

INFORMATION SHEET

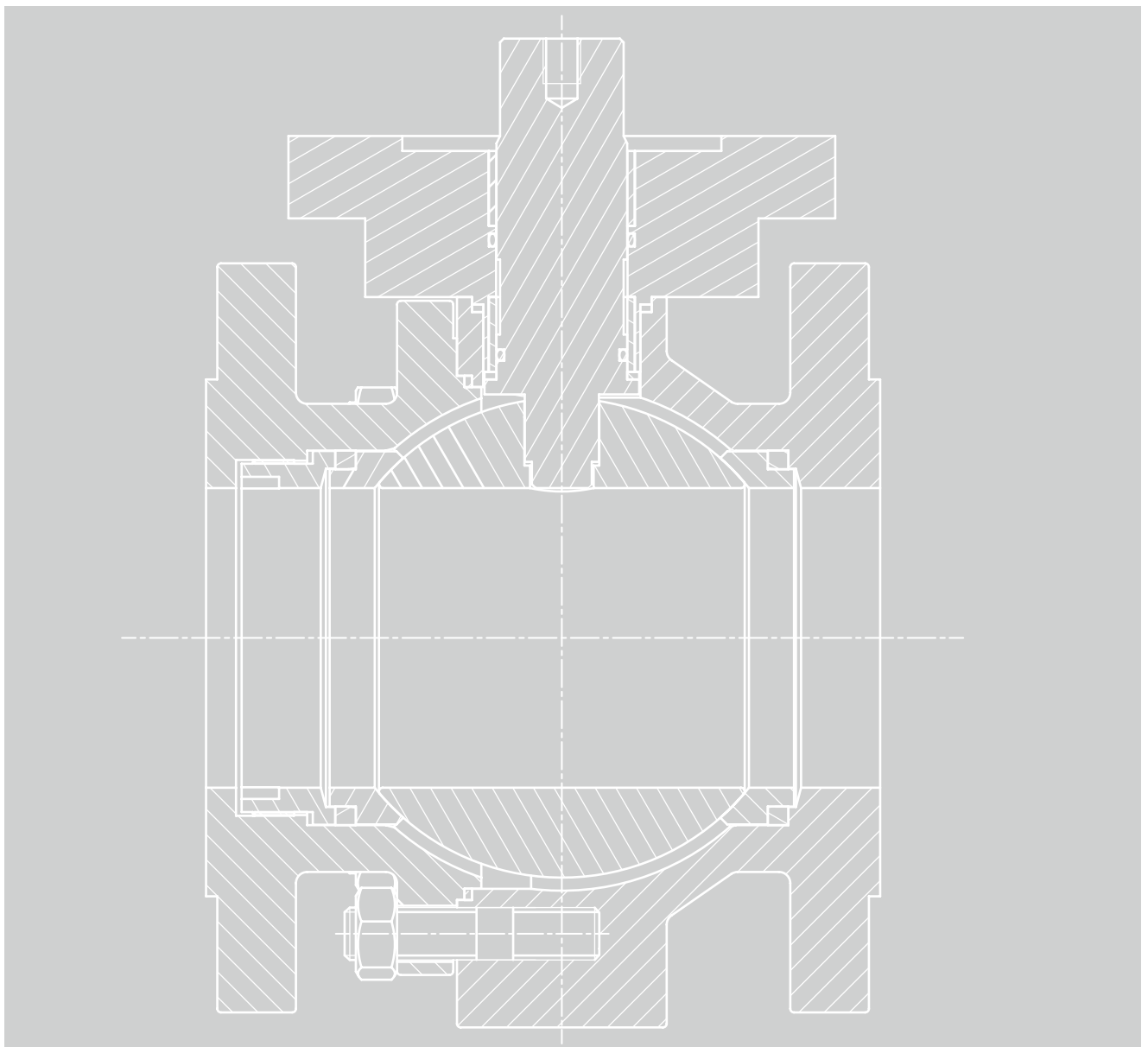
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CERA4300 · Ball Valves



Application

The Series CERA4300 Ball Valves are used for on/off service in industrial applications to meet very high requirements concerning resistance to wear, corrosion and high temperatures.



Overview of types

- Standard version; ◦ Special version/option; – Not available

Customized ball valve versions are also possible to meet special requirements.

Type		KBR 500/550	KBR-ET	KBR-HT	
					
Markets	Chemicals and petrochemicals	•	•	•	
	Industrial gases				
	Energy	•	•	•	
	Metallurgy and mining	•	•	•	
	Water and wastewater	•	•	•	
	General industry	•	•	•	
	Other markets	Steel works, bulk solids handling (severely abrasive media)	Steel works, bulk solids handling (severely abrasive media)	Steel works, bulk solids handling (severely abrasive media)	
Application	On/off	•	•	•	
Suitability	Fibrous media	•	•	•	
	Media containing suspended matter	•	•	•	
	Highly viscous media	•	•	•	
	Abrasive media	•	•	•	
	Seawater	•	•	•	
	Other	Fly ash, lime, sand, all dry media	Fly ash, lime, sand, all dry media	Fly ash, lime, sand, all dry media	
Version	DIN	•	•	•	
	ANSI	•	•	•	
Connecting flange	DIN EN 1092-1	•	•	•	
	ASME B16.5	•	•	•	
Nominal size	DN	25 to 250	25 to 250	25 to 250	
	NPS	1 to 12	1 to 10	1 to 10	
Pressure rating	PN	10 to 40 ¹⁾	10 to 40 ¹⁾	10 to 40 ¹⁾	
	Class	150 and 300 ¹⁾	150 and 300 ¹⁾	150 and 300 ¹⁾	
Temperature range	Standard	-10 to +180 °C	Up to +260 °C	Up to +450 °C	
	Deviation	With Kalrez®	Up to +260 °C	–	–
		With graphite	Up to +450 °C	–	–
Face-to-face dimensions	According to DIN EN 558, FTF series 27	–	–	–	
	According to EN 558-1, series 27	DIN versions	DIN versions	DIN versions	
	According to ASME/ANSI B16.10 or EN 558-2: Series 3	ANSI versions: Class 150 up to NPS 4	ANSI versions: Class 150 up to NPS 4	ANSI versions: Class 150 up to NPS 4	
	Series 4	Class 300	Class 300	Class 300	

	KBRG	KBRZ	KFK/KFL	Type		
						
	•	•	•	Chemicals and petrochemicals	Markets	
			•	Industrial gases		
	•	•	•	Energy		
	•	•	•	Metallurgy and mining		
	•	•	•	Water and wastewater		
	•	•	•	General industry		
	Steel works, bulk solids handling (severely abrasive media)	Steel works, bulk solids handling (severely abrasive media)	For liquids and gases according to fluid groups 1 and 2 (article 13 of PED 2014/68/EU)	Other markets		
	•	•	•	On/off	Application	
	•	•		Fibrous media	Suitability	
	•	•	•	Media containing suspended matter		
	•	•		Highly viscous media		
	•	•		Abrasive media		
	•	•		Seawater		
	Fly ash, lime, sand, all dry media	Fly ash, lime, sand, all dry media	Fly ash, lime, sand, all dry media	Other		
	•	•	•	DIN	Version	
	•	•	–	ANSI		
	•	•	PN 10, series 25 PN 16, series 26 PN 25, series 27 PN 40, series 28	DIN EN 1092-1	Connecting flange	
	•	•	–	ASME B16.5		
	65 to 250	65 to 250	10 to 250	DN	Nominal size	
	1 to 10	1 to 10	–	NPS		Flange
	10 to 40 ¹⁾	10 to 40 ¹⁾	10 to 40 ¹⁾		Pressure rating	
	150 and 300 ¹⁾	150 and 300 ¹⁾	–			PN Class
	–10 to +180 °C	–10 to +180 °C	–10 to +150 °C		Temperature range	
	Up to +260 °C	Up to +260 °C	–	With Kalrez®		Deviation
	Up to +450 °C	Up to +450 °C	–	With graphite		
	–	–	•	According to DIN EN 558 ,FTF series 27	Face-to-face dimensions	
	DIN versions	DIN versions	–	According to EN 558-1, series 27		
	ANSI versions: Class 150 up to NPS 4 Class 300	ANSI versions: Class 150 up to NPS 4 Class 300	–	According to ASME/ANSI B16.10 or EN 558-2: Series 3 Series 4		

Type		KBR 500/550	KBR-ET	KBR-HT	
					
Materials	Body	• 1.4301 ○ 1.4571, ○ P250GH	• 1.4301 ○ 1.4571, ○ P250GH	• 1.4301 ○ 1.4571, ○ P250GH	
	Seat ring	• 1.4462/KVT433 ○ Al ₂ O ₃	• 1.4462/KVT433	• 1.4462/KVT433	
	Retaining ring	• 1.4301 ○ 1.4571, ○ P250GH	• 1.4301 ○ 1.4571	• 1.4301 ○ 1.4571	
	Ball	• 1.4112 (58HRC)	• 1.4112 (58HRC)	• 1.4112 (58HRC)	
	Shaft	• 1.4301	• 1.4301	• 1.4301	
	Screw fitting	–	–	–	
	Connecting flange	• 1.4301 ○ 1.4571, ○ P250GH	• 1.4301 ○ 1.4571	• 1.4301 ○ 1.4571	
	Bonnet flange	• 1.4301 ○ 1.4571, ○ P250GH	• 1.4301 ○ 1.4571	• 1.4301 ○ 1.4571	
	Trunnion bearing	• 1.4301 ○ 1.4571, ○ P250GH	–	–	
	Lever anchor	–	–	–	
	Stop washer	–	–	–	
	Stop pin	–	–	–	
	Rotating seal face	–	–	–	
	Washer	• Graphite	• Graphite	• Stellite® 6	
	Body gasket	• Viton® ○ Graphite	• Viton® ○ Graphite	• Graphite	
	O-ring (seat ring)	–	–	–	
	O-ring (shaft)	–	–	–	
	O-rings (others)	–	–	–	
	Bearing bushing (shaft)	–	–	–	
	Spring element	• Graphite	• Graphite	• Graphite	
Bonnet flange gasket	• Viton® ○ Graphite	• FFKM ○ Graphite	• Graphite		
Shaft seal	• Viton® ○ FFKM (Kalrez®), ○ Graphite	• FFKM (Kalrez®), ○ Graphite	• Graphite		
Bearing bushing	• DU®	• DU®	• DU®		
Bolts, nuts	• A2-70	• A2-70	• A2-70		
Mounting and seal of closure member	Floating design	• Up to DN 175	• Up to DN 175	• Up to DN 175	
	Trunnion design	–	–	–	
	Spring-loaded seat ring	Input Output	– –	– –	
Characterized ball	Equal-percentage characteristic	•	•	•	Round
	Full bore ²⁾	•	•	•	
Cross-sectional area of flow	Reduced bore ³⁾	–	–	–	
	Leakage class	EN 60534-4	• IV ○ V	• IV ○ V	• IV ○ V
Accessories and special versions	TA Luft	Optional	Optional	Optional	
Connection to mount actuator	DIN EN ISO 5211	•	•	•	
Recommended actuator		Type 31 (SAMSON PFEIFFER)	Type 31 (SAMSON PFEIFFER)	Type 31 (SAMSON PFEIFFER)	

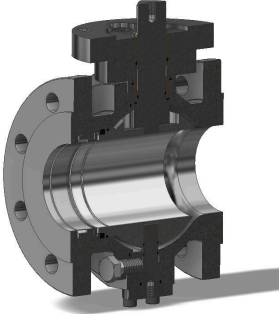

	KBRG	KBRZ	KFK/KFL	Type		
						
	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	<ul style="list-style-type: none"> • 1.0460 ○ 1.0619 	Body		
	<ul style="list-style-type: none"> • 1.4462/KVT433 	<ul style="list-style-type: none"> • 1.4462/KVT433 	<ul style="list-style-type: none"> • PTFE/carbon 	Seat ring		
	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571 	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571 	–	Retaining ring		
	<ul style="list-style-type: none"> • 1.4112 (58HRC) 	<ul style="list-style-type: none"> • 1.4112 (58HRC) 	<ul style="list-style-type: none"> • 1.4408 	Ball		
	<ul style="list-style-type: none"> • 1.4301 	<ul style="list-style-type: none"> • 1.4301 	<ul style="list-style-type: none"> • 1.4301 	Shaft		
	–	–	<ul style="list-style-type: none"> • 2.0401 	Screw fitting		
	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	<ul style="list-style-type: none"> • 1.0460 ○ 1.0619 	Connecting flange		
	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	–	Bonnet flange		
	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	<ul style="list-style-type: none"> • 1.4301 ○ 1.4571, ○ P250GH 	–	Trunnion bearing		
	–	–	<ul style="list-style-type: none"> • Stainless steel 	Lever anchor		
	–	–	<ul style="list-style-type: none"> • Steel 	Stop washer		
	–	–	<ul style="list-style-type: none"> • Stainless steel 	Stop pin	Materials	
	–	–	<ul style="list-style-type: none"> • PTFE 	Rotating seal face		
	<ul style="list-style-type: none"> • Graphite 	<ul style="list-style-type: none"> • Graphite 	–	Washer		
	<ul style="list-style-type: none"> • Viton® ○ Graphite 	<ul style="list-style-type: none"> • Viton® ○ Graphite 	–	Body gasket		
	–	–	<ul style="list-style-type: none"> • Viton® 	O-ring (seat ring)		
	–	–	<ul style="list-style-type: none"> • Viton® 	O-ring (shaft)		
	–	–	<ul style="list-style-type: none"> • Viton® 	O-rings (others)		
	–	–	<ul style="list-style-type: none"> • PTFE 	Bearing bushing (shaft)		
	<ul style="list-style-type: none"> • Graphite 	<ul style="list-style-type: none"> • Graphite 	–	Spring element		
	<ul style="list-style-type: none"> • Viton® ○ Graphite 	<ul style="list-style-type: none"> • Viton® ○ Graphite 	–	Bonnet flange gasket		
	<ul style="list-style-type: none"> • Viton® ○ FFKM (Kalrez®), ○ Graphite 	<ul style="list-style-type: none"> • Viton® ○ FFKM (Kalrez®), ○ Graphite 	–	Shaft seal		
	<ul style="list-style-type: none"> • DU® 	<ul style="list-style-type: none"> • DU® 	<ul style="list-style-type: none"> • 2.0401 	Bearing bushing		
	<ul style="list-style-type: none"> • A2-70 	<ul style="list-style-type: none"> • A2-70 	<ul style="list-style-type: none"> • Stainless steel 	Bolts, nuts		
	–	–	<ul style="list-style-type: none"> • DN 15 to 250 	Floating design		
	<ul style="list-style-type: none"> • Up to DN 65 	<ul style="list-style-type: none"> • Up to DN 65 	–	Trunnion design	Mounting and seal of closure member	
	•	•	–	Input	Spring-loaded	
	–	•	–	Output	seat ring	
	•	•	•	Round	Equal-percentage characteristic	Characterized ball
	•	•	•	–	Full bore ²⁾	Cross-sectional area of flow
	–	–	–	–	Reduced bore ³⁾	
	<ul style="list-style-type: none"> • IV ○ V 	<ul style="list-style-type: none"> • IV ○ V 	<ul style="list-style-type: none"> • IV 	EN 60534-4	Leakage class	
	Optional	Optional	Optional	TA Luft	Accessories and special versions	
	•	•	•	DIN EN ISO 5211	Connection to mount actuator	
	Type 31 (SAMSON PFEIFFER)	Type 31 (SAMSON PFEIFFER)	Type 31 (SAMSON PFEIFFER)		Recommended actuator	

Type	KBR 500/550	KBR-ET	KBR-HT	
				
Suitability/special features	<ul style="list-style-type: none"> - Rugged metal ball valve: shaft, shaft guide and seats have particularly stable construction. - Bidirectional design 	<ul style="list-style-type: none"> - Rugged metal ball valve: shaft, shaft guide and seats have particularly stable construction. - Bidirectional design 	<ul style="list-style-type: none"> - High-temperature version up to 450 °C - Rugged metal ball valve: shaft, shaft guide and seats have particularly stable construction. - Bidirectional design 	
Conformity	CE	CE	CE	

¹⁾ Other pressure ratings on request

²⁾ The cross-section is **not** restricted when the valve is fully open.

³⁾ The cross-section is restricted when the valve is fully open.

KBRG	KBRZ	KFK/KFL	Type
			
<ul style="list-style-type: none"> - Spring-loaded on one side - Trunnion-mounted ball - Rugged metal ball valve: shaft, shaft guide and seats have particularly stable construction. - Bidirectional design 	<ul style="list-style-type: none"> - Spring-loaded on both sides - Trunnion-mounted ball - Rugged metal ball valve: shaft, shaft guide and seats have particularly stable construction. - Bidirectional design 	<ul style="list-style-type: none"> - Floating ball - Blow-out proof shaft with two additional seals 	Suitability/special features
CE	CE	CE	Conformity

Technical data

Table 1: Flow coefficients (K_{VS} and C_V)

Nominal size (flange)		Ball bore	K_{VS}	C_V
DN	NPS			
15	½	Round	14.6	17
20	¾	Round	19.1	22.3
25	1	Round	45.9	53.6
32	1¼	Round	62.1	72.5
40	1½	Round	127	148
50	2	Round	250	292
65	2½	Round	342	398
80	3	Round	529	617
100	4	Round	825	962
125	5	Round	1392	1623
150	6	Round	2031	2369
200	8	Round	3360	3898
250	10	Round	5250	6090

Table 2: Torques

Values in table measured on the test bench (with air and water). These values may vary depending on the operating conditions (process medium, temperature).

Table 2.1: Floating ball

Type	Shaft		Ball Material	Nom. size (middle body)		Recommended torque in Nm at Δp up to ... bar								Max. perm. torque Nm	Max. differential pressure bar	
	Material	Max. temperature		DN	NPS	1	2	3	4	6	10	16	25			40
KBR 500 (for liquids)	1.4301	180 °C	1.4112 58HRC	25	1							60			135	16
				40	1½							80			425	16
				50	2							120			450	16
				65	2½						230			820	16	
				80	3					270			820	16		
				100	4					330			820	10		
				125	5				550			1630	10			
				150	6			1050			4000	10				
KBR 500 (powder service)	1.4301	180 °C	1.4112 58HRC	25	1							95			135	16
				40	1½						230			425	16	
				50	2					290			450	16		
				65	2½				400			820	16			
				80	3			520			820	16				
				100	4			680			820	10				
				125	5			1110			1630	10				
				150	6			2000			4000	10				

Table 2.2: Trunnion-mounted ball

Type	Shaft		Ball Material	Nom. size (middle body)		Recommended torque in Nm at Δp up to ... bar						Max. perm. torque Nm	Max. differential pressure bar
	Material	Max. temperature		DN	NPS	4	6	10	16	25	40		
KBR 500 (for liquids)	1.4301	180 °C	1.4112 58HRC	175	7			1250				4000	10
				200	8			On req.					
				250 ¹⁾	10			On req.					
KBR 500 (power service)	1.4301	180 °C	1.4112 58HRC	175	7			2300				4000	10
				200	8			On req.					
				250 ¹⁾	10			On req.					

¹⁾ For larger nominal sizes on request

Table 3: Dimensions and weights

Table 3.1: Type KBR Ball Valve

Nominal size DN	Pressure rating PN	Length L mm	Height H mm	Actuator flange	Square drive	Weight kg
25	16	115	60	F07	VK17	9
40	16	140	125	F10	VK22	18
50	16	150	130	F10	VK22	25
65	16	170	125	F12	VK27	30
80	16	180	134	F12	VK27	42
100	16	190	155	F14	VK27 (36)	48
125	16	325	241	F14	VK36	55
150	16	350	271	F16	VK46	80
175	16	375	291	F16	VK46	125
200	16	400	306	F16	VK46	195

Dimensional drawings

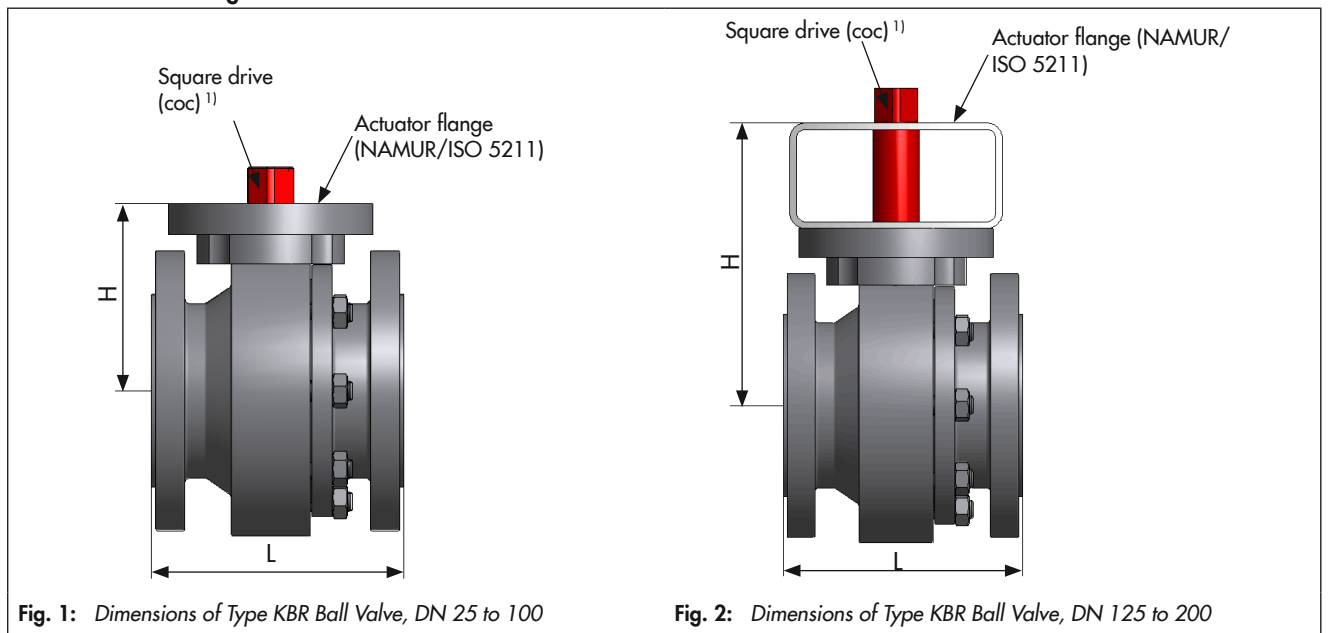


Fig. 1: Dimensions of Type KBR Ball Valve, DN 25 to 100

Fig. 2: Dimensions of Type KBR Ball Valve, DN 125 to 200

¹⁾ Corner on Center (coc) = Diagonal square drive

Table 3.2: Type KFK/KFL Ball Valve

Nominal size DN	Pressure rating PN	Dimension				Qty. z pcs	Dimension			Connec- tion F ISO 5211	SW ₁ mm	Weight kg
		L mm	D mm	g mm	K mm		d mm	Hg mm	R mm			
Series 25 (PN 10, DIN EN 1092-1)												
10	10	110	90	40	60	4	14	77	112		10	1.7
15	10	115	95	45	65	4	14	69	130		10	2.4
20	10	120	105	58	75	4	14	71	160		10	3.3
25	10	125	115	68	85	4	14	82	160		10	4.5
32	10	130	140	78	100	4	18	117	250		17	6.7
40	10	140	150	88	110	4	18	121	250		17	8.0
50	10	150	165	102	125	4	18	128	250	F07	17	10.0
65	10	170	185	122	145	4	18	158	250		17	19.0
80	10	180	200	138	160	8	18	182	370	F10	22	25.0
100	10	190	220	158	180	8	18	194	370	F10	22	30.0
125	10	325	250	188	210	8	18	195	520	F10	22	50.0
150	10	350	285	212	240	8	22	225	700	F12	27	72.0
200	10	400	340	265	295	8	22	260	700	F12	27	108.0
250 ¹⁾	10	450	395	320	350	12	22	260	700	F12	27	135.0
Series 26 (PN 16, DIN EN 1092-1)												
10	16	110	90	40	60	4	14	77	112		10	1.7
15	16	115	95	45	65	4	14	69	130		10	2.4
20	16	120	105	58	75	4	14	71	160		10	3.3
25	16	125	115	68	85	4	14	82	160		10	4.5
32	16	130	140	78	100	4	18	117	250		17	6.7
40	16	140	150	88	110	4	18	121	250		17	8.0
50	16	150	165	102	125	4	18	128	250	F07	17	10.0
65	16	170	185	122	145	4	18	158	250		17	19.0
80	16	180	200	138	160	8	18	182	370	F10	22	25.0
100	16	190	220	158	180	8	18	194	370	F10	22	30.0
125	16	325	250	188	210	8	18	195	520	F10	22	50.0
150	16	350	285	212	240	8	22	225	700	F12	27	72.0
200	16	400	340	265	295	12	22	260	700	F12	27	108.0
250 ¹⁾	16	450	405	320	355	12	22	260	700	F12	27	135.0
Series 27 (PN 25, DIN EN 1092-1)												
10	25	110	90	40	60	4	14	77	112		10	1.7
15	25	115	95	45	65	4	14	69	130		10	2.4
20	25	120	105	58	75	4	14	71	160		10	3.3
25	25	125	115	68	85	4	14	82	160		10	4.5
32	25	130	140	78	100	4	18	117	250		17	6.7
40	25	140	150	88	110	4	18	121	250		17	8.0
50	25	150	165	102	125	4	18	128	250	F07	17	10.0
65	25	170	185	122	145	8	18	158	250		17	19.0
80	25	180	200	138	180	8	18	182	370	F10	22	25.0
100	25	190	235	162	190	8	22	194	370	F10	22	30.0
125	25	325	270	188	220	8	26	195	520	F10	22	50.0
150	25	350	300	218	250	8	26	225	700	F12	27	72.0
200	25	400	360	278	310	12	26	260	700	F12	27	108.0
250 ¹⁾	25	450	425	335	370	12	30	260	700	F12	27	135.0

Nominal size DN	Pressure rating PN	Dimension				Qty. z pcs	Dimension			Conne- tion F ISO 5211	SW ₁ mm	Weight kg
		L mm	D mm	g mm	K mm		d mm	Hg mm	R mm			
Series 28 (PN 40, DIN EN 1092-1)												
10	40	110	90	40	60	4	14	77	112		10	1.7
15	40	115	95	45	65	4	14	69	130		10	2.4
20	40	120	105	58	75	4	14	71	160		10	3.3
25	40	125	115	68	85	4	14	82	160		10	4.5
32	40	130	140	78	100	4	18	117	250		17	6.7
40	40	140	150	88	110	4	18	121	250		17	8.0
50	40	150	165	102	125	4	18	128	250	F07	17	10.0
65	40	170	185	122	145	8	18	158	250		17	19.0
80	40	180	200	138	160	8	18	182	370	F10	22	25.0
100	40	190	235	162	190	8	22	194	370	F10	22	30.0
125	40	325	270	188	220	8	26	195	520	F10	22	50.0
150	40	350	300	218	250	8	26	225	700	F12	27	72.0
200	40	400	375	285	320	12	30	260	700	F12	27	108.0
250 ¹⁾	40	450	450	345	385	12	38	260	700	F12	27	135.0

¹⁾ Reduced bore, effective diameter 200

Dimensional drawings

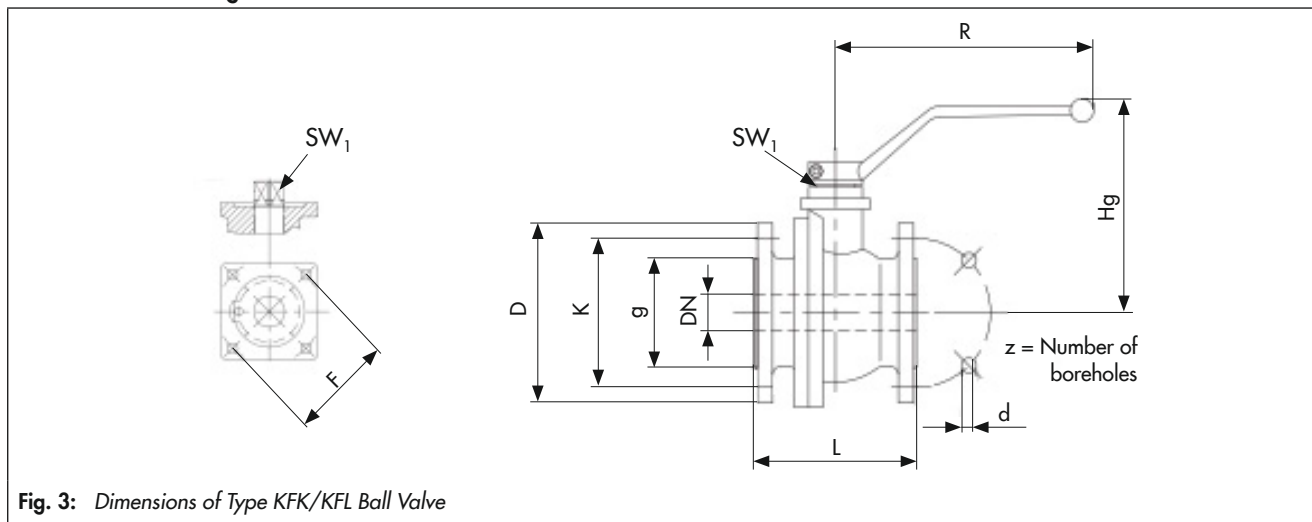


Fig. 3: Dimensions of Type KFK/KFL Ball Valve

Selection and ordering

Code system

Type	x	x	x	x	-	x	x	-	x	x
Extremely rugged design	K	B	R							
Trunnion-mounted ball				C						
Version for granulate				G						
Higher temperature (up to +260 °C)						E	T			
High temperature (up to +450 °C)						H	T			
TA Luft									T	A
Metal version										500
Ceramic seats										550

Type	x	x	x	x	-	x	x	-	x	x
	K	F								
Short FTF				K						
Long FTF				L						
White PTFE						P	T			
PTFE/carbon						P	K			

Ordering text

Criteria	Value
Nominal size (flange)	DN/NPS ...
Pressure rating	PN/Class ...
Face-to-face dimension	Series ...
Flanges	
Temperature range	
Materials	See Overview of types on page 5.
Characterized ball	Round
Process medium	
Max. flow rate	in kg/h or m ³ /h
Pressure	p1 and p2 in bar
Required leakage class	
Industrial sector	