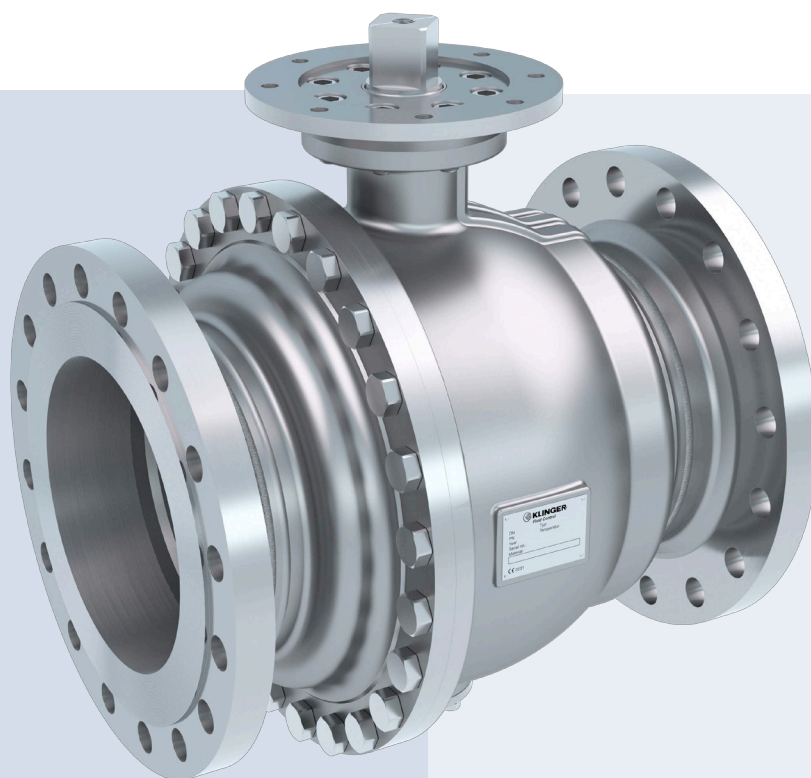




KLINGER BALLOSTAR® KHI-F STAINLESS STEEL

Industrial ball valves
DN 150-400



CERTIFIED QUALITY

Manufacturer and product approvals

The KLINGER Ballostar KHI-F ball valves are designed for the harshest and most demanding applications in various industries. Furthermore, the KHI-F comes with stainless steel and duplex housing materials with soft and metal-seated sealing system.

WITH THE UNIQUE KLINGER ELASTIC SEALING SYSTEM

One of the unique features of the Ballostar KHI product range is its sealing system, which ensures exceptional performance. The ball valve housing also comes optionally with a test and drain valve.

This is a significant advantage as it allows for leak testing at any time. These ball valves are suitable for a wide range of applications, including pulp and paper plants, district heating systems, geothermal plants, steelworks, hydroelectric power stations and tunnel boring machines.



GREATEST GUARANTEED FIRE SAFETY

The ball valve can be used for fire-safe applications and is certified in accordance with API Standard 607 and EN ISO 10497.

DOUBLE BLOCK & BLEED

With the DBB function you only need one KLINGER Ballostar KHI-F ball valve instead of two separate valves. This alternative solution either with a test and drain valve not only saves time and money, but is especially useful for installations with limited space.

EN ISO 15848-1

The KLINGER Ballostar KHI-F is significantly below prescribed emission limits for keeping air clean. Certified emission testing pursuant to ISO 15848-1 (fugitive emissions), ISO FE CH-C03-SSA0-tRT (120°C) for Ballostar KHI-F and fulfill TA-Luft.

USE WITH GASEOUS OXYGEN

The Ballostar KHI ball valve series are useable for applications with gaseous oxygen at operating pressures of up to 16 bar for carbon steel, up to 30 bar for stainless steel and operating temperatures of up to 60 °C.

EN 12266-1, P10, P11 AND P12

The KHI-F ball valves with KFC sealing elements fulfill the leakage rate A acc. to EN 12266-1/ISO 5208 soft seated and leakage rate Class IV-S1 acc. to EN 60534-4 metal seated.

BALLOSTAR KHI-F

STAINLESS STEEL



Product details	» PN 10/16/25/40, ASME CL 150/300
	» DN 150-400, 6"-16"
	» Body: rust and acid proof casting, duplex casting
	» Ball: rust and acid proof casting, duplex casting

Connections	» Flange in acc. with EN 1092-1 or ASME B16.5
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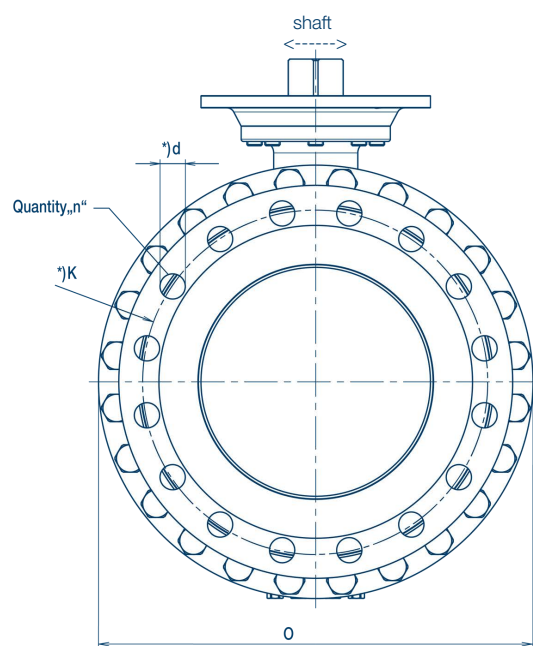
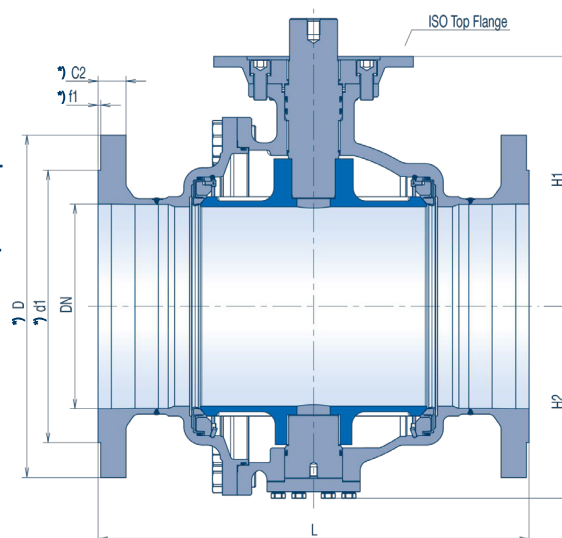
General features	» 2-piece ball valve with full bore
	» Trunnion mounted
	» Bi-directional sealing
	» Top flange acc. ISO 5211
	» Leakage rate A (EN 12266-1/ISO 5208), Class VI for soft seated
	» Leakage rate Class IV-S1 (EN 60534-4) metal seated
	» Double Block & Bleed with optional drain valve
	» Anti blow out stem
	» Anti static tested
	» Non service packing

Temperature	» -45°C to +250°C depending on O-ring material (see pT diagram)
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FTF-Dimensions	» PN10/16/25 + CL150
	-> EN558-1 row 12/ANSI B16.10 long pattern
	» PN40 + CL300
	-> EN558-1 row 4/ANSI B16.10 long pattern

Certificates	» Leak-testing according ISO 5208 / ISO 14313 Double Block & Bleed
	» Fire-Safe ac. ISO 10497 + API 607
	» ISO 15848-1 (fugitive emission):
	-> ISO FE CH-C03-SSA0-tRT (120°C) - (40bar)
	» SIL 2

Acceptance Testing	» Seat leak tightness: EN 12266-1 P12
	» Tightness to atmosphere: EN 12266-1 P11
	» Strength: EN 12266-1 P10
	» Material certificate 3.1. for body parts, ball, shaft



*) Flange dimensions D, d1, C2, f1, d, K, n in acc. with DIN EN 1092-1 or ASME B 16.5

TECHNICAL DATA - BALLOSTAR KHI-F Stainless Steel

DN (ASME)	DN (mm)	L (mm)		H2	H1 (mm)	O (mm)	Weight (kg) (PN40)	Top Flange ISO 5211 not double drilled	Shaft (mm)	
		PN10-25** CL150	PN40*** CL300						square	diameter / key
6"	150	394	403	167	232	320	71	F14/F16	36 (Std.)	Ø48 / 14
8"	200	457	502	209	273	398	120	F14/F16	36 (Std.)	Ø48 / 14
10"	250	533	568	261	349	490	200	F16/F25	46 (Std.)	Ø60 / 18
12"	300	610	648	289	376	568	288	F25/F30	55	Ø72 / 20 (Std.)
14"	350	686	762	346	440	660	414	F25/F30	55	Ø72 / 20 (Std.)
16"	400	762	838	359	442	700	534	F25/F30	55	Ø72 / 20 (Std.)

** acc. to EN558-1 row 12 / ANSI B16.10 Long pattern

*** acc. to EN558-1 row 4 / ANSI B16.10 Long pattern

Flow characteristics for the determination of the nominal diameter

Size of the ball valve

Flow rate	Q in m ³ /h
Pressure loss	Δp in bar
Density	ρ in kg/m ³
Velocity	w in m/s
Flow coefficient	K_v in m ³ /h
Pressure loss coefficient	ζ

The valve is to be selected in a manner that the K_v -value is greater, or the ζ -value less than the computed value.

Allows for the calculation of:

$$K_v = Q * \sqrt{\frac{\rho}{1000 * \Delta p}}$$

or

$$\zeta = \frac{2 * \Delta p * 10^5}{\rho * w^2}$$

Flow values

FULL BORE

DN (mm)	ζ	K_{vs} -value
150	0.055	3,832
200	0.048	7,271
250	0.051	11,111
300	0.047	16,615
350	0.055	20,857
400	0.046	27,056

MAST

(20°C, Nm)

DN (mm)	M2 (Xc)	M3 (Xd)
150	2,134	4,268
200	2,754	5,508
250	5,095	10,190
300	10,672	21,344
350	13,729	27,458
400	14,596	29,193

Torques

KFC SEAT RING

Nominal diameter DN	Differential pressure (bar)	
	25	40
mm	Torque (Nm)	
150	650	1,260
200	1,070	1,760
250	2,090	2,910
300	3,710	5,740
350	5,070	7,070
400	6,250	7,990

METAL SEAT RING

Nominal diameter DN	Differential pressure (bar)		
	16	25	40
mm	Torque (Nm)		
150	890	1,180	1,530
200	1,780	1,770	2,300
250	2,650	3,530	4,590
300	5,000	6,280	8,160
350	6,960	8,630	11,300
400	8,530	10,200	13,300

BALLOSTAR KHI-F

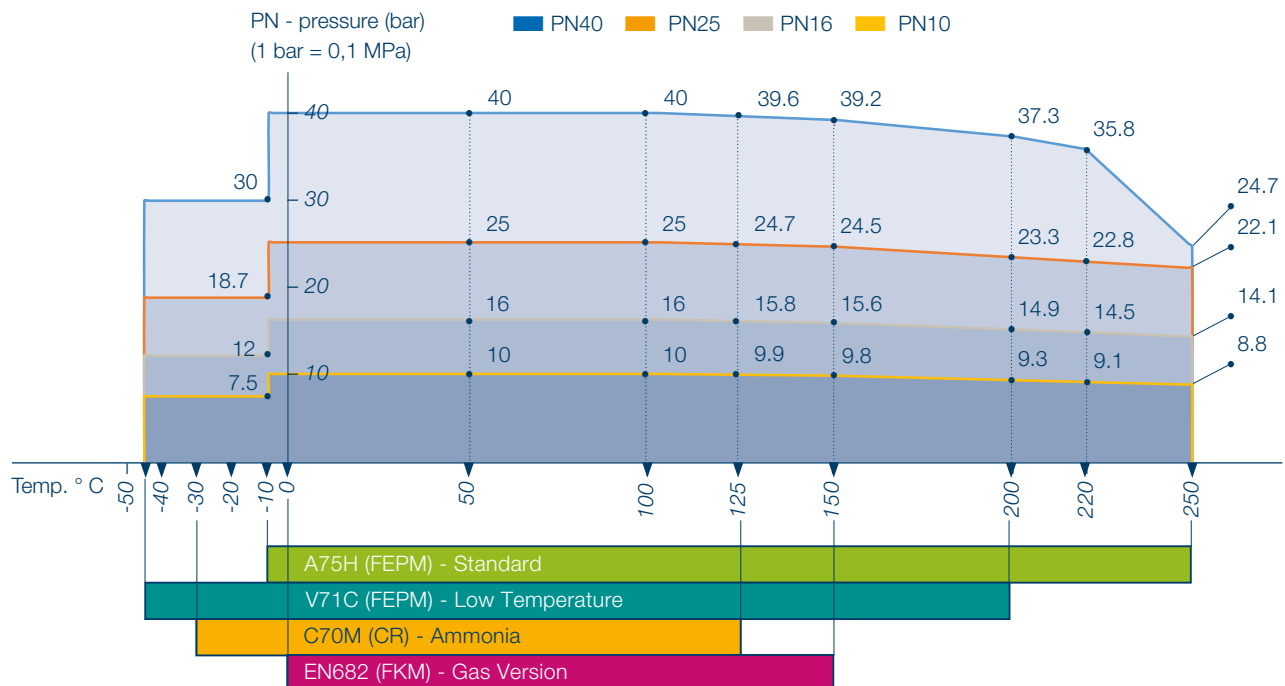
Pressure and temperature ranges



P-T diagram – for stainless steel

Stainless steel

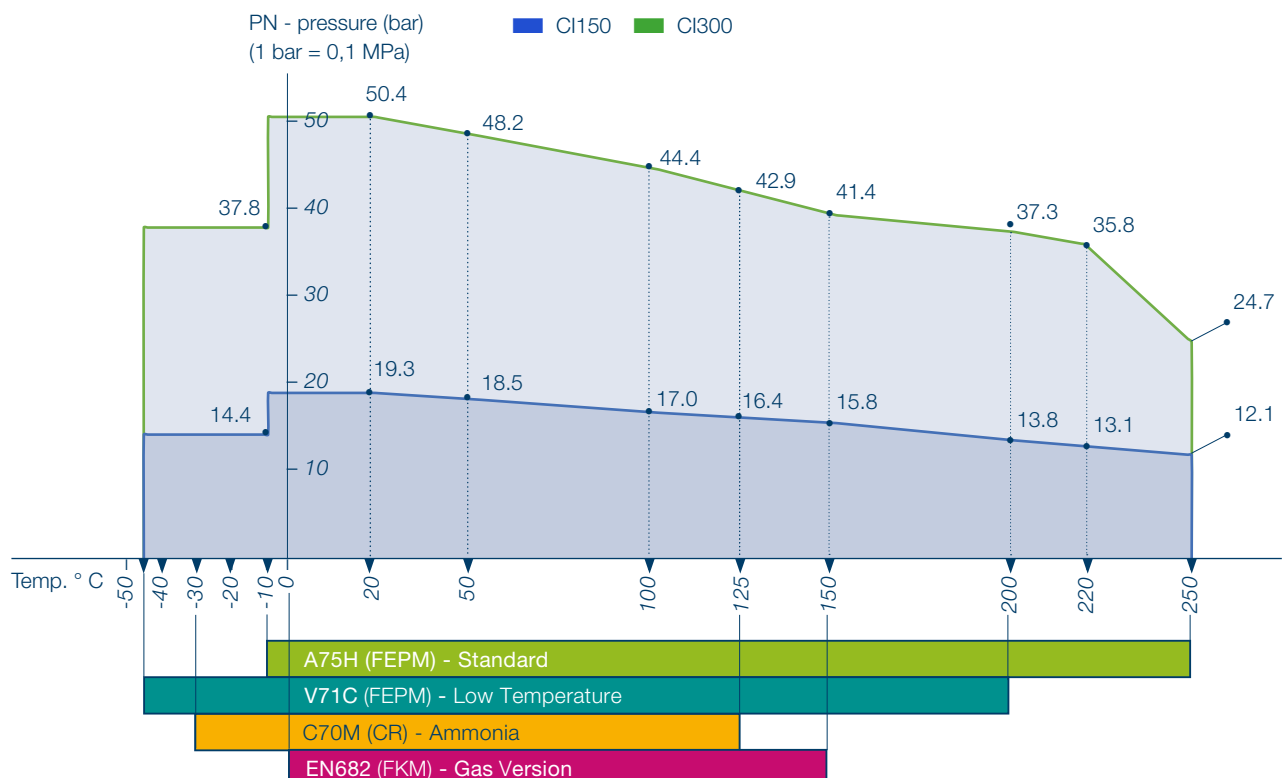
Material index M2 (Xc)



O-ring variants	intended use
A75H (FEPM)	Standard (-10°C to +250°C)
V71C (FEPM)	Low temperature (-45°C to +200°C)
C70M (CR)	Ammonia (-30°C to +125°C)
EN682 (FKM)	Gas version (0°C to +150°C)

Stainless Steel ANSI

Material index M2 (Xc)



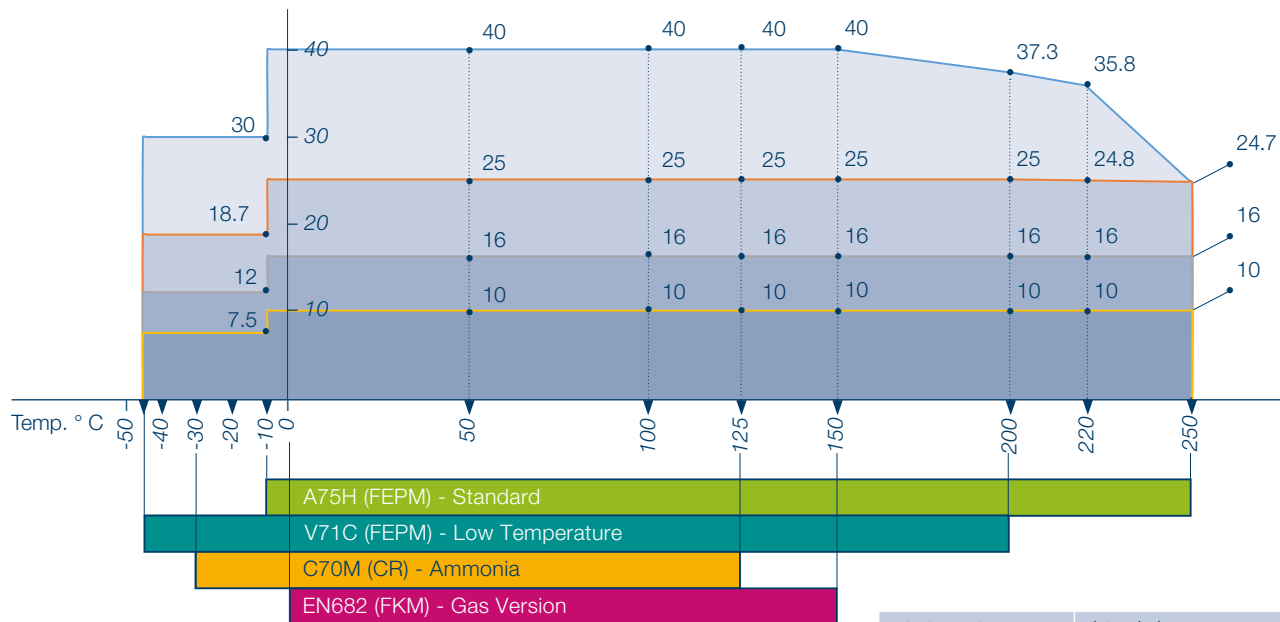
P-T diagram – for duplex

Duplex

Material index M3 (Xd)

PN - pressure (bar)
(1 bar = 0,1 MPa)

■ PN40 ■ PN25 ■ PN16 ■ PN10

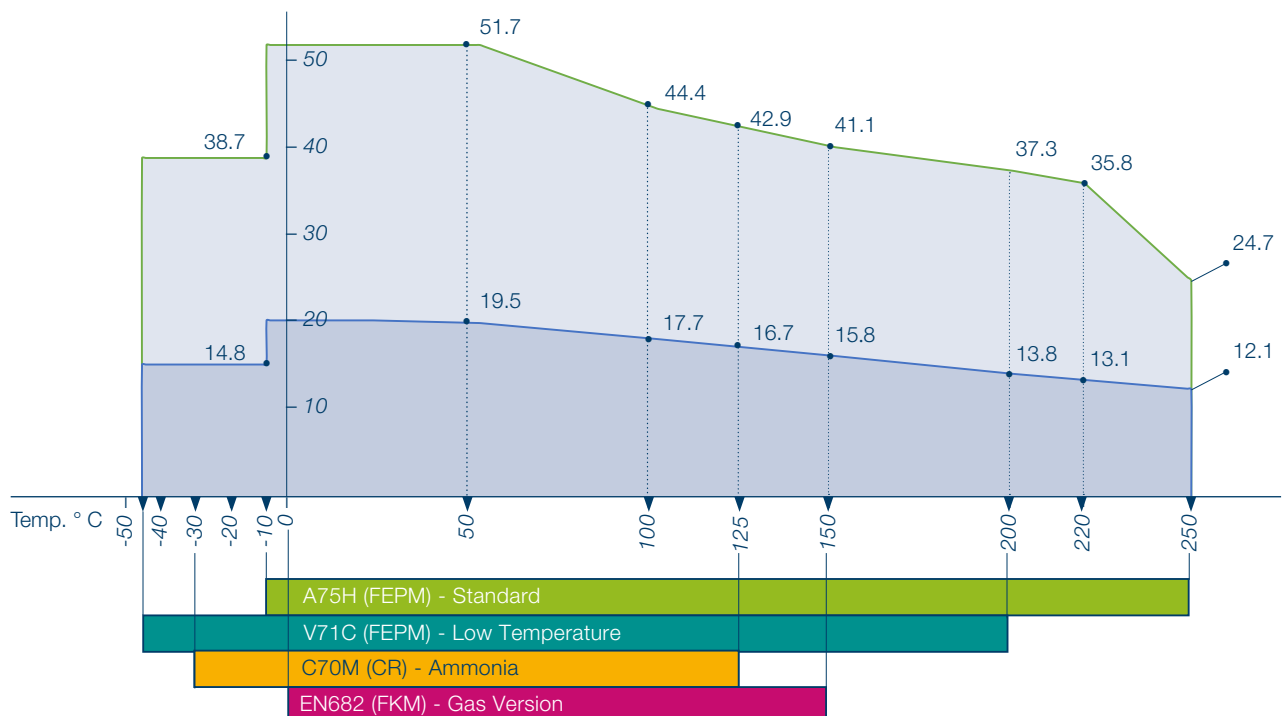


Duplex ANSI

Material index M3 (Xd)

PN - pressure (bar)
(1 bar = 0,1 MPa)

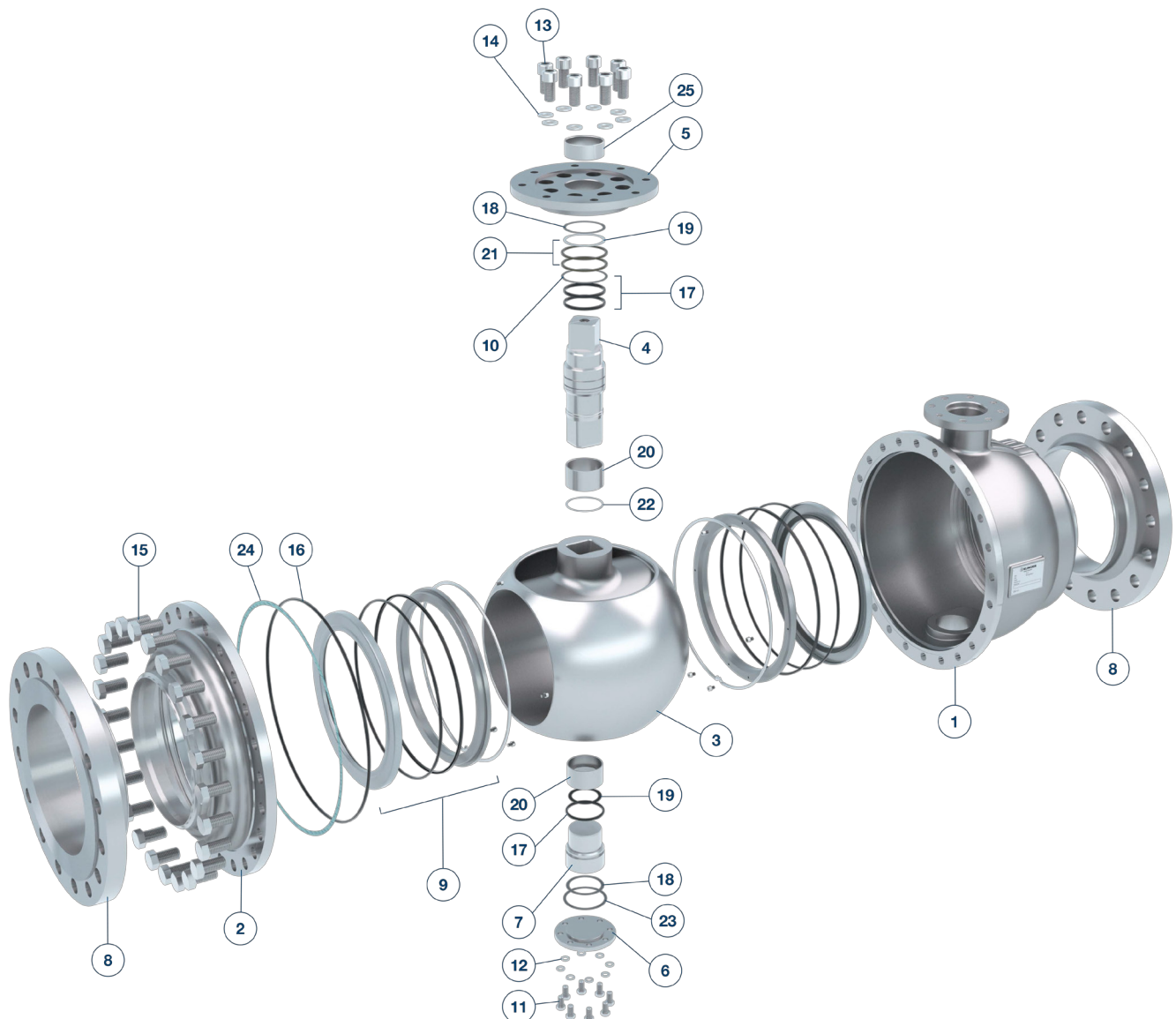
■ CI150 ■ CI300



BALLOSTAR KHI-F

Parts list

Pos	Qu	Name	M2 (Xc) / AISI	M3 (Xd) / AISI	Pos	Qu	Name	M2 (Xc) / AISI	M3 (Xd) / AISI
1	1	body	1.4581 / 316Ti	1.4470 / 318LN	15	16/18/20/24	hex headscrew	A4-70	A4-70
2	1	cap	1.4581 / 316Ti	1.4470 / 318LN	16	1	O-ring *	variants available	variants available
3	1	ball ¹⁾	1.4581 / 316Ti	1.4470 / 318LN	17	3	O-ring **	variants available	variants available
4	1	shaft	1.4404	1.4462	18	as needed	tolerance washer	1.4404 / 316L	1.4404 / 316L
5	1	installation plate	1.4404 / 316L	1.4404 / 316L	19	2	friction washer **	PEEK	PEEK
6	1	bearing plug	1.4404 / 316L	1.4462 / 318LN	20	2	bearing bush **	SS - PTFE	1.4462 - PTFE
7	1	bearing pin	1.4404 / 316L	1.4462 / 318LN	21	2	Firesafe packing ring **	K35-C + Aramid	K35-C + Aramid
8	2	weld neck flange	1.4571 / 316Ti	1.4462 / 318LN	22	1	support ring **	PTFE	PTFE
9	2	sealing element*	variants available	variants available	23	1	flat seal **	C4430	C4430
10	1	Firesafe support washer **	1.4571 / 316Ti	1.4462 / 318LN	24	1	flat seal *	C4430	C4430
11	6/8	hex headscrew	A4-70	A4-70	25	1	bearing bush **	BZ - PTFE	BZ - PTFE
12	6/8	Wedge lock washer	1.4404 / 316L	1.4404 / 316L	1) chrome-plated when metal seated				
13	8	cylinder screw	A4-70	A4-70	* full spare part kit (including **)				
14	8	Wedge lock washer	1.4404 / 316L	1.4404 / 316L	** shaft + bearing spare part kit				



Typing and printing errors reserved.
Technical changes reserved.

KLINGER Fluid Control GmbH
Am Kanal 8-10 » A-2352 Gumpoldskirchen » Austria
T +43 2252 600-0 » F +43 2252 600-100
office@klinger.kfc.at