KLINGER Fluid Control

KLINGER FLUID CONTROL

Ballostar KH(SV)I ball valve „Basic“

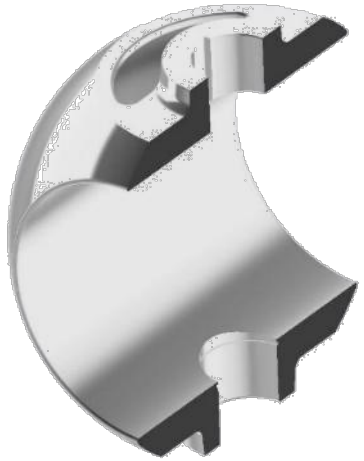
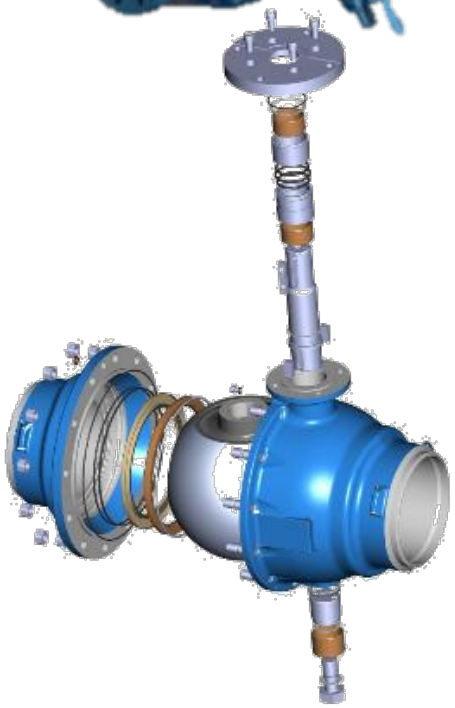
KH(SV)I BASIC

Agenda

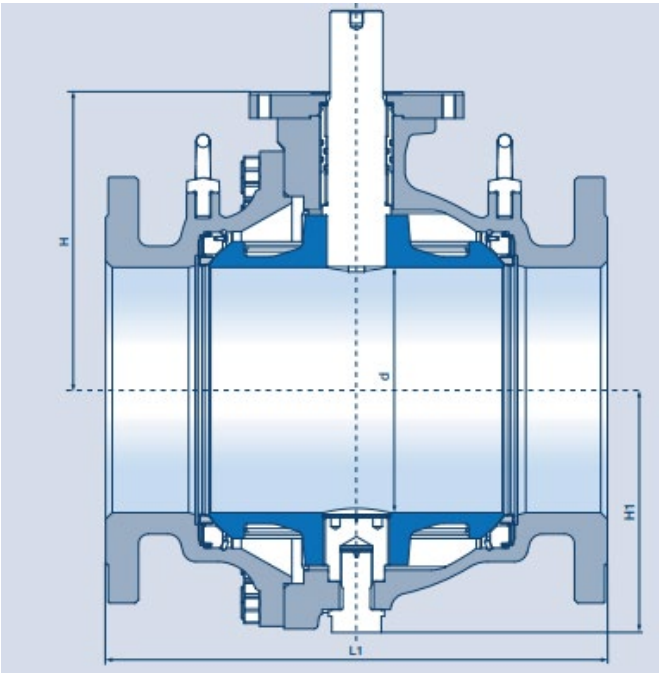
- KHI flanged
- KHSVI with weld ends
- KHSVI VVS – fully welded
- KHSVI cone version
- Construction
- Stem O-Rings
- Sealing elements
- P/T diagram
- Ball
- DBB
- Pressure loss & lifespan
- ISO5211, EN12266, certification
- Advantages
- Application





BALLOSTAR KHI FLANGED, FULL BORE

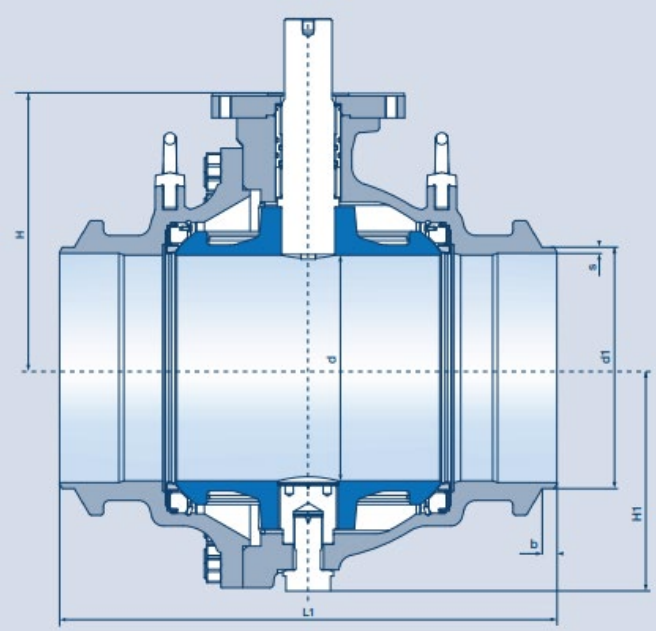


	Dimensions				PN			Weight in kg	
DN	L1	H1	H	d	VII	X	Xc	at PN 25	at PN 40
150*	394	171	497	150	25/40	40	25	85	85
200*	457	222	257	200	25/40	40	25	150	160
250	533	264	327	250	25/40	40	25	220	240
300	610	294	352	300	25/40	40	25	380	410
350	686	356	443	350	25/40	40	25	580	620
400	762	376	462	380	25/40	40	25	800	856
500	914	468	563	475	25/40		25	1,200	1,330
600	1,067	533	667	585	25/40			1,750	1,863
700	1,245	640	789	686	25/40			3,100	3,350
800	1,372	710	886	782	25/40			4,850	5,055

KHI full bore:

DN150 to DN800, PN25/40
Face to face length acc EN558-1, size 12, flanges acc. EN1092-1, Body material 1.0619
Standard temperature Version 0°C to +200°C, Low Temperature Version -45°C to +200°C
Ball EN-JS1030Fe/Cr30f,mt/ 1.4408 trunnion mounted, stem 1.4104
Painting carbon steel body:
Hydrolux KH / Hydrodur
Pre -treatment: Metallic bright, free of dust and grease
Base coat 1K alkyd resin (AK) Layer thickness 30µm
Top coat 2K alkyd resin (AK) Layer thickness 40µm
Colour KH(SV)I:
Material VIII Sky blue RAL 5015

BALLOSTAR KHSVI WELD ENDS, FULL BORE



	Dimensions			Connection dimensions				PN	Weight
DN	L1	H1	H	d	d1	s*	b	VII	in kg
150**	457	171	268	150	168.3	6.65	20	25/40	68
200**	521	222	343	200	219.1	8.05	20	25/40	130
250	559	264	327	250	273	8.5	20	25/40	200
300	635	294	352	300	323.9	9.45	20	25/40	355
350	762	356	443	350	355.6	10.8	20	25/40	555
400	838	376	462	380	406.4	10.2	25	25/40	760
500	991	468	563	475	508	16	25	25/40	1,150
600	1,143	533	667	585	610	17.5	25	25/40	1,700
700	1,346	640	789	686	711	17.5	25	25/40	3,000
800	1,524	710	886	782	813	19	25	25/40	4,700
1000	1,981	860	1,034	980	1,016	10	25	25/40	7,480

KHSVI full bore:

DN150 to DN1000, PN25/40

Face to face length acc EN12982 size 63 / ANSI B16.10 Cl300, Body material 1.0619

Weld end dimensions on demand

Standard temperature Version 0°C to +200°C, Low Temperature Version -45°C to +200°C

Ball EN-JS1030Fe/Cr30f,mt/ 1.4408 trunnion mounted, stem 1.4104

Painting carbon steel body:

Hydrolux KH / Hydrodur

Pre -treatment: Metallic bright, free of dust and grease

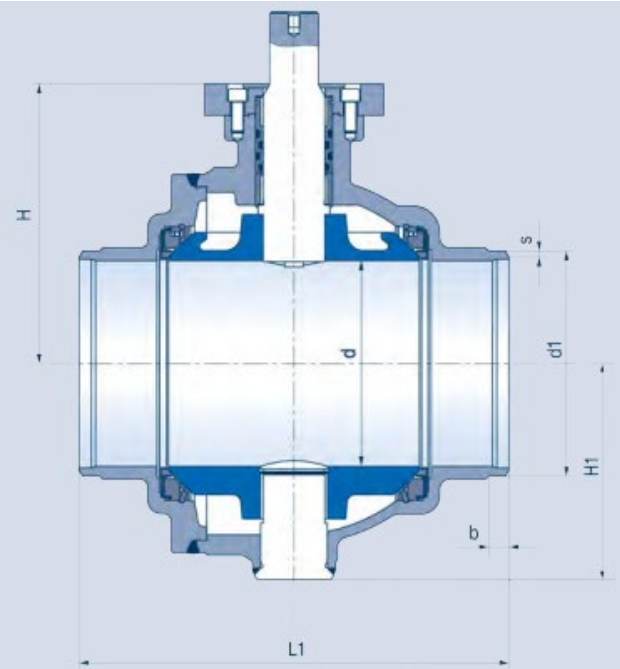
Base coat 1K alkyd resin (AK) Layer thickness 30µm

Top coat 2K alkyd resin (AK) Layer thickness 40µm

Colour KH(SV)I:

Material VIII Sky blue RAL 5015

BALLOSTAR KHSVI VVS, DN150-250



	Dimensions			Connection dimensions				PN	Weight
DN	L1	H1	H	d	d1	s*	b	VII	in kg
150	403	149	213	150	168.3	6.65	20	25/40	55
200	419	200	272	200	219.1	8.05	20	25/40	106
250	457	250	346	250	273	8.5	20	25/40	170

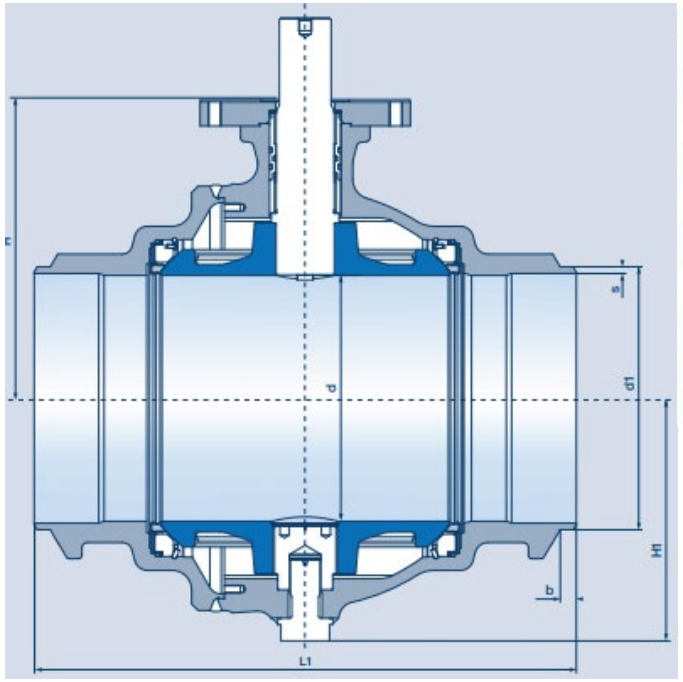
* Standard dimensions, also configurable in accordance with customer requirements

DN150: connection flange F12 or F14 optional with Ø 36 mm, AF 27 or AF 36
DN200: connection flange F14 or F16 optional with Ø 48 mm or AF 36
DN250: connection flange F16 or F25 optional with Ø 50 mm or Ø 60 mm, AF 46 or AF 55

KHSVI – VVS fully welded full bore

DN150 to DN300, PN25/40, Body material 1.0619
Face to face length acc EN12982 size 61
Certified acc. EN488:2019, EHP003
Standard temperature Version 0°C to +200°C, Low Temperature Version -45°C to +200°C
Ball EN-JS1030Fe/Cr30f,mt/ 1.4408, trunnion mounted, stem 1.4104
Painting carbon steel body:
Hydrolux KH / Hydrodur
Pre -treatment: Metallic bright, free of dust and grease
Base coat 1K alkyd resin (AK) Layer thickness 30µm
Top coat 2K alkyd resin (AK) Layer thickness 40µm
Colour KH(SV)I:
Material VIII Sky blue RAL 5015

BALLOSTAR KHSVI VVS, DN300-800



	Dimensions			Connection dimensions				PN	Weight
DN	L1	H1	H	d	d1	s*	b	VII	in kg
300	635	294	352	300	323.9	9.45	20	25/40	277
350	762	356	443	350	355.6	10.8	20	25/40	442
400	838	376	462	380	406.4	10.2	25	25/40	580
500	991	468	563	475	508	16	25	25/40	990
600	1,143	533	667	585	610	17.5	25	25/40	1,650
700	1,346	640	789	686	711	17.5	25	25/40	2,690
800	1,524	710	886	782	813	19	25	25/40	3,810

KHSVI – VVS fully welded full bore

DN300 to DN800, PN25/40, Body material 1.0619

Face to face length acc EN12982 size 63 / ANSI B16.10 Cl300

Certified acc. EN488:2019, EHP003

Standard temperature Version 0°C to +200°C, Low Temperature Version -45°C to +200°C

Ball EN-JS1030Fe/Cr30f,mt/ 1.4408, trunnion mounted, stem 1.4104

Painting carbon steel body:

Hydrolux KH / Hydrodur

Pre -treatment: Metallic bright, free of dust and grease

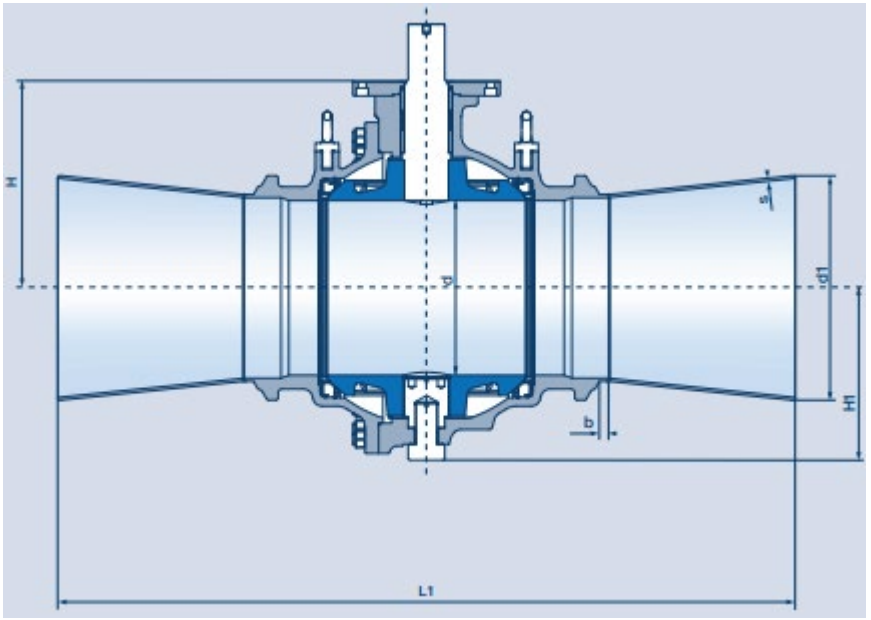
Base coat 1K alkyd resin (AK) Layer thickness 30µm

Top coat 2K alkyd resin (AK) Layer thickness 40µm

Colour KH(SV)I:

Material VIII Sky blue RAL 5015

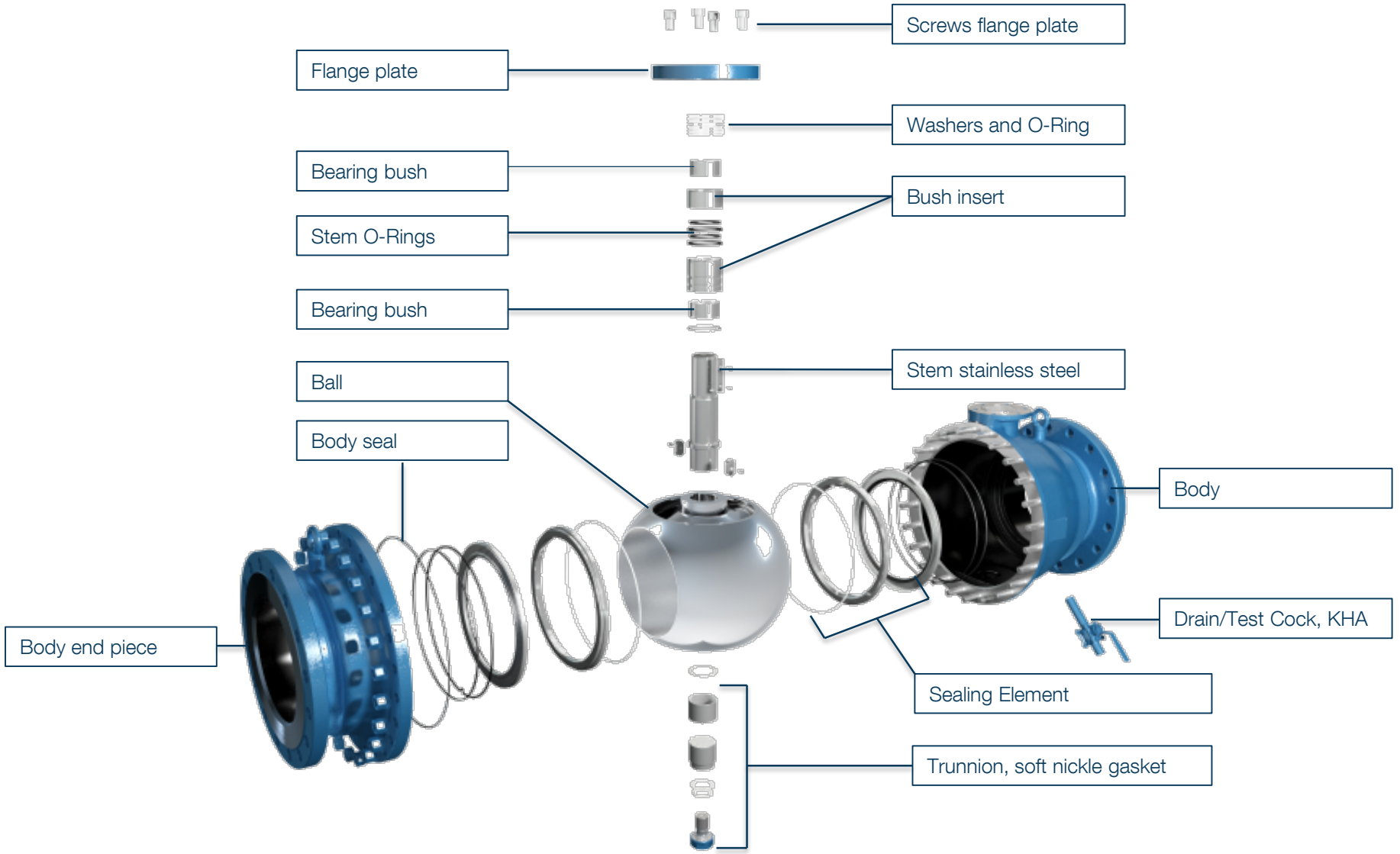
BALLOSTAR KHSVI CONE VERSION



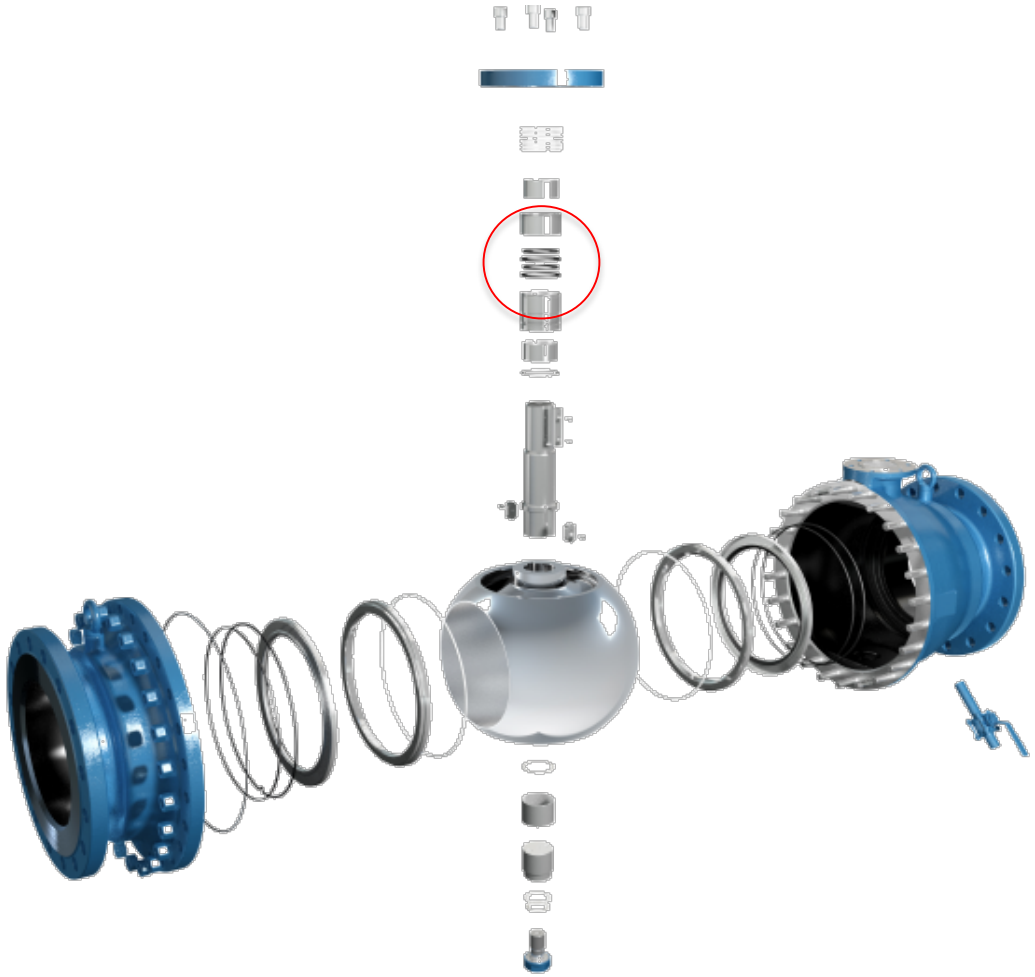
	Dimensions			Connection dimensions				PN	Weight
DN	L1	H1	H	d	d1	s	b	VII	in kg
600/500	2,011	468	563	475	610	7	25	40	1,264
700/600	2,367	533	667	585	711	8	25	40	1,860
800/700	2,570	640	789	686	813	8	25	40	3,184
900/800	2,748	710	886	782	914	10	25	40	4,960
1000/800	2,748	710	886	782	1,016	10	25	40	4,980
1200/800	2,950	710	886	782	1,220	12	25	40	5,070
1200/1000	3,407	860	1,034	980	1,220	12	25	40	7,950

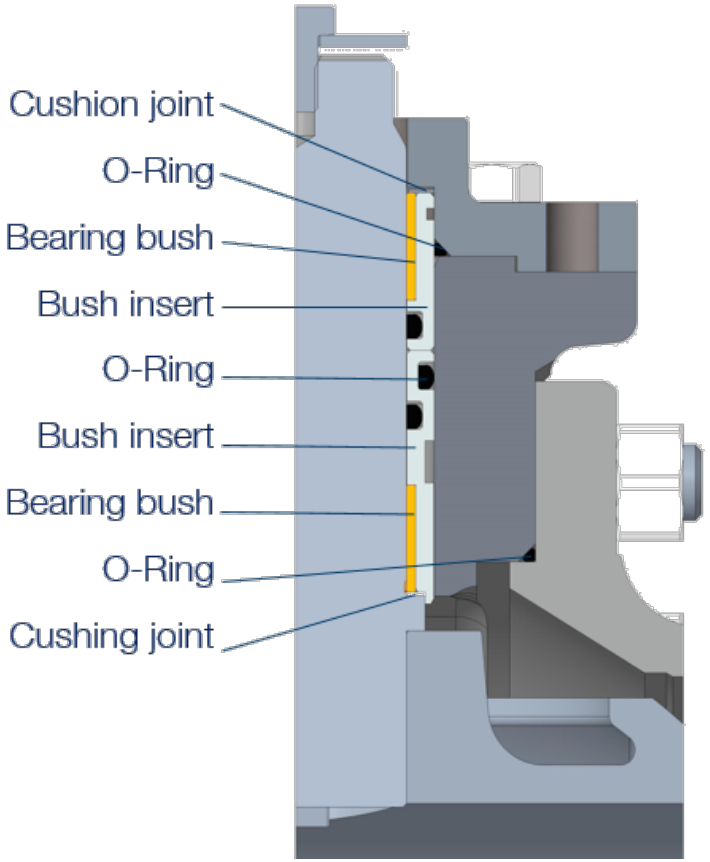
KHSVI – Cone version:
DN600/500 to DN1200/1000, PN25/40, Body material 1.0619
Face to face length acc. table
Standard temperature Version 0°C to +200°C, Low Temperature Version -45°C to +200°C
Ball EN-JS1030Fe/Cr30f,mt/ 1.4408, trunnion mounted, stem 1.4104
Painting carbon steel body:
Hydrolux KH / Hydrodur
Pre -treatment: Metallic bright, free of dust and grease
Base coat 1K alkyd resin (AK) Layer thickness 30µm
Top coat 2K alkyd resin (AK) Layer thickness 40µm
Colour KH(SV)I:
Material VIII Sky blue RAL 5015

CONSTRUCTION



STEM O-RINGS





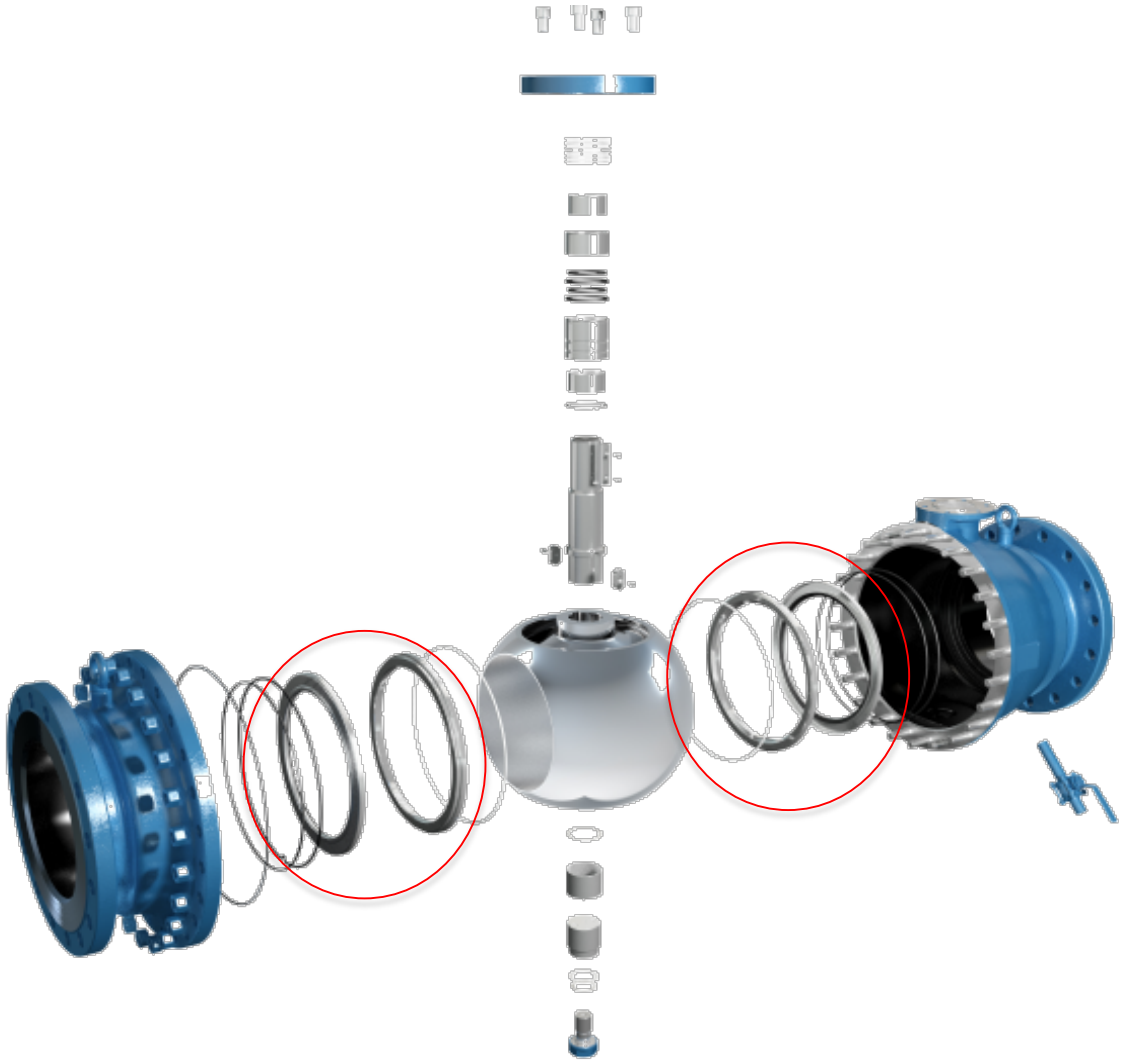
Standard O-Rings AFLAS
Temperature Range 0°C to 200°C

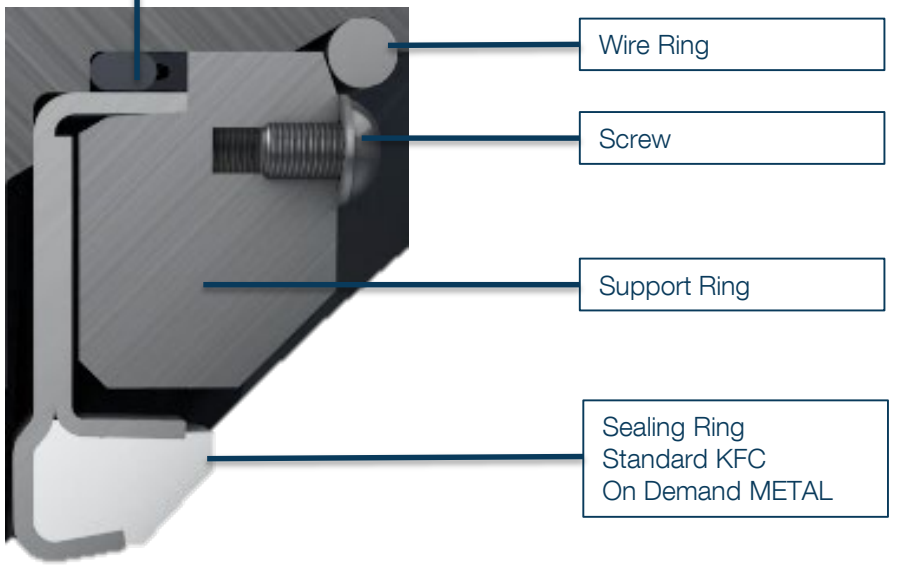
High Temperature O-Rings FLUORAZ
Temperature Range 0°C to 260°C

Low Temperature O-Rings V71C :
Temperature Range -45°C to 200°C,

Gas O-Rings FPM
Temperature Range 0°C to 150°C

SEALING ELEMENTS



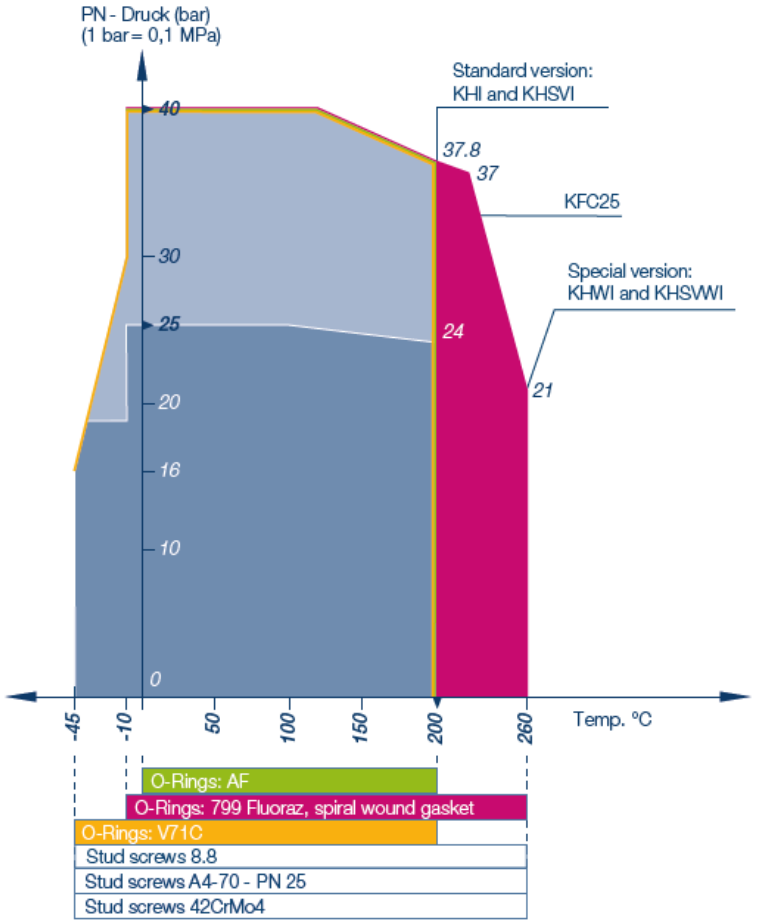


The sealing system at the ball is pre-stressed during assembly. The two pre-stressed elastic sealing elements made of stainless steel and featuring sealing rings and a back seal (consisting of a U-sleeve and an O-ring) form a system upstream and downstream of the valve together with the ball. Furthermore, a support ring protects the elastic sealing element against overloads, for example caused by water hammers. A wire ring safeguards the sealing unit.

The ball valve can be pressurized in both flow directions. The elasticity of the sealing elements allows for a compensation of thermal expansion. Thanks to this function, two primary sealed areas are constantly present in the bore.

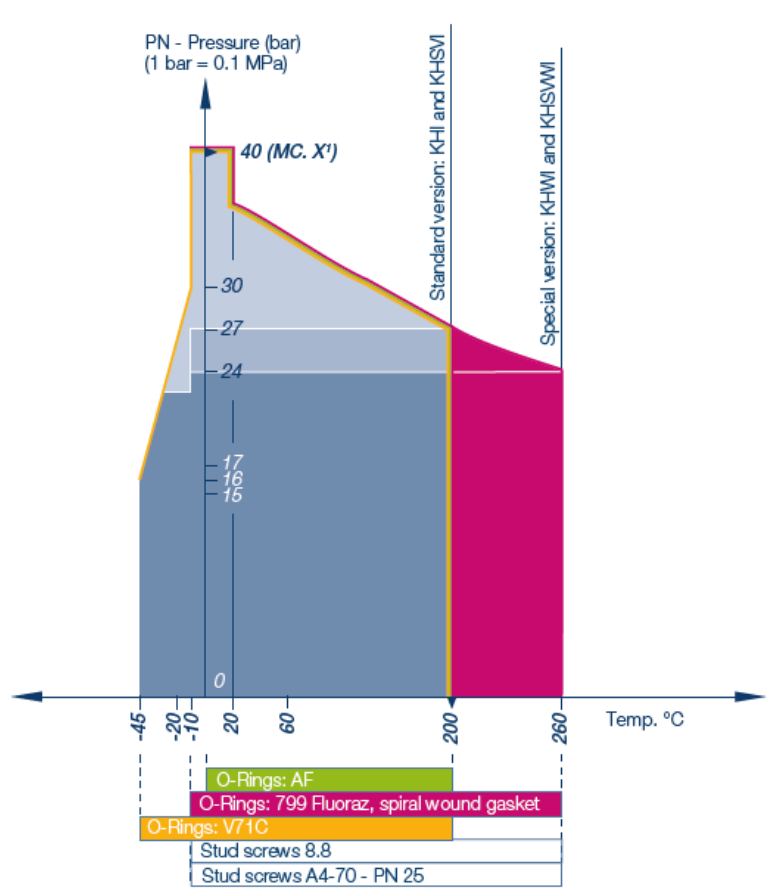
P/T DIAGRAM

PN 40
PN 25



Steel casting

Material code VII

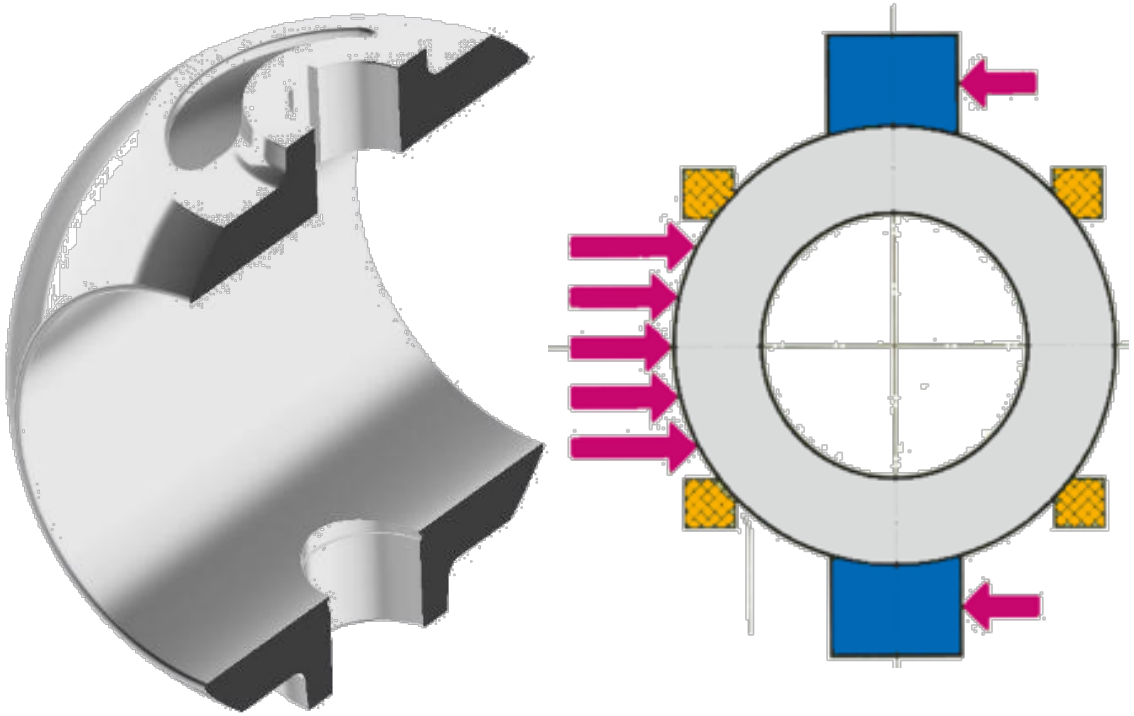


Stainless steel casting

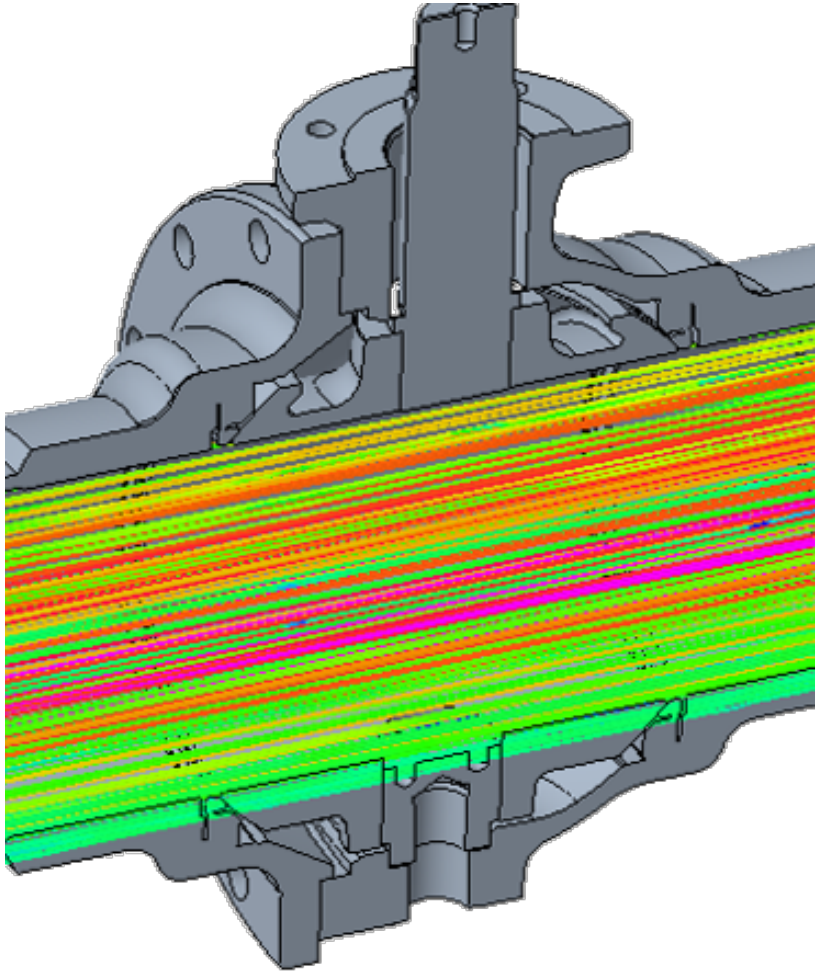
Material code Xc, X

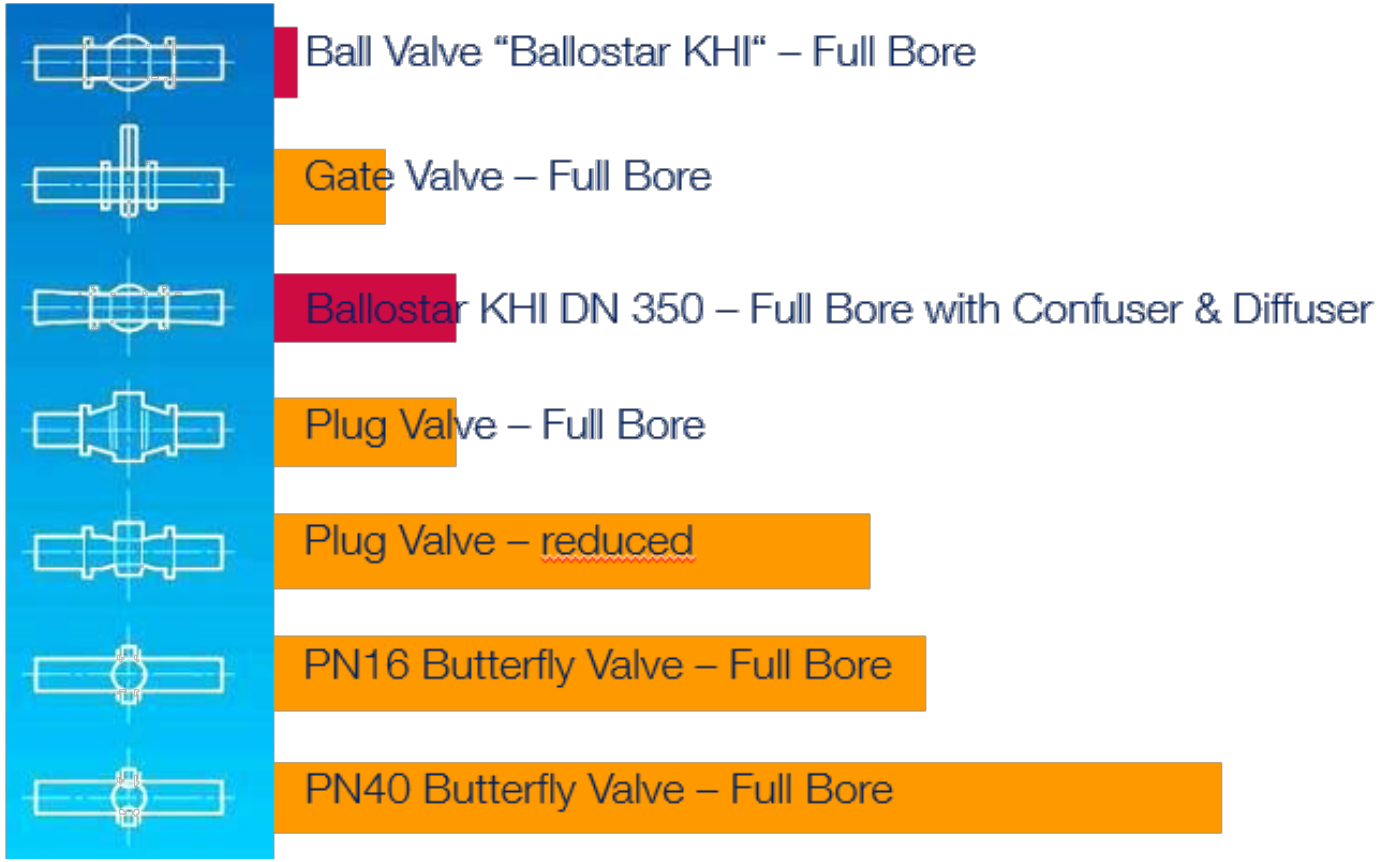
THE BALL

	Execution	Hardness	Surface roughness (RZ)
KLINGER	Ductile graphite iron ball chrome plated	800 – 1000 HV	0,6 µm
Competitor	Nickel plated	500 – 650 HV	5,6 µm
	Stainless steel	300 – 350 HV	3,5 µm



PRESSURE LOSS

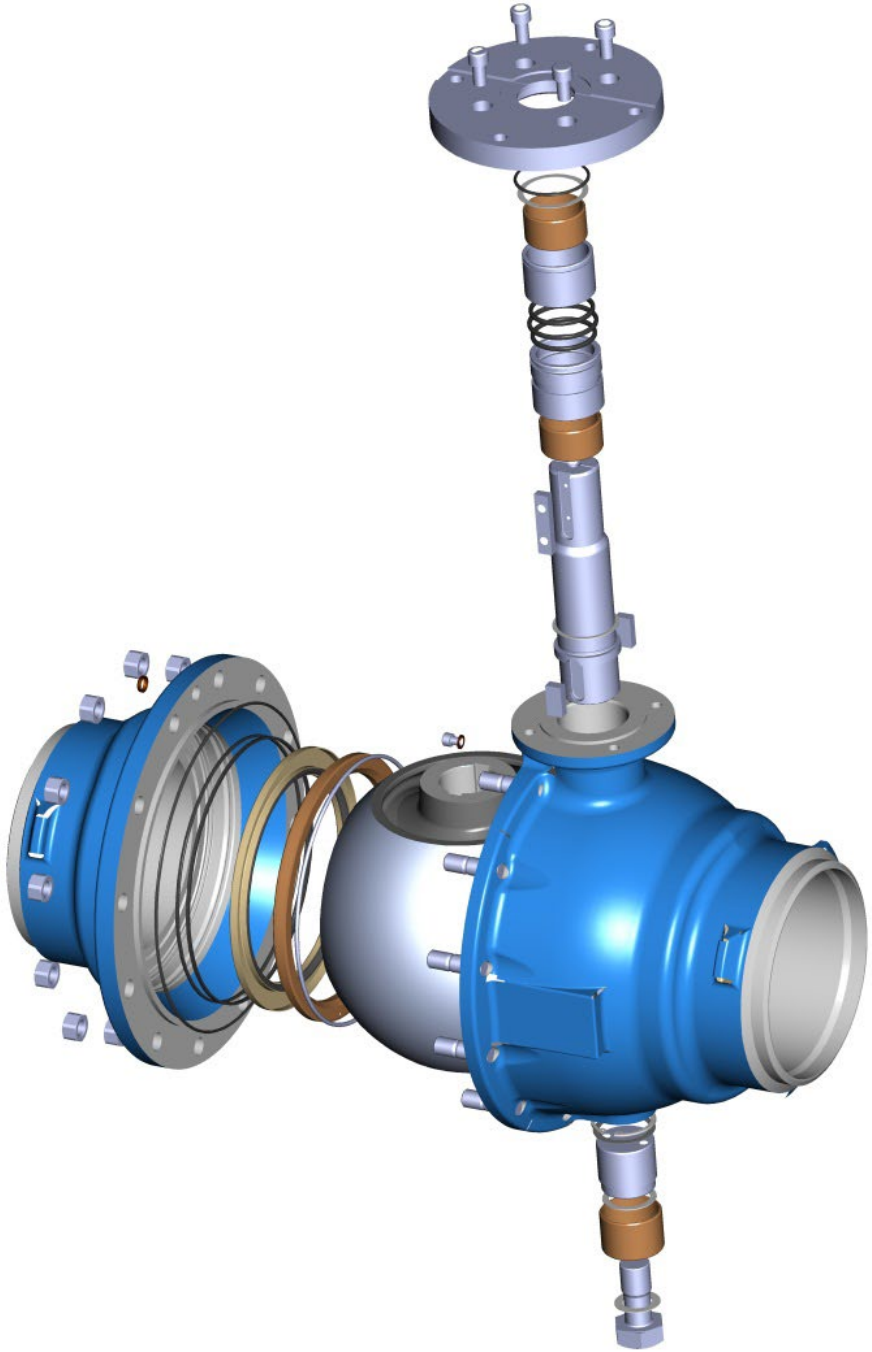




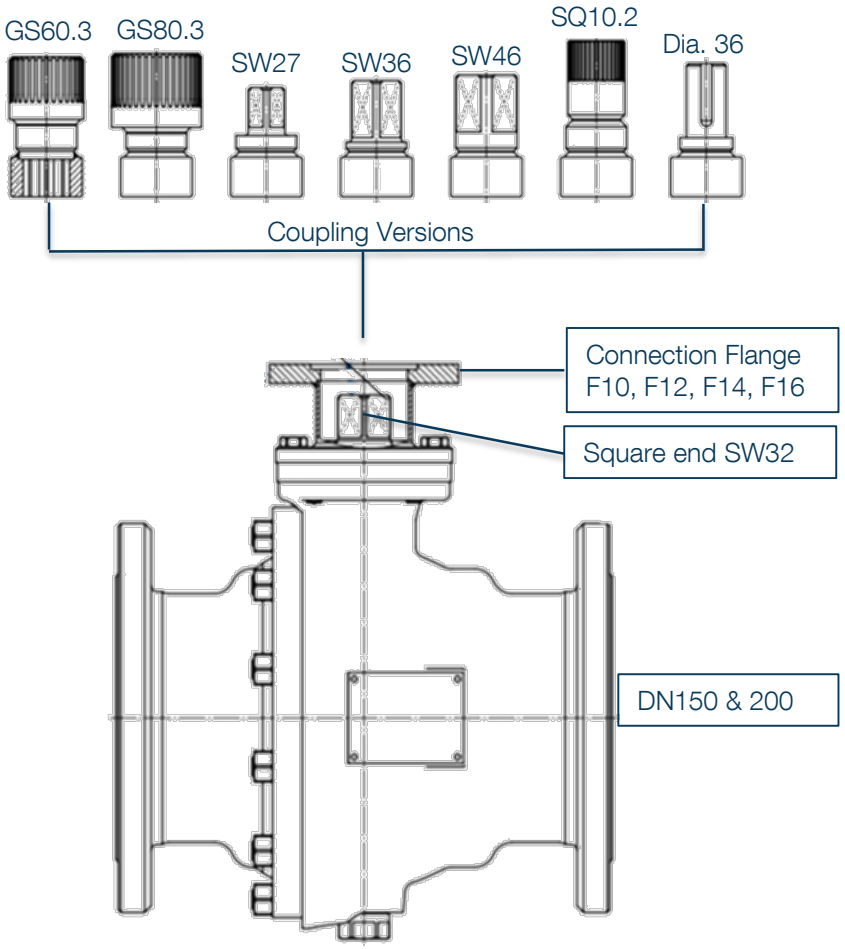
Due to the construction and straight inner geometry, the KH(SV)I full bore supports laminar flow, prevents turbulences and ensures low pressure drop and max. flow rate in comparison with other types of valves.

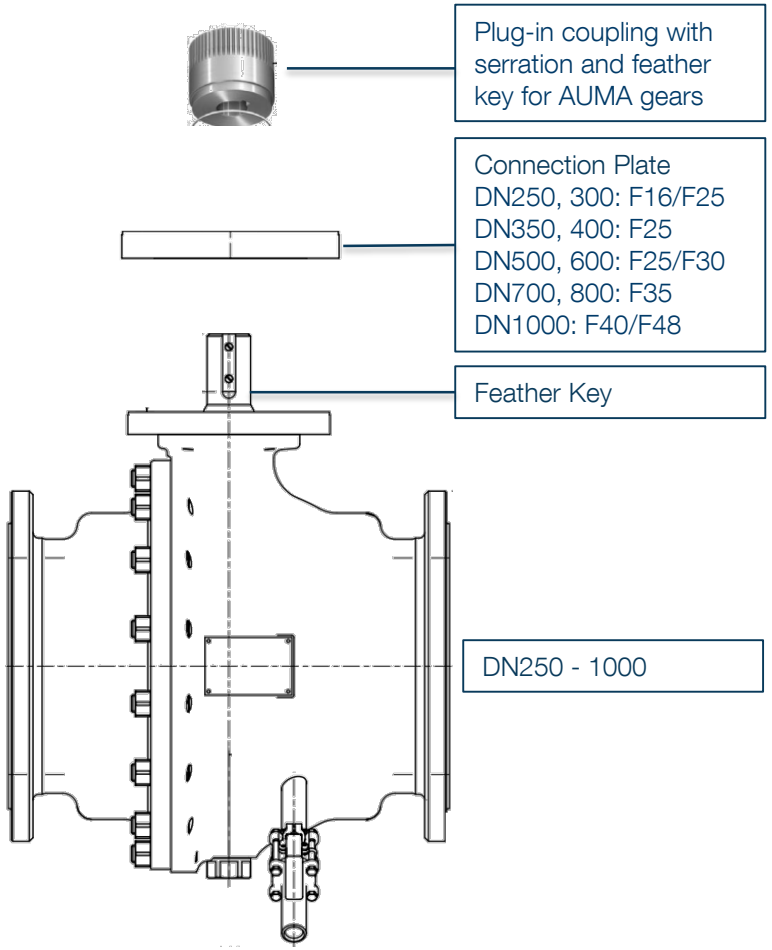
LIFESPAN

- KLINGER BALLOSTAR ball valves are basically maintenance free
- If necessary, stem o-rings can be changed inline
- One operation per year is recommended (ball should left the seat for a few degrees only)
- 5000 operations in one go were tested with air without any wear
- 56 operations with different forces (tensile, compressive and bending) were tested with water 90°C and 25bar acc. EN488:2015 during 1 week
- Estimated life time 25 to 30 years based on experience



CONNECTION ACC. ISO5211





EN12266-1, P10, P11, P12

Test	Test Duration		Test pressure and media
	DN 15 – 150	DN 200 – 300	
P10 (Strength)	1 Minute	2 Minutes	1,5x PN Water
P11 (Tightness)	1 Minute	2 Minutes	1,5x PN Water
P12 (Seat Tightness)	1 Minute	2 Minutes	6 bar ± 1bar Air or 1,1x PN Water

CERTIFICATION

EN 488:2019 KHSVI VVS

KLINGER Ballostar® KHSVI VVS ball valves, DN 150 to 800, have been successfully tested and certified by the TÜV Austria under inclusion of the extended requirements of the EN 488:2019.

Fire Safe

The Fire Safe tests in accordance with API Standard 607, 4th Edition and EN ISO 10497:2004 have been certified by Lloyd's Register and TÜV Austria respectively

Approval of the KHI sealing chamber

The KLINGER Ballostar® KHI represents a safe shut-off for the operation of steam boilers in the sense of item 6231 TRD 601 B12.

Gas approval

ÖVGW Certificate for authorization to display the ÖVGW quality label "Gas" for the ball valves GKHI, GKHSVI and GKHSVI VVS, DN 150 - 800.

Utilization for gaseous oxygen

The BAM Berlin has granted its approval for the ball valve series Ballostar® KHI in utilization scenarios with gaseous oxygen at operating pressures of up to 16 bar and operating temperatures of up to 60 °C.

Emission testing in accordance with VDI 2440

Certified emission testing pursuant to VDI 2440 for Ballostar® KHI / KHSVI ball valves at temperatures < 250 °C.

Pressure Equipment Directive 2014/68/EU

The Ballostar® KHI, KHSVI and KHSVI VVS ball valves are developed, produced, tested and delivered in accordance with the valid standards of the Pressure Equipment Directive 2014/68/EU.

ADVANTAGES

Sealing system

Elastic Sealing System for high temperatures (→260°C)

Due to sealing system / trunnion mounted ball → low torque → bidirectional flow

Sealing construction → insensitive to imputiertes → metal seats available

Valid for abrasive medias

Ball

Ductile graphite iron ball with chrome coating (30µm)
Very corrosion resistant → Scratch proof
Chrome Layer harder than ANY stainless steel ball→ resistant against solids
No turbulences → cylindrical passage

Body

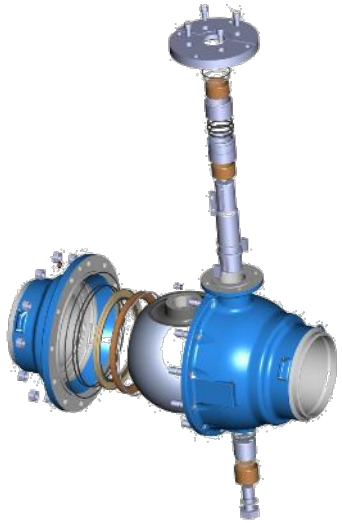
Compact casted construction → insensitive to pipe forces

Pneum. and electr. actuators possible to install → Connection acc. ISO 5211

Installation in any position possible →bidirectional flow

Fully Welded version available → no different weldings on housing

Drain/Test cock available



Quality

Maintenance free

Long service life (min. 20 -25 years)

Stem Sealing could be changed inline

Leakage rate A → tested acc. EN12266-1

DB&B → maximum safety → TÜV confirmed

EN488

Fulfill the latest version acc. EN488:2019

Certification acc. EN488:2019

APPLICATION

District heating

APPLICATION

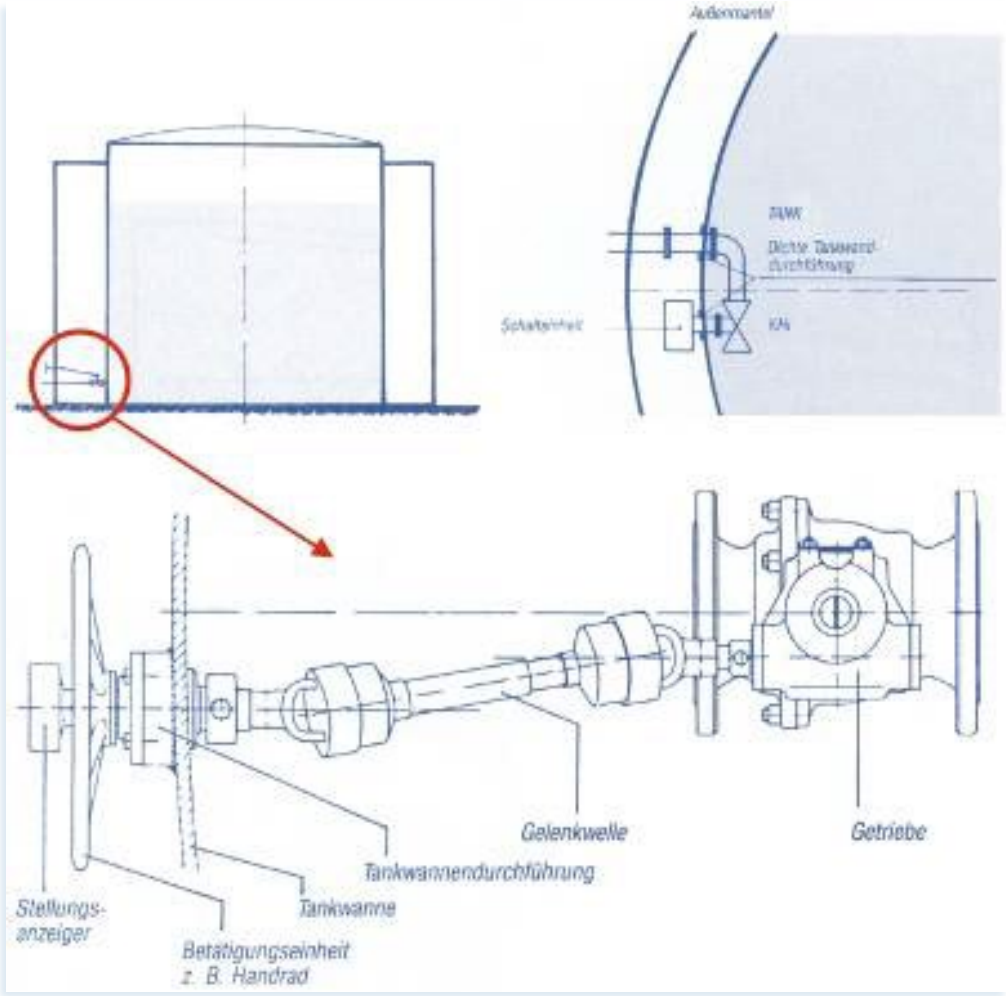
Underground installation

APPLICATION

Tunnel drilling, media “bentonite”

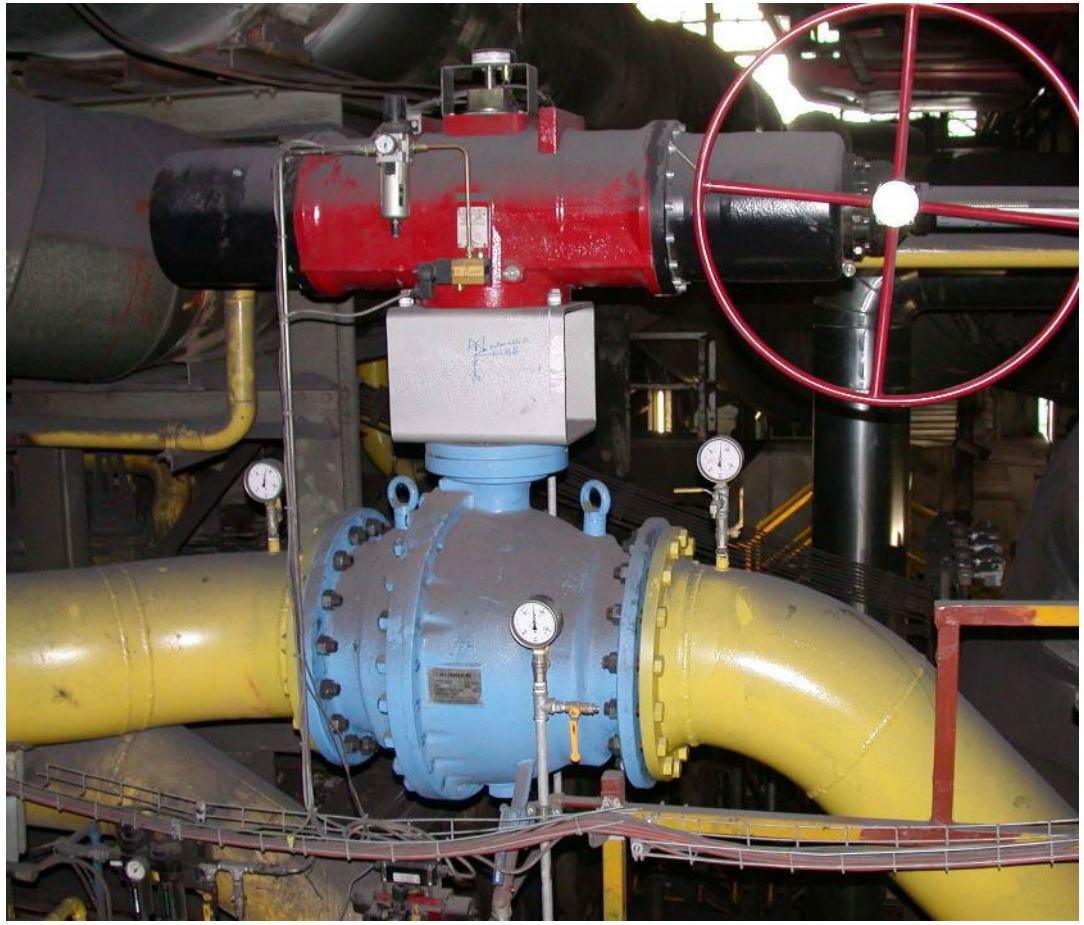
APPLICATION

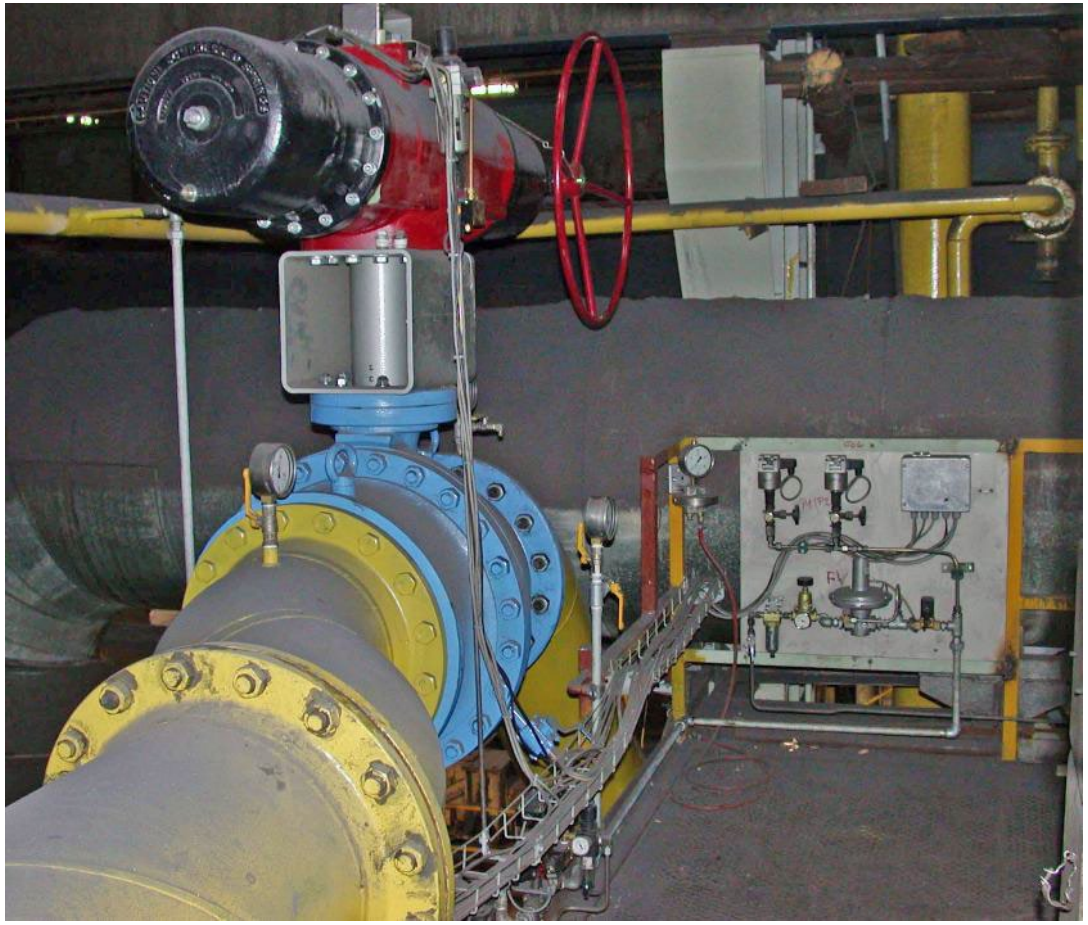
Hydrocarbon tank farm



APPLICATION

Steel industry, oxygen





APPLICATION

Pulp & paper, black liquor

THANKS FOR YOUR ATTENTION!

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