper stem seal	KF/Graphite/PEEK					
11	upper stem bearing	PEEK					
15	body seal	KF					
16	trunnion seal	KF					



Dimensions

DN mm	PN	dimensions (mm) H	L1	L	D	E	top flange ISO	torque Nm*	weight kg
16	325	139.0	300	230	105	62.0	F07	186	13,6
24	325	185.5	500	260	115	73.0	F10	305	19.0
30	325	201.5	700	300	135	83.0	F12	442	30.5
45	325	216.0	700	350	165	97.5	F14	717**	49.3

* Necessary torque measured with treated water at Δ P acc. to pressure class and room temperature.

** Gearbox recommended.

Other flange connections on request.

Ordering example:
INTEC K811, DN24, PN325, 1.0460, high temperature, stem 1.4980

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SMALL BALL VALVES / PRESSURE GAUGE BALL VALVES

KLINGER Schöneberg

INTEC

INTEC K100

Perfect solution for laboratory, chemical analysis, testing and mini plant!

The high pressure series for all laboratory and mini plant applications for process industries. The series is available from threaded end to clamping ring connection. All variations are used for laboratory and also in control applications. A benefit for this series is also the smart possibility for automation. Certified acc. to German clean air act VDI 2440!

Type:	Small ball valve
Nominal sizes:	DN 8 - DN 20
Pressure range:	PN 100, PN 160 and PN 250
Temperature:	up to +260°C
Material of body:	stainless steel
End connections:	with female threaded ends, with male threaded ends, one side with female threaded end and other side with male threaded end, with pipe screwing light / heavy series with clamping ring connection
FTF:	see relevant ball valve types
Accessories:	heating jacket, hand lever with bayonet locking, hand lever extension, block unit - padlock unit, spring close unit - automatical return lever (“deadman handle”)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440
- ATEX 2014/34/EU

Special designs:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.
- PEEK seated
- special connections on request

Product advantages:

- compact design
- one piece body reduces fugitive emissions
- best suited for automation
- wide range of accessories

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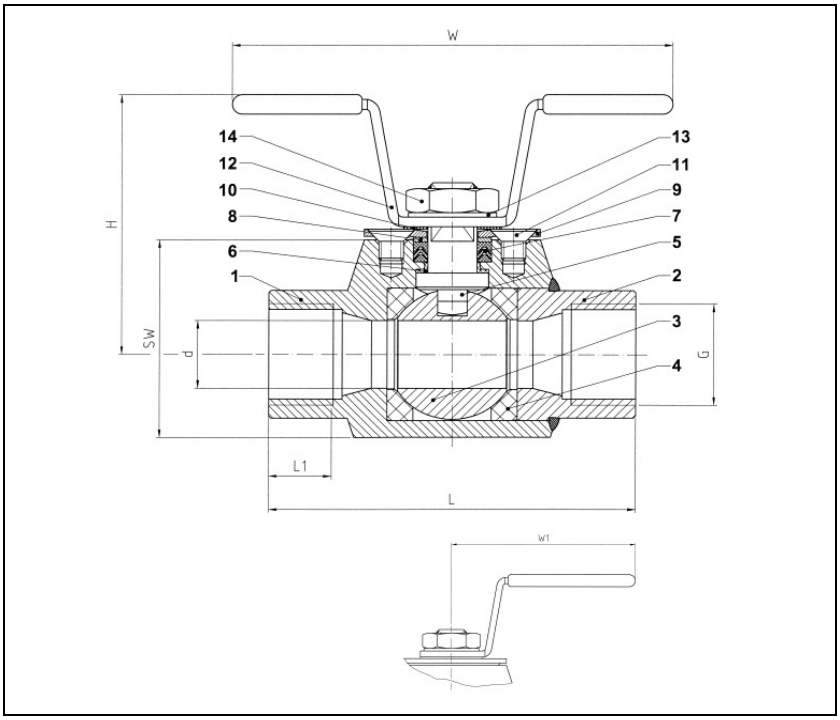
BALL VALVES INTEC

K110, DN8 - DN20, PN100/160

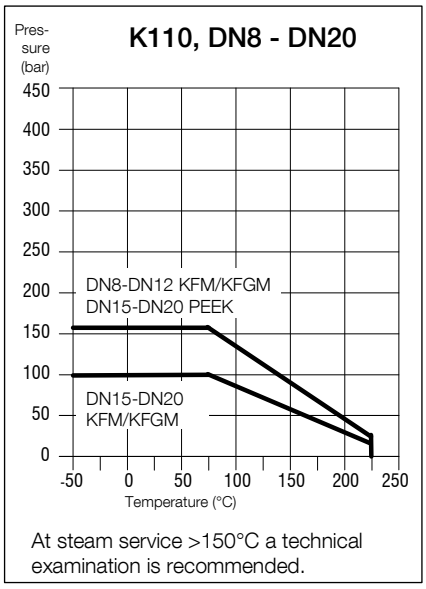


Mini plant ball valve
with female threaded ends
acc. to EN ISO 228-1
face to face dimensions acc. to
DIN 3202 part 4-M3

Specification:
One-piece ball valve, female threaded ends acc. to EN ISO 228-1, blow-out-proof-stem, body material stainless steel (1.4571/1.4404), free of non ferrous metals, seat KFM/KFGM or PEEK for higher pressures and temperatures, stem packing KF chevron ring, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K110

No.	Part	Material code
1	body	1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFM/KFGM/PEEK-KFM
5	stem	1.4571/1.4404
6	fricion washer	KFSM/PEEK
7	chevron ring	KFM
8	washer	1.4301/1.4571/1.4404
9	gland	1.4310
10	thrust washer	PEEK
11	countersunk screw	A2
12	lever	1.4301/1.4571/plasticised PVC
13	serrated lock washer	A2
14	hex. nut	A2



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	connect. G in inch	PN	dimensions (mm) d	L	L1	H	W	W1	SW* mm
8	G 1/4	160	7.5	50	9.7	45	90		27
12	G 3/8	160	11	60	10.1	49	90		32
12	G 1/2	160	11	65	13.2	49	90		32
15	G 1/2	100	14	75	13.2	53		100	41
15	G 1/2	160	14	75	13.2	53		100	41
15	G 3/4	100	14	80	14.5	53		100	41
15	G 3/4	160	14	80	14.5	53		100	41
20	G 3/4	100	17	80	14.5	66		120	46
20	G 3/4	160	17	80	14.5	66		120	46
20	G 1	100	17	90	16.8	66		120	46
20	G 1	160	17	90	16.8	66		120	46

Gearbox with connection acc. to DIN EN ISO 5211 is possible.

* Width across in mm

Ordering example:
INTEC K110, DN 12, G ½", KFGM, PN160, 1.4571

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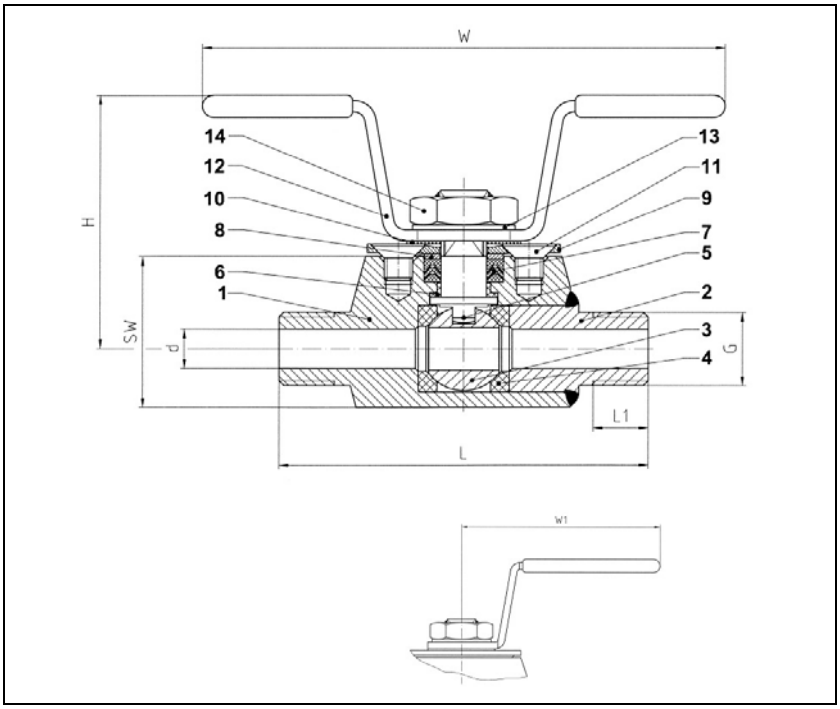
BALL VALVES INTEC

K120, DN8 - DN20, PN100/160

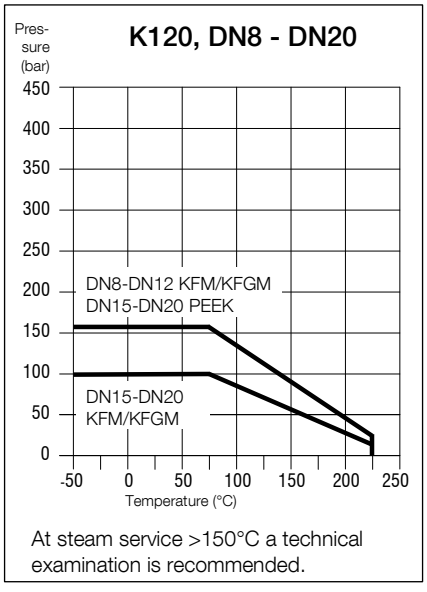


Mini plant ball valve
with male threaded ends
acc. to EN ISO 228-1
face to face dimensions acc. to producers standard

Specification:
One-piece ball valve, male threaded ends acc. to EN ISO 228-1, blow-out-proof-stem, body material stainless steel (1.4571/1.4404), free of non ferrous metals, seat KFM/KFGM or PEEK for higher pressures and temperatures, stem packing KF chevron ring, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K120

No.	Part	Material code
1	body	1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFM/KFGM/PEEK-KFM
5	stem	1.4571/1.4404
6	friction washer	KFSM/PEEK
7	chevron ring	KFM
8	washer	1.4301/1.4571/1.4404
9	gland	1.4310
10	thrust washer	PEEK
11	countersunk screw	A2
12	lever	1.4301/1.4571/plasticised PVC
13	serrated lock washer	A2
14	hex. nut	A2



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	connect. G in inch	PN	dimensions (mm) d	L	L1	H	W	W1	SW* mm
8	G 1/4	160	7.5	65	9.7	45	90		27
12	G 3/8	160	11	70	10.1	49	90		32
12	G 1/2	160	11	80	13.2	49	90		32
15	G 1/2	100	14	85	13.2	53		100	41
15	G 1/2	160	14	85	13.2	53		100	41
15	G 3/4	100	14	90	14.5	53		100	41
15	G 3/4	160	14	90	14.5	53		100	41
20	G 3/4	100	17	90	14.5	66		120	46
20	G 3/4	160	17	90	14.5	66		120	46
20	G 1	100	17	95	16.8	66		120	46
20	G 1	160	17	95	16.8	66		120	46

Gearbox with connection acc. to DIN EN ISO 5211 is possible.

* Width across in mm

Ordering example:
INTEC K120, DN 15, G ¾", KFGM, PN100, 1.4571

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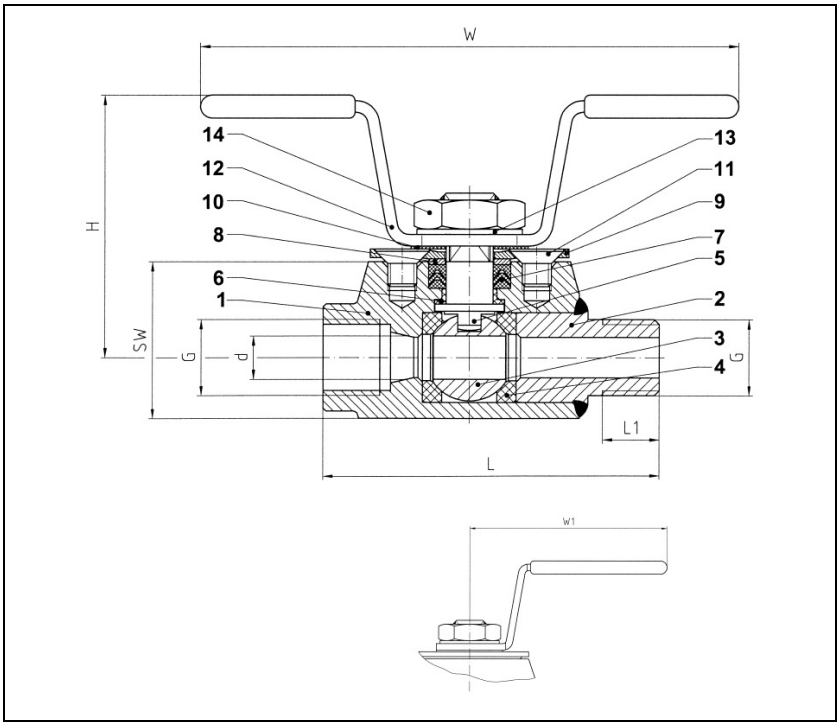
BALL VALVES INTEC

K130, DN8 - DN20, PN100/160

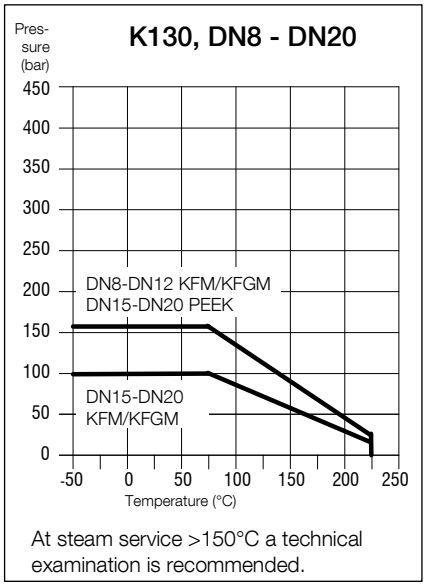


Mini plant ball valve with male and female threaded ends acc. to EN ISO 228-1 face to face dimensions acc. to producers standard

Specification:
One-piece ball valve, male and female threaded ends acc. to EN ISO 228-1, blow-out-proof-stem, body material stainless steel (1.4571/1.4404), free of non ferrous metals, seat KFM/KFGM or PEEK for higher pressures and temperatures, stem packing KF chevron ring, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K130

No.	Part	Material code
1	body	1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFM/KFGM/PEEK-KFM
5	stem	1.4571/1.4404
6	friction washer	KFSM/PEEK
7	chevron ring	KFM
8	washer	1.4301/1.4571/1.4404
9	gland	1.4310
10	thrust washer	PEEK
11	countersunk screw	A2
12	lever	1.4301/1.4571/plasticised PVC
13	serrated lock washer	A2
14	hex. nut	A2



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	connect. G in inch	PN	dimensions (mm) d	L	L1	H	W	W1	SW* mm
8	G 1/4	160	7.5	57,5	9.7	45	90		27
12	G 3/8	160	11	65	10.1	49	90		32
12	G 1/2	160	11	80	13.2	49	90		32
15	G 1/2	100	14	80	13.2	53		100	41
15	G 1/2	160	14	80	13.2	53		100	41
15	G 3/4	100	14	85	14.5	53		100	41
15	G 3/4	160	14	85	14.5	53		100	41
20	G 3/4	100	17	85	14.5	66		120	46
20	G 3/4	160	17	85	14.5	66		120	46
20	G 1	100	17	92,5	16.8	66		120	46
20	G 1	160	17	92,5	16.8	66		120	46

Gearbox with connection acc. to DIN EN ISO 5211 is possible.

* Width across in mm

Ordering example:
INTEC K130, DN 12, G ½", KFGM, PN160, 1.4571

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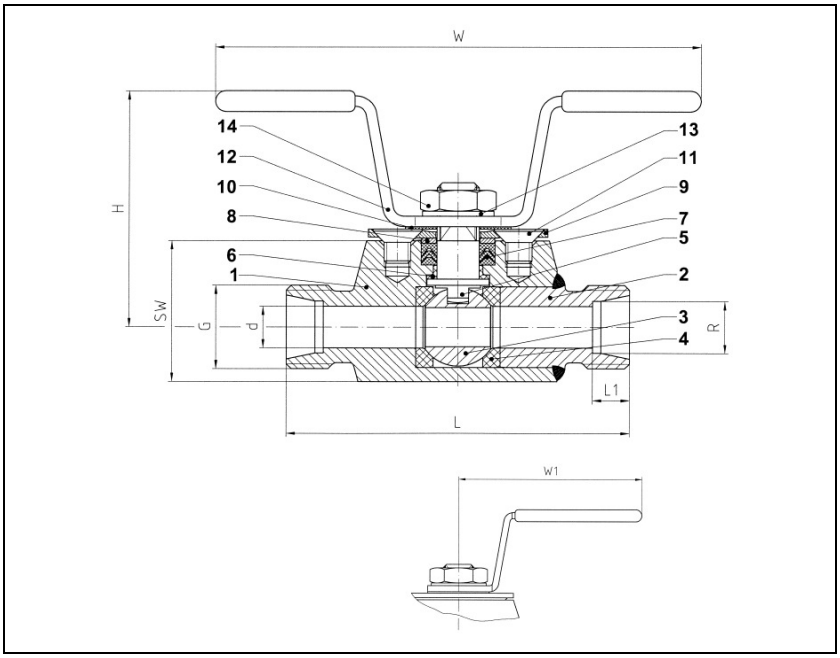
BALL VALVES INTEC

K140, DN8 – DN15, PN100/160/250

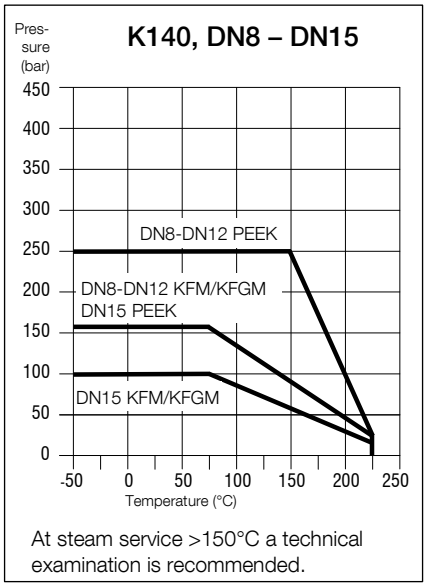


Mini plant ball valve with pipe screwing light/heavy series acc. to DIN 2353 face to face dimensions acc. to producers standard

Specification:
One-piece ball valve with pipe screwing light/heavy series acc. to DIN 2353, blow-out-proof-stem, body material stainless steel (1.4571/1.4404), free of non ferrous metals, seat KFM/KFGM or PEEK for higher pressures and temperatures, stem packing KF chevron ring, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K140

No.	Part	Material code
1	body	1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFM/KFGM/PEEK-KFM
5	stem	1.4571/1.4404
6	friction washer	KFSM/PEEK
7	chevron ring	KFM
8	washer	1.4301/1.4571/1.4404
9	gland	1.4310
10	thrust washer	PEEK
11	countersunk screw	A2
12	lever	1.4301/1.4571/plasticised PVC
13	serrated lock washer	A2
14	hex. nut	A2



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	R	G	PN	dimensions (mm) d	L	L1	H	W	W1	SW* mm
8	6-L	M12 x 1.5	160	7.5	60	7	45	90		27
8	6-S	M14 x 1.5	160	7.5	60	7	45	90		27
8	6-S	M14 x 1.5	250	7.5	60	7	45	90		27
8	8-L	M14 x 1.5	160	7.5	60	7	45	90		27
8	8-S	M16 x 1.5	160	7.5	60	7	45	90		27
8	8-S	M16 x 1.5	250	7.5	60	7	45	90		27
8	10-L	M16 x 1.5	160	7.5	65	7	45	90		27
8	10-S	M18 x 1.5	160	7.5	65	7.5	45	90		27
8	10-S	M18 x 1.5	250	7.5	65	7.5	45	90		27
12	12-L	M18 x 1.5	160	11	65	7	49	90		32
12	12-S	M20 x 1.5	160	11	65	7.5	49	90		32
12	12-S	M20 x 1.5	250	11	65	7.5	49	90		32
12	15-L	M22 x 1.5	160	11	70	7	49	90		32
15	15-L	M22 x 1.5	100	14	75	7	53		100	41
15	15-L	M22 x 1.5	160	14	75	7	53		100	41
15	18-L	M26 x 1.5	100	14	75	7.5	53		100	41
15	18-L	M26 x 1.5	160	14	75	7.5	53		100	41

Gearbox with connection acc. to DIN EN ISO 5211 is possible. * Width across in mm

Ordering example:
INTEC K140, DN 12, 12-L, KFGM, PN160, 1.4571

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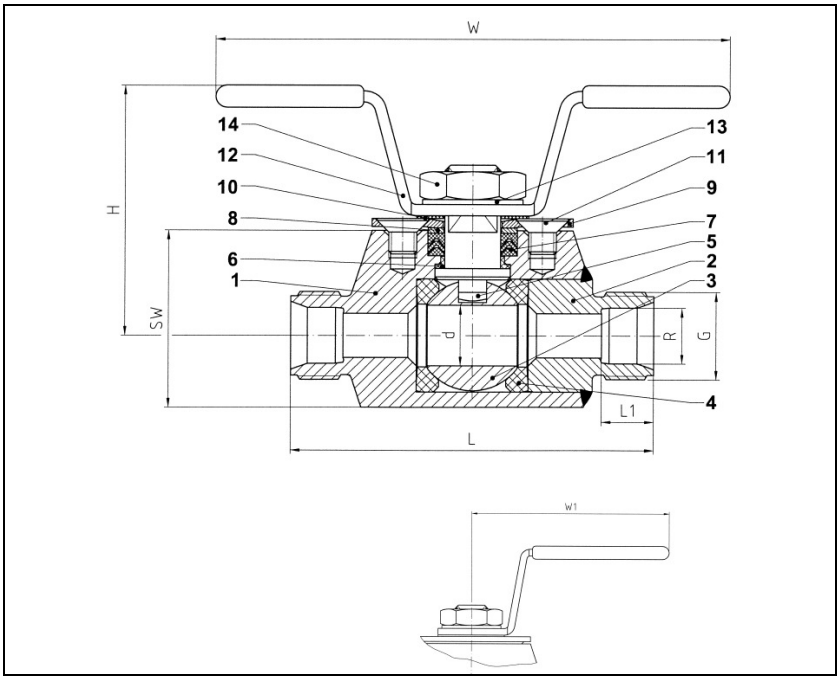
BALL VALVES INTEC

K150, DN8 – DN15, PN100/160/250

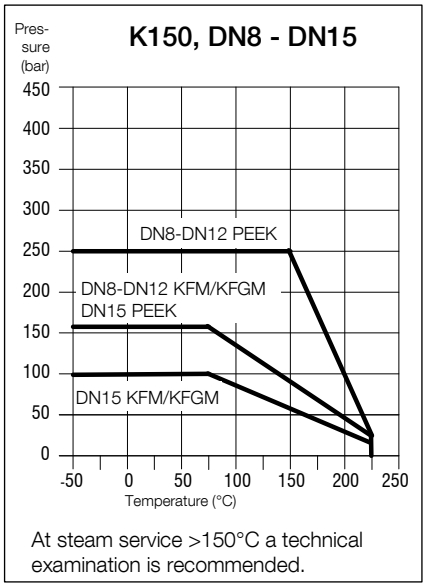


Mini plant ball valve for clamping ring connection face to face dimensions acc. to producers standard

Specification:
One-piece ball valve for clamping ring connection, blow-out-proof-stem, body material stainless steel (1.4571/1.4404), free of non ferrous metals, seat KFM/KFGM or PEEK for higher pressures and temperatures, stem packing KF chevron ring, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K150

No.	Part	Material code
1	body	1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFM/KFGM/PEEK-KFM
5	stem	1.4571/1.4404
6	friction washer	KFSM/PEEK
7	chevron ring/packing	KFM/Graphite
8	washer	1.4301/1.4571/1.4404
9	gland	1.4310
10	thrust washer	PEEK
11	countersunk screw	A2
12	lever	1.4301/1.4571/plasticised PVC
13	serrated lock washer	A2
14	hex. nut	A2



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	R	G in inch	PN	dimensions (mm) d	L	L1	H	W	W1	SW* mm
8	6	7/16	160	7.5	60	7.9	45	90		27
8	6	7/16	250	7.5	60	7.9	45	90		27
8	8	1/2	160	7.5	60	8.6	45	90		27
8	8	1/2	250	7.5	60	8.6	45	90		27
8	10	5/8	160	7.5	65	9.5	45	90		27
8	10	5/8	250	7.5	65	9.5	45	90		27
12	12	3/4	160	11	65	12.5	49	90		32
12	12	3/4	250	11	65	12.5	49	90		32
15	16	7/8	100	14	80	14.5	53		100	41
15	16	7/8	160	14	80	14.5	53		100	41
15	18	1	100	14	80	14.5	53		100	41
15	18	1	160	14	80	14.5	53		100	41

Gearbox with connection acc. to DIN EN ISO 5211 is possible.

* Width across in mm

Ordering example:
INTEC K150, DN 12, R 12, KFGM, PN160, 1.4571

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INTEC K600

No compromise for your kettle pressure!

Stainless steel ball valves for pressure gauges and measurement lines. The different variations of your connection like flanges acc. to EN 1092, outside thread acc. to DIN 16288, pressure gauge connection acc. to DIN 16284 or female and male thread variations are available. The minimised dimensions and the safety regarding the pressure relief of the gauge are the absolutely advantages for this product. Available with vent bore, without vent bore, with test connection port or with expansion tube. Certified acc. to German clean air act VDI 2440!

Type:	Pressure gauge ball valve
Nominal sizes:	DN 4 - DN 100
Pressure range:	PN 16, PN 40 and PN 160
Temperature:	up to +225°C
Material of body:	stainless steel
End connections:	flanges acc. to EN 1092, outside thread acc. to DIN 16288, pressure gauge connection acc. to DIN 16284, female and male thread
FTF:	acc. to producers standard
Accessories:	heating jacket, hand lever extension, stem extension, block unit - padlock unit, grid unit, hand lever with bayonet locking, spring close unit - automatical return handle (“dead man handle”), gear (hand operated)

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440
- ATEX 2014/34/EU

Special design:

- special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, Titanium, Zirconium, Monell, Nickel etc.

Product advantages.

- different variations of connections
- minimized dimensions
- safety regarding the pressure relief of the gauge
- available with vent bore, without vent bore, with test connection port or with expansion tube

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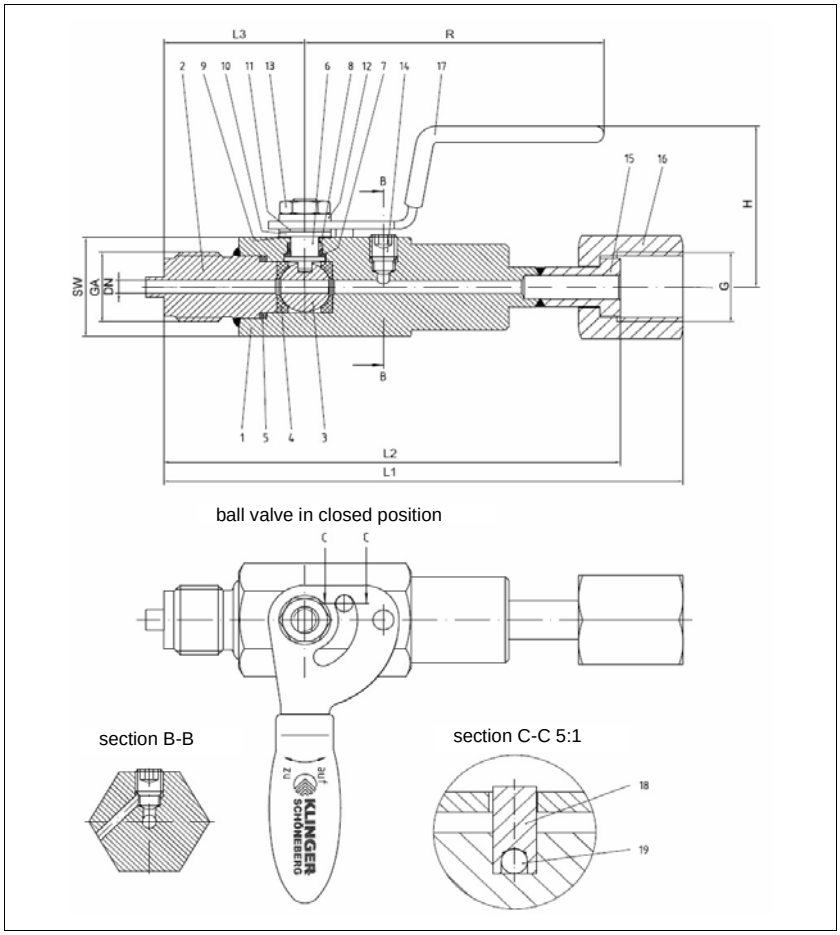
BALL VALVES INTEC

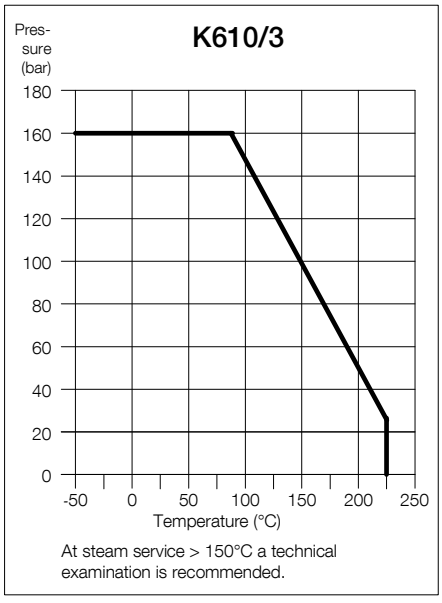
K610/3, DN4, PN160
with vent bore



Pressure gauge ball valve
connection G ½“ A acc. to DIN 16288
collar cap with cap nut G ½“ acc. to DIN 16284
face to face dimension acc. to producers standard

Specification:
Pressure gauge ball valve, connection G ½“ A acc. to DIN 16288, collar cap with cap nut G ½“ acc. to DIN 16284, blow-out-proof stem, body material stainless steel (1.4571/1.4404), body fully welded, acc. to the safety requirements of chemical industry, antistatic device, free of non ferrous metals, with vent bore, certified acc. to German clean air act VDI 2440, with lever.

Marking: INTEC
Type: K610/3



No.	Part	Material
1	body	1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFGN
5	sealing ring	KF
6	stem	1.4571/1.4404
7	friction washer	KFSM
8	cone ring	KF
9	sealing washer	KFA
10	washer	A2
11	plate spring	1.4310
12	serrated lock washer	A2
13	hex. nut	A2
14	vent screw	A4/1.4571/1.4404
15	collar cap	1.4571/1.4404
16	cap nut	1.4571/1.4404
17	safety lever	1.4301/plasticised PVC
18	stopper	1.4571/1.4404
19	ball	1.4571/1.4404

Ordering example:
K610/3, DN 4, PN 160, 1.4571

Dimensions

G	GA	DN	dimensions (mm)					SW	weight
			L1	L2	L3	H	R		kg
G ½“	G ½“	Ø 4	149	131	40.5	49	86	30	0.6

Subject to modification. 01/2017

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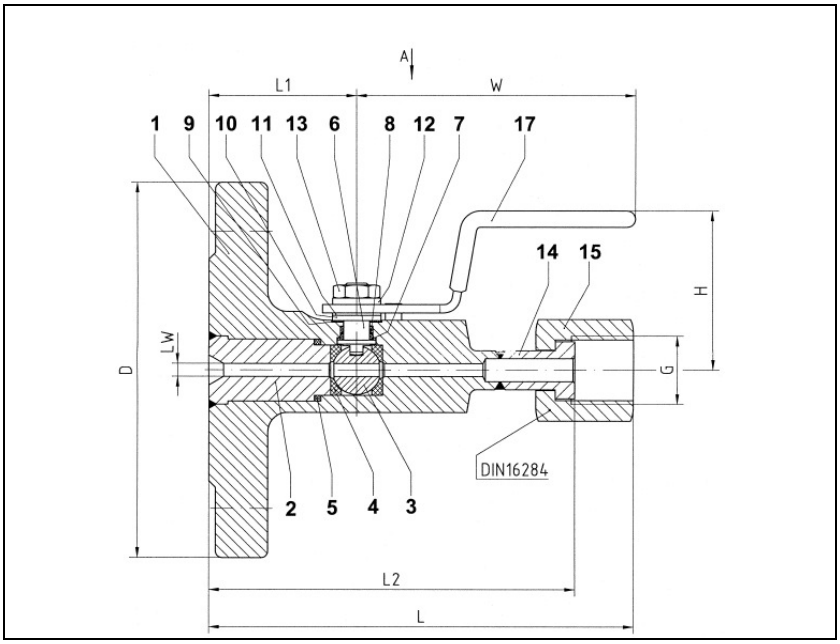
BALL VALVES INTEC

K620/2, DN15 - DN100, PN16/40
without vent bore

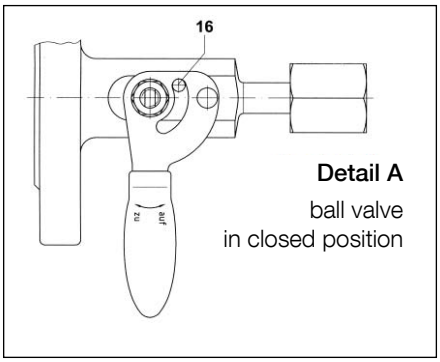


Pressure gauge ball valve with flange connection acc. to EN 1092 collar cap with cap nut G ½“ acc. to DIN 16284 face to face dimensions acc. to producers standard

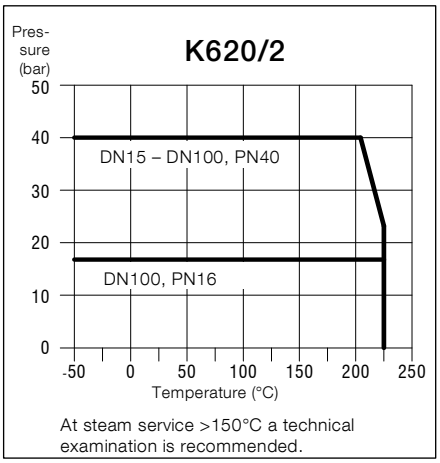
Specification:
Pressure gauge ball valve with flange connection acc. to EN 1092, collar cap with cap nut G ½“ acc. to DIN 16284, fully welded body material stainless steel (1.4571/1.4404), antistatic device, free of non ferrous metals, maintenance free shaft sealing with friction washer and cone ring, without vent bore, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K620/2

No.	Part	Material code
1	body	1.4408/1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFGN
5	seal	KF
6	stem	1.4571/1.4404
7	friction washer	KFSM
8	cone ring	KF
9	antistatic element	KFA
10	washer	A2
11	plate spring	1.4310
12	serrated lock washer	A2
13	hex. nut	A2
14	collar cap	1.4571/1.4404
15	cap nut	1.4571/1.4404
16	stopper	1.4571/1.4404
17	lever	1.4301/plasticised PVC



Detail A
ball valve
in closed position



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	LW	PN	G	dimensions (mm) L	L1	L2	H	W	D
15	4	40	½“	130	45	112	49	86	95
20	4	40	½“	130	45	112	49	86	105
25	4	40	½“	130	45	112	49	86	115
32	4	40	½“	130	45	112	49	86	140
40	4	40	½“	130	45	112	49	86	150
50	4	40	½“	130	45	112	49	86	165
65	4	40	½“	130	45	112	49	86	185
80	4	40	½“	130	45	112	49	86	200
100	4	16	½“	130	45	112	49	86	220
100	4	40	½“	130	45	112	49	86	235

Other pressure classes on request

Ordering example:
INTEC K620/2, DN25, PN40, 1.4571

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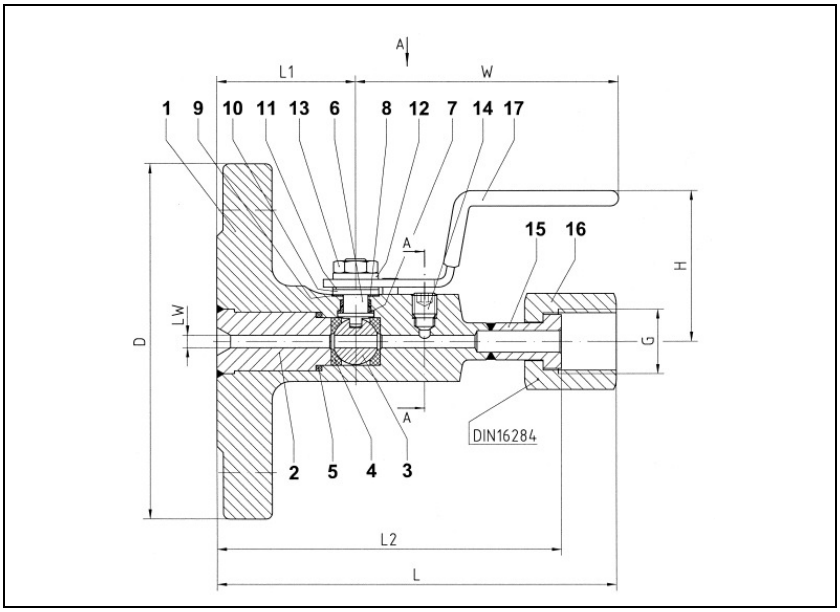
BALL VALVES INTEC

K620/3, DN15 - DN100, PN16/40
with vent bore

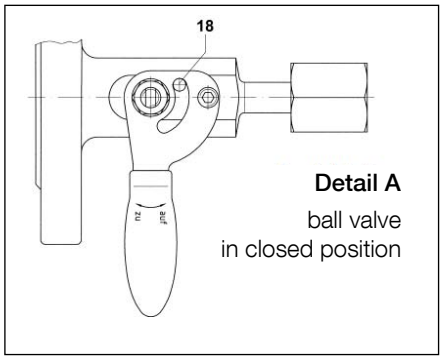


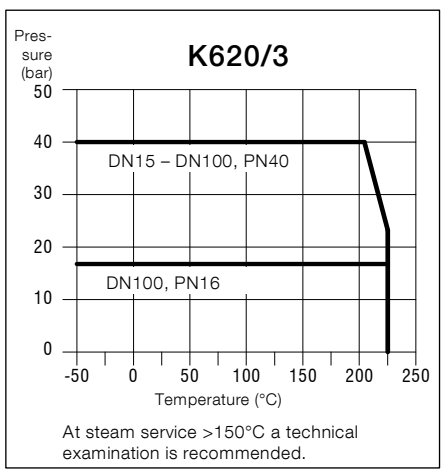
Pressure gauge ball valve with flange connection acc. to EN 1092 collar cap with cap nut G ½“ acc. to DIN 16284 face to face dimensions acc. to producers standard

Specification:
Pressure gauge ball valve with flange connection acc. to EN 1092, collar cap with cap nut G ½“ acc. to DIN 16284, fully welded body material stainless steel (1.4571/1.4404), antistatic device, free of non ferrous metals, maintenance free shaft sealing with friction washer and cone ring, with vent bore, the design of the lever prevent aeration in opened position (patented!), certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K620/3

No.	Part	Material code
1	body	1.4408/1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFGN
5	seal	KF
6	stem	1.4571/1.4404
7	friction washer	KFSM
8	cone ring	KF
9	antistatic element	KFA
10	washer	A2
11	plate spring	1.4310
12	serrated lock washer	A2
13	hex. nut	A2
14	vent screw	A4/1.4571/1.4404
15	collar cap	1.4571/1.4404
16	cap nut	1.4571/1.4404
17	safety lever	1.4301/plasticised PVC
18	stopper	1.4571/1.4404





Dimensions

DN mm	LW	PN	G	dimensions (mm) L	L1	L2	H	W	D
15	4	40	½“	130	45	112	49	86	95
20	4	40	½“	130	45	112	49	86	105
25	4	40	½“	130	45	112	49	86	115
32	4	40	½“	130	45	112	49	86	140
40	4	40	½“	130	45	112	49	86	150
50	4	40	½“	130	45	112	49	86	165
65	4	40	½“	130	45	112	49	86	185
80	4	40	½“	130	45	112	49	86	200
100	4	16	½“	130	45	112	49	86	220
100	4	40	½“	130	45	112	49	86	235

Other pressure classes on request

Ordering example:
INTEC K620/3, DN25, PN40, 1.4571

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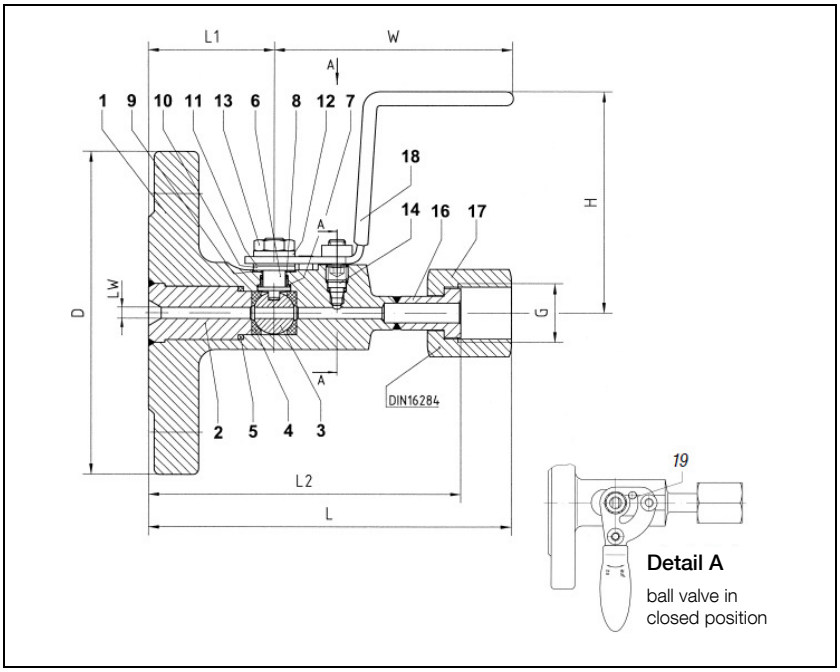
BALL VALVES INTEC

K620/4-2, DN15 - DN100, PN16/40 with vent bore and expansion tube resp. test connection port G 1/8“



No.	Part	Material code
1	body	1.4408/1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFGN
5	seal	KF
6	stem	1.4571/1.4404
7	friction washer	KFSM
8	cone ring	KF
9	antistatic element	KFA
10	washer	A2
11	plate spring	1.4310
12	serrated lock washer	A2
13	hex. nut	A2
14	vent screw	A4/1.4571/1.4404
15	o-ring	Viton
16	collar cap	1.4571/1.4404
17	cap nut	1.4571/1.4404
18	safety lever	1.4301/plasticised PVC
19	stopper	1.4571/1.4404
20	plug screw	1.4571/1.4404
21	expansion tube G 1/8“/tube Ø 4x1x120	1.4571/1.4404

Dimensions

DN mm	LW	PN	G	dimensions (mm) L	L1	L2	H	W	D
15	4	40	½“	130	45	112	79	86	95
20	4	40	½“	130	45	112	79	86	105
25	4	40	½“	130	45	112	79	86	115
32	4	40	½“	130	45	112	79	86	140
40	4	40	½“	130	45	112	79	86	150
50	4	40	½“	130	45	112	79	86	165
65	4	40	½“	130	45	112	79	86	185
80	4	40	½“	130	45	112	79	86	200
100	4	16	½“	130	45	112	79	86	220
100	4	40	½“	130	45	112	79	86	235

Other pressure classes on request

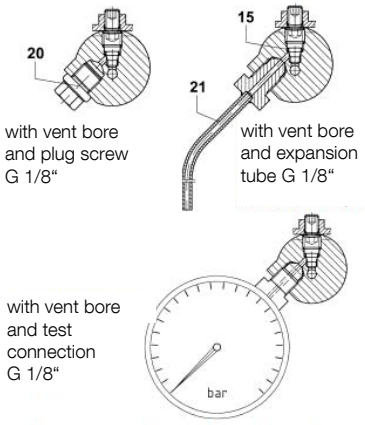
Pressure gauge ball valve with flange connection acc. to EN 1092 collar cap with cap nut G ½“ acc. to DIN 16284 expansion tube resp. test connection port G 1/8” face to face dimensions acc. to producers standard

Specification:

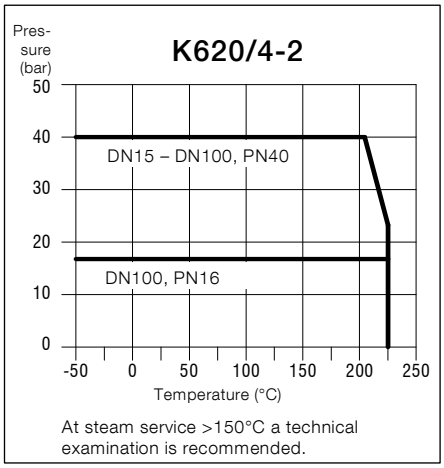
Pressure gauge ball valve with flange connection acc. to EN 1092, collar cap with cap nut G ½“ acc. to DIN 16284, fully welded body material stainless steel (1.4571/1.4404), antistatic device, free of non ferrous metals, maintenance free shaft sealing with friction washer and cone ring, with vent bore, expansion tube resp. test connection port G 1/8”, the design of the lever prevent aeration in opened position (patented!), vent screw O-ring sealed, certified acc. to GERMAN clean air act VDI 2440, lever be able to lock in opened and closed position.

Marking: INTEC
Type: K620/4-2

Section A-A - open position



Pressure gauge not included



At steam service >150°C a technical examination is recommended.

Ordering example:
INTEC K620/4-2, DN25, PN40, 1.4571 with test connection G 1/8“

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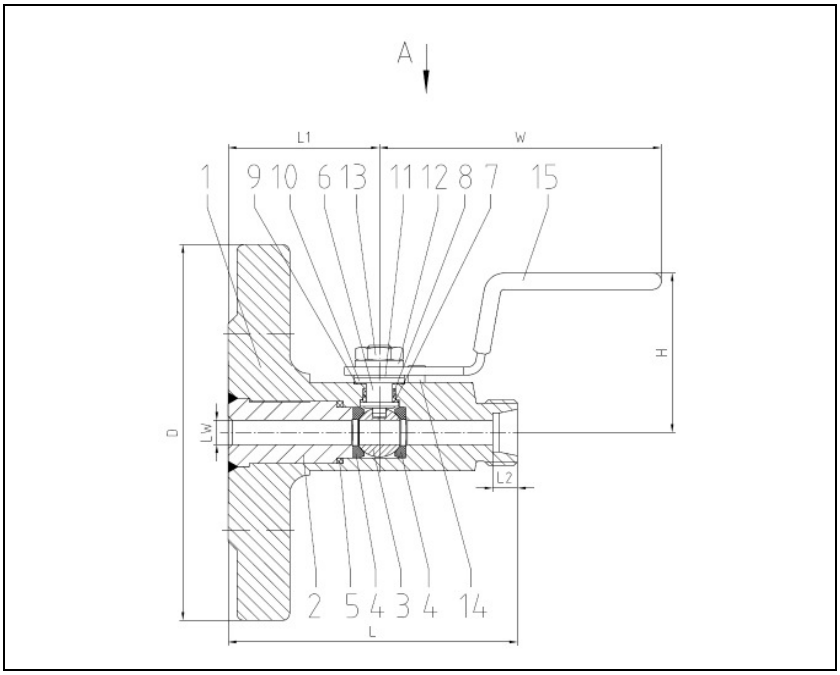
BALL VALVES INTEC

K640/2, DN15 - DN100, PN16/40
without vent bore

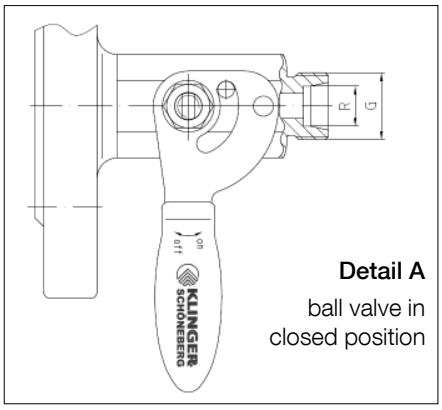


Pressure gauge ball valve with flange connection acc. to EN 1092 pipe screwing light/heavy series acc. to DIN 2353 10-S and 12-S face to face dimensions acc. to producers standard

Specification:
Pressure gauge ball valve with flange connection acc. to EN 1092, pipe screwing light/heavy series acc. to DIN 2353 10-S and 12-S, fully welded body material stainless steel (1.4571/1.4404), antistatic device, free of non ferrous metals, maintenance free shaft sealing with friction washer and cone ring, without vent bore, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: INTEC
Type: K640/2

No.	Part	Material
1	body	1.4408/1.4571/1.4404
2	cap	1.4571/1.4404
3	ball	1.4571/1.4404
4	seat	KFGN
5	seal	KF
6	stem	1.4571/1.4404
7	friction washer	KFSM
8	cone ring	KF
9	antistatic element	KFA
10	washer	A2
11	plate spring	1.4310
12	serrated lock washer	A2
13	hex. nut	A2
14	stopper	1.4571/1.4404
15	lever	1.4301/plasticised-PVC



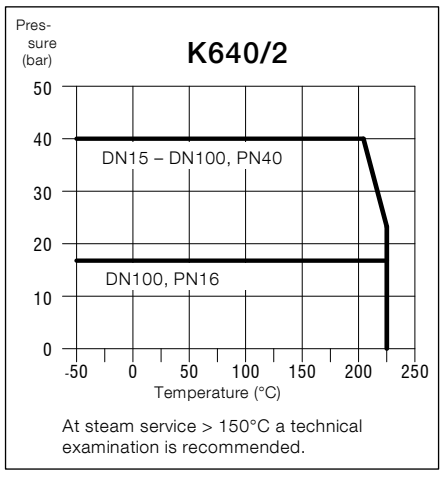
Detail A
ball valve in closed position

DN (mm)	R	G
any DN	10-S	M18x1.5
any DN	12-S	M20x1.5

Dimensions

DN mm	LW	PN	dimensions (mm) L	L1	L2	H	W	D
15	7.5	40	85	45	7.5	49	86	95
20	7.5	40	85	45	7.5	49	86	105
25	7.5	40	85	45	7.5	49	86	115
32	7.5	40	85	45	7.5	49	86	140
40	7.5	40	85	45	7.5	49	86	150
50	7.5	40	85	45	7.5	49	86	165
65	7.5	40	85	45	7.5	49	86	185
80	7.5	40	85	45	7.5	49	86	200
100	7.5	16	85	45	7.5	49	86	220
100	7.5	40	85	45	7.5	49	86	235

Other pressure classes on request



At steam service > 150°C a technical examination is recommended.

Ordering example:
INTEC K640/2, DN25, PN40, 1.4404, 10-S, M18x1,5

Subject to modification. 02/2017

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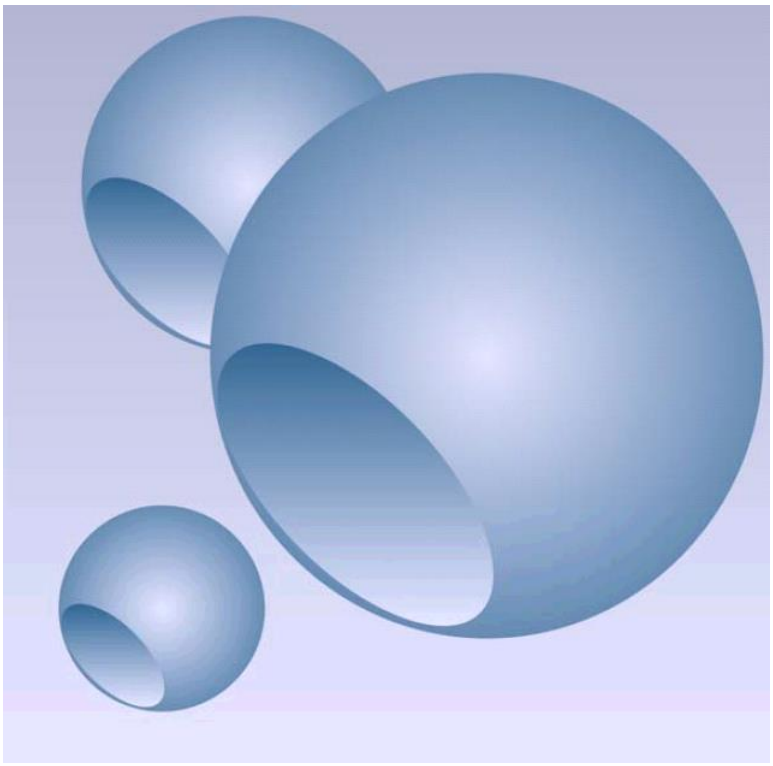
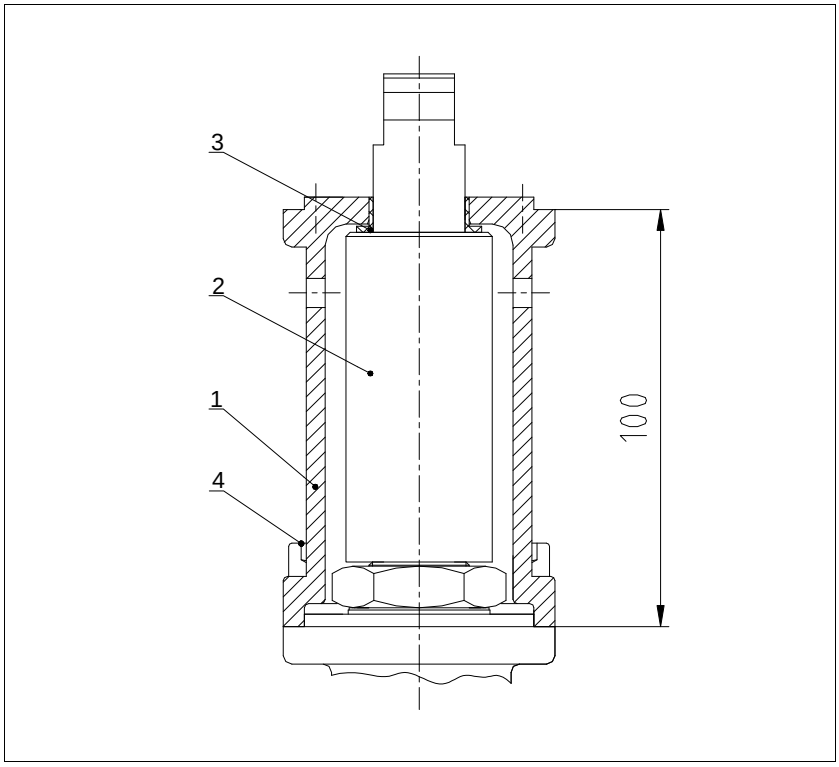
ACCESSORIES

INTEC



BALL VALVES INTEC

Stem extension
INTEC 11, F05/F05 - F14/F14



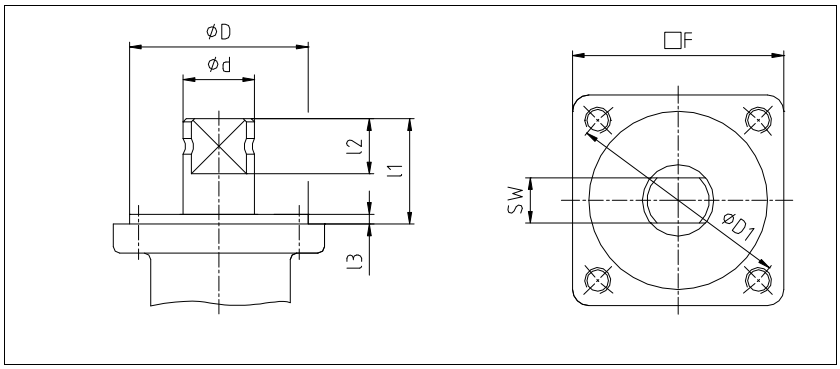
Stem extension with top flange acc. to DIN EN ISO 5211

Specification:
Stem extension with top flange acc. to DIN EN ISO 5211, stem extension length 100 mm (special length on request), double-d of coupling is equal to double-d of valve stem, coupling is precisely pivoted in the extension-body, body with leakage holes.

Marking: INTEC 11

Ordering example:
INTEC 11, F05/F05, SW14

No.	Part	Material
1	body	1.4408
2	coupling	1.4462
3	bearing	PTFE
4	socket screw	A2-70



Dimensions

top flange ISO	dimensions (mm) F	D	D1	d	SW	l1	l2	l3	weight kg
F05/F05	49.0	35.0	50.0	14.0	11.0	22.5	11.0	2.0	0.9
F05/F05	49.0	35.0	50.0	18.0	14.0	26.0	14.0	2.0	1.0
F07/F07	65.0	55.0	70.0	22.0	17.0	32.5	17.0	3.0	1.5
F10/F10	90.0	70.0	102.0	26.0	19.0	37.5	19.0	3.0	1.8
F12/F12	110.0	85.0	125.0	33.0	24.0	42.5	24.0	3.0	3.8
F12/F12	110.0	85.0	125.0	42.0	30.0	48.5	30.0	3.0	4.5
F14/F14	130.0	100.0	140.0	42.0	30.0	48.5	30.0	3.0	7.0
F14/F14	130.0	100.0	140.0	55.0	41.0	59.5	41.0	3.0	7.9

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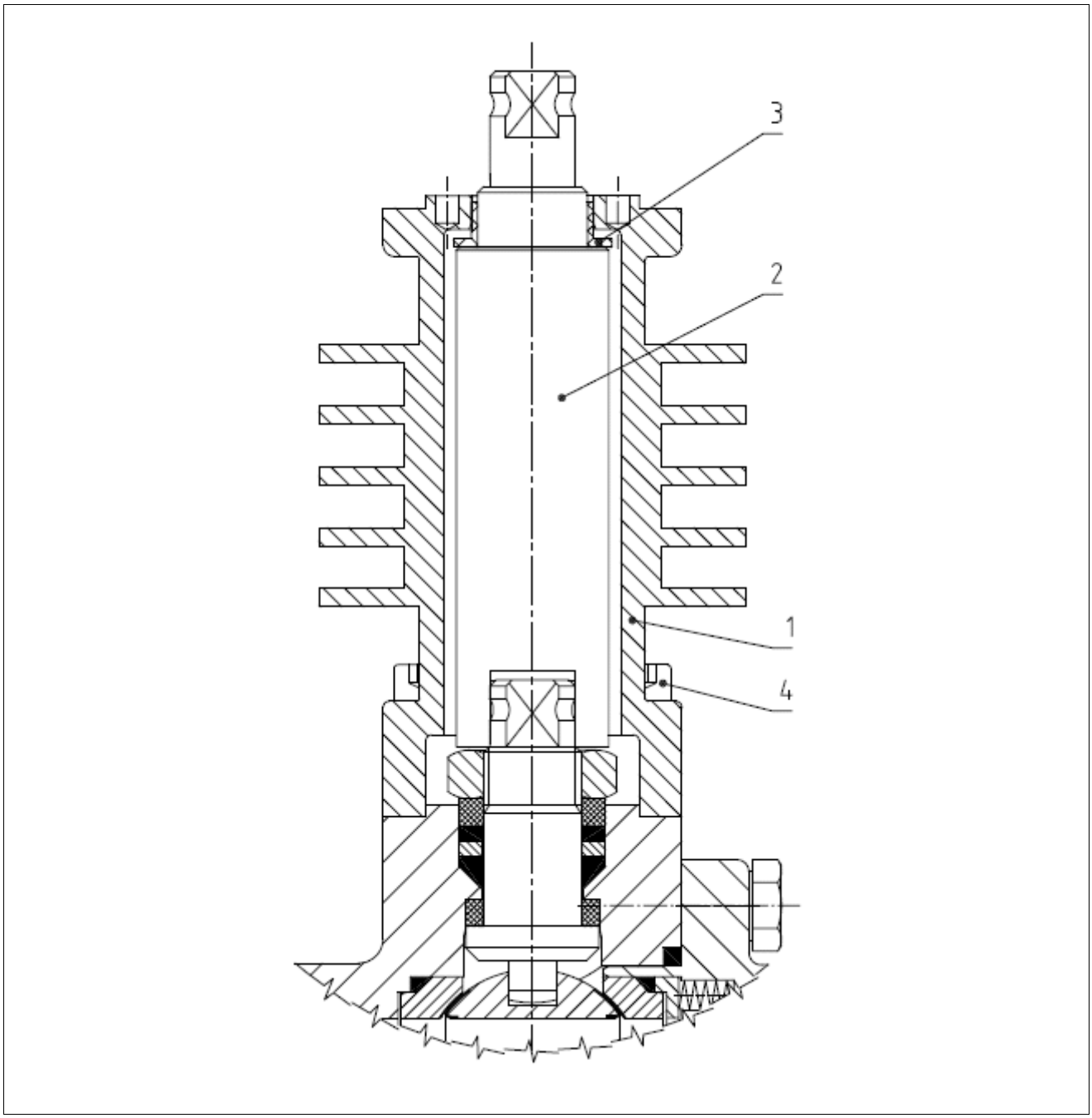
BALL VALVES INTEC

Stem extension with cooling fin
INTEC 11-S



No.	Part	Material
1	body	1.4571/1.4404
2	coupling	1.4462/1.4980
3	bearing	KF
4	socket screw	A2-70/1.4980

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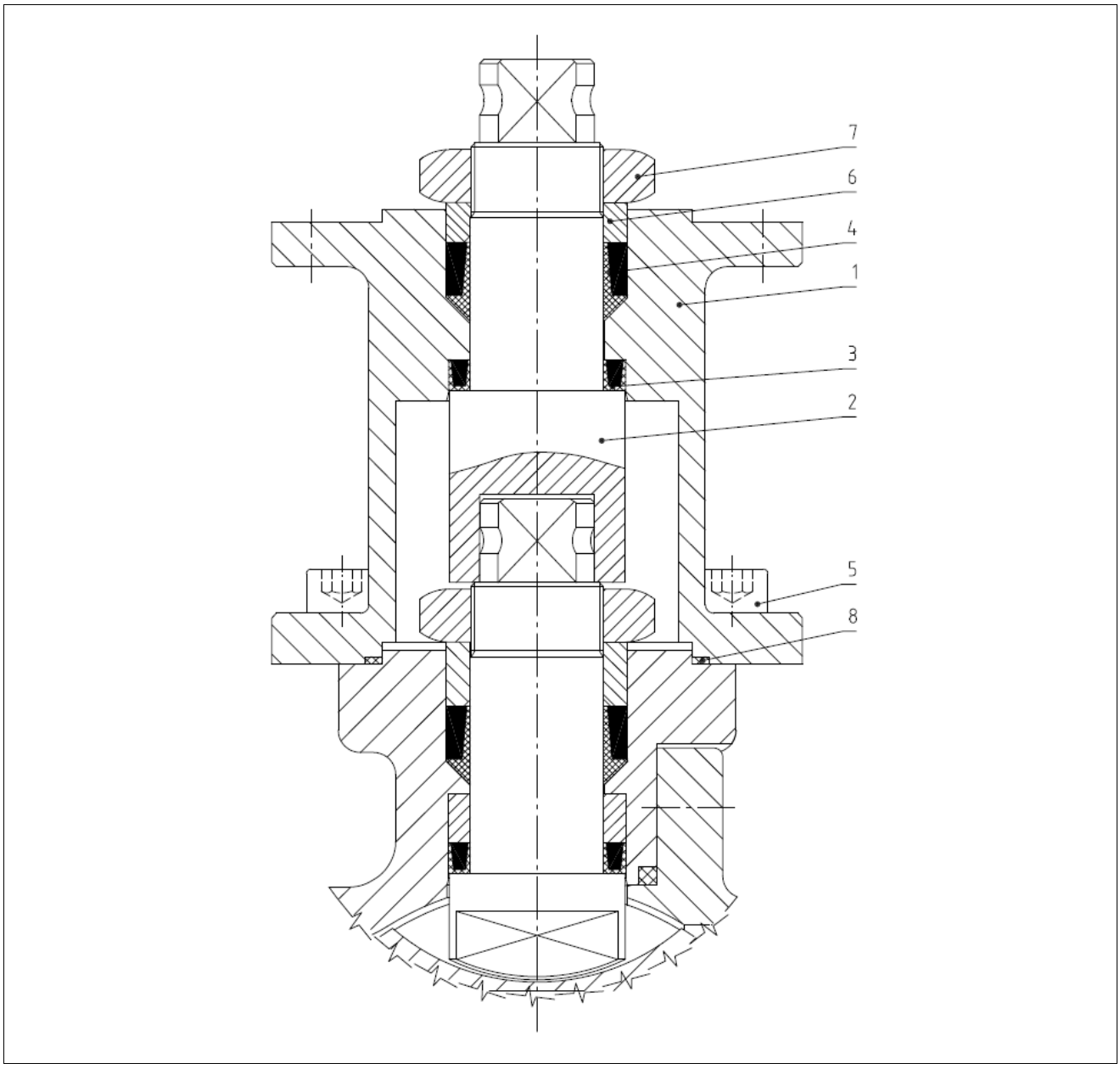
BALL VALVES INTEC

Stem extension double-sealed
INTEC 12



No.	Part	Material
1	body	1.4571/1.4404
2	coupling	1.4462
3	below seal	KFGN/Graphite
4	upper seal	KFAM/Graphite
5	socket screw	A2-70
6	bearing	PEEK
7	hex. nut self-locking	A2/1.4301
8	body seal (stem extension)	KF

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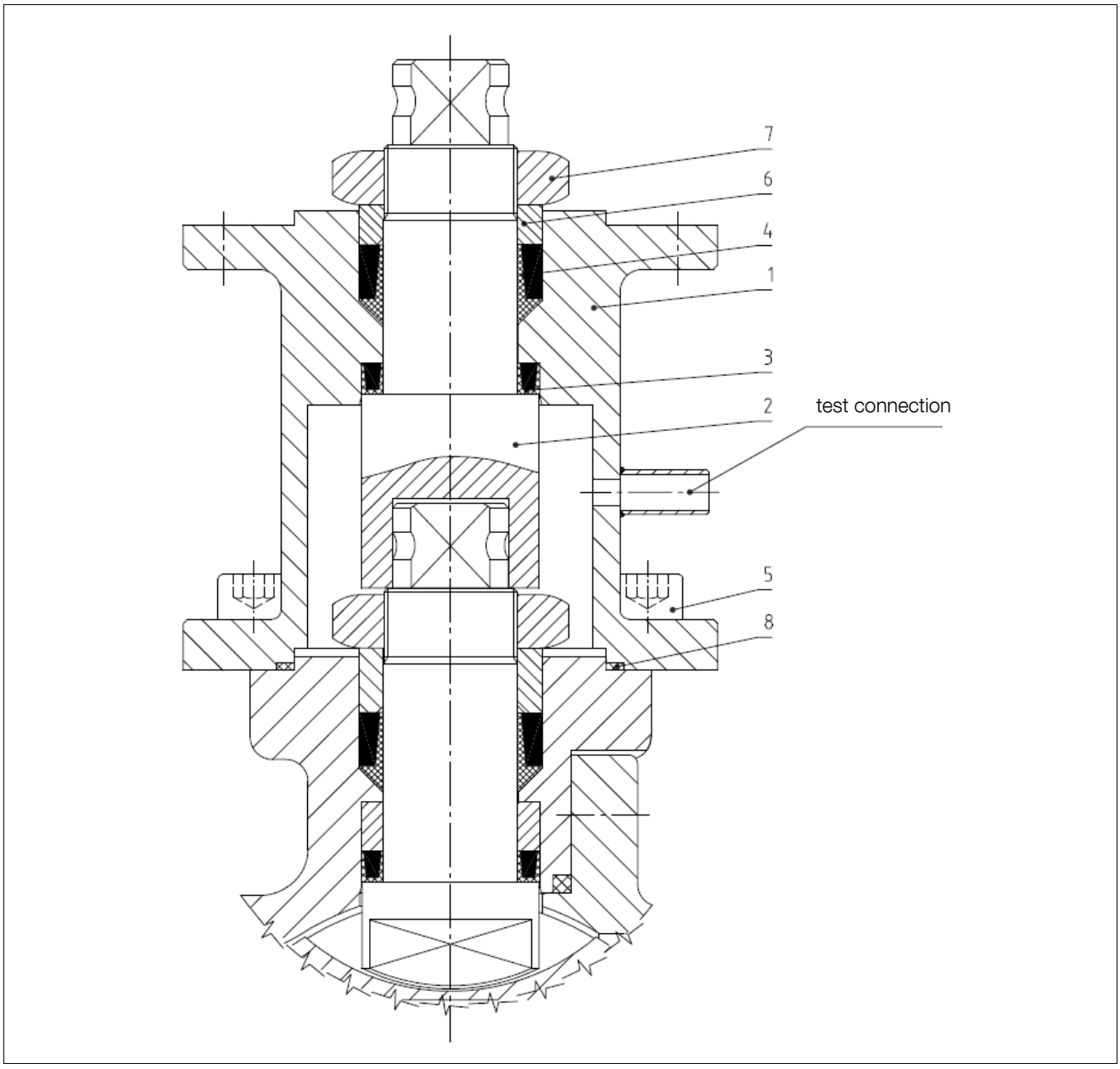
BALL VALVES INTEC

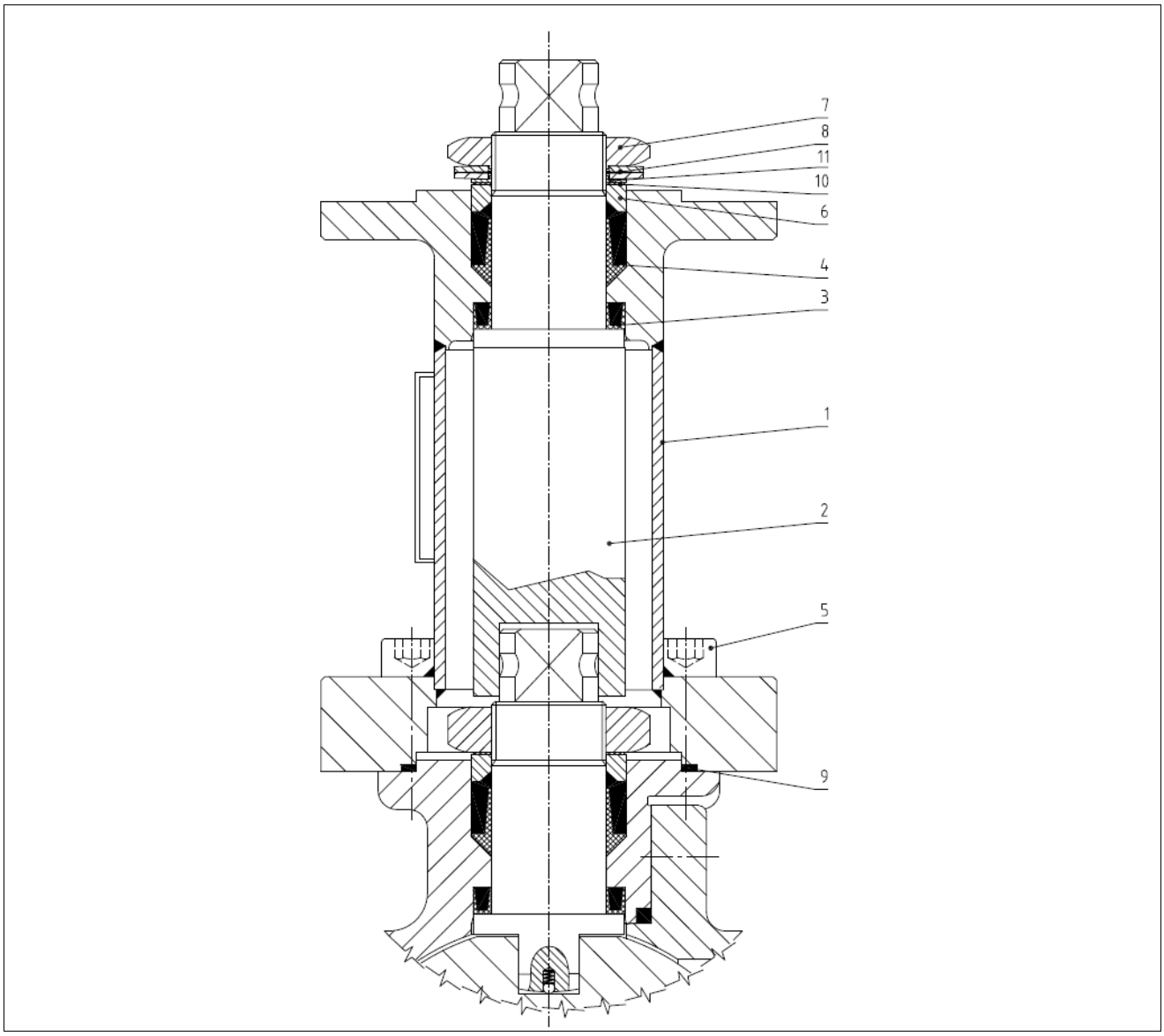
Stem extension double-sealed with test connection
INTEC 12-S



No.	Part	Material
1	body	1.4571/1.4404
2	coupling	1.4462
3	below seal	KFGN/Graphite
4	upper seal	KFAM/Graphite
5	socket screw	A2-70
6	bearing	PEEK
7	hex. nut self-locking	A2/1.4301
8	body seal (stem extension)	KF

BALL VALVES INTEC

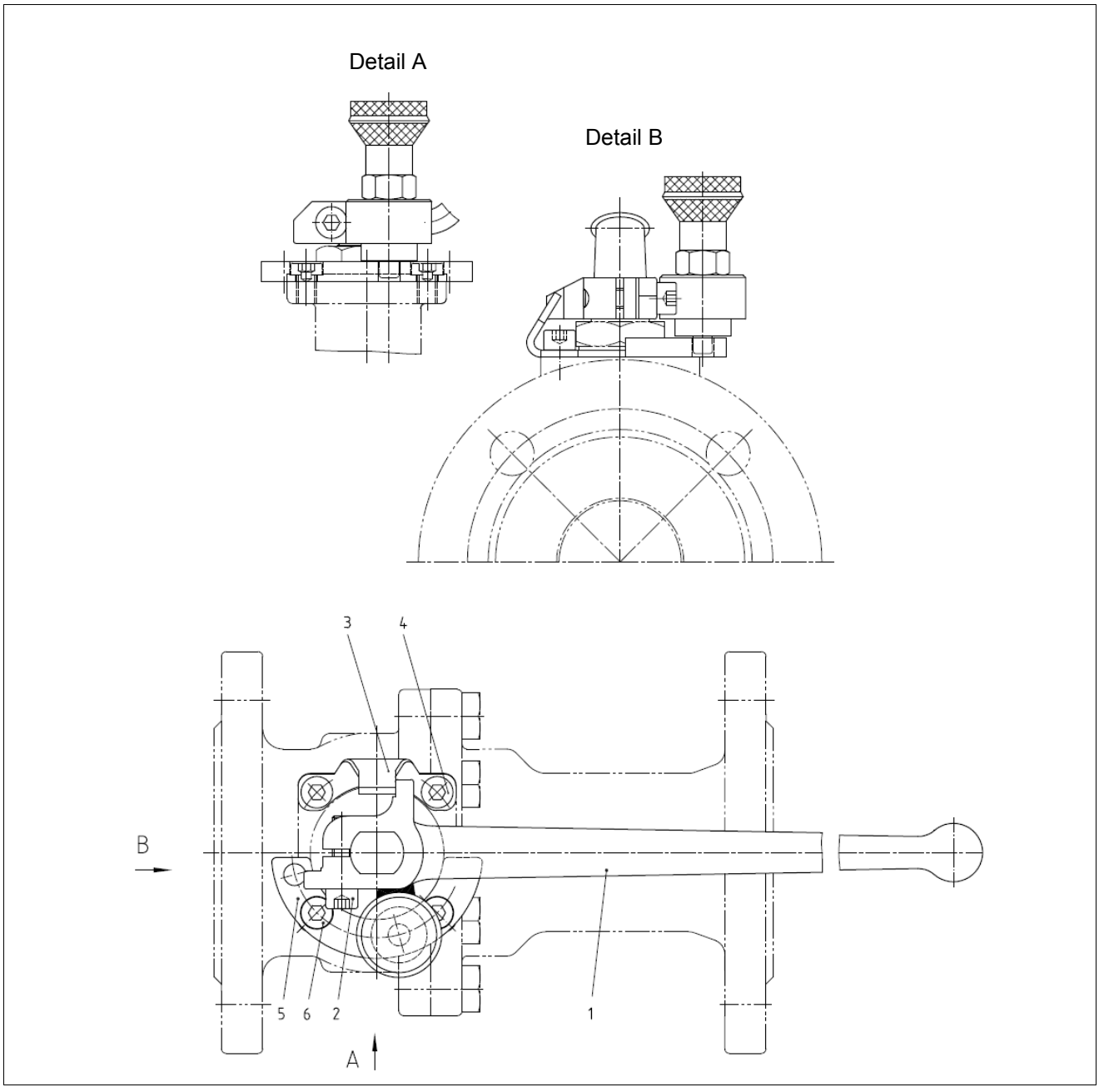
Stem extension double-sealed
cryogenic type
INTEC 12-S-TT



No.	Part	Material
1	body	1.4571/1.4404
2	coupling	1.4462/1.4980
3	below seal	KFGN/Graphite
4	upper seal	KFAM/Graphite
5	socket screw	A2-70/1.4980
6	thrust ring	1.4571/1.4404
7	hex. nut self-locking	A2/1.4301
8	disc spring	1.4568
9	body seal (stem extension)	Graphite
10	thrust washer	PEEK
11	thrust ring	1.4571/1.4404

BALL VALVES INTEC

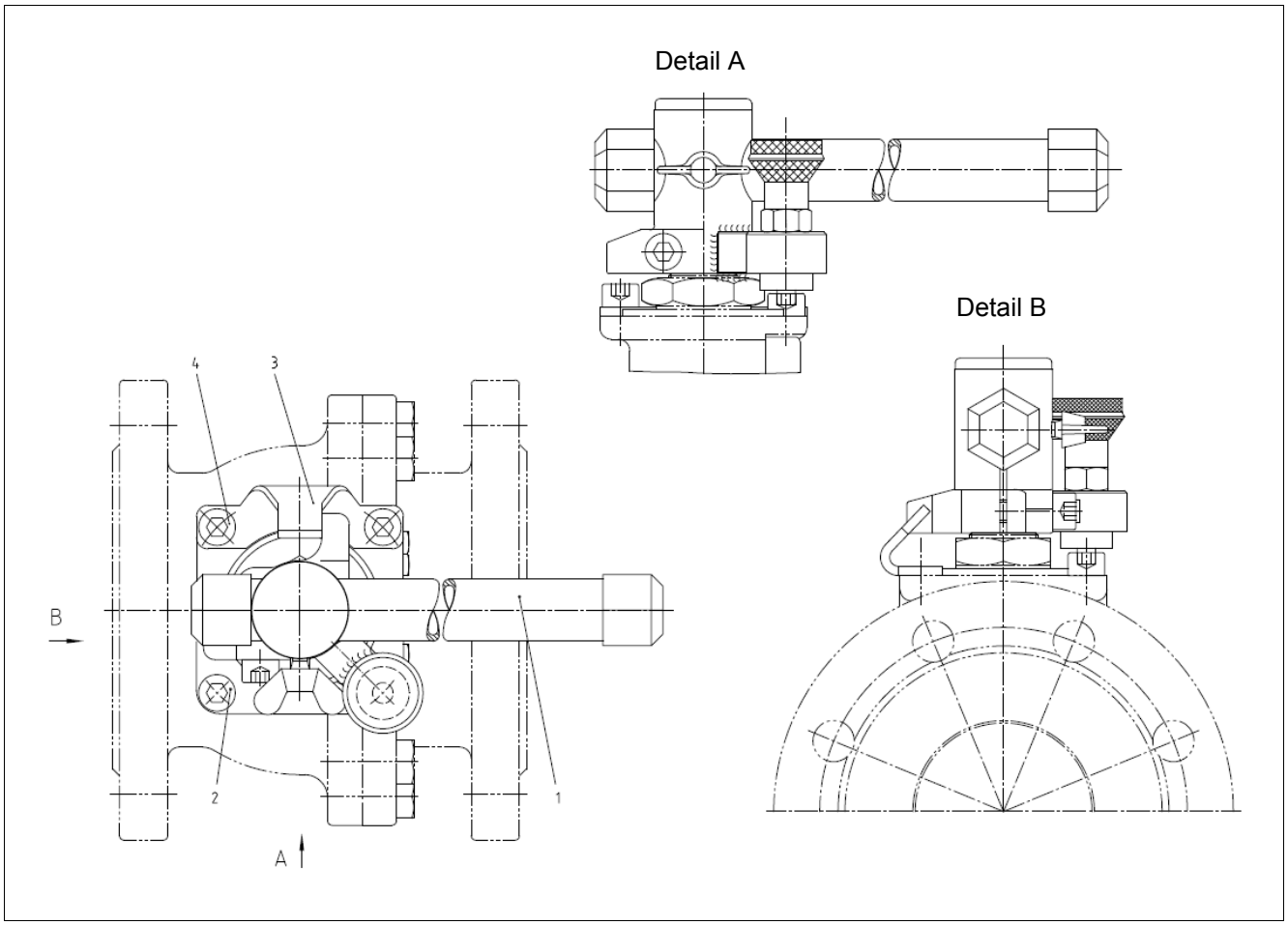
Grid unit
INTEC 20, DN15 - DN65



No.	Part	Material
1	lever with locking bolt	1.4408/A2-Nirosta
2	socket screw	A2-70
3	stopper	1.4301
4	socket screw	A2-70
5	base plate	1.4301
6	socket screw	A2-70

BALL VALVES INTEC

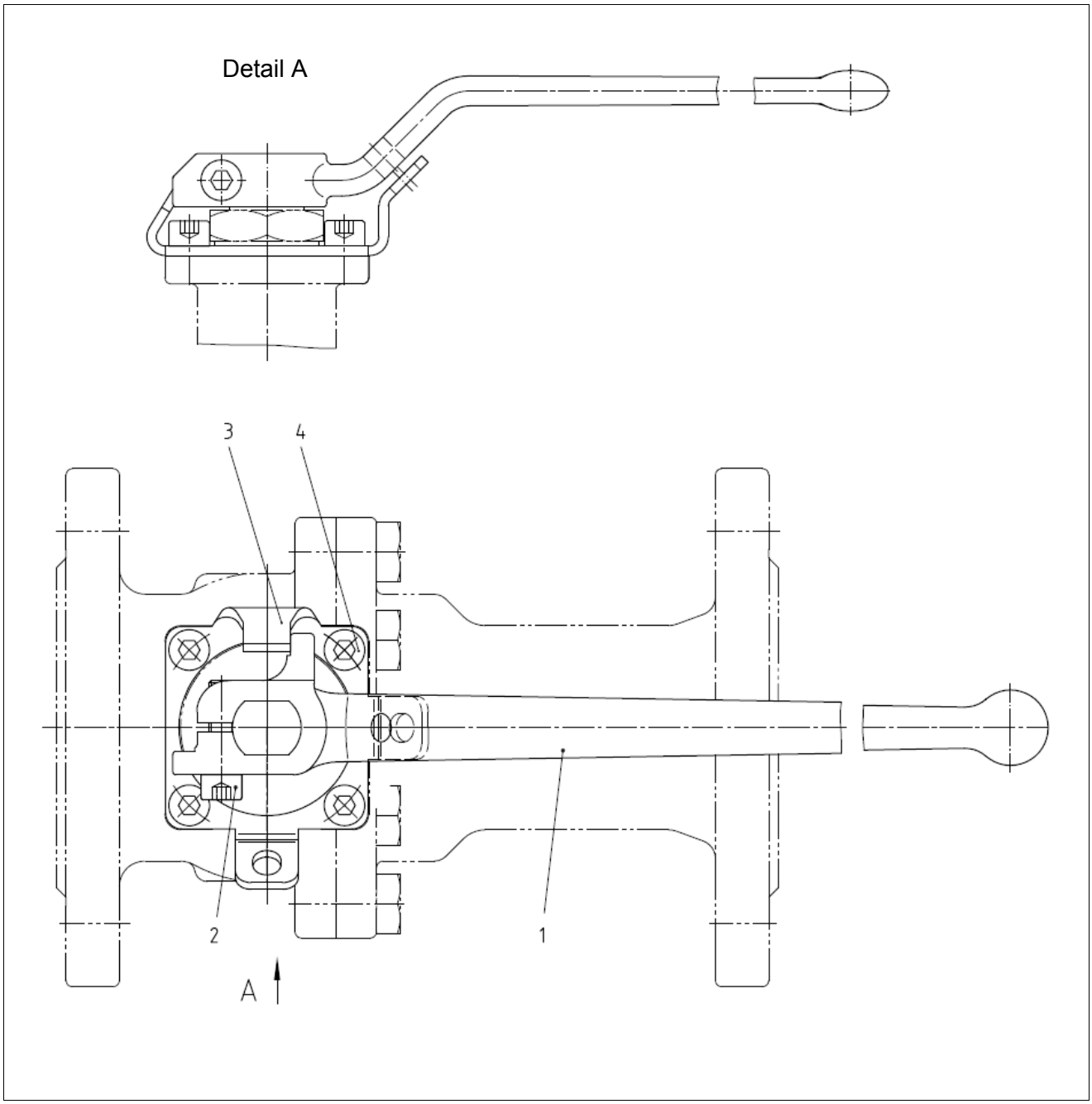
Grid unit
INTEC 20, DN80 - DN100



No.	Part	Material
1	lever with locking bolt	1.4408/A2-Nirosta
2	socket screw	A2-70
3	stopper	1.4301
4	socket screw	A2-70

BALL VALVES INTEC

Locking device
INTEC 30, DN15 - DN65

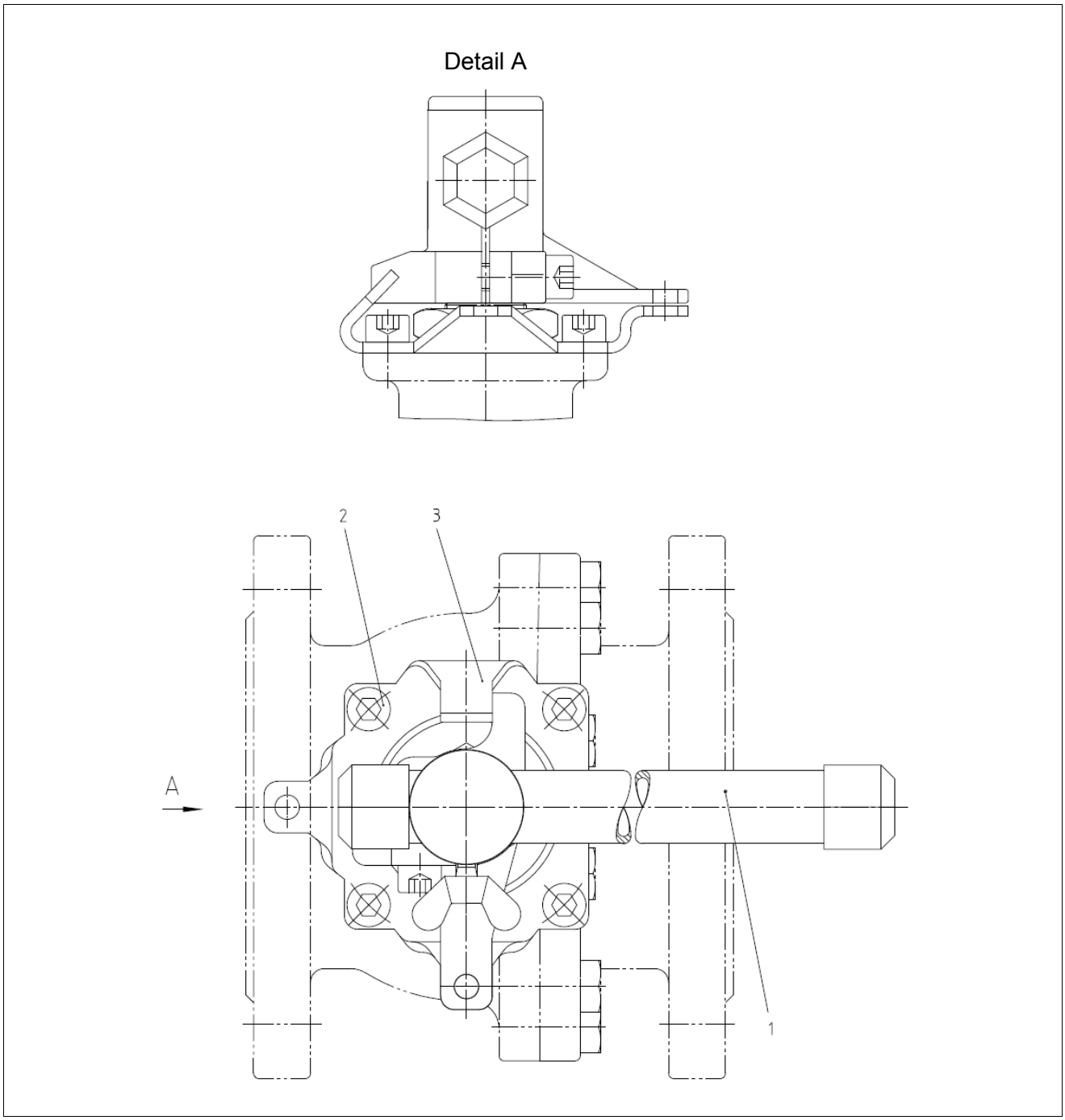


No.	Part	Material
1	lever	1.4408
2	socket screw	A2-70
3	stopper	1.4301
4	socket screw	A2-70

Lock not included in the delivery

BALL VALVES INTEC

Locking device
INTEC 30, DN80 - DN150

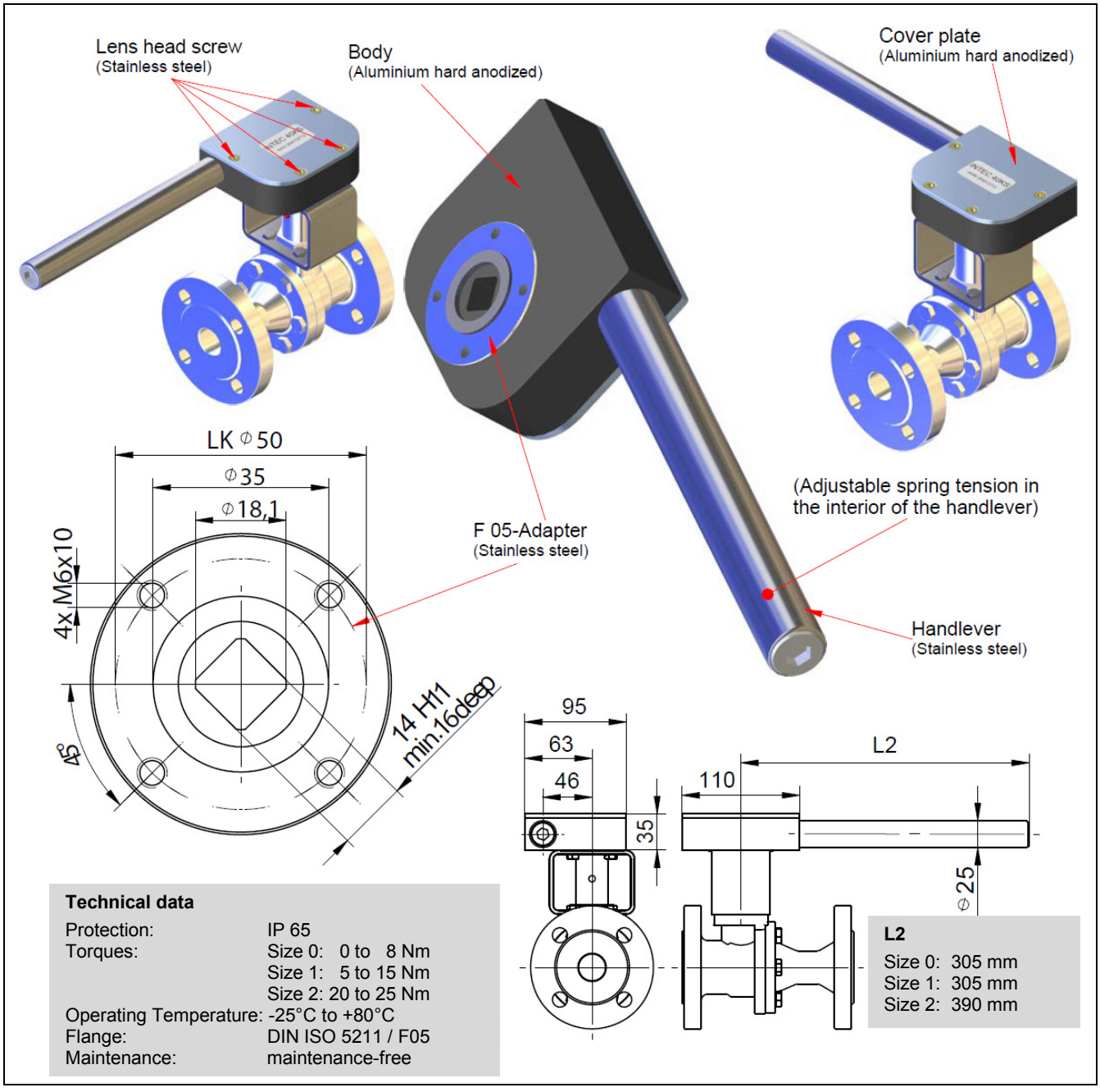


No.	Part	Material
1	lever unit	1.4408/1.4301/1.4401
2	socket screw	A2-70
3	stopper	1.4301

Lock not included in the delivery

INTEC 40KS

Spring closing unit for hand operated valves (Dead-man`s switching)



Technical data

Protection:	IP 65
Torques:	Size 0: 0 to 8 Nm
	Size 1: 5 to 15 Nm
	Size 2: 20 to 25 Nm
Operating Temperature:	-25°C to +80°C
Flange:	DIN ISO 5211 / F05
Maintenance:	maintenance-free

L2

Size 0: 305 mm
Size 1: 305 mm
Size 2: 390 mm

The spring closing unit INTEC 40KS is a user friendly, robust and easy to mounted safety device for all quarter turn valves.

The valve is actuated by the hand-lever. Upon release of the hand-lever the valve will be moved, by the spring force, back to the default safe position (as pre-set).

One of the characteristics of the spring closing unit INTEC 40KS is the possibility of continuous adjustment of the spring-force. This allows for the user, at any time incl. during operation, to make adjustment within a few simple steps to required torque setting.

The following additional options are available: adaption for limit-switches, grid-unit to avoid unintended actuation (Tamper Proof), special materials and customer specific executions.

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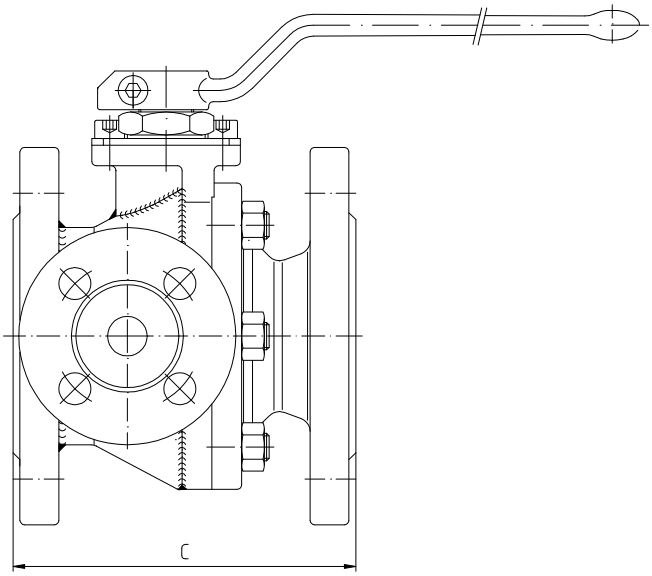
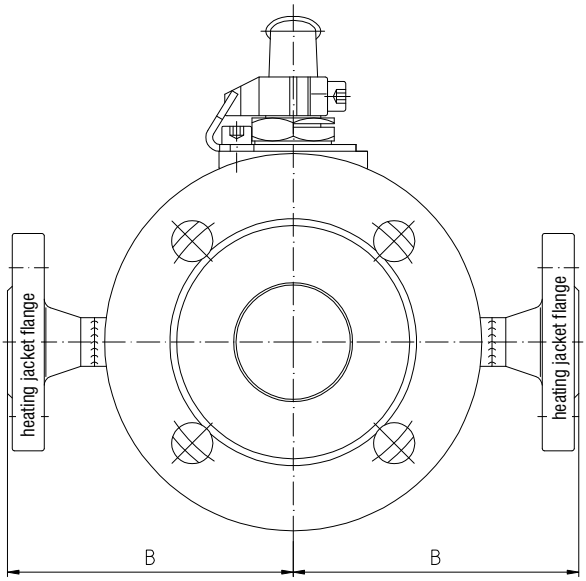
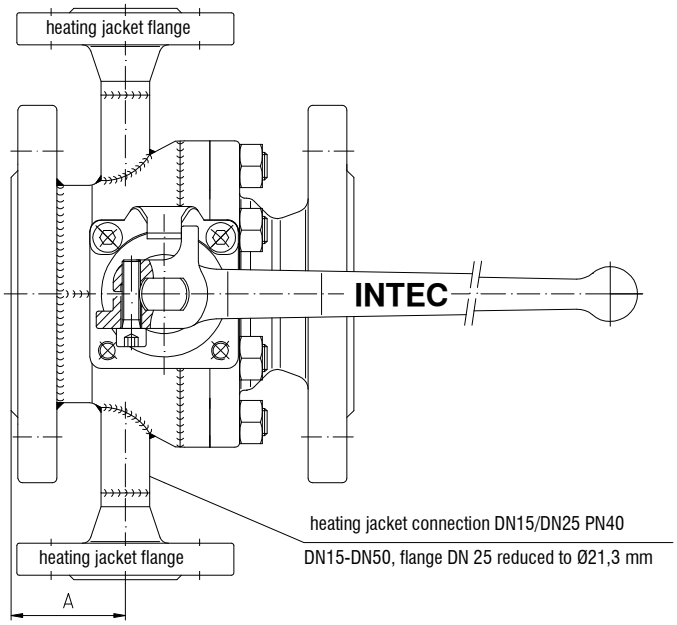
BALL VALVES INTEC

One-piece heating jacket PN25

Heating jacket with flanges acc. to EN 1092
Face to face acc. to EN 558, GR.1
Face to face acc. to EN 558, GR.27







Dimensions

DN	dimensions (mm)			
	A	B	GR.1 C	GR.27 C
15*	70	110	130	--
15	38	80	130	--
25 **	50	110	160	--
25 ***	70	110	160	--
40	60	115	200	140
50	60	125	230	150
65	55	150	290	170
80	80	150	310	180
100	70	160	350	190
150	90	195	480	350
200	90	350	600	400

* solid material construction
** body material 1.4408
*** body material 1.4571, 1.4462

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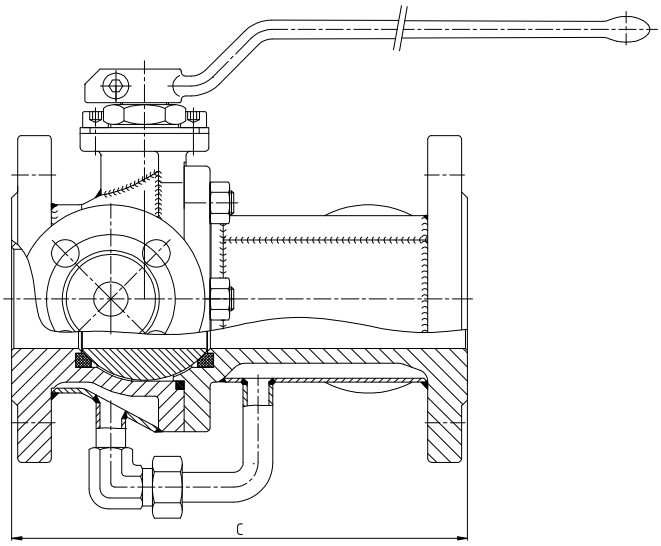
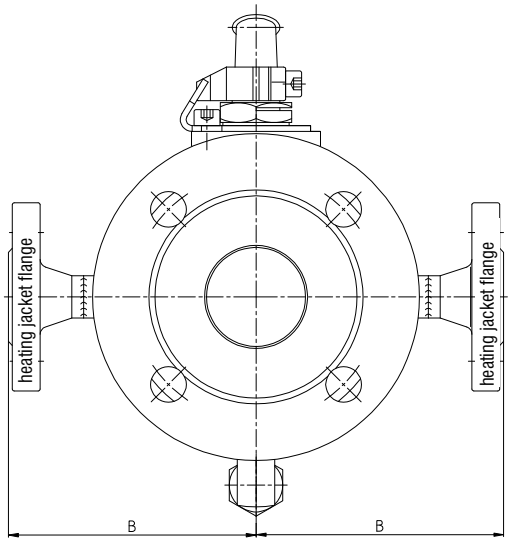
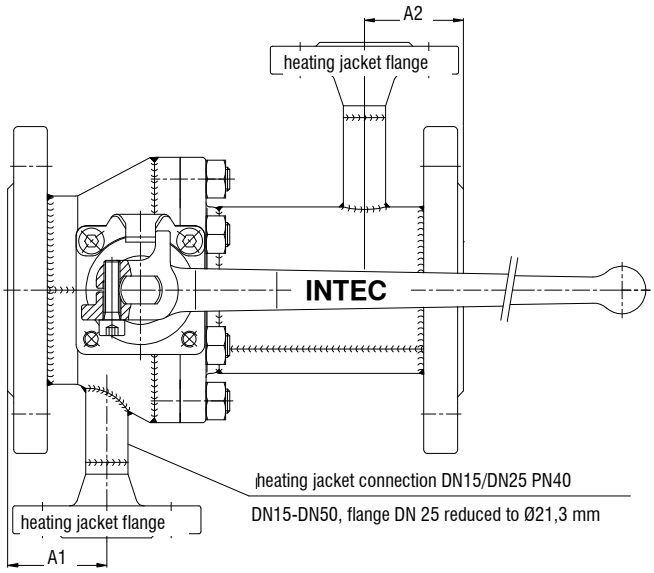
BALL VALVES INTEC

Two-piece heating jacket PN25

Heating jacket with flanges acc. to EN 1092
Face to face acc. to EN 558, GR.1
Face to face acc. to EN 558, GR.27







Dimensions

DN	dimensions (mm)			
	A1 / A2	B	GR.1 C	GR.27 C
15	45 / 33	80	130	--
25	50 / 45	110	160	--
40	60 / 50	115	200	--
50	60 / 50	125	230	--
80	80 / 70	150	310	--
100	70	160	350	--
150	110 / 90	210	--	350
200	140 / 140	265	--	400
300	110 / 70	350	--	500

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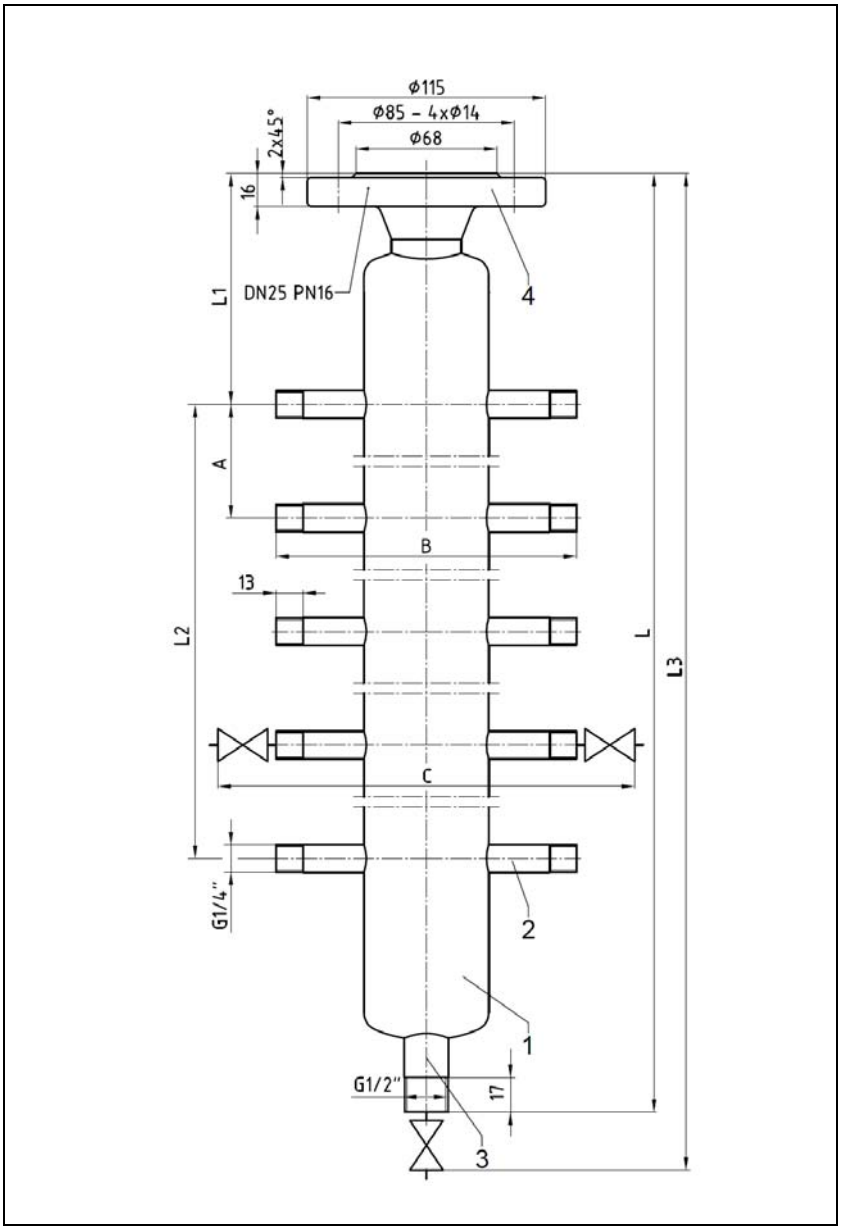
AIR HEADER INTEC

with 10-, 20- or x-times outlet ports, DN25, PN16



Air header, stainless steel 1.4571/1.4404 with 10-, 20- or x-times outlet ports

Specification:
Air header, stainless steel 1.4571/1.4404 with 10-, 20- or x-times outlet ports, air header tube: size 2"

The outlet ports are equipped with following shut-off valves:

Outlet:
threaded connection with shut-off valve ball valve RK-Proball KH 1T M 1/4"

Draining:
threaded connection with shut-off valve ball valve RK-Proball KH 1T M 1/2"

Input flange:
DN25, PN16 Form B1

No.	Part	Material
1	air header tube	1.4571/1.4404
2	connection nipple 1/4“	1.4571/1.4404
3	connection nipple 1/2“	1.4571/1.4404
4	flange DN25, PN16	1.4571/1.4404

Dimensions

Number of connections	dimensions (mm) L	L1	L2	L3	A	B	C
10 piece	753	110	520 (4x130)	796	130	145	205
20 piece	1135	110	900 (9x100)	1188	100	145	205

Ordering example:
Air header with 10 outlet ports

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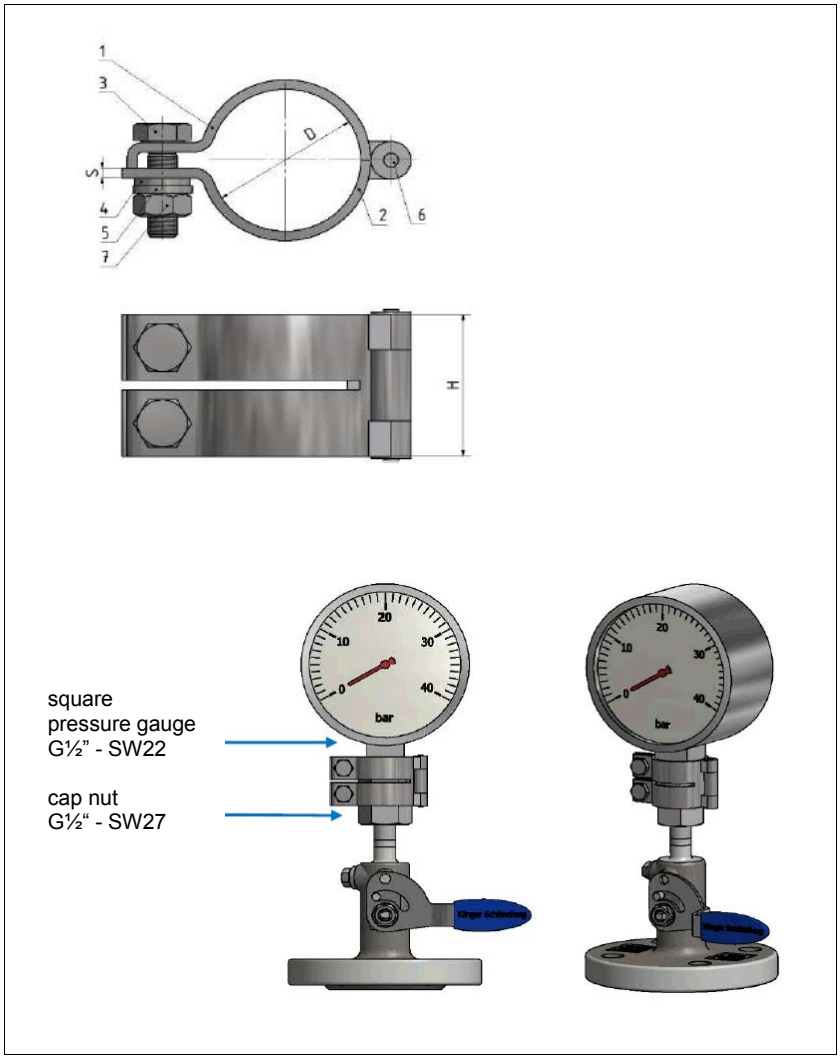
BALL VALVES INTEC

Pressure gauge safety clamp TYPE 51



Protection against loosening of pressure gauge or pressure gauge tightening, e.g. by pipeline vibration

No.	Part	Material
1	upper safety clamp	1.4301
2	below safety clamp	1.4301
3	hex. bolt	A2
4	washer	A2
5	spring washer	A2
6	cylinder pin	A2
7	hex. nut	A2

Dimensions

dimensions in mm			
G	D	H	S
G ½"	31	30	2

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BALL VALVES

KLINGER Schöneberg

KLINGER	
	
	

TYP 300P

One-piece sampling device ball valve.

The economical solution for open sampling in the field of laboratory- and process engineering. Optional variations of connections, e.g. female thread, clamping ring connection, cutting ring connection etc. are available.

Type:	One-piece ball valve
Nominal sizes:	DN ¼“ - DN 2“
Pressure range:	PN 63
Temperature:	up to +210°C
Material of body:	stainless steel
End connections:	female threaded ends acc. to EN 10226-1 with screwed butt weld end connection
FTF:	acc. to producers standard
Accessories:	stem extension, grid unit, spring close unit

Certificates and Approvals:

» ATEX 2014/34/EU

Product advantages:

» special designs for higher pressures and higher temperatures
» special material combinations
» available free of oil and grease
» available with spring close unit to avoid wrong operation (open/close) by user

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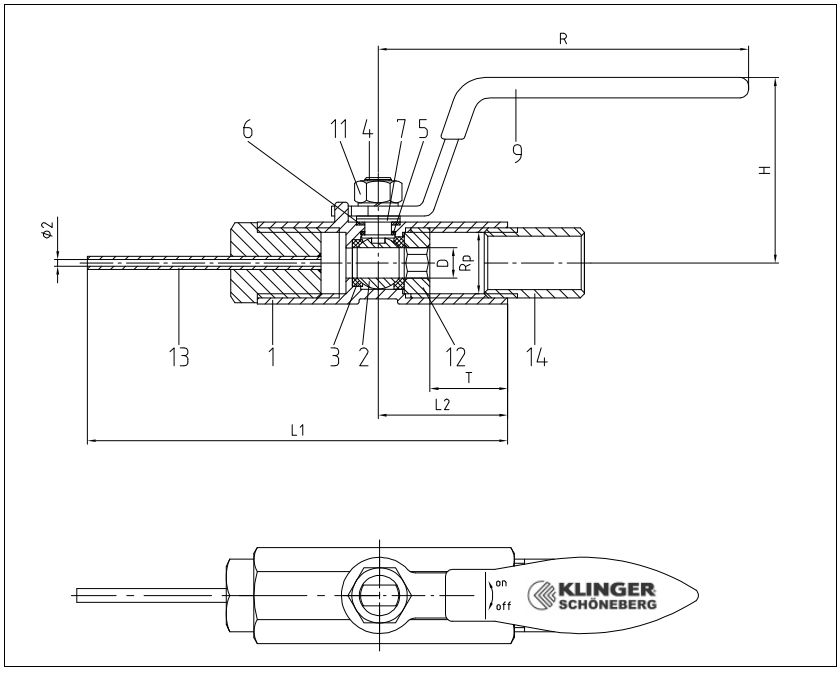
MINI PLANT BALL VALVE

TYPE 300 P, ¼“ - 2“, PN 63
sampling tube with 2mm inside diameter

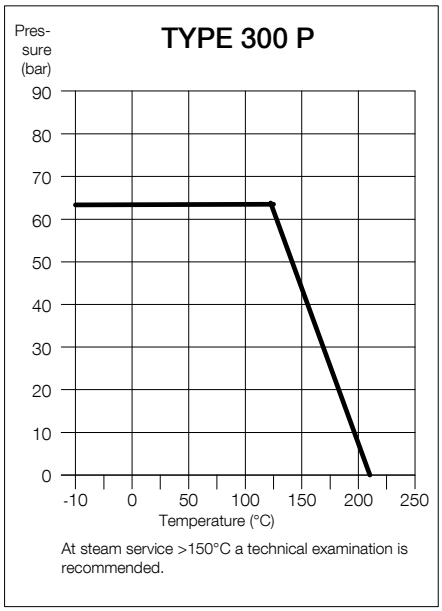


Mini plant ball valve
female threaded ends acc. to EN 10226-1 with
screwed butt weld end connection
sampling tube with 2mm inside diameter
face to face dimensions acc. to producers standard

Specification:
One-piece sampling device ball valve, female threaded ends acc. to EN 10226-1 with screwed butt weld end connection, sampling tube with 2mm inside diameter, blow-out-proof stem, body material stainless steel (1.4408), free of non ferrous metals, with lever.

Marking: TYPE 300 P
Type: TYPE 300 P-1.4408

No.	Part	Material
1	body	1.4408
2	ball	1.4408
3	seat	KFG
4	stem	1.4401
5	friction washer	KF
6	packing ring	KF
7	thrust washer	1.4301
9	lever	1.4301
11	hex. nut	1.4401
12	inscrewed part	1.4401
13	sampling tube	1.4571
14	screwed butt weld end connection	1.4571



Dimensions

DN	D	dimensions (mm)				
		L1	L2	T	H	R
¼“	5.0	150	25	11	47	67
3/8“	7.0	170	30	13	49	67
½“	9.0	180	38	14	57	90
¾“	12.5	191	40	18	60	90
1“	16.0	202	45	22	68	112
1 ¼“	20.0	221	55	22	70	112
1 ½“	24.5	231	60	22	75	132
2“	32.0	252	70	23	80	132

Ordering example:
TYPE 300 P, 1”, PN 63, 1.4408

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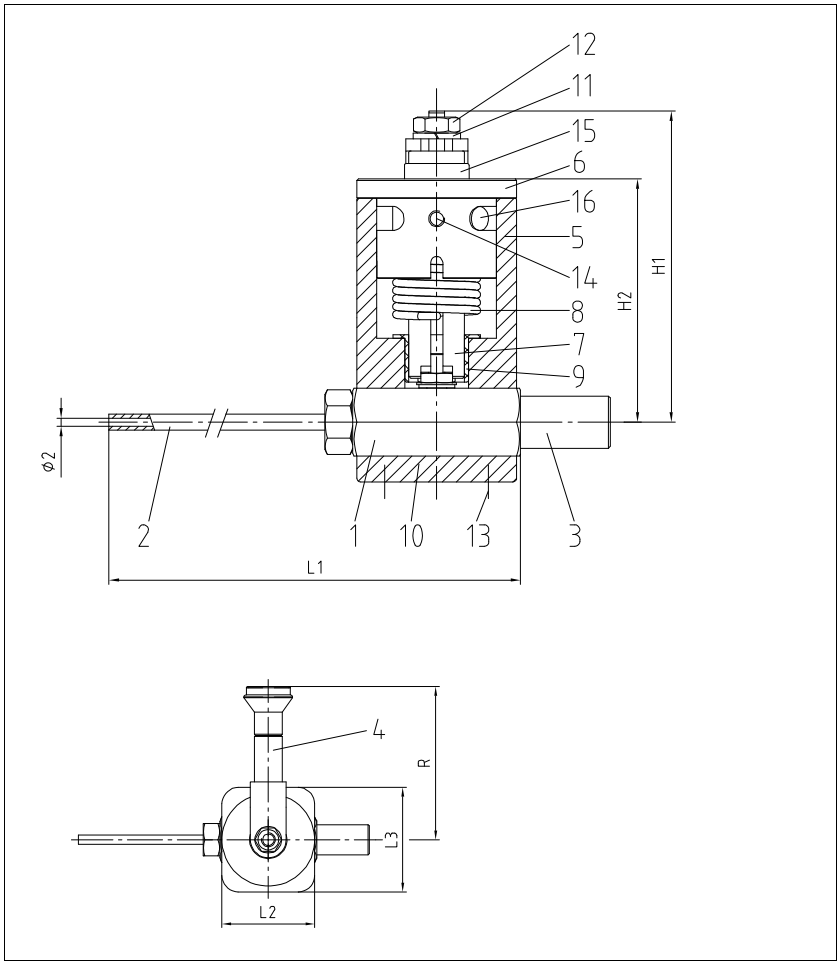
MINI PLANT BALL VALVE

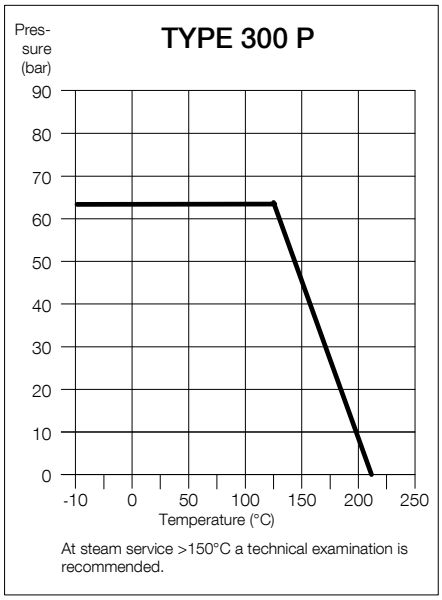
TYPE 300 P, ¼“, PN 63
with spring close unit TYPE 43



Mini plant ball valve
female threaded ends acc. to EN 10226-1 with
screwed butt weld end connection
sampling tube with 2mm inside diameter
face to face dimensions acc. to producers standard

Specification:
One-piece sampling device ball valve, female threaded ends acc. to EN 10226-1 with screwed butt weld end connection, sampling tube with 2mm inside diameter, blow-out-proof-stem, body material stainless steel (1.4408), free of non ferrous metals, with spring close unit to avoid wrong operation (open/close) by user.

Marking: TYP 300 P
Type: TYP 300 P-1.4408



No.	Part	Material
1	ball valve	1.4408
2	sampling tube	1.4571
3	screwed butt weld end connection	1.4571
4	lever with grid unit	1.4301
5	housing upper part	1.4408
6	cap	1.4408
7	spindle	1.4305
8	spring	1.4310
9	bearing sleeve	EP
10	housing lower part	1.4408
11	spring washer	1.4310
12	hex. nut	A2
13	socked screw	A2
14	rounded head screw	A2
15	bearing	EP
16	pin	1.4305

Dimensions

DN	dimensions (mm)					
	L1	L2	L3	H1	H2	R
¼“	150	40	45	80	62	64

Ordering example:
TYPE 300 P, ¼”, PN 63, 1.4408
with spring close unit TYPE 43

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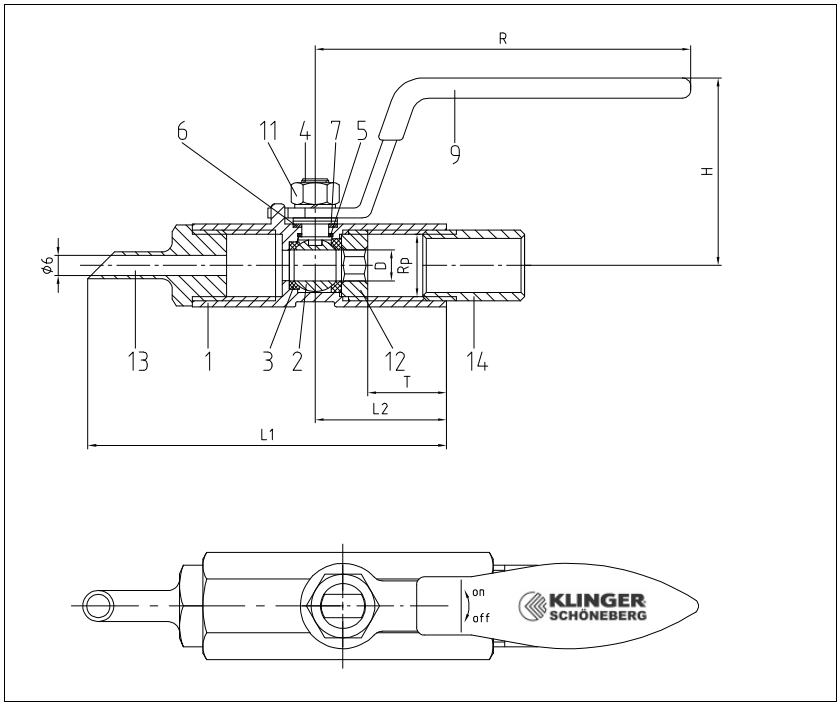
MINI PLANT BALL VALVE

TYPE 300 PS, ¼“ - 2“, PN 63
sampling tube with inclined dripping edge

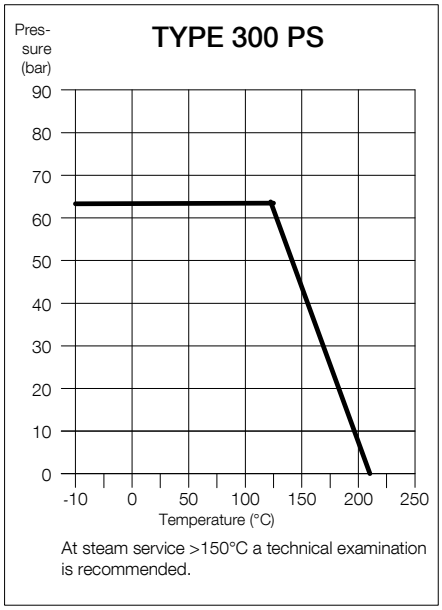


Mini plant ball valve
female threaded ends acc. to EN 10226-1 with
screwed butt weld end connection
sampling tube with inclined dripping edge
face to face dimensions acc. to producers standard

Specification:
One-piece sampling device ball valve, female threaded ends acc. to EN 10226-1 with screwed butt weld end connection, sampling tube with inclined dripping edge, blow-out-proof stem, body material stainless steel (1.4408), free of non ferrous metals, with lever.

Marking: TYPE 300 P
Type: TYPE 300 P-1.4408

No.	Part	Material
1	body	1.4408
2	ball	1.4408
3	seat	KFG
4	stem	1.4401
5	friction washer	KF
6	packing ring	KF
7	thrust washer	1.4301
9	lever	1.4301
11	hex. nut	1.4401
12	inscrewed part	1.4401
13	sampling tube	1.4571
14	screwed butt weld end connection	1.4571



Dimensions

DN	D	dimensions (mm)				
		L1	L2	T	H	R
¼“	5.0	83	25	14	47	67
⅜“	7.0	93	30	18	49	67
½“	9.0	108	38	23	57	90
¾“	12.5	114	40	23	60	90
1“	16.0	125	45	23	68	112
1 ¼“	20.0	159	55	35	70	112
1 ½“	24.5	169	60	37	75	132
2“	32.0	190	70	43	80	132

Ordering example:
TYPE 300 PS, 1”, PN 63, 1.4408

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RK-PROBALL

An interesting alternative!

The RK-Proball series offers special interesting cost effectiveness. Depending on the design the ball valves are suitable in air pressure systems, light chemical industry, pulp and paper industry for alcalines, acids, solvents and other chemical agents. RK-Proball ball valve NC-Types are certified acc. to German clean air act VDI 2440! Flexible usability - a “Pro” for your plant.

Types:	1-, 2- or 3-piece ball valves
Nominal sizes:	DN 15 - DN 100 DN ¼“ - DN 4“
Pressure range:	PN 16, PN 40, PN 63 and PN 100 ANSI Class 150 and Class 300
Temperature:	up to +250°C
Body of material:	stainless steel, carbon steel
End connections:	threaded ends, flanges, with pipe screwing light series, with clamping ring connection, butt weld ends
FTF:	see relevant ball valve types
Accessories:	safety spring locking device, locking device for lever, stem extension

Certificates and Approvals:

- certified acc. to German clean air act VDI 2440
- ATEX 2014/34/EU
- Fire-Safe acc. to API 607 (optional)

Special designs:

- special materials on request

Product advantages:

- special interesting cost effectiveness
- flexible usability
- certified acc. to German clean air act VDI 2440
- top flange DIN EN ISO 5211
- available with safety spring locking device
- best suited for automation

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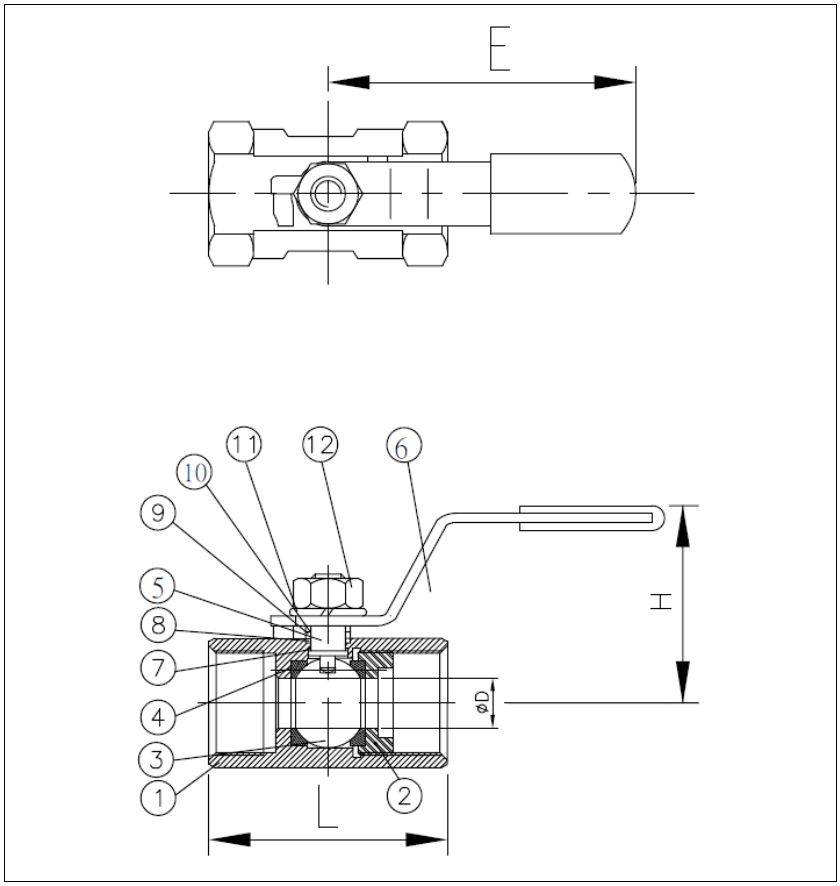
BALL VALVES RK-PROBALL

KH 1T M, ¼" - 2", PN63

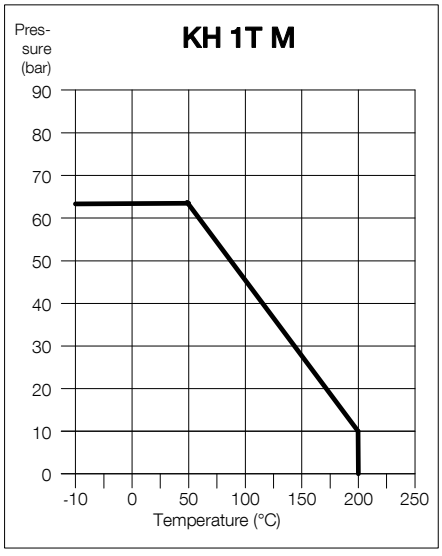


Ball valve with threaded ends acc. to EN 10226-1 / EN ISO 228-1 reduced bore face to face dimensions acc. to DIN 3202-M3

Specification:
One-piece ball valve, threaded ends acc. to EN 10226-1/EN ISO 228-1, face to face dimensions acc. to DIN 3202-M3, reduced bore, bow-out-proof stem, body material stainless steel (1.4408), free of non ferrous metals, seat KFG, stem packing PTFE, approved by PED, inscrewed part marked with A4, nut marked with A4, high of the lever acc. to "UVV-Großchemie".

Marking: RK-Proball
Type: KH 1T M-1.4408

No.	Part	Material
1	body	1.4408
2	inscrewed part	1.4408
3	ball	1.4408
4	seat	KFG
5	stem	1.4401
6	lever	1.4301
7	stem packing	PTFE
8	thrust washer	PTFE
9	gland ring	1.4301
10	conical spring washer	1.4301
11	spring washer	1.4301
12	nut	1.4301



Dimensions

DN	DN	reduced bore	dimensions (mm)			weight
mm	inch	D	L	H	E	kg
8	¼	5.0	50	46.5	67	0.1
10	⅜	7.0	60	49.0	67	0.1
15	½	9.2	75	56.5	90	0.2
20	¾	12.5	80	60.0	90	0.3
25	1	15.0	90	67.8	112	0.4
32	1 ¼	20.0	110	69.8	112	0.7
40	1 ½	25.0	120	74.6	132	0.8
50	2	32.0	140	79.5	132	1.3

Ordering example:
KH 1T M, 2", PN 63, 1.4408

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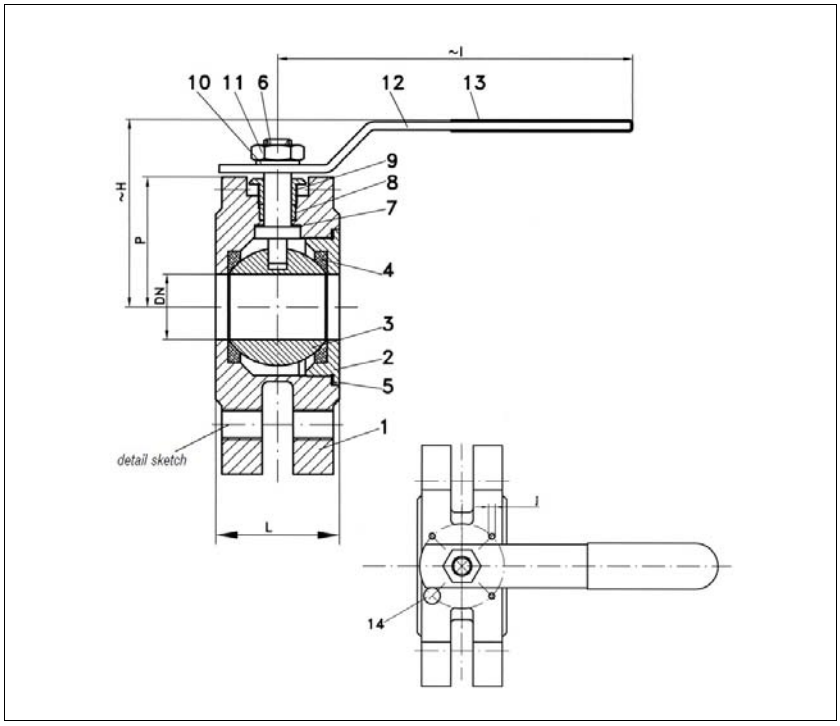
BALL VALVES RK-PROBALL

KH 1T W, ½“ - 4“, PN16



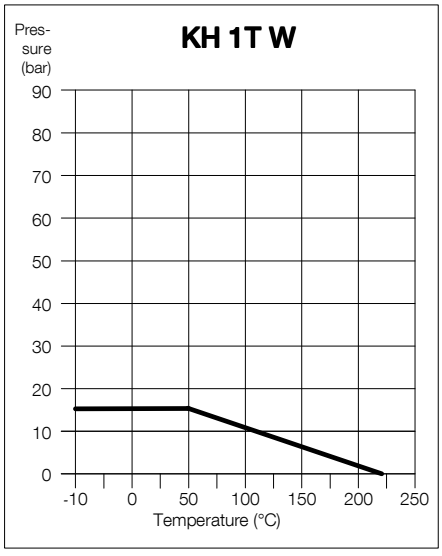
Kugelhähne RK-Proball KH 1T W of all sizes are also available with pneumatical, electrical or hydraulic actuators.

Wafer type ball valve
full bore
face to face acc. to producers standard
flanges acc. to EN 1092

Specification:
One-piece ball valve with flanges acc. to EN 1092, face to face dimensions acc. to producers standard, full bore, blow-out proof stem, body material stainless steel (1.4408), free of non ferrous metals, seat KFG/KFM, stem packing KF, design acc. to EN 19, design of the actuator connection refers to DIN/ISO 5211, approved by PED, with lever.

Marking: RK-Proball
Type: KH 1T W-1.4408

No.	Part	Material
1	body	1.4408
2	body screw	1.4408
3	ball	1.4408
4	seat	KFG/KFM
5	body seal	PTFE
6	stem	1.4401
7	seal	PTFE
8	stem packing	KF
9	gland nut	1.4301
10	thrust washer	1.4301
11	nut	1.4301
12	lever	1.4301
13	insulation cover	Vinyl
14	stopper	1.4301



Dimensions

DN mm	DN inch	dimensions (mm) H	l	j	L	P	top flange ISO	torque Nm	weight kg
15	½	70	145	M5	34.5	34.0	F3	10	1.25
20	¾	80	140	M5	38.5	37.8	F3	15	1.75
25	1	82	155	M5	44.5	45.5	F4	20	2.20
32	1 ¼	91	173	M6	54.0	51.5	F5	30	3.40
40	1 ½	110	187	M6	62.0	57.1	F5	35	4.10
50	2	118	187	M8	72.0	65.0	F5	45	5.30
65	2 ½	133	250	M8	104.0	84.5	F7	75	6.80
80	3	155	250	M8	118.0	90.6	F7	90	9.20
100	4	185	250	M8	150.0	108.0	F7	140	14.60

Ordering example:
KH 1T W, 2", PN 16, 1.4408

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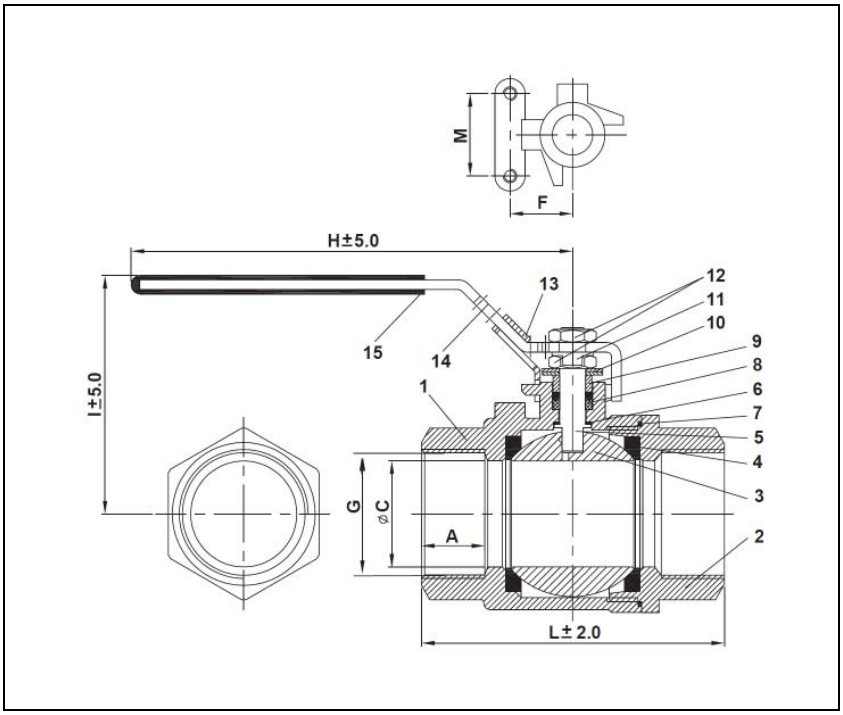
BALL VALVES RK-PROBALL

KH 2T M (NC), ¼“ - 2“, PN63, 2 ½“ - 3“, PN40



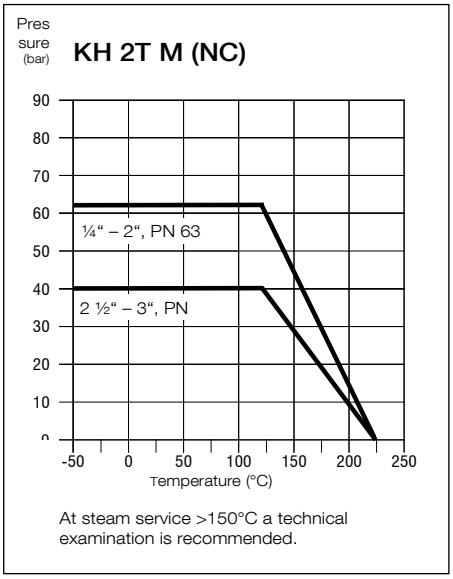
Ball valves with threaded ends acc. to EN 10226-1 / EN ISO 228-1 full bore face to face acc. to DIN 3202-M3

Specification:
Two-piece ball valve, threaded ends acc. to EN 10226-1 / EN ISO 228-1, face to face dimensions acc. to DIN 3202-M3, full bore, blow-out-proof stem, body material stainless steel (1.4408), free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, approved by PED, certified acc. to GERMAN clean air act VDI 2440, safety spring locking device is optional.

Marking: RK-Proball
Type: KH 2T M (NC)-1.4408

No.	Part	Material
1	body	1.4408
2	cap	1.4408
3	ball	1.4408
4	seat	KFG
5	stem	1.4401
6	thrust washer	KF
7	body seal	KF
8	stem packing	KF
9	gland ring	1.4301
10	disc spring	1.4310
11	nut stopper	1.4301
12	stem nuts	1.4301
13	locking device*	1.4301
14	lever	1.4301
15	insulation cover	PVC

* special type



At steam service >150°C a technical examination is recommended.

Dimensions

DN mm	connection G in inch	PN	dimensions (mm) A	C	F	M	H	I	L	torque Nm	weight kg
8	G 1/4“	63	12.5	11,5	12.7	28.5	115	66	50	4	0.3
10	G 3/8“	63	14	12,5	12.7	28.5	115	66	60	4	0.3
15	G 1/2“	63	17.8	15	12.7	28.5	115	68	75	6	0.4
20	G 3/4“	63	19.1	20	22.1	35	132	77	80	8	0.6
25	G 1”	63	22.6	25	22.1	35	162	82	90	11	1.0
32	G 1 1/4“	63	24.9	32	23.6	38	162	87	110	15	1.4
40	G 1 1/2“	63	24.9	38	23.6	38	205	103	120	25	2.3
50	G 2”	63	29.2	49	28.9	38.5	205	111	140	42	3.3
65	G 2 1/2“	40	33.7	65	35	55	260	152	185	60	7.4
80	G 3”	40	36.8	80	37.5	72	260	161	205	70	11.4

Ordering example:
KH 2T M (NC), 2“, PN 63, 1.4408, safety spring locking device

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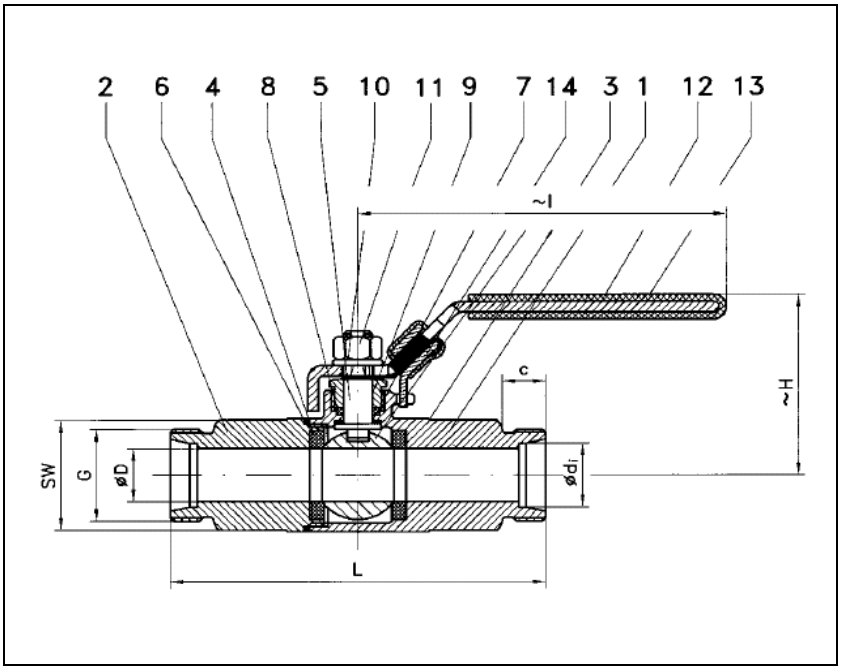
BALL VALVES RK-PROBALL

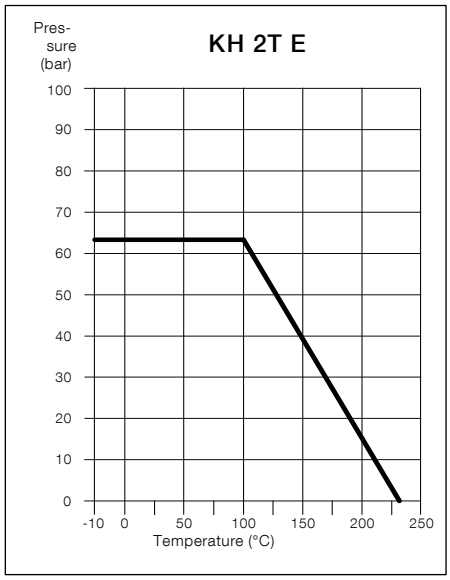
KH 2T E, DN6 - DN16, PN63



Ball valve with pipe screwing
light series acc. to DIN 3861
full bore
face to face acc. to DIN 3202 V1

Specification:
Two-piece ball valve with pipe screwing light series acc. to DIN 3861, full bore, blow-out-proof stem, body material stainless steel (1.4408), free of non-ferrous metals, seat KFG, stem KF, design acc. to EN 19, safety spring locking device is optional.

Marking: RK-Proball
Type: KH 2T E-1.4408



No.	Part	Material
1	body	1.4408
2	cap	1.4408
3	ball	1.4408
4	seat	KFG
5	stem	1.4401
6	seal	KFG
7	thrust washer	PTFE
8	stem packing	KF
9	gland nut	1.4301
10	washer	1.4301
11	nut	1.4301
12	lever	1.4301
13	insulation cover	Vinyl
14	spring locking device*	1.4301

* special type

Ordering example:
KH 2T E, DN6, PN 63, 1.4408,
safety spring locking device

Dimensions

DN	dimensions (mm)							SW **	Kv-value	weight
mm	di	D	L	H	l	C	G		m³/h	kg
6	8	6.0	76	50	102	10	M14x1.5	22	3	0.2
8	10	8.0	76	50	102	11	M16x1.5	22	5	0.2
10	12	10.0	80	50	102	11	M18x1.5	22	6	0.3
12	15	12.0	96	50	102	12	M22x1.5	24	7	0.3
16	18	15.0	105	52	102	12	M26x1.5	27	9	0.3

** width across in mm

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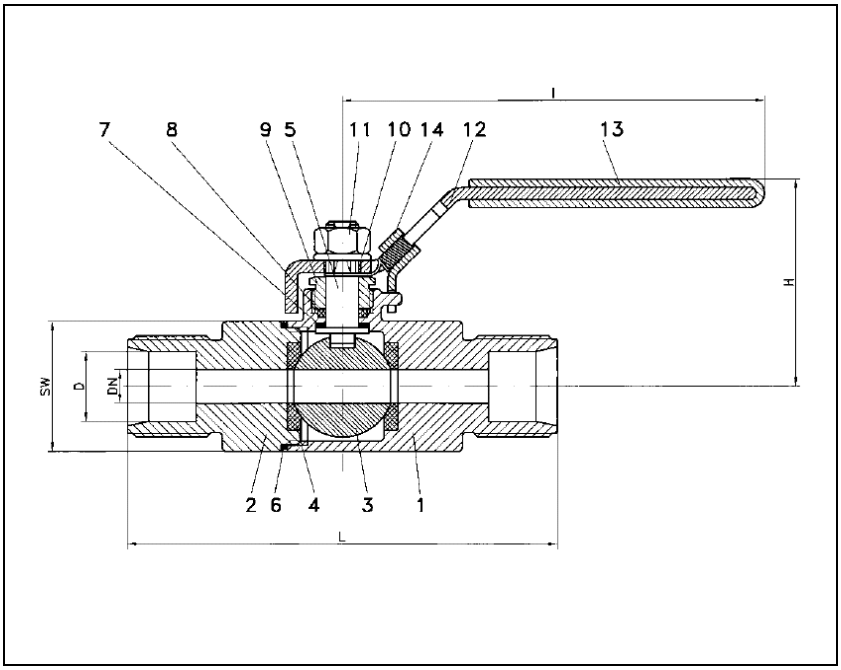
BALL VALVES RK-PROBALL

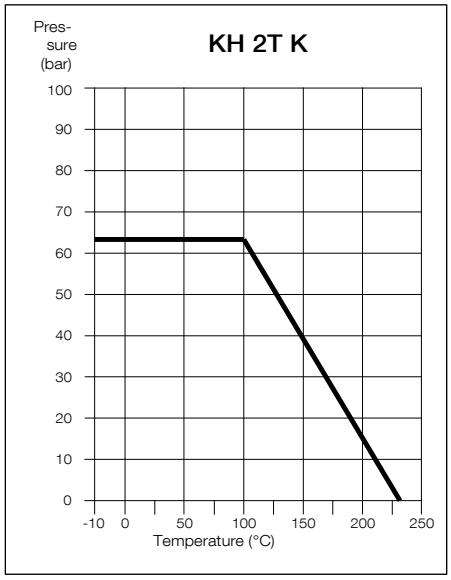
KH 2T K, DN4 - DN16, PN63



Ball valve with
clamping ring connection
full bore
face to face acc. to DIN 3202 V1

Specification:
Two-piece ball valve with clamping ring connection, full bore, blow-out-proof stem, body material lost wax cast stainless steel (1.4408), free of non-ferrous metals, seat KFG, stem packing KF, design acc. to EN 19, safety spring locking device is optional

Marking: RK-Proball
Type: KH 2T K-1.4408



No.	Part	Material
1	body	1.4408
2	cap	1.4408
3	ball	1.4408
4	seat	KFG
5	steam	1.4401
6	seal	KFG
7	thrust washer	PTFE
8	stem packing	KF
9	gland nut	1.4301
10	washer	1.4301
11	nut	1.4301
12	lever	1.4301
13	insulation cover	Vinyl
14	spring locking device*	1.4301

* special type

Ordering example:
KH 2T K, DN6, PN 63, 1.4408,
safety spring locking device

Dimensions

DN mm	PN	dimensions (mm) D	L	H	I	SW**	Kv-value m³/h	weight kg
4	63	6	76	50	102	22	2	0.2
6	63	8	76	50	102	22	3	0.2
8	63	10	76	50	102	22	5	0.2
10	63	12	80	50	102	22	6	0.3
12	63	15	96	50	102	24	7	0.3
16	63	18	105	52	102	34	9	0.6

** width across in mm

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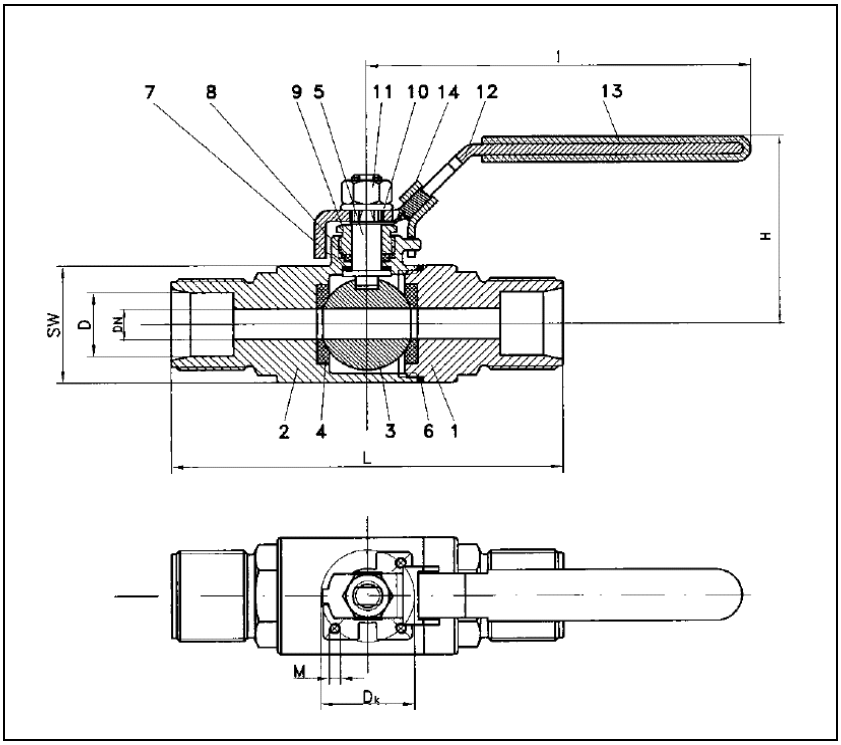
BALL VALVES RK-PROBALL

KH 2T K HP, DN4 - DN16, PN160



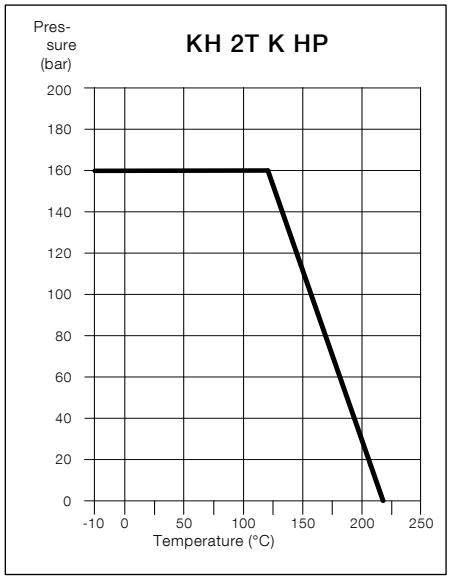
High-pressure ball valve
with clamping ring connection
full bore
face to face DIN 3202 V1

Specification:
Two-piece ball valve with clamping ring connection, high pressure PN 160, full bore, blow-out-proof stem, body material lost wax cast stainless steel (1.4408), free of non-ferrous metals, seat KFG/KFM, stem packing KF, top flange DIN EN ISO 5211, design acc. to EN 19, safety spring locking device is optional.

Marking: RK-Proball
Type: KH 2T K HP-1.4408

No.	Part	Material
1	body	1.4408
2	cap	1.4408
3	ball	1.4408
4	seat	KFG/KFM
5	stem	1.4401
6	seal	KFG
7	thrust washer	PTFE
8	stem packing	KF
9	gland nut	1.4301
10	washer	1.4301
11	nut	1.4301
12	lever	1.4301
13	insulation cover	Vinyl
14	spring locking device*	1.4301

* special type



Ordering example:
KH 2T K HP, DN6, PN 160, 1.4408, safety spring locking device

Dimensions

DN mm	PN	dimensions (mm) D	L	H	I	SW**	top flange ISO	D_k	M	Kv-value m³/h	weight kg
4	160	6	76	50	102	22	F04	42	M5	2	0.25
6	160	8	76	50	102	22	F04	42	M5	3	0.25
8	160	10	76	50	102	22	F04	42	M5	5	0.25
10	160	12	80	50	102	22	F04	42	M5	6	0.35
12	160	15	96	50	102	24	F04	42	M5	7	0.35
16	160	18	105	52	102	34	F04	42	M5	9	0.65

** width across in mm

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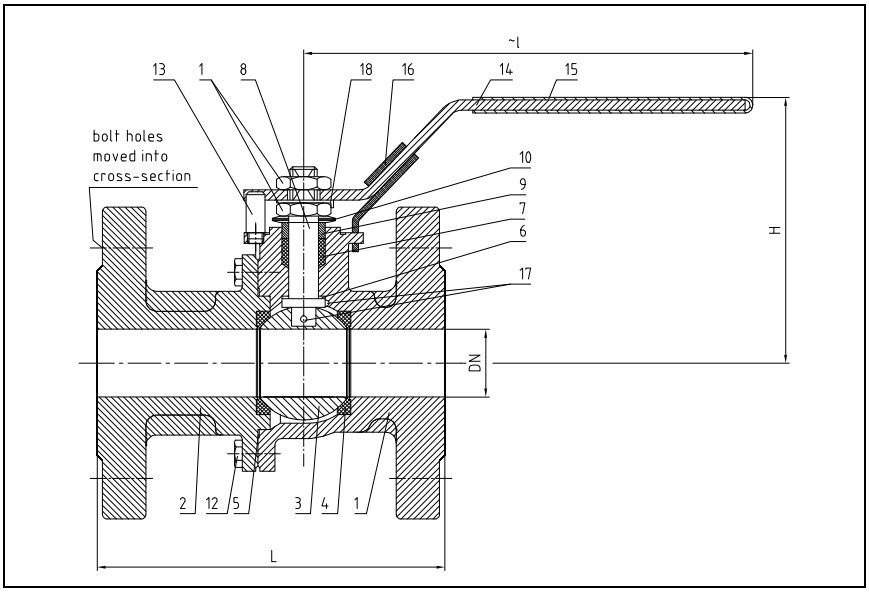
BALL VALVES RK-PROBALL

KH 2T F-FS, DN15 - DN100, PN16/40



Ball valves RK-Proball KH 2T F of all sizes are also available with pneumatical, electrical or hydraulic actuators.

Flanged ball valve
full bore
face to face acc. to 558, GR.1
face to face acc. to 558, GR.27
flanges acc. to EN 1092

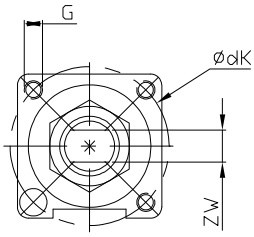
Specification:
Two-piece ball valve, flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR.1/GR.27, full bore, blow-out-proof stem, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFM, stem packing graphite, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, Fire-Safe acc. to API 607, safety spring locking device is optional.

Marking: RK-Proball
Types: KH 2T F-FS-1.0619
KH 2T F-FS-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFM	
5	seal	Graphite	
6	thrust washer	KFCM	
7	stem packing	Graphite	
8	stem	1.4401	
9	ring	1.4401	
10	belleville washer	1.4310	
11	nut	1.4301	
12	screw	A4-70	
12.1	stud bolt, GR.27	A4-70	
12.2	nut, GR.27	A4-70	
13	stop pin	1.4301	
14	lever	1.4301	
15	insulation cover	Vinyl	
16	spring locking device*	1.4301	
17	antistatic element	1.4401	
18	locking washer	1.4301	

* special type

Top flange

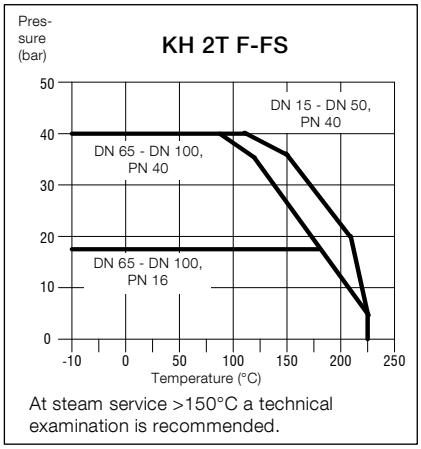


DN (mm)	Ø dk	G	ZW
15	42 x	M 5 x 0.8	8
20	42 x	M 5 x 0.8	8
25	50 x	M 6 x 1.0	10
32	50 x	M 6 x 1.0	10
40	50 x	M 6 x 1.0	10
50	70 x	M 8 x 1.25	14
65	70 x	M 8 x 1.25	14
80	102 x	M 10 x 1.5	19
100	102 x	M 10 x 1.5	19

Dimensions

DN mm	DN Zoll	PN	dimensions (mm) H	l	L GR.1	L GR.27	top flange ISO	torque Nm**	weight kg GR.1	kg GR.27
15	1/2“	40	86	165	130	115	F04	6	2.4	2.3
20	3/4“	40	92	165	150	120	F04	10	3.2	3.1
25	1“	40	106	176	160	125	F05	14	4.6	4.3
32	1 1/4“	40	114	215	180	130	F05	22	6.5	6.0
40	1 1/2“	40	116	215	200	140	F05	30	7.5	7.0
50	2“	40	136	278	230	150	F07	41	12.3	11.4
65	2 1/2“	40	150	278	290	170	F07	65	17.0	15.2
65	2 1/2“	16	150	278	290	170	F07	65	15.7	14.1
80	3“	40	185	375	310	180	F10	94	24.1	22.0
80	3“	16	185	375	310	180	F10	94	22.9	20.5
100	4“	40	200	375	350	190	F10	130	32.9	29.8
100	4“	16	200	375	350	190	F10	130	30.0	26.2

**Necessary torque measured with treated water at Δ P acc. to pressure 16 bar and room temperature



At steam service >150°C a technical examination is recommended.

Ordering example:
KH 2T F-FS, DN 65, PN 16, GR.1, 1.4408, safety spring locking device

Subject to modification. 02/2017

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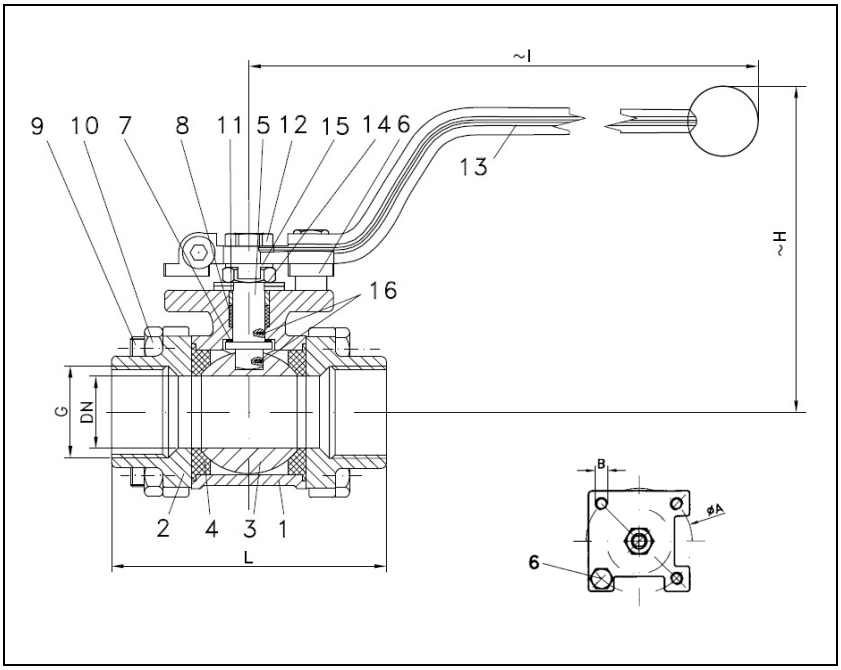
BALL VALVES RK-PROBALL

KH 3T M (NC), ¼“ - 4“, PN63/100
casting lever



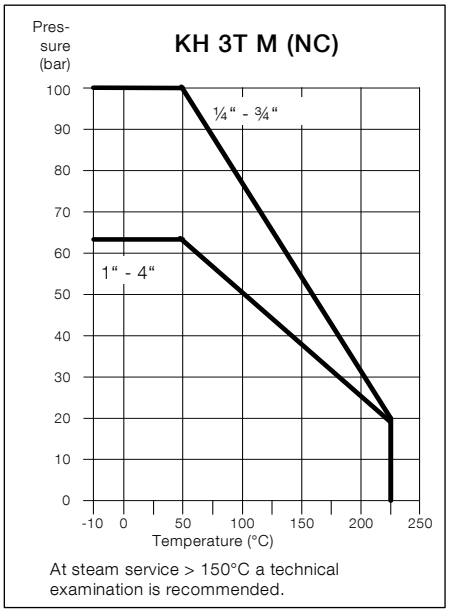
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Ball valve with threated ends acc. to EN 10226-1 / EN ISO 228-1
full bore
face to face acc. to DIN 3202-M3

Specification:
Three-piece ball valve, threated ends acc. to EN 10226-1 / EN ISO 228-1, face to face dimensions acc. to DIN 3202-M3, full bore, blow-out-proof stem, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: RK-Proball
Types: KH 3T M (NC)-1.0619
KH 3T M (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. screw	A2-70	
10	hex. nut	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	plate spring	1.4310	
15	locking plate	1.4301	
16	antistatic element	1.4401	



At steam service > 150°C a technical examination is recommended.

Ordering example:
KH 3T M (NC), 2“, PN 63, 1.4408

Dimensions

DN mm	G inch	PN	dimensions (mm) H	I	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
10.6	¼	100	72	154	50	F03	36	M5	6	3	0.5
12.7	⅜	100	72	154	60	F03	36	M5	7	3	0.5
15	½	100	86	169	75	F04	42	M5	10	5	0.7
20	¾	100	93	169	80	F04	42	M5	25	10	0.9
25	1	63	105	222	90	F05	50	M6	35	11	1.3
32	1 ¼	63	110	222	110	F05	50	M6	46	20	2.2
38	1 ½	63	124	222	120	F05	50	M6	80	26	2.8
49	2	63	146	304	140	F07	70	M8	110	30	4.4
65	2 ½	63	170	304	185	F07	70	M8	310	70	9.8
80	3	63	176	354	205	F10	102	M10	360	90	14.8
100	4	63	207	354	240	F10	102	M10	820	120	25.4

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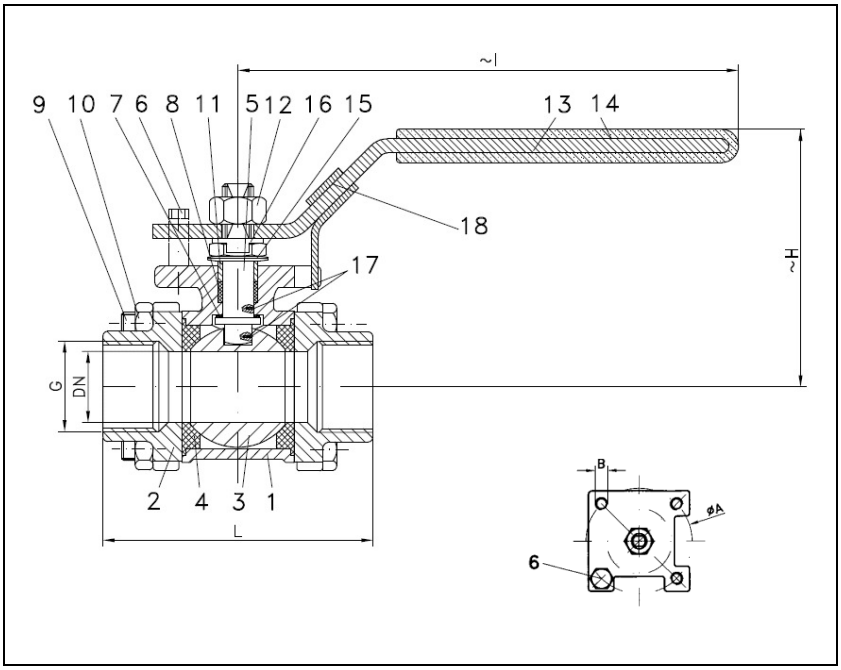
BALL VALVES RK-PROBALL

KH 3T M (NC), ¼“ - 4“, PN63/100
safety spring locking device



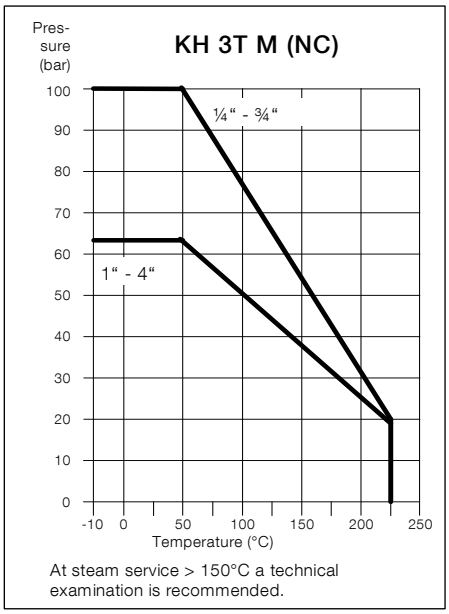
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Ball valve with threated ends acc. to EN 10226-1 / EN ISO 228-1
full bore
face to face acc. to DIN 3202-M3

Specification:
Three-piece ball valve, threated ends acc. to EN 10226-1 / EN ISO 228-1, face to face dimensions acc. to DIN 3202-M3, full bore, blow-out-proof stem, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, lever with safety spring locking device.

Marking: RK-Proball
Types: KH 3T M (NC)-1.0619
KH 3T M (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. nut	A2-70	
10	hex. screw	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	insulation cover	Vinyl	
15	plate spring	1.4310	
16	locking plate	1.4301	
17	antistatic element	1.4401	
18	spring locking device	1.4301	



At steam service > 150°C a technical examination is recommended.

Ordering example:
KH 3T M (NC), 2“, PN 63, 1.4408, safety spring locking device

Dimensions

DN mm	G inch	PN	dimensions (mm) H	I	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
10.6	¼	100	63	118	50	F03	36	M5	6	3	0.5
12.7	⅜	100	63	118	60	F03	36	M5	7	3	0.5
15	½	100	67	135	75	F04	42	M5	10	5	0.7
20	¾	100	73	135	80	F04	42	M5	25	10	0.9
25	1	63	80	168	90	F05	50	M6	35	11	1.3
32	1 ¼	63	87	168	110	F05	50	M6	46	20	2.2
38	1 ½	63	103	205	120	F05	50	M6	80	26	2.8
49	2	63	112	218	140	F07	70	M8	110	30	4.4
65	2 ½	63	156	280	185	F07	70	M8	310	70	9.8
80	3	63	163	376	205	F10	102	M10	360	90	14.8
100	4	63	194	376	240	F10	102	M10	820	120	25.4

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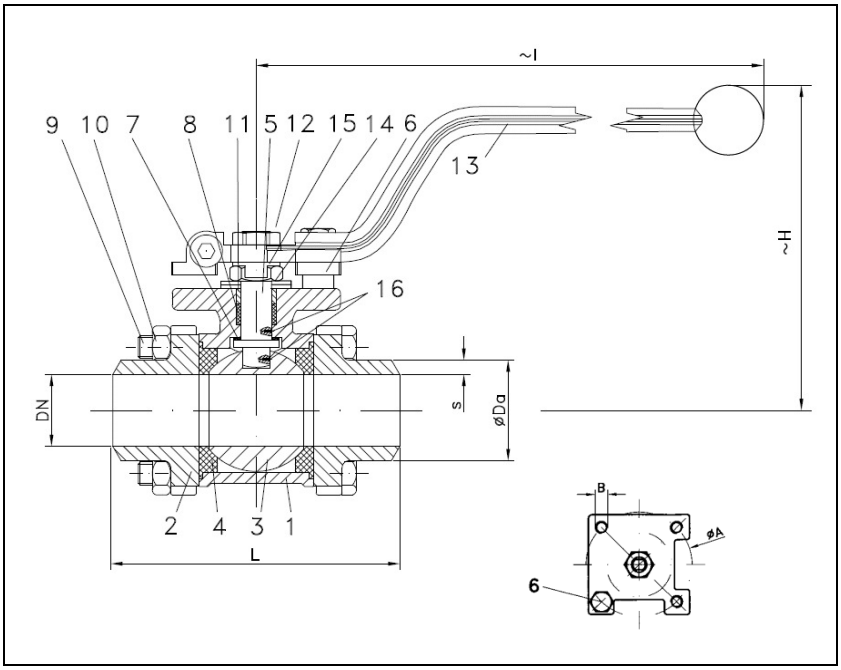
BALL VALVES RK-PROBALL

KH 3T S (NC), ¼“ - 4“, PN63/100
casting lever



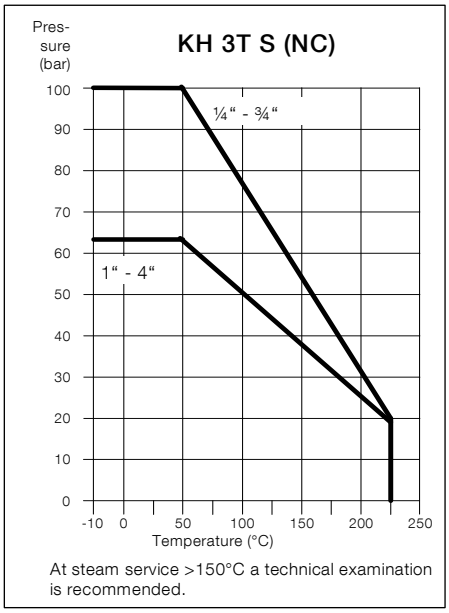
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Ball valve with butt weld ends
full bore
face to face acc. to DIN 3202-S13
butt weld ends acc. to EN 12627

Specification:
Three-piece ball valve, butt weld ends acc. to EN 12627, face to face dimensions acc. to DIN 3202-S13, full bore, blow-out-proof stem, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: RK-Proball
Types: KH 3T S (NC)-1.0619
KH 3T S (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. schrew	A2-70	
10	hex. nut	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	plate spring	1.4310	
15	locking plate	1.4301	
16	antistatic element	1.4401	



At steam service >150°C a technical examination is recommended.

Ordering example:
KH 3T S (NC), 2“, PN 63, 1.4408,

Dimensions

DN mm	DN inch	PN	dimensions (mm) Ø Da	S	H	l	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
8	¼	100	13.7	2.60	72	154	70	F03	36	M5	6	3	0.5
10	⅜	100	17.2	3.35	72	154	70	F03	36	M5	7	3	0.5
15	½	100	21.3	2.80	86	169	75	F04	42	M5	10	5	0.7
20	¾	100	26.9	2.95	93	169	90	F04	42	M5	25	10	0.9
25	1	63	33.7	3.45	105	222	100	F05	50	M6	35	11	1.3
32	1 ¼	63	42.4	5.20	110	222	110	F05	50	M6	46	20	1.9
38	1 ½	63	48.3	5.15	124	222	125	F05	50	M6	80	26	2.9
49	2	63	60.3	5.65	146	304	150	F07	70	M8	110	30	4.7
65	2 ½	63	76.1	5.55	170	304	190	F07	70	M8	310	70	9.7
80	3	63	88.9	4.45	176	354	220	F10	102	M10	360	90	14.6
100	4	63	114.3	7.15	207	354	270	F10	102	M10	820	120	25.8

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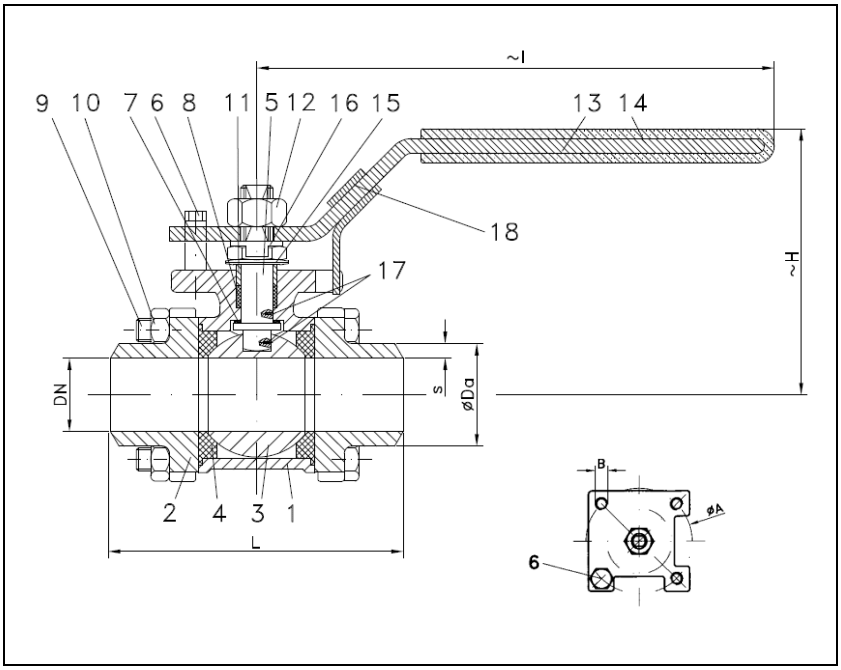
BALL VALVES RK-PROBALL

KH 3T S (NC), ¼“ - 4“, PN63/100
safety spring locking device



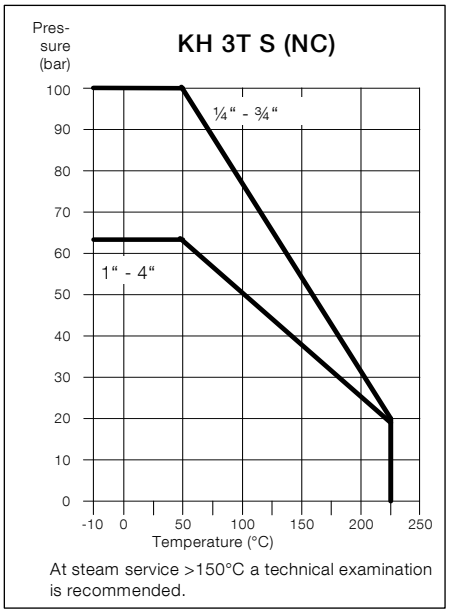
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Ball valve with butt weld ends
full bore
face to face acc. to DIN 3202-S13
butt weld ends acc. to EN 12627

Specification:
Three-piece ball valve, butt weld ends acc. to EN 12627, face to face dimensions acc. to DIN 3202-S13, full bore, blow-out-proof stem, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, lever with safety spring locking device.

Marking: RK-Proball
Types: KH 3T S (NC)-1.0619
KH 3T S (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. screw	A2-70	
10	hex. nut	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	insulation cover	Vinyl	
15	plate spring	1.4310	
16	locking plate	1.4301	
17	antistatic element	1.4401	
18	spring locking device	1.4301	



At steam service >150°C a technical examination is recommended.

Ordering example:
KH 3T S (NC), 2“, PN 63, 1.4408, safety spring locking device

Dimensions

DN mm	DN inch	PN	dimensions (mm) Ø Da	S	H	l	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
8	¼	100	13.7	2,60	63	118	70	F03	36	M5	6	3	0.5
10	⅜	100	17.2	3,35	63	118	70	F03	36	M5	7	3	0.5
15	½	100	21.3	2,80	67	135	75	F04	42	M5	10	5	0.7
20	¾	100	26.9	2,95	73	135	90	F04	42	M5	25	10	0.9
25	1	63	33.7	3,45	80	168	100	F05	50	M6	35	11	1.3
32	1 ¼	63	42.4	5,20	87	168	110	F05	50	M6	46	20	1.9
38	1 ½	63	48.3	5,15	103	205	125	F05	50	M6	80	26	2.9
49	2	63	60.3	5,65	112	218	150	F07	70	M8	110	30	4.7
65	2 ½	63	76.1	5,55	156	280	190	F07	70	M8	310	70	9.7
80	3	63	88.9	4,45	163	376	220	F10	102	M10	360	90	14.6
100	4	63	114.3	7,15	194	376	270	F10	102	M10	820	120	25.8

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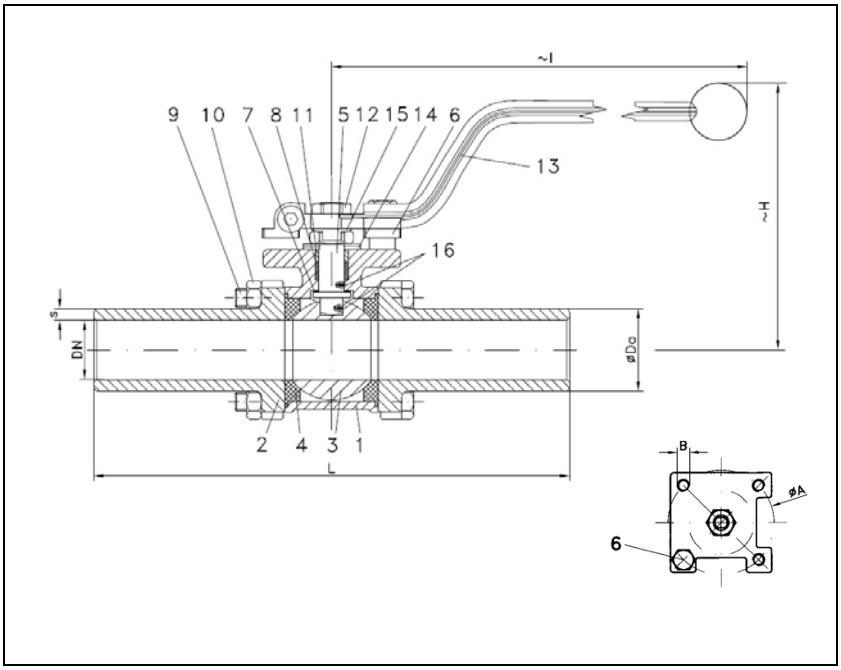
BALL VALVES RK-PROBALL

KH 3T SV (NC), ½“ - 4“, PN63/100
casting lever



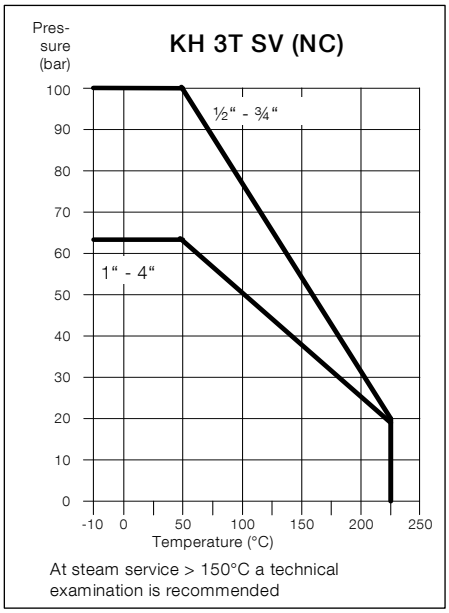
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Ball valve with extended butt weld ends full bore
face to face dimensions acc. to producers standard
butt weld ends acc. to EN 12627

Specification:
Three-piece ball valve, extended butt weld ends acc. to EN 12627, face to face dimensions acc. to producers standard, full bore, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: RK-Proball
Types: KH 3T SV (NC)-1.0619
KH 3T SV (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. screw	A2-70	
10	hex. nut	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	plate spring	1.4310	
15	locking plate	1.4301	
16	antistatic element	1.4401	



At steam service > 150°C a technical examination is recommended

Ordering example:
KH 3T SV (NC), 2“, PN 63, 1.4408,

Dimensions

DN mm	DN inch	PN	dimensions (mm) Ø Da	S	H	l	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
15	½	100	23.5	4.25	86	169	180	F04	42	M5	10	5	1.0
20	¾	100	29.0	4.50	93	169	180	F04	42	M5	25	10	1.2
25	1	63	35.7	5.35	105	222	180	F05	50	M6	35	11	1.8
32	1 ¼	63	45.0	6.50	110	222	200	F05	50	M6	46	20	2.8
38	1 ½	63	51.0	6.50	124	222	200	F05	50	M6	80	26	3.5
49	2	63	62.0	6.50	146	304	210	F07	70	M8	110	30	5.5
65	2 ½	63	78.0	6.50	170	304	240	F07	70	M8	310	70	10.2
80	3	63	91.0	5.50	176	354	280	F10	102	M10	360	90	14.6
100	4	63	116.3	8.15	207	354	280	F10	102	M10	820	120	27.5

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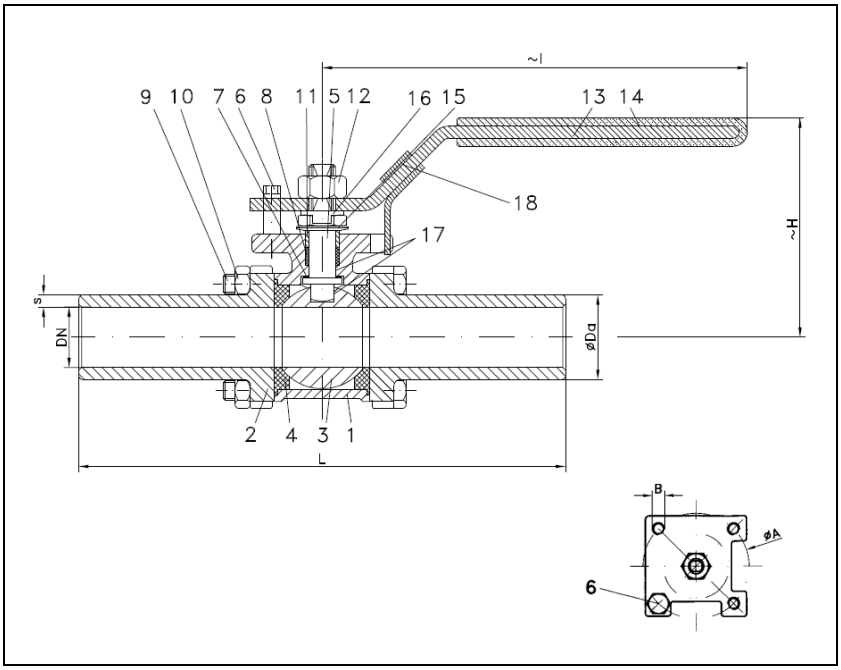
BALL VALVES RK-PROBALL

KH 3T SV (NC), ½“ - 4“, PN63/100
safety spring locking device



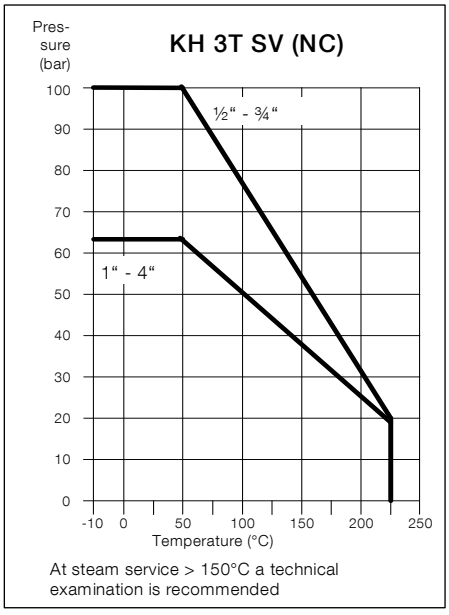
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Ball valve with extended butt weld ends full bore
face to face dimensions acc. to producers standard
butt weld ends acc. to EN 12627

Specification:
Three-piece ball valve, extended butt weld ends acc. to EN 12627, face to face dimensions acc. to producers standard, full bore, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, lever with safety spring locking device.

Marking: RK-Proball
Types: KH 3T SV (NC)-1.0619
KH 3T SV (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. screw	A2-70	
10	hex. nut	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	insulation cover	Vinyl	
15	plate spring	1.4310	
16	locking plate	1.4301	
17	antistatic element	1.4401	
18	spring locking device	1.4301	



At steam service > 150°C a technical examination is recommended

Ordering example:
KH 3T SV (NC), 2“, PN 63, 1.4408, safety spring locking device

Dimensions

DN mm	DN inch	PN	dimensions (mm) Ø Da	S	H	l	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
15	½	100	23.5	4.25	67	135	180	F04	42	M5	10	5	0.7
20	¾	100	29.0	4.50	73	135	180	F04	42	M5	25	10	1.1
25	1	63	35.7	5.35	80	168	180	F05	50	M6	35	11	1.7
32	1 ¼	63	45.0	6.50	87	168	200	F05	50	M6	46	20	2.7
38	1 ½	63	51.0	6.50	103	205	200	F05	50	M6	80	26	3.5
49	2	63	62.0	6.50	112	218	210	F07	70	M8	110	30	5.4
65	2 ½	63	78.0	6.50	156	280	240	F07	70	M8	310	70	10.7
80	3	63	91.0	5.50	163	376	280	F10	102	M10	360	90	15.9
100	4	63	116.3	8.15	194	376	280	F10	102	M10	820	120	27.5

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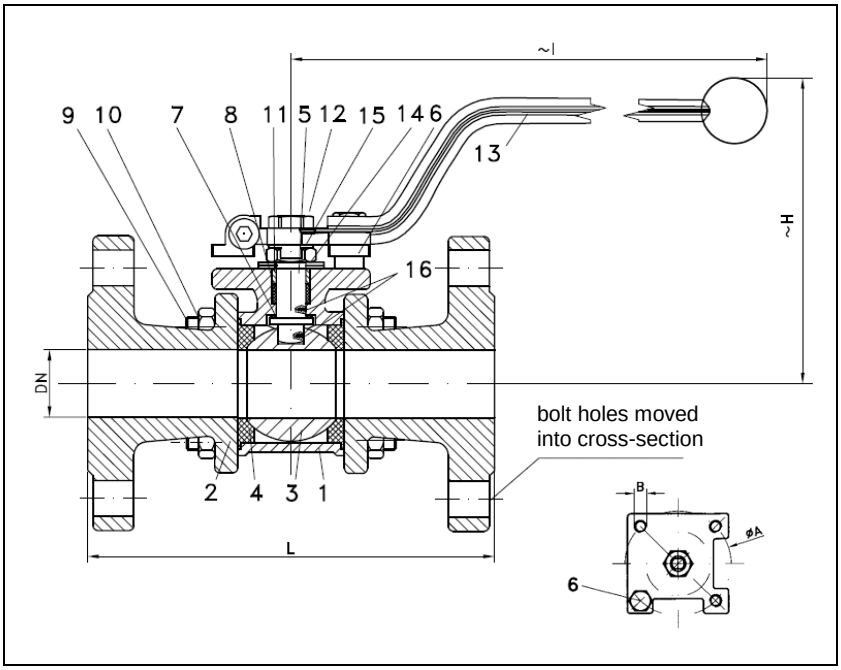
BALL VALVES RK-PROBALL

KH 3T F (NC), DN15 - DN100, PN16/40
casting lever



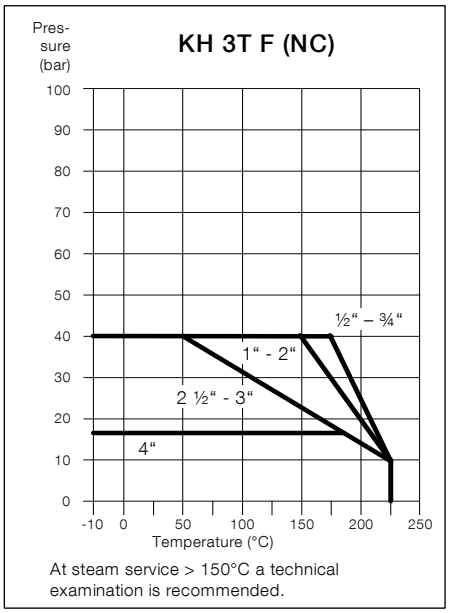
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Flanged ball valves
full bore
face to face acc. to EN 558, GR. 1
flanges acc. to EN 1092

Specification:
Three-piece ball valve, flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR. 1, full bore, blow-out-proof stem, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, with lever.

Marking: RK-Proball
Types: KH 3T F (NC)-1.0619
KH 3T F (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. screw	A2-70	
10	hex. nut	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	plate spring	1.4310	
15	locking plate	1.4301	
16	antistatic element	1.4401	



At steam service > 150°C a technical examination is recommended.

Ordering example:
KH 3T F (NC), DN50, PN 40, 1.4408

Dimensions

DN mm	PN	dimensions (mm) H	I	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
15	40	86	169	130	F04	42	M5	10	5	2.1
20	40	93	169	150	F04	42	M5	25	10	2.9
25	40	105	222	160	F05	50	M6	35	11	3.9
32	40	110	222	180	F05	50	M6	46	20	5.6
40	40	124	222	200	F05	50	M6	80	26	7.4
50	40	146	304	230	F07	70	M8	110	30	10.3
65	40	170	304	290	F07	70	M8	310	70	14.4
80	40	176	354	310	F10	102	M10	360	90	23.8
100	40	207	354	350	F10	102	M10	820	120	37.2
100	16	207	354	350	F10	102	M10	820	120	34.3

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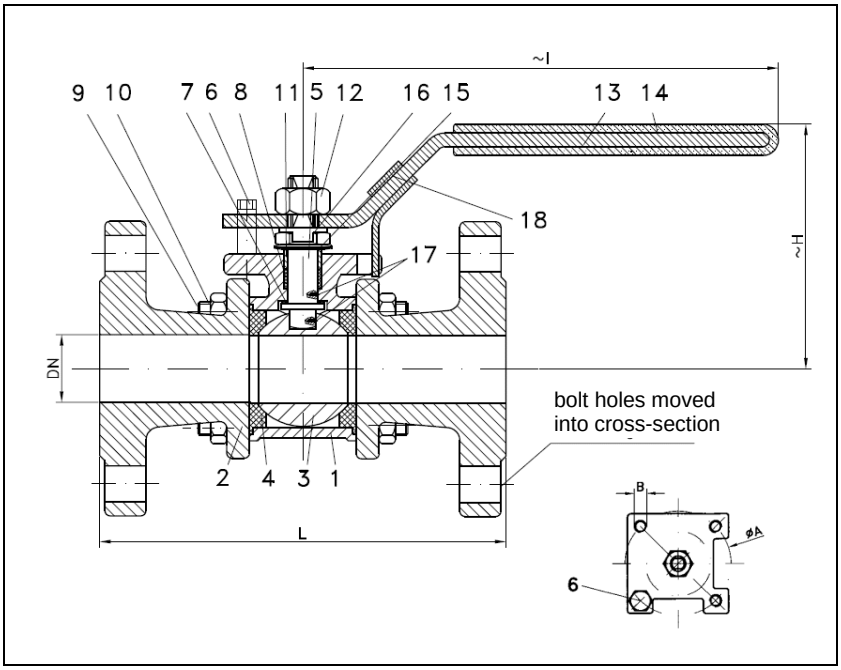
BALL VALVES RK-PROBALL

KH 3T F (NC), DN15 - DN100, PN16/40
safety spring locking device



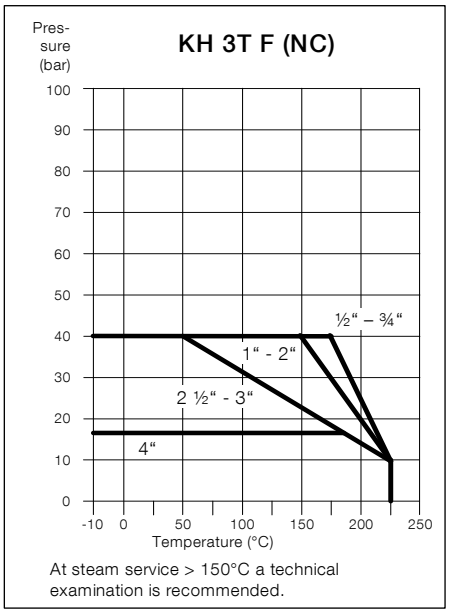
Ball valves RK-Proball KH 3T all sizes are also available with pneumatical, electrical or hydraulic actuators.

Flanged ball valves
full bore
face to face acc. to EN 558, GR. 1
flanges acc. to EN 1092

Specification:
Three-piece ball valve, flanges acc. to EN 1092, face to face dimensions acc. to EN 558, GR. 1, full bore, blow-out-proof stem, body material stainless steel (1.4408) or steel (1.0619), antistatic device, free of non ferrous metals, seat KFG, stem packing KF, disc spring loaded adjustable, top flange DIN EN ISO 5211, approved by PED, certified acc. to GERMAN clean air act VDI 2440, lever with safety spring locking device.

Marking: RK-Proball
Types: KH 3T F (NC)-1.0619
KH 3T F (NC)-1.4408

No.	Part	Material	Material
1	body	1.0619	1.4408
2	cap	1.0619	1.4408
3	ball	1.4408	
4	seat	KFG	
5	stem	1.4401	
6	stop pin	1.4301	
7	washer	KFG	
8	stem packing	KF	
9	hex. screw	A2-70	
10	hex. nut	A2-70	
11	thrust washer	1.4301	
12	hex. nut	A2-70	
13	lever	1.4301	
14	insulation cover	Vinyl	
15	plate spring	1.4310	
16	locking plate	1.4301	
17	antistatic element	1.4401	
18	spring locking device	1.4301	



At steam service > 150°C a technical examination is recommended.

Ordering example:
KH 3T F (NC), DN50, PN 40, 1.4408, safety spring locking device

Dimensions

DN mm	PN	dimensions (mm) H	l	L	top flange ISO 5211	Ø A	B	Kv-value m³/h	torque Nm	weight kg
15	40	67	135	130	F04	42	M5	10	5	2.1
20	40	73	135	150	F04	42	M5	25	10	2.9
25	40	80	168	160	F05	50	M6	35	11	3.9
32	40	87	168	180	F05	50	M6	46	20	5.6
40	40	103	205	200	F05	50	M6	80	26	7.4
50	40	112	218	230	F07	70	M8	110	30	10.3
65	40	156	280	290	F07	70	M8	310	70	14.4
80	40	163	376	310	F10	102	M10	360	90	23.8
100	40	194	376	350	F10	102	M10	820	120	37.2
100	16	194	376	350	F10	102	M10	820	120	34.3

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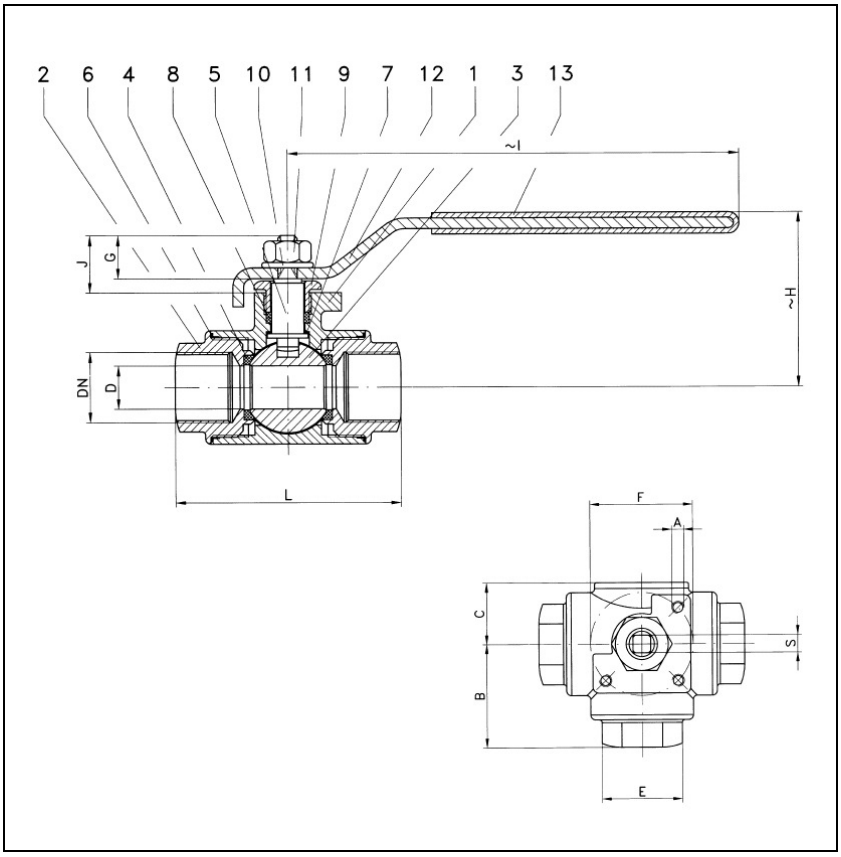
BALL VALVES RK-PROBALL

KH 3W M, ¼“ - 2“, PN40/63

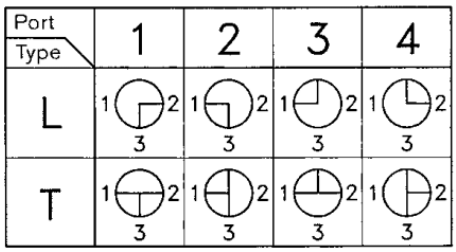


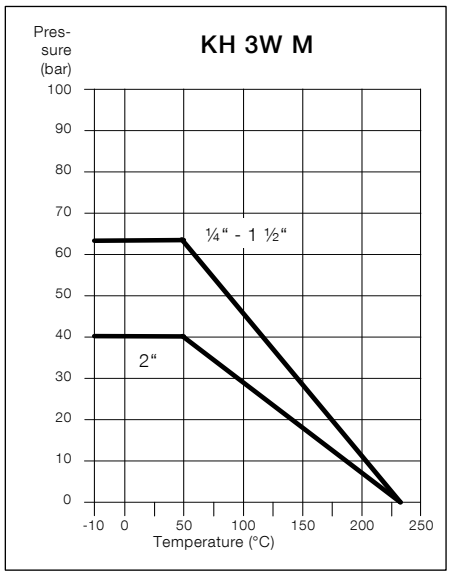
Ball valves RK-Proball KH 3W all sizes are also available with pneumatical, electrical or hydraulic actuators.

3-way ball valve with threated ends acc. to EN 10226-1 / EN ISO 228-1 reduced bore
face to face acc. to producers standard

Specification:
3-way ball valve with threated ends acc. to EN 10226-1 / EN ISO 228-1, face to face dimensions acc. to producers standard, reduced bore, ball with L- or T-bore, blow-out-proof stem, body material stainless steel (1.4408), free of non ferrous metals, seat KF, stem packing KF, DIN/ISO top flange design, approved by PED, with lever.

Marking: RK-Proball
Type: KH 3W M-1.4408





No.	Part	Material
1	body	1.4408
2	cap	1.4408
3	ball	1.4408
4	seat	KF
5	stem	1.4408
6	seal	KF
7	washer	PTFE
8	stem packing	KF
9	gland nut	1.4301
10	spring washer	1.4301
11	nut	1.4301
12	lever	1.4301
13	insulation cover	Vinyl

Dimensions

DN inch	PN	dimensions (mm) D	L	B	C	H	I	E	F	A	S	G	J	torque Nm	weight kg
¼“	63	9.5	78	39.5	22	54	157	29	42	M5 x 0,8	9	5.2	10	5	0.8
⅜“	63	9.5	78	39.5	22	54	157	29	42	M5 x 0,8	9	5.2	10	5	0.8
½“	63	12.0	78	39.5	22	54	157	29	42	M5 x 0,8	9	5.2	10	5	0.8
¾“	63	15.0	87	44.0	28	63	180	35	50	M6 x 1,0	9	7.1	13	8	1.2
1“	63	20.0	107	54.0	31	77	210	41	50	M6 x 1,0	9	12.0	22	14	1.7
1 ¼“	63	25.0	122	62.0	34	78	234	53	50	M6 x 1,0	11	17.9	27	17	2.8
1 ½“	63	32.0	132	67.5	40	82	234	58	70	M8 x 1,25	11	17.9	27	37	4.0
2“	40	40.0	160	82.0	48	88	234	73	70	M8 x 1,25	14	24.0	27	48	6.8

Ordering example:
KH 3W M, 2“, PN40, 1.4408

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KLINGER Schöneberg

MIG-KS ACTUATORS

With passion for exceptional quality.

This innovative actuator concept sets new standards in energy efficiency and performance.

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ADVANTAGE FEATURES

Pneumatic Rack & Pinion actuators – Type MIG-KS

The actuator concept for the challenges of tomorrow!

This totally new actuator concept sets new standards in performance and energy management. Up to 40% higher torque with same or smaller construction size and from 40% up to 60% less air consumption compared with the contention. The pneumatic Rack & Pinion actuators, type MIG-KS, revolutionise the control of butterfly valves, ball valves and plug valves.

Advantage features:

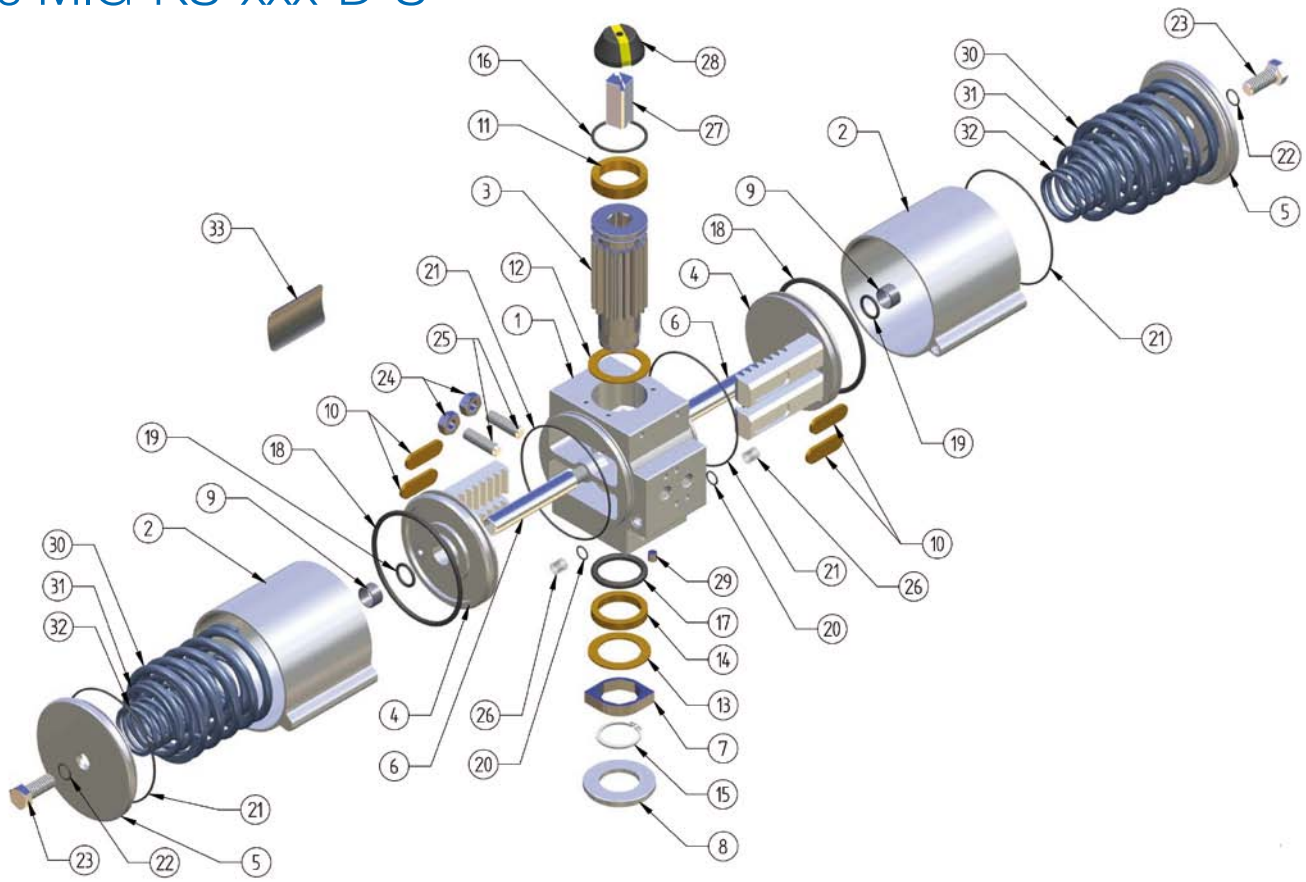
- Pistons are guided with rods
- Additional piston guide belts
- Consistent torque process
- Suitable for high operation cycles
- Integral and exterior air supply with very large diameter
- No slip-stick effect
- Optimum piston area to pressure ratio
- Significant increase of performance and torque
- Considerably improved efficiency
- Significantly shorter actuation / reaction times
- 40% to 60% less air consumption
- No specialised version is needed for quick acting requirement
- Anti blow out stop screws
- Rotation angle with +/- 5° adjustable in every end position
- Less wear and tear while longer life span
- Complete assembly/disassembly only with two hexagon bolts
- Maintenance free and easy to assemble

Optional:

- Double stroke adjustment
- Mechanical partial-stroke test
- Safety block for end positions
- 90° standard actuators with extended rotation to 100°
- Reversal of rotation direction
- Direct assembly of positioning and control units acc. to VDI/VDE 3847
- All types of contactless limit switches can be directly integrated in the body as an additional option or as a replacement for a typical limit switch box.

SPECIFICATION AND PARTS LIST

Type MIG-KS-xxx-D-S

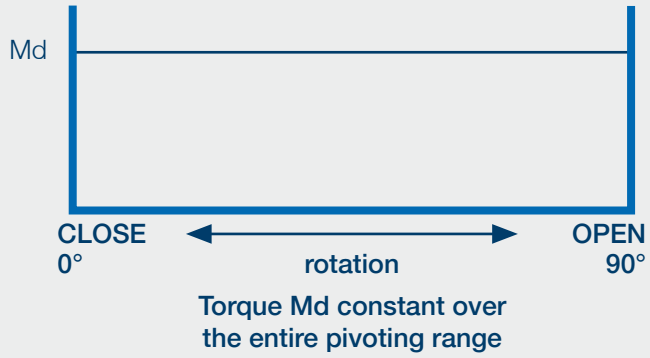


Pos.	Part	Material	Surface protection	Norm	Qty.
1	Body	EN AW 6060 F22 T6	anodized		1
2D	Cylinder pipe (double acting)	EN AW 6063 T6	anodized		2
2S	Cylinder pipe (single acting)	EN AW 6063 T6	anodized		2
3	Shaft	EN AW 7075	hart anodized		1
4	Piston	AL 6061-T6	hart anodized		1
5	End cap	AL 6061-T6	powder-coated, 40-60 µm		2
6	Guide bar	1.4305			2
7	Stopper	1.4301			1
8	Centring disc	PA6-G natur			1
9	Sliding bearing	GSM-1618-10			2
10	Guide bearing	PA6.6			4
11	Sliding bearing shell (shaft at top)	PA6-G natur			2
12	Start-up disc	PA6.6			1
13	Start-up disc	PA6.6			1
14	Sliding bearing (shaft at bottom)	PA6-G natur			1
15	Retainer ring	1.4122		DIN 471	1
16	O-ring	NBR 70 Sh			1
17	O-ring	NBR 70 Sh			1
18	O-ring	NBR 70 Sh			2
19	O-ring	NBR 70 Sh			2
20	O-ring	NBR 70 Sh			2
21	O-ring	NBR 70 Sh			4
22	O-ring	NBR 70 Sh			2
23D	Hexagonal bolt	A2		DIN 933	2
23S	Hexagonal bolt	A2		DIN 933	2
24	Counter nut	A2		DIN 934	2
25	Threaded pin	A2		DIN 915	2
26	Fixing sleeve	PE			2
27	VDI-VDE tappet	EN AW-6082 T6	anodized		1
28	Visual display	PA6.6+GF			1
29	Expander MB600-60	hull 1.4305 / ball 1.4301			1
30S	Pressure spring (outside)	Spring steel FDSiCr high-strength	zinc phosphated, KTL/EPS-coated		2
31S	Pressure spring (central)	Spring steel FDSiCr high-strength	zinc phosphated, KTL/EPS-coated		2
32S	Pressure spring (inside)	Spring steel FDSiCr high-strength	zinc phosphated, KTL/EPS-coated		2
33	Type plate	Aluminium foil			1

Pos. with “D” = double acting actuator
Pos. with “S” = single acting actuator

TORQUE

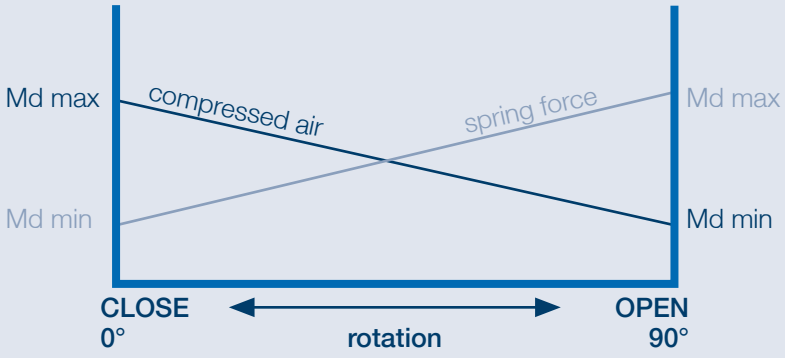
Double acting actuators
Type MIG-KS-xxx-D



Torque Md constant over the entire pivoting range

Actuator Type	Md (Nm) at pressure (bar)														
	1.5 bar	2 bar	2.5 bar	3 bar	3.5 bar	4 bar	4.2 bar	4.5 bar	5 bar	5.5 bar	6 bar	7 bar	8 bar	9 bar	10 bar
MIG-KS-30-D	8	11	14	17	19	22	23	24	27	31	34	39	44	49	55
MIG-KS-40-D	10	14	17	21	24	28	29	30	34	38	42	49	56	63	70
MIG-KS-60-D	15	22	27	33	39	44	46	49	55	60	66	77	88	99	110
MIG-KS-80-D	23	30	37	45	53	60	62	66	74	81	89	103	117	131	146
MIG-KS-120-D	33	44	55	66	77	88	92	99	110	126	138	161	184	207	230
MIG-KS-150-D	41	55	69	83	97	111	115	124	138	157	172	200	228	256	285
MIG-KS-200-D	64	86	107	129	151	172	180	193	215	236	258	301	344	387	430
MIG-KS-270-D	76	103	129	155	181	207	216	232	258	284	310	361	412	463	515
MIG-KS-380-D	111	148	185	222	259	296	310	333	370	403	440	513	586	659	732
MIG-KS-510-D	148	198	246	297	346	396	414	444	494	542	592	690	788	886	985
MIG-KS-740-D	212	283	354	425	497	567	595	638	709	780	851	992	1133	1274	1416
MIG-KS-920-D	266	355	444	533	621	710	745	798	887	975	1064	1241	1418	1595	1772
MIG-KS-1300-D	397	529	661	794	926	1058	1110	1189	1322	1454	1587	1851	2115	2379	2643
MIG-KS-1600-D	476	635	794	953	1111	1270	1333	1428	1587	1746	1905	2222	2539	2856	3173

Single acting actuators
Type MIG-KS-xxx-S



Actuator Type	Spring set No.	Spring force Md (Nm)		Md (Nm) at pressure (bar)																					
				2.5 bar		3 bar		3.5 bar		4 bar		4.2 bar		4.5 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar	
		max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
MIG-KS-30-S*	1	4	3	11	10	14	13	17	16	20	18	21	20	22	21	25	24	28	27	31	30	36	35	42	41
	2	6	5	10	8	12	11	15	13	18	16	19	17	21	19	24	22	26	25	29	28	35	33	41	39
	3	8	6	8	6	11	9	14	11	17	14	18	15	19	17	22	20	25	23	28	25	33	31	39	37
	4	10	8	7	4	9	6	12	9	15	12	16	13	18	15	21	18	23	21	26	23	32	29	38	35
	5	13	9	5	2	8	4	11	7	14	10	15	11	16	13	19	16	22	18	25	21	30	27	36	33
	6	15	11			6	2	9	5	12	8	13	9	15	11	18	14	20	16	23	19	29	25	35	30
	7	17	12					8	3	11	6	12	7	13	9	16	11	19	14	22	17	27	23	33	28
	8	19	14							9	4	10	5	12	7	15	9	17	12	20	15	26	21	32	26
	9	21	15									9	3	10	4	13	7	16	10	19	13	24	19	30	24
	10	23	17													12	5	14	8	17	11	23	16	29	22
	11	25	18															13	6	16	9	21	14	27	20
MIG-KS-40-S*	1	5	4	13	12	17	15	20	18	23	22	25	23	27	25	30	28	34	32	37	35	44	42	50	49
	2	8	5	11	9	15	12	18	16	22	19	23	20	25	22	28	26	32	29	35	33	42	39	49	46
	3	11	7	10	6	13	10	16	13	20	16	21	18	23	20	27	23	30	26	33	30	40	37	47	43
	4	13	9	8	4	11	7	15	10	18	14	19	15	21	17	25	20	28	24	32	27	38	34	45	41
	5	16	11			9	4	13	8	16	11	18	12	20	14	23	18	26	21	30	25	36	31	43	38
	6	19	13					11	5	14	8	16	10	18	12	21	15	25	19	28	22	35	29	41	35
	7	21	14							13	6	14	7	16	9	19	12	23	16	26	19	33	26	40	33
	8	24	16									12	4	14	6	18	10	21	13	24	17	31	23	38	30
	9	27	18											12	4	16	7	19	11	23	14	29	21	36	27
	10	29	20													14	4	17	8	21	11	27	18	34	25
	11	32	22															16	5	19	9	26	15	32	22

Actuator Type	Spring set No.	Spring force Md (Nm)		Md (Nm) at pressure (bar)																					
				2.5 bar		3 bar		3.5 bar		4 bar		4.2 bar		4.5 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar	
		max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
MIG-KS-60-S*	1	8	6	22	19	27	25	33	30	38	36	40	38	44	41	49	47	55	52	60	58	71	69	82	80
	2	12	9	19	15	24	21	30	26	35	32	38	34	41	37	46	43	52	48	57	54	68	65	79	76
	3	16	12	16	11	21	17	27	22	32	28	35	30	38	33	43	39	49	44	54	50	65	61	76	72
	4	20	15	13	7	18	13	24	18	29	24	32	26	35	29	40	35	46	40	51	46	62	57	73	68
	5	24	17			16	9	21	14	27	20	29	22	32	25	38	31	43	36	49	42	60	53	71	64
	6	28	20					18	10	24	16	26	18	29	21	35	27	40	32	46	38	57	49	68	60
	7	32	23					15	6	21	12	23	14	26	17	32	23	37	28	43	34	54	45	65	56
	8	36	26							18	8	20	10	23	13	29	19	34	24	40	30	51	41	62	52
	9	40	29									17	6	20	9	26	15	31	20	37	26	48	37	59	48
	10	44	32											18	5	23	11	29	16	34	22	45	33	56	44
	11	49	35													20	6	26	12	31	17	42	28	53	39
MIG-KS-80-S*	1	11	8	29	25	36	33	44	40	51	47	54	50	58	55	66	62	73	69	80	77	95	92	110	106
	2	17	12	25	20	32	27	40	35	47	42	50	45	54	49	62	57	69	64	76	71	91	86	106	101
	3	22	16	21	14	28	22	36	29	43	36	46	39	50	44	58	51	65	58	72	66	87	80	102	95
	4	28	19	17	9	25	16	32	23	39	31	42	34	47	38	54	45	61	53	69	60	83	75	98	89
	5	33	23			21	11	28	18	35	25	38	28	43	33	50	40	57	47	65	55	79	69	94	84
	6	39	27					24	12	32	20	35	23	39	27	46	34	54	42	61	49	76	64	90	78
	7	45	31							28	14	31	17	35	21	42	29	50	36	57	43	72	58	86	73
	8	50	35									27	12	31	16	39	23	46	31	53	38	68	53	83	67
	9	56	39											27	10	35	18	42	25	49	32	64	47	79	62
	10	61	43													31	12	38	19	45	27	60	41	75	56
	11	67	46															34	14	42	21	56	36	71	51

Actuator Type	Spring set No.	Spring force Md (Nm)		Md (Nm) at pressure (bar)																					
				2.5 bar		3 bar		3.5 bar		4 bar		4.2 bar		4.5 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar	
		max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
MIG-KS-120-S*	1	17	12	46	41	57	53	69	64	81	76	85	81	92	88	104	99	116	111	127	123	151	146	174	169
	2	25	18	40	33	51	44	63	56	75	68	79	72	86	79	98	91	110	103	121	114	144	137	168	161
	3	34	24	34	24	45	36	57	48	69	59	73	64	80	71	92	82	103	94	115	106	138	129	162	152
	4	42	31	28	16	39	27	51	39	62	51	67	55	74	62	86	74	97	86	109	97	132	120	155	144
	5	51	37	21	7	33	19	45	31	56	42	61	47	68	54	80	65	91	77	103	89	126	112	149	135
	6	59	43			27	10	38	22	50	34	55	38	62	45	73	57	85	69	97	80	120	103	143	127
	7	68	49					32	14	44	25	49	30	56	37	67	48	79	60	90	72	114	95	137	118
	8	76	55					26	5	38	17	43	21	49	28	61	40	73	52	84	63	108	87	131	110
	9	85	61							32	8	36	13	43	20	55	32	67	43	78	55	102	78	125	101
	10	93	67											37	11	49	23	61	35	72	46	95	70	119	93
	11	102	74													43	15	54	26	66	38	89	61	113	84
MIG-KS-150-S*	1	22	15	57	51	72	65	86	80	101	94	107	100	115	109	130	124	145	138	159	153	188	182	217	211
	2	33	23	50	40	64	55	79	69	93	84	99	89	108	98	122	113	137	127	151	142	181	171	210	200
	3	44	31	42	29	57	44	71	58	86	73	92	79	100	87	115	102	129	116	144	131	173	160	202	189
	4	55	38	34	18	49	33	63	47	78	62	84	68	93	76	107	91	122	105	136	120	165	149	194	178
	5	65	46	27	7	41	22	56	36	70	51	76	57	85	65	99	80	114	94	128	109	158	138	187	167
	6	76	54			34	11	48	25	63	40	68	46	77	54	92	69	106	84	121	98	150	127	179	156
	7	87	61					40	14	55	29	61	35	69	43	84	58	99	73	113	87	142	116	171	145
	8	98	69					33	4	47	18	53	24	62	33	76	47	91	62	105	76	135	105	164	134
	9	109	77							40	7	46	13	54	22	69	36	83	51	98	65	127	95	156	124
	10	120	84											47	11	61	25	76	40	90	55	119	84	148	113
	11	131	92													53	14	68	29	82	44	112	73	141	102

Actuator Type	Spring set No.	Spring force Md (Nm)		Md (Nm) at pressure (bar)																					
				2.5 bar		3 bar		3.5 bar		4 bar		4.2 bar		4.5 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar	
		max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
MIG-KS-200-S*	1	34	24	90	80	112	102	135	125	158	148	167	157	180	171	203	193	226	216	249	239	294	284	340	330
	2	51	36	78	63	100	86	123	108	146	131	155	140	168	154	191	177	214	199	237	222	282	267	328	313
	3	67	48	66	46	88	69	111	92	134	114	143	124	156	137	179	160	202	183	225	205	270	251	316	296
	4	84	60	54	29	76	52	99	75	122	98	131	107	144	120	167	143	190	166	213	188	258	234	304	279
	5	101	72	42	13	64	35	87	58	110	81	119	90	132	103	155	126	178	149	201	172	246	217	291	263
	6	118	84			52	18	75	41	98	64	107	73	120	87	143	109	166	132	189	155	234	200	279	246
	7	135	96					63	24	86	47	95	56	108	70	131	92	154	115	177	138	222	183	267	229
	8	152	108							74	30	83	39	96	53	119	76	142	98	165	121	210	166	255	212
	9	168	120							62	13	71	23	84	36	107	59	130	82	153	104	198	150	243	195
	10	185	132											72	19	95	42	118	65	141	87	186	133	231	178
	11	202	144													83	25	106	48	129	70	174	116	219	161
MIG-KS-270-S*	1	41	29	108	96	135	123	162	150	189	177	200	188	217	205	244	232	271	259	298	287	353	341	407	396
	2	61	43	93	76	120	103	148	130	175	157	186	168	202	185	229	212	257	239	284	266	338	321	393	375
	3	81	58	79	55	106	83	133	110	161	137	171	148	188	164	215	192	242	219	270	246	324	301	379	355
	4	101	72	64	35	92	62	119	90	146	117	157	128	173	144	201	171	228	199	255	226	310	280	364	335
	5	121	86	50	15	77	42	104	70	132	97	143	108	159	124	186	151	213	179	241	206	295	260	350	315
	6	142	101			63	22	90	49	117	76	128	87	145	104	172	131	199	158	226	185	281	240	335	295
	7	162	115					76	29	103	56	114	67	130	83	157	111	185	138	212	165	266	220	321	274
	8	182	130							89	36	99	47	116	63	143	91	170	118	198	145	252	200	307	254
	9	202	144							74	16	85	27	101	43	129	70	156	98	183	125	238	179	292	234
	10	223	158											87	23	114	50	141	77	169	105	223	159	278	214
	11	243	173													100	30	127	57	154	84	209	139	263	193

* Spring set number

Recommended layout for the relevant spring set number

Actuator Type	Spring set No.	Spring force Md (Nm)		Md (Nm) at pressure (bar)																			
				2.5 bar		3 bar		3.5 bar		4 bar		4.2 bar		4.5 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar	
		max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
MIG-KS-380-S*	1	58	41	154	138	193	177	232	216	271	255	287	271	310	294	350	333	389	372	428	411	506	490	584	568
	2	86	62	133	109	173	148	212	187	251	226	266	242	290	265	329	304	368	344	407	383	485	461	563	539
	3	115	83	113	80	152	119	191	158	230	197	246	213	269	237	308	276	347	315	386	354	465	432	543	510
	4	144	103	92	51	131	91	170	130	209	169	225	184	249	208	288	247	327	286	366	325	444	403	522	481
	5	173	124	72	23	111	62	150	101	189	140	205	155	228	179	267	218	306	257	345	296	424	374	502	452
	6	202	144			90	33	129	72	168	111	184	127	207	150	247	189	286	228	325	267	403	346	481	424
	7	230	165					109	43	148	82	163	98	187	121	226	160	265	199	304	239	382	317	460	395
	8	259	186					88	14	127	53	143	69	166	93	205	132	244	171	283	210	362	288	440	366
	9	288	206							106	25	122	40	146	64	185	103	224	142	263	181	341	259	419	337
	10	317	227									101	12	125	35	164	74	203	113	242	152	320	230	398	309
	11	346	247													143	45	182	84	222	123	300	202	378	280
MIG-KS-510-S*	1	78	55	205	183	258	235	310	287	362	339	383	360	414	391	466	443	518	495	570	547	674	652	779	756
	2	116	83	178	144	230	196	282	248	334	300	355	321	386	353	439	405	491	457	543	509	647	613	751	717
	3	155	110	150	106	203	158	255	210	307	262	328	283	359	314	411	366	463	418	515	470	619	574	724	679
	4	194	138	123	67	175	119	227	171	279	223	300	244	331	275	383	327	436	379	488	431	592	536	696	640
	5	232	165	96	29	148	81	200	133	252	185	273	206	304	237	356	289	408	341	460	393	565	498	669	602
	6	271	192			120	42	172	94	225	146	245	167	277	198	329	250	381	302	433	354	537	459	641	563
	7	310	220					145	55	197	107	218	128	249	159	301	211	353	263	405	315	510	420	614	524
	8	348	247					117	16	169	68	190	89	222	121	274	173	326	225	378	277	482	381	586	485
	9	387	275							142	30	163	51	194	82	246	134	298	186	350	238	455	342	559	447
	10	426	302											167	43	219	95	271	147	323	199	427	304	531	408
	11	465	330													191	56	243	108	295	160	400	265	504	369

Actuator Type	Spring set No.	Spring force Md (Nm)		Md (Nm) at pressure (bar)																			
				2.5 bar		3 bar		3.5 bar		4 bar		4.2 bar		4.5 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar	
		max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
MIG-KS-740-S*	1	112	79	296	263	370	338	445	412	520	487	550	517	595	562	670	637	745	712	820	787	970	937	1120	1087
	2	168	119	256	206	331	281	406	356	481	431	511	461	556	506	631	581	705	656	780	731	930	881	1080	1030
	3	224	158	216	150	291	225	366	300	441	375	471	405	516	450	591	525	666	600	741	675	891	824	1041	974
	4	280	198	177	94	252	169	327	244	402	319	432	349	477	394	552	469	626	544	701	619	851	768	1001	918
	5	336	237	138	38	213	113	288	188	363	263	392	293	437	338	512	413	587	488	662	563	812	713	962	862
	6	392	276			173	57	248	132	323	207	353	237	398	282	473	357	548	432	623	507	772	657	922	806
	7	448	316					209	76	283	151	313	181	358	226	433	301	508	376	583	451	733	601	883	750
	8	504	355					169	20	244	95	274	125	319	170	394	245	469	320	544	395	693	544	843	694
	9	561	395							204	39	234	69	279	114	354	188	429	263	504	338	654	488	804	638
	10	617	434									195	13	240	58	315	133	390	207	465	282	614	432	764	582
	11	673	474													275	77	350	151	425	226	575	376	725	526
MIG-KS-920-S*	1	142	99	369	326	463	419	557	513	650	607	688	644	744	700	838	794	931	888	1025	981	1212	1169	1399	1356
	2	226	157	311	242	404	336	498	429	592	523	629	560	685	617	779	710	873	804	966	898	1154	1085	1341	1272
	3	310	216	252	158	346	252	439	346	533	439	571	477	627	533	720	627	814	720	908	814	1095	1001	1282	1189
	4	381	265	203	87	296	181	390	274	484	368	521	406	577	462	671	555	765	649	858	743	1046	930	1233	1117
	5	424	296	172	44	266	137	359	231	453	325	491	362	547	418	640	512	734	606	828	699	1015	887	1202	1074
	6	496	345			216	66	310	160	404	253	441	291	497	347	591	441	685	534	778	628	966	815	1153	1003
	7	567	395					261	89	354	182	392	220	448	276	542	370	635	463	729	557	916	744	1103	931
	8	651	453							296	99	333	136	389	192	483	286	577	380	670	473	858	660	1045	848
	9	734	512									275	52	331	109	424	202	518	296	612	390	799	577	986	764
	10	805	561											281	37	375	131	469	225	562	318	750	506	937	693
	11	877	611													326	60	419	153	513	247	700	434	887	622

Actuator Type	Spring set No.	Spring force Md (Nm)		Md (Nm) at pressure (bar)																			
				2.5 bar		3 bar		3.5 bar		4 bar		4.2 bar		4.5 bar		5 bar		5.5 bar		6 bar		7 bar		8 bar	
		max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
MIG-KS-1300-S*	1	214	147	551	485	691	624	831	764	970	904	1026	960	1110	1043	1250	1183	1389	1323	1529	1463	1808	1742	2088	2021
	2	317	221	478	381	617	521	757	660	897	800	953	856	1036	940	1176	1079	1316	1219	1456	1359	1735	1638	2014	1917
	3	421	294	404	277	544	417	684	557	823	696	879	752	963	836	1103	976	1242	1115	1382	1255	1661	1534	1941	1814
	4	528	368	331	170	470	310	610	450	750	589	806	645	889	729	1029	869	1169	1009	1309	1148	1588	1428	1867	1707
	5	632	441			397	206	537	346	676	486	732	541	816	625	956	765	1095	905	1235	1044	1514	1324	1794	1603
	6	739	515					463	239	603	379	659	435	742	518	882	658	1022	798	1161	937	1441	1217	1720	1496
	7	845	588							529	272	585	328	669	412	808	551	948	691	1088	831	1367	1110	1646	1389
	8	949	662									512	224	595	308	735	448	875	587	1014	727	1294	1006	1573	1286
	9	1053	735											522	204	662	344	801	483	941	623	1220	902	1500	1182
	10	1160	809													588	237	728	377	867	516	1147	796	1426	1075
	11	1267	882															654	270	794	410	1073	689	1352	968
MIG-KS-1600-S*	1	256	177	661	582	829	750	997	918	1164	1085	1231	1152	1332	1253	1499	1420	1667	1588	1835	1756	2170	2091	2505	2426
	2	382	265	573	456	741	624	909	792	1076	959	1143	1026	1244	1127	1411	1294	1579	1462	1747	1630	2082	1965	2417	2300
	3	508	353	485	330	653	498	820	665	988	833	1055	900	1156	1001	1323	1168	1491	1336	1659	1503	1994	1839	2329	2174
	4	636	441	397	202	565	370	732	538	900	705	967	772	1067	873	1235	1040	1403	1208	1570	1376	1905	1711	2241	2046
	5	762	529			476	244	644	411	811	579	878	646	979	746	1147	914	1314	1082	1482	1249	1817	1584	2152	1920
	6	890	618					556	283	723	451	790	518	891	619	1058	786	1226	954	1394	1121	1729	1457	2064	1792
	7	1018	706							635	323	702	390	802	491	970	658	1138	826	1305	994	1640	1329	1976	1664
	8	1144	794									614	264	714	365	882	532	1050	700	1217	868	1552	1203	1888	1538
	9	1270	882											626	239	794	406	961	574	1129	741	1464	1077	1800	1412
	10	1398	971													706	278	873	446	1041	614	1376	949	1711	1284
	11	1526	1059															785	318	952	486	1288	821	1623	1156

* Spring set number

Recommended layout for the relevant spring set number

CLASSIFICATION OF SPRING SETS

Single acting actuators, Type MIG-KS-xxx-S

Spring set No. 11
2 x Spring external
2 x Spring middle
2 x Spring inner

Spring set No. 10
2 x Spring external
2 x Spring middle
1 x Spring inner

Spring set No. 9
2 x Spring external
2 x Spring middle

Spring set No. 8
2 x Spring external
1 x Spring middle
1 x Spring inner

Spring set No. 7
2 x Spring external
2 x Spring inner

Spring set No. 6
2 x Spring external
1 x Spring inner

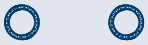
Spring set No. 5
2 x Spring external

Spring set No. 4
2 x Spring middle
1 x Spring inner

Spring set No. 3
2 x Spring middle

Spring set No. 2
1 x Spring middle
1 x Spring inner

Spring set No. 1
2 x Spring inner

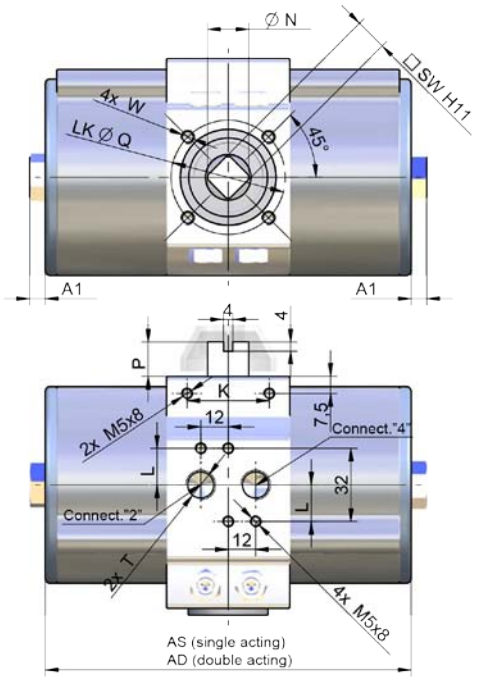


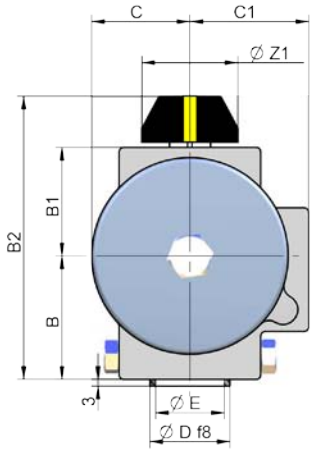
WEIGHTS, REGULATING TIME, AIR VOLUME

Actuator Type	Weights [kg]			Regulating time [sec.]				Air volume [L]	
	Double acting actuators	Single acting actuators *)		Double acting actuators		Single acting actuators		Double acting actuators	Single acting actuators
		from	to	CLOSE → OPEN	OPEN → CLOSE	CLOSE → OPEN	OPEN → CLOSE		
MIG-KS-30	1.0	1.3	1.8	0.10	0.11	0.20	0.10	0.17	0.08
MIG-KS-40	1.2	1.7	2.2	0.11	0.12	0.20	0.10	0.26	0.12
MIG-KS-60	1.4	1.8	2.3	0.14	0.16	0.20	0.10	0.43	0.20
MIG-KS-80	1.7	1.9	2.8	0.18	0.20	0.30	0.10	0.52	0.25
MIG-KS-120	2.8	3.4	4.8	0.19	0.22	0.40	0.15	0.85	0.41
MIG-KS-150	3.1	4.0	5.4	0.20	0.25	0.45	0.20	1.01	0.49
MIG-KS-200	5.3	6.2	9.8	0.35	0.50	0.50	0.30	1.55	0.75
MIG-KS-270	6.0	7.4	10.5	0.50	0.65	0.70	0.40	2.05	0.90
MIG-KS-380	8.6	11.9	17.4	0.70	0.85	0.90	0.65	2.85	1.30
MIG-KS-510	10.7	13.0	21.0	0.85	1.10	1.40	0.80	4.15	1.90
MIG-KS-740	13.2	16.8	26.5	1.30	1.75	1.90	0.95	5.45	2.60
MIG-KS-920	18.9	25.1	33.5	1.70	1.85	2.40	1.00	6.90	3.25
MIG-KS-1300	28.9	32.1	47.0	2.50	2.70	3.80	1.80	11.70	5.20
MIG-KS-1600	33.0	36.8	56.0	3.00	3.50	4.50	2.80	12.40	6.50
Remark:	*) Weight depending on spring set (from = Set 1 / to = Set 11)			Indication of travel times with a control pressure of 5 bar, room temperature and unloaded drive.				Indication of the air volume for one switching cycle respectively.	

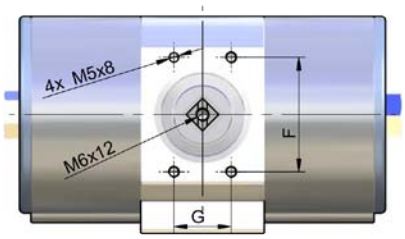
DIMENSIONS

For all types

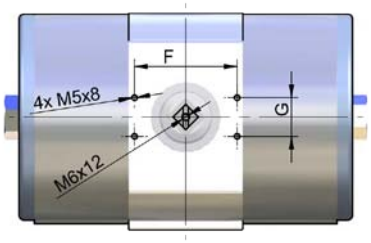




MIG-KS-30 up to MIG-KS-120



MIG-KS-150 up to MIG-KS-1600



Dimensions (mm)

Actuator Type	MIG-KS-30	MIG-KS-40	MIG-KS-60	MIG-KS-80	MIG-KS-120	MIG-KS-150	MIG-KS-200	MIG-KS-270	MIG-KS-380	MIG-KS-510	MIG-KS-740	MIG-KS-920	MIG-KS-1300	MIG-KS-1600
AS	162	175	182	216	240	290	304	328	344	436	446	530	560	645
AD	132	145	145	160	176	198	228	244	260	312	329	388	396	464
A1	6	6	7	7	7	7	9	9	13	12	14	14	14	18
B	45	45	54	54	63.5	63.5	80	80	102	102	116	116	137	137
B1	38	38	47.5	47.5	54.5	54.5	71	71	82	82	101	101	119	119
B2	106	106	124	124	142	142	176	176	210	215	242	248	288	288
C	30	30	43	43	53	53	66	66	80.5	80	95	95	116	116
C1	45	45	52	52	64	64	75	75	87.5	87.5	101.5	101.5	122.5	122.5
Ø D f8	30	35	35	35	55	55	70	70	70	85	85	100	100	130
Ø E	26	30	30	30	49	49	62	62	62	76	76	90	90	120
F	50	50	50	50	50	50	80	80	80	80	80	130	130	130
G	25	25	25	25	25	25	30	30	30	30	30	30	30	30
I	8	8	8	7,5	6	6	8	8	8	8	10	10	10	10
K	36	36	36	36	40	40	40	40	50	50	60	60	100	100
L	13	13	16	16	16	16	16	16	16	16	16	16	16	16
Ø N	14.1	18.1	18.1	18.1	22.2	22.2	28.2	28.2	28.2	36.2	36.2	48.2	48.2	60.2
P	12	15	15	15	15	15	20	20	20	20	20	30	30	30
T	G 1/8"	G 1/8"	G 1/8"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Ø Z1	42	42	42	42	42	42	40	40	42	60	60	90	90	90
ISO Flange	F04	F05	F05	F05	F07	F07	F10	F10	F10	F12	F12	F14	F14	F16
Ø Q	42	50	50	50	70	70	102	102	102	125	125	140	140	165
W	M5	M6	M6	M6	M8	M8	M10	M10	M10	M12	M12	M16	M16	M20
□ SW H11	11	14	14	14	17	17	22	22	22	27	27	36	36	46
x I min.	15	18	18	18	22	22	28	28	28	36	36	42	42	55

TECHNICAL DATA

Design:

» Pneumatic Rack & Pinion actuators in double action and single action (spring-return mechanism) executions

Construction features:

» Rack and pinion principle, piston drive via guide rods and slip bands

Rotation angle:

» 90° and +/-5° per end position

Operating pressure:

» min. 1.5 bar up to max. 10 bar

Control medium:

» Compressed air acc. to ISO 8573-1 7-5-4, pressure dew point min. 10°C under operating temperature as well as all non-aggressive gaseous media (oily and dry).

Lubrication:

» Factory set constant lubrication for normal working life of the actuator

Operating temperature:

» -25°C to + 80°C standard

» -50°C to + 80°C optional low temperature design

» -20°C to +140°C optional high temperature design

Torque range:

» 14 models for optimum torque gradation. Torque from 10 Nm to 2,000 Nm.

Mounting position:

» Any as required

IP-Protection:

» min. IP-67

Resistance to corrosion:

» Industrial atmosphere

» Commercial fuels, brake fluid, oils and solvents

» Salt water

» Acids > pH 4

» Alkalinity < pH 9

» Resistant when mechanically stressed

Applied norms:

» DIN EN ISO 5211
» DIN 3337
» DIN EN 15714-3:2010
» VDI/VDE 3845
» VDI/VDE 3847
» NAMUR NE 95
» MR 2006/42/EG
» 94/9/EG - ATEX 100a
» DIN EN ISO 9227
» ISO 8573-1:2012
» EN13463-1:2009
» EN 13463-5:2011
» DIN EN 1127-1
» EN ISO 12100:2010

Maintenance and inspection:

» The MIG-KS actuators are maintenance free

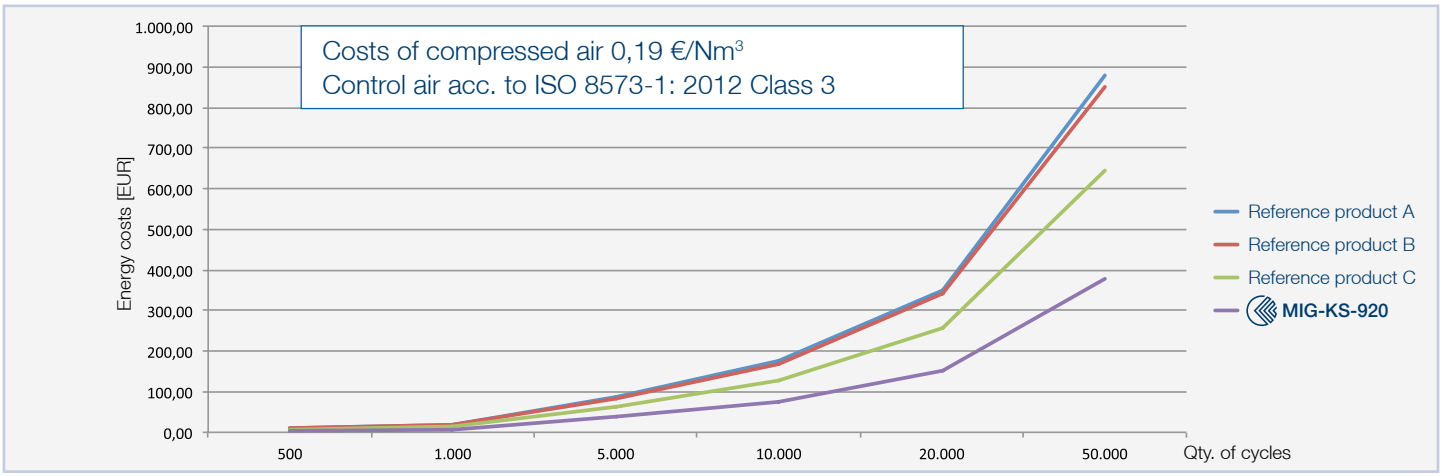
» Prerequisites for this are:
- Professional actuator construction
- Appropriate control medium
- Normal environmental conditions
- Proper use

CERTIFICATES AND APPROVALS

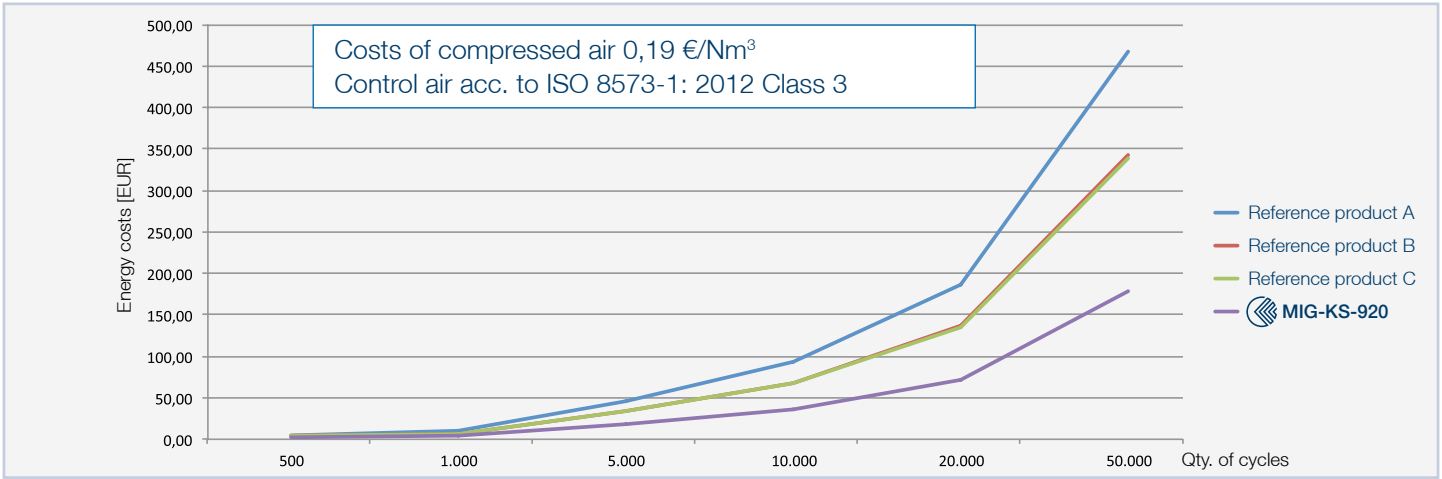
» Certified acc. to DIN EN ISO 9001:2008
» Certified acc. to DGRL 97/23/EC, Module H and H1
» Installation declaration of an incomplete machine as per MR 2006/42/EC
» EC declaration of conformity as per ATEX guideline 94/9/EC Protection type EX II 2GD Tmax. = 95°C
» Manufacturer's declaration of conformity as per IEC 61508 / IEC 61511 Minimum requirement SIL 2
» Type test as per NAMUR NE95 carried out by Bilfinger Maintenance Süd GmbH.
The endurance test was carried out with 500,000 switching cycles against load and at -20°C to +80°C and durability was thus verified.

COSTS OF COMPRESSED AIR

Double acting actuators, Type MIG-KS-xxx-D



Single acting actuators, Type MIG-KS-xxx-S



A comparison of manufacturer's specifications on average air consumption shows very clearly even with the single acting actuators and increasingly with the double acting actuators that the life cycle costs are already significantly lower at almost 1,000 cycles.

COMPACT DIMENSIONS, LESS ENERGY CONSUMPTION, HIGHER PERFORMANCE

Apart from the revised classic design and the optimum utilisation of the physical features, its pioneering technology, which is contained within this actuator concept. The idea does not only rest on technological innovation, it also grows from the consistent combination of design and functionality as well as suitability for use and efficiency. Technically this means an optimum relationship between piston area and a significant benefit in performance and torque, as well as a clear reduction in air consumption. The result is, when compared with previous technology, considerably more capacity with greater comfort and reduced air consumption.

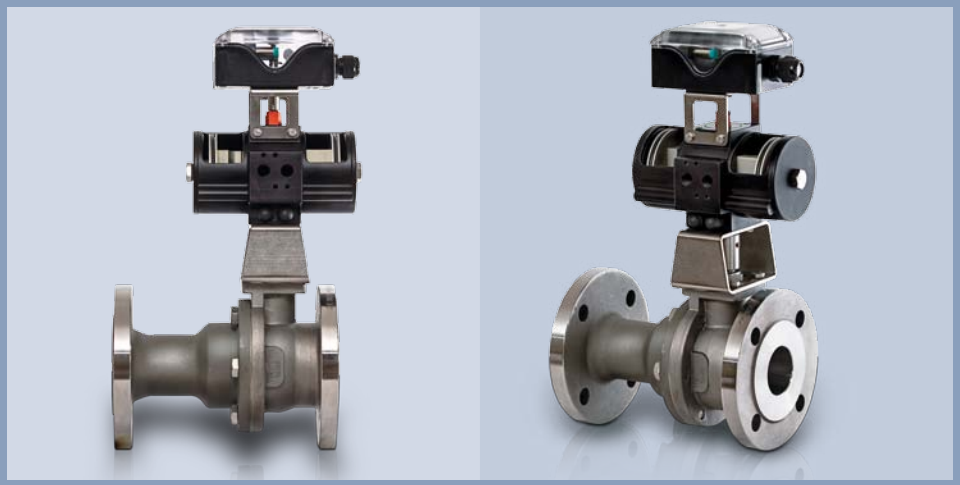
The previously unexploited potential of the tried and tested function principle was utilised by constructing the classic pneumatic Rack & Pinion actuator. Above all, the optimised relationship between piston areas and pressure ensures significantly better energy efficiency. With reduced air and energy consumption as well as compact dimensions these pneumatic Rack & Pinion actuator offer higher performance than previous conventional actuators. The result is significant technical processing, commercial and ecological benefit for a great number of applications in process engineering and technology as well as in automation.

AUTOMATED BALL VALVES

As renowned manufacturer of ball valves we also offer our customers the complete set of control elements consisting of:

» Ball valve
» Stem extension
» Bracket
» Coupling
» MIG-KS actuator
» Solenoid valve
» Switch box

as appropriate to your application and specification. To ensure fast and secure automation of our ball valves we can offer you standardised automation packages (as listed above). We keep the necessary components for this in stock.



NEEDLE VALVE

KLINGER Schöneberg

KLINGER

RK-NEEDLE VALVES

Mini plant valve for generally application.

With conventional stuffing box or bellow sealed and safety stuffing box good solutions with clamping ring connection for your mini plant or measurement application.

Type:	High-pressure needle valve
Nominal sizes:	DN 4 - DN 10
Pressure range:	PN 250 and PN 315
Temperature:	up to +500°C
Material of body	stainless steel
End connections:	with clamping ring connection
FTF:	acc. to producers standard
Accessories:	stem extension

Special designs:

- special materials like Titanium, Hastelloy etc.
- soft seated or metal seated
- stuffing box made of Graphite or PTFE
- with female threaded ends
- with male threaded ends

- male/female variation
- light series acc. to DIN 3861
- NPT-thread

Product advantages:

- compact design
- compatible with current clamping ring connection manufacturers
- one-piece solid body
- German clean air act design design with bellow and safety stuffing box

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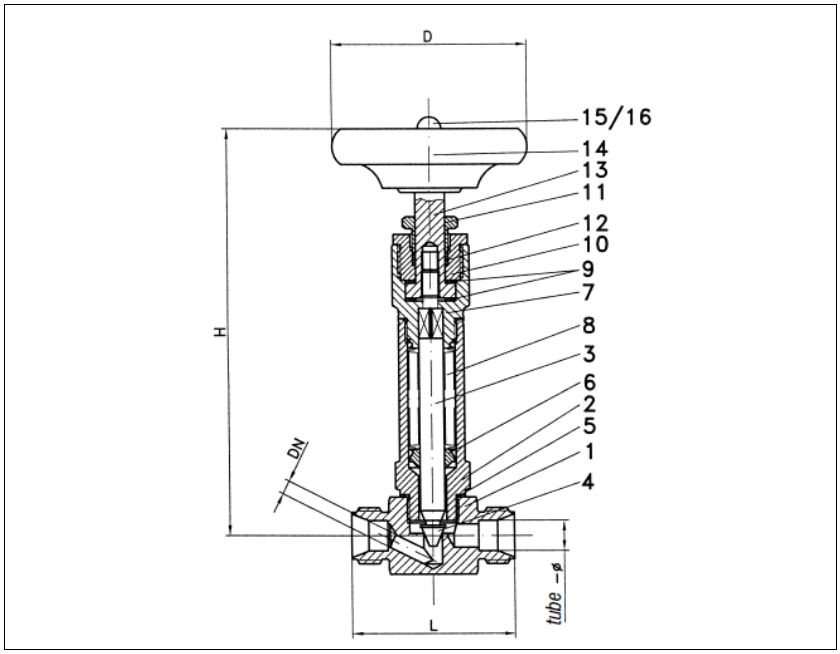
RK-NEEDLE VALVE

NVFK-HP, DN4 - DN10, PN250



High pressure needle valve with clamping ring connection and bellow face to face acc. to producers standard

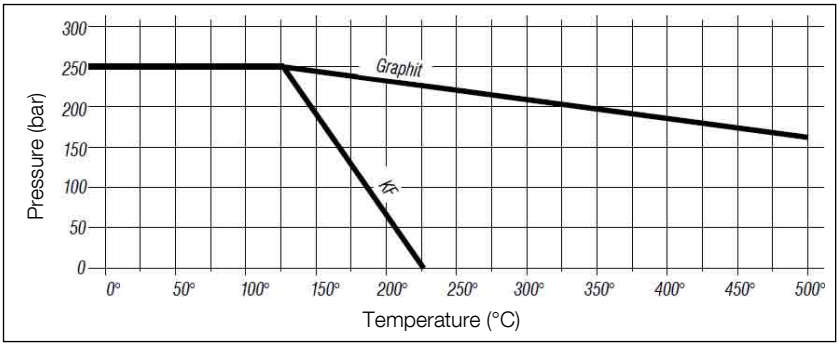
Specification:
High pressure needle valve with clamping ring connection PN 250, fully welded bellow and safety stuffing box above, body made of acid resistance forged steel (1.4571), metal tight conical globe, metal resealing, anti blow out spindle, bellow made of 3 layers fully welded, hardened shaft beared with PTFE coated friction discs, gland nut metal tight on block, stuffing box material KF or graphite, design free of non ferrous metals, clean air act confirmation, 10.000 cycles warranty.

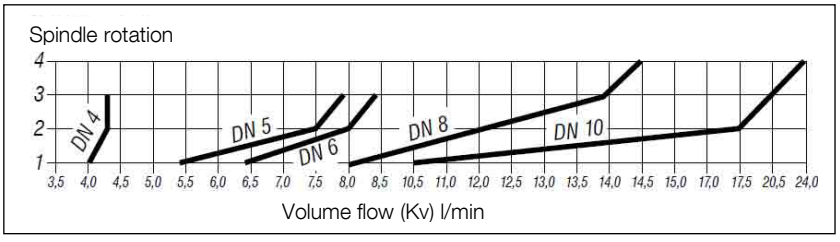
Marking: RK-Needle valve
Type: NVFK-HP-1.4571

No.	Part	Material 1.4571-KF	Material 1.4571-Graphite
1	body	1.4571	1.4571
2	bonnet	1.4571	1.4571
3	spindle	1.4571	1.4571
4	globe	1.4571	1.4571
5	body seal	1.4571	1.4571
6	below connector	1.4571	1.4571
7	upper connector	1.4571	1.4571
8	bellow	1.4571	1.4571
9	friction disc	1.4571/PTFE	1.4571/PTFE
10	gland nut	1.4571	1.4571
11	stuffing box	1.4571	1.4571
12	packing	KF	Graphite
13	shaft	1.4571	1.4571
14	hand wheel	synthetic FS31	synthetic FS31
15	washer	1.4571	1.4571
16	nut	1.4571	1.4571

Dimensions

DN	PN	tube-Ø	dimensions in mm		
			L	H	D
4	250	6	60	151	80
5	250	8			
5	250	10	65		
6	250	12			
8	250	15	80	154	
10	250	18			





Ordering example:
NVFK-HP-1.4571-Graphite, DN8, PN250

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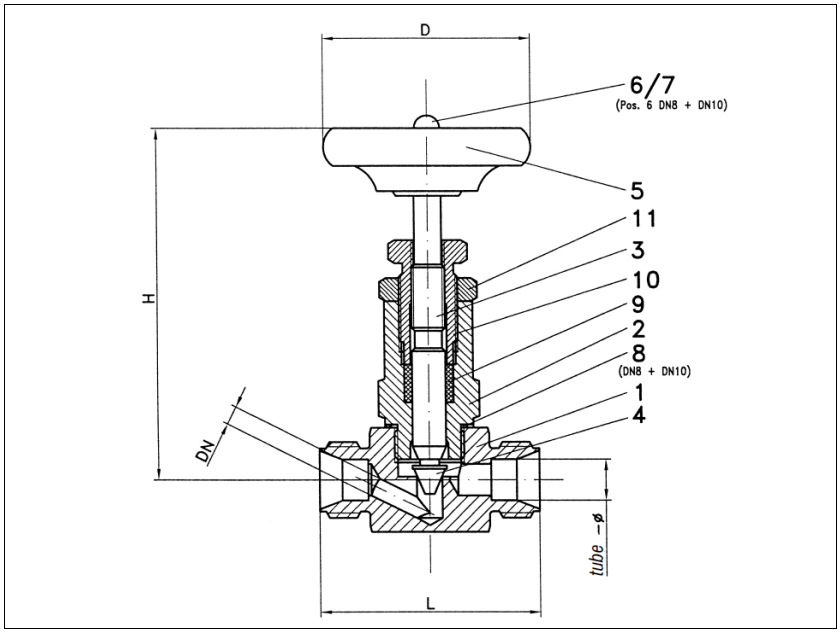
RK-NEEDLE VALVE

NVK-HP, DN4 - DN10, PN315



High pressure needle valve with clamping ring connection face to face acc. to producers standard

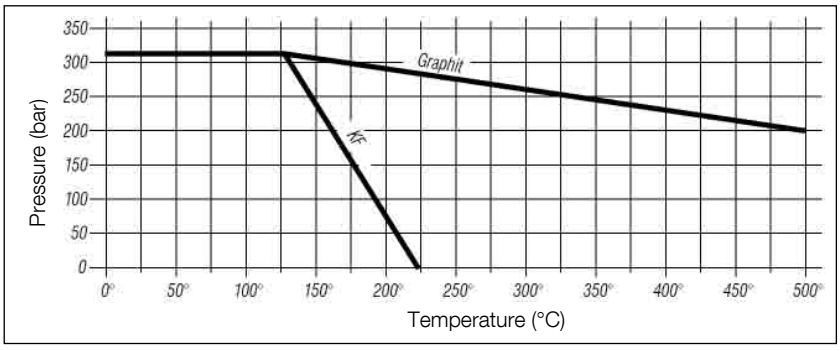
Specification:
High pressure needle valve with clamping ring connection PN 315, body made of acid resistance forged steel (1.4571), metal tight conical globe, metal resealing, anti blow out spindle, spindle thread outside located, re-tightened stuffing box, stuffing box material KF or graphite, design free of non ferrous metals.

Marking: RK-Needle valve
Type: NVK-HP-1.4571

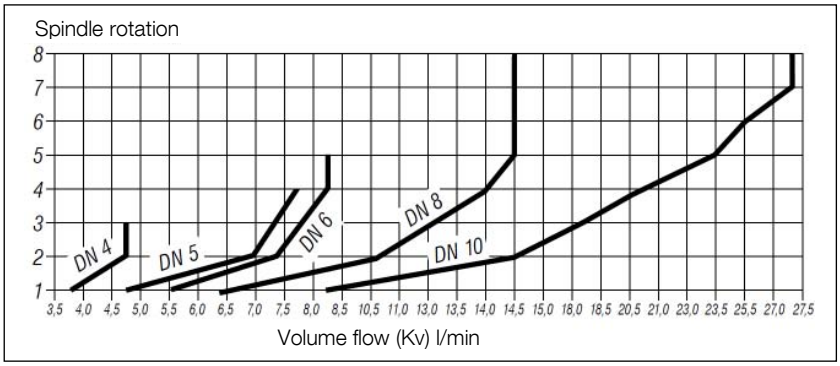
No.	Part	Material 1.4571-KF	Material 1.4571-Graphite
1	body	1.4571	1.4571
2	bonnet	1.4571	1.4571
3	spindle	1.4571	1.4571
4	globe	1.4571	1.4571
5	hand wheel	synthetic FS31	synthetic FS31
6	washer	1.4571	1.4571
7	nut	1.4571	1.4571
8	body seal	1.4571	1.4571
9	packing	KF	Graphite
10	tightening nut	1.4571	1.4571
11	nut	1.4571	1.4571

Dimensions

DN	PN	tube-Ø	dimensions in mm		
			L	H	D
4	315	6	55	84	50
5	315	8			
6	315	10			
6	315	12			
8	315	15	80	87	63
10	315	18			



Ordering example:
NVK-HP-1.4571-Graphite, DN8, PN315



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SPECIAL APPLICATIONS

KLINGER Schöneberg

INTEC

Duoball Valve INTEC K200-S-FS

Duoball Valve in length face to face of a standard valve for higher reliability

The by us developed Duoball Valve has a double shut-off of the pipeline and makes it possible to increase the safety of a system significantly.

- » Double closure
- » Increased closure safety
- » Double Block & Bleed
- » Proven ball valve technology
- » Leakage monitoring
- » Pressure monitoring
- » Flushing connection
- » Defined cavity room
- » Smallest possible cavity room
- » Nitrogen pressure overlay
- » With entrance and outlet connection to flush the cavity room
- » Floating ball or trunnion mounted ball
- » Soft or metal seated execution
- » Leakage rate A, completely gas-tight
- » Face to face acc. EN 558 R1

Nominal size:	DN15 up to DN200	NPS½“ up to NPS8“
Design pressure:	PN16 up to PN40	Class150 up to Class300
Temperature range:	-10°C up to +400°C	-10°C up to +400°C

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Duoball Valve INTEC K200-S-FS

Ball Valve with double shut-off for increased operational safety

- The Duoball Valve, developed by us, has a double shut-off of the pipeline and makes it possible to increase the safety of a system significantly.
- Designed for applications with extremely high safety requirements.
- The Duoball Valve consists practically two ball valves which are equipped on request with two independent barriers.
- Therefore the safety factor could be increased 4 times compared to a standard ball valve.
- According the double isolation and bleed function each ball valve is tight upstream and downstream side.
- The Duoball Valve is available even in the same length as a standard valve and provides a compact and economical alternative instead to use several valves.
- Like all ball valves of the INTEC series also the Duoball Valve is available in metal and soft seated execution.
- These seat-systems meet all the leakage rate A and are completely gas-tight.

Double Block & Bleed Ball Valve INTEC K220-S-DE-DB-FS

Safety device especially for Ethylene Oxide service

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TECHNICAL INFORMATION

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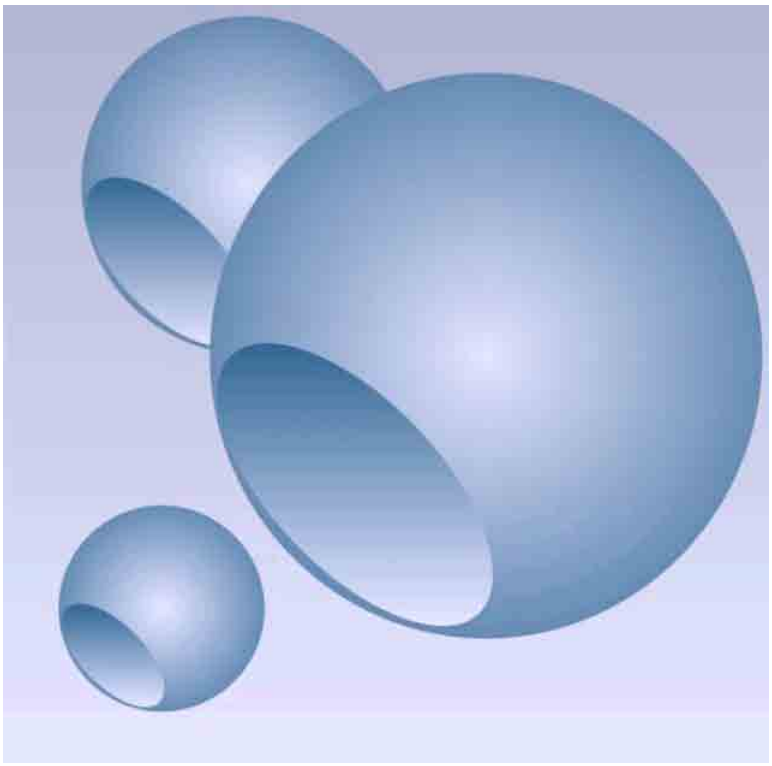
INTEC



FLOW RATE

for Ball Valves INTEC
face to face dimensions acc. to EN 558, GR.1/GR.27/GR.107

DN	Through port [mm]	FTF length [mm]	Zeta	K_{VS} [m³/h]	cv [gal/min]
Ball Valves INTEC DN15-DN100, EN 558, GR.1					
15	15	130	0.125	25	29
20	20	150	0.102	49	57
25	25	160	0.084	85	99
32	31	180	0.070	140	164
40	40	200	0.060	258	302
50	50	230	0.053	430	503
65	65	290	0.049	755	883
80	77	310	0.043	1,135	1,328
100	100	350	0.036	2,105	2,463
Ball Valves INTEC DN15-DN500, EN 558, GR.27					
15	15	115	0.111	27	32
20	20	120	0.082	56	66
25	25	125	0.065	97	113
32	31	130	0.053	167	195
40	40	140	0.042	312	365
50	50	150	0.035	538	629
65	65	170	0.029	995	1,164
80	77	180	0.025	1,500	1,755
100	100	190	0.019	2,866	3,353
125	125	325	0.026	3,885	4,545
150	150	350	0.023	5,990	7,008
200	200	400	0.019	11,740	13,736
250	250	450	0.016	19,600	22,932
300	300	500	0.015	29,600	34,632
350	335	550	0.014	37,600	43,992
400	385	762	0.017	45,600	53,352
500	487	914	0.016	76,000	88,920
Ball Valves INTEC DN15-DN80, EN 558, GR.107					
15	15	50	0.048	41	48
20	20	50	0.034	86	101
25	25	60	0.031	141	165
32	31	65	0.026	237	277
40	40	80	0.024	413	483
50	50	95	0.022	677	792
65	65	110	0.019	1,240	1,451
80	77	145	0.020	1,672	1,956

Zeta = The pressure loss coefficient Zeta-Value is a dimensionless measure of the pressure loss in a flow-through component, such as a ball valve.

K_{VS} = The pressure loss Kvs-value corresponds to the water flow through a fully open valve, with a pressure loss of 1 bar and a water temperature of 5 - 30°C.

cv = The pressure loss cv-value corresponds to the water flow through a fully open valve, with a pressure loss of 1 PSI and a water temperature of 5 - 30°C.

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FLOW RATE

for Ball Valves INTEC
face to face dimensions acc. to ANSI B 16.10, Class 150/Class 300

NPS	Through port [mm]	FTF length [mm]	Zeta	K_{VS} [m³/h]	cv [gal/min]
Ball Valves INTEC NPS ½“ - NPS 20“, ANSI B 16.10, Class 150					
½“	15	108	0.104	27	32
¾“	20	117	0.080	56	66
1“	25	127	0.066	96	112
1 ¼“	31	140	0.057	159	186
1 ½“	40	165	0.049	285	333
2“	50	178	0.041	489	572
2 ½“	65	190	0.032	940	1,100
3“	77	203	0.028	1,410	1,650
4“	100	229	0.024	2,610	3,054
6“	150	394	0.025	5,650	6,611
8“	200	457	0.021	10,960	12,823
10“	250	533	0.019	18,000	21,060
12“	300	610	0.018	26,900	31,473
14“	335	686	0.018	33,680	39,406
16“	385	762	0.017	45,600	53,352
20“	487	914	0.016	76,000	88,920
Ball Valves INTEC NPS ½“ - NPS 20“, ANSI B 16.10, Class 300					
½“	15	140	0.135	24	28
¾“	20	152	0.104	49	57
1“	25	165	0.086	84	98
1 ¼“	31	178	0.072	141	165
1 ½“	40	190	0.057	265	310
2“	50	216	0.050	444	519
2 ½“	65	241	0.041	830	971
3“	77	282	0.039	1,190	1,392
4“	100	305	0.031	2,262	2,647
6“	150	403	0.026	5,580	6,529
8“	200	502	0.023	10,480	12,262
10“	250	568	0.020	17,480	20,452
12“	300	648	0.019	26,100	30,537
14“	335	762	0.020	31,950	37,382
16“	385	838	0.019	43,500	50,895
20“	487	991	0.017	72,950	85,352

Zeta = The pressure loss coefficient Zeta-Value is a dimensionless measure of the pressure loss in a flow-through component, such as a ball valve.

K_{VS} = The pressure loss Kvs-value corresponds to the water flow through a fully open valve, with a pressure loss of 1 bar and a water temperature of 5 - 30°C.

cv = The pressure loss cv-value corresponds to the water flow through a fully open valve, with a pressure loss of 1 PSI and a water temperature of 5 - 30°C.

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INFORMATION

Technical Data
Conversion table for lbs./sq. inch in bar

lbs./sq. inch	bar	lbs./sq. inch	bar
1	0.0703	350	24.605
2	0.1406	400	28.120
3	0.2109	450	31.635
4	0.2812	500	35.150
5	0.3515	550	38.665
6	0.4218	600	42.180
7	0.4921	650	45.695
8	0.5624	700	49.210
9	0.6327	750	52.752
10	0.7030	800	56.240
15	1.054	850	59.755
20	1.406	900	63.270
25	1.757	950	66.785
30	2.109	1000	70.300
35	2.460	1100	77.330
40	2.812	1200	84.360
45	3.163	1300	91.390
50	3.515	1400	98.420
55	3.866	1500	105.450
60	4.218	1600	112.480
65	4.569	1700	119.510
70	4.921	1800	126.540
75	5.272	1900	133.570
80	5.624	2000	140.600
85	5.975	2100	147.630
90	6.327	2200	154.660
95	6.678	2300	161.690
100	7.030	2400	168.720
110	7.733	2500	175.750
120	8.436	2600	182.780
130	9.139	2700	189.810
140	9.842	2800	196.840
150	10.545	2900	203.870
160	11.248	3000	210.900
170	11.951		
180	12.654		
190	13.357		
200	14.060		
250	17.575		
300	21.090		

bar	lbs./sq. inch	bar	lbs./sq. inch
1	14.223	41	588.143
2	28.445	42	597.366
3	42.668	43	611.589
4	56.891	44	625.812
5	71.114	45	640.035
6	85.336	46	654.258
7	99.559	47	668.481
8	113.782	48	682.704
9	128.004	49	696.927
10	142.233	50	711.150
11	156.456	51	725.373
12	170.679	52	739.596
13	184.902	53	753.819
14	199.125	54	768.042
15	213.348	55	782.265
16	227.571	56	769.488
17	241.794	57	810.711
18	256.017	58	824.934
19	270.240	59	839.157
20	284.465	60	853.380
21	298.688	65	924.495
22	312.911	70	995.610
23	327.134	75	1066.725
24	341.357	80	1137.840
25	355.580	85	1208.955
26	369.805	90	1280.070
27	384.028	95	1351.185
28	398.251	100	1422.300
29	412.474	110	1564.530
30	426.698	120	1706.760
31	440.913	130	1848.990
32	445.136	140	1991.220
33	469.359	150	2133.450
34	483.582	160	2275.680
35	497.805	170	2417.920
36	512.028	180	2560.140
37	526.251	190	2702.370
38	540.474	200	2844.600
39	554.697		
40	568.920		

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INFORMATION

Technical Data
Pressure-Temperature for Saturated Steam

Pressure bar	Saturation Temperature °C
0.01	6.6
0.015	12.7
0.02	17.1
0.025	20.7
0.03	23.7
0.04	28.6
0.05	32.5
0.06	35.8
0.08	41.1
0.10	45.4
0.12	49.0
0.15	53.6
0.20	59.7
0.25	64.6
0.30	68.7
0.35	72.3
0.40	75.4
0.50	80.9
0.60	85.5
0.70	89.5
0.80	93.0
0.90	96.2
1.0	99.1
1.1	101.8
1.2	104.2
1.3	106.6
1.4	108.7
1.5	110.8
1.6	112.7
1.8	116.3
2.0	119.6
2.2	122.6
2.4	125.5
2.6	128.1
2.8	130.5
3.0	132.9
3.2	135.1
3.4	137.2
3.6	139.2
3.8	141.1
4.0	142.9
4.5	147.2
5.0	151.1
5.5	154.7
6.0	158.1
6.5	161.2
7.0	164.2
7.5	167.0
8.0	169.6

Pressure bar	Saturation Temperature °C
8.5	172.1
9.0	174.5
9.5	176.8
10	179.0
11	183.2
12	187.1
13	190.7
14	194.1
15	197.4
16	200.4
17	203.4
18	206.2
19	208.8
20	211.4
22	216.2
24	220.8
26	225.0
28	229.0
30	232.8
32	236.4
34	239.8
36	243.1
38	246.2
40	249.2
42	252.1
44	254.9
46	257.6
48	260.2
50	262.7
55	268.7
60	274.3
65	279.6
70	284.5
75	289.2
80	293.6
85	297.9
90	301.9
95	305.8
100	309.5
110	316.5
120	323.1
130	329.3
140	335.0
150	340.5
160	345.7
180	355.4
200	364.2
225	374.0

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