



SWING CHECK VALVES WAFER TYPE

SERIES
ZRK | ZRKF

AWS
APPARATEBAU

GENERAL DESCRIPTION

SWING CHECK VALVES WAFER TYPE



Description and intended purpose

AWS swing check valves wafer type are characterized by their simple and robust design. A key feature is their particularly narrow FTF length - a major advantage compared to other designs in many installation situations in piping systems in industrial and building services. They can be installed directly between flanges (PN 6 - PN 40 or Class 150 - Class 300).

Function

AWS swing check valves wafer type require a low opening pressure. The resulting opening force pushes the disc against its self-weight and, if necessary, also an additional spring, so that the medium can flow. If the inlet pressure drops or if the backpressure exceeds the inlet pressure, the valve closes and seals against the medium by means of the soft seat or the metal seat.

AWS swing check valves wafer type are maintenance-free.

OVERVIEW MATRIX

SWING CHECK VALVES WAFER TYPE

DESCRIPTION

		ZRK	ZRKF	920	925.1
NOMINAL SIZES*1		DN 32 - DN 1000	DN 32 - DN 400	DN 32 - DN 600	DN 50 - DN 200
FLANGE CONNECTION*2		PN 6 / PN 10 / PN 16 / PN 25 / PN 40 Class 150 / Class 300 JIS 10K	PN 6 / PN 10 / PN 16 / PN 25 / PN 40 Class 150 / Class 300 JIS 10K	PN 6 / PN 10 Class 150 JIS 10K	PN 10
MAX. PRESSURE		16 to 50 bar*3	16 to 50 bar*3	10 bar	6 bar
TEMPERATURE RANGES		-273 °C to +500 °C	-200 °C to +450 °C	-20 °C to +120 °C	0 °C to +50 °C
MATERIALS AVAILABLE*5	Steel	x	x	-	-
	Stainless steel	x	x	-	-
	Alu-Bronze	x	x	-	-
	Superduplex	x	x	-	-
	PVC	-	-	x	x
	PP	-	-	x	-
	PVDF	-	-	x	-
SEALS AVAILABLE		Metal, NBR, EPDM, FKM, PTFE	Metal, NBR, EPDM, FKM, PTFE	NBR, EPDM, FKM, PTFE	EPDM

*1 other nominal sizes on request

*2 other flange connections on request

*3 depending on nominal size and design

*4 other materials on request

WHY CHOOSE AWS

SWING CHECK VALVES WAFER TYPE?

IN BRIEF:

Many years of experience in the production of check valves

In-house assembly department with maximum flexibility and expertise

Advice and technical design via in-house design and engineering team

High availability ensuring short delivery times of standard articles

QUALITY AND TESTING AT AWS:

Own test benches for pressure and leak tests in accordance with EN 12266-1, API 598 and other common standards

Experience and routine in the preparation of works and acceptance test certificates in accordance with DIN EN 10204 (2.2, 3.1 or 3.2 certificate)

Regular auditing of processes and quality mechanisms by TÜV Süd, discerning customers and other external bodies

In-house spectral analyses for metallic materials

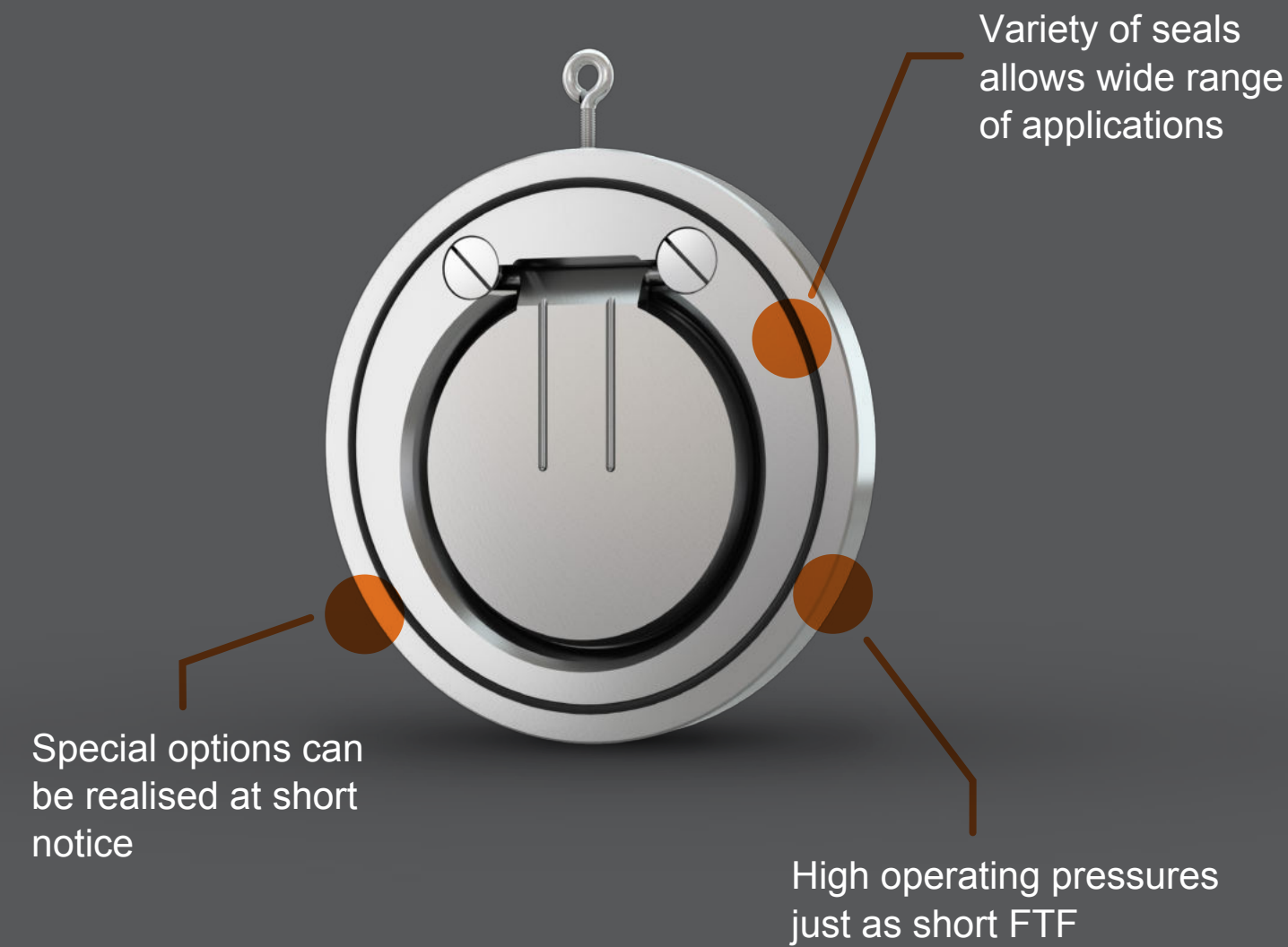
Additional quality assurance measures (external and internal), for example corrosion testing, dye penetrant testing, X-ray testing, preparation of QCPs, etc.

... AND BECAUSE WE KNOW

WHAT MATTERS IN YOUR INDUSTRY!



TECHNICAL DATA
SWING CHECK VALVE WAFER TYPE | SERIES ZRK



Nominal sizes
DN 32 - DN 1000

Flange connection
PN 6 - PN 40 | Class 150 - 300 | JIS 10K

Max. pressure:
16 to 50 bar

Temperature range
-273 °C to +500 °C

TECHNICAL DATA
SWING CHECK VALVE WAFER TYPE | SERIES ZRK



- 1. Body
- 2. Disc
- 3. Disc holder
- 4. Seals

Design	Body	Disc	Max. allowable pressure*1				
ST-ST	1.0460, zinc plated	1.0619 / 1.0460, zinc plated	DN 32 - 40 40 bar		DN 50 25 bar	DN 65 - 1000 16 bar	
ST-VA	1.0460, zinc plated	1.4408	DN 32 - 40 40 bar		DN 50 25 bar	DN 65 - 1000 16 bar	
VA-VA	1.4408	1.4408	DN 32 - 50 40 bar	DN 65 30 bar	DN 80 -100 20 bar	DN 125 - 1000 16 bar	
VA1-VA1	1.4571	1.4571	DN 32 - 50 50 bar	DN 65 40 bar	DN 80 30 bar	DN 100 -150 25 bar	DN 200 - 1000 20 bar
AB-DU	CC333G (2.0975)	1.4469 (Superduplex)	DN 32 - 50 40 bar	DN 65 - 125 30 bar	DN 150 - 300 20 bar	DN 350 - 1000 10 bar	
DU-DU	1.4469 (Superduplex)	1.4469 (Superduplex)	DN 32 - 65 50 bar	DN 80 - 100 40 bar	DN 125 - 150 30 bar	DN 200 - 1000 20 bar	

*1 max. allowable pressure is dependent on the temperature

Seal	Design	Temperature	Leakage rate*2
Metal seated*3	ST-VA	-10 °C to +400 °C	G
	VA-VA	-196 °C to +400 °C	
	VA1-VA1	-273 °C to +500 °C	
	AB-DU	-10 °C to +250 °C	
	DU-DU	-10 °C to +250 °C	
NBR*4	-	-30 °C to +100 °C	A
EPDM*4	-	-65 °C to +150 °C	A
FKM*4	-	-30 °C to +230 °C	A
PTFE*4	-	-200 °C to +250 °C	A

*2 acc. to EN 12266-1

*3 metal seated valves are supplied without O-rings
in body as standard

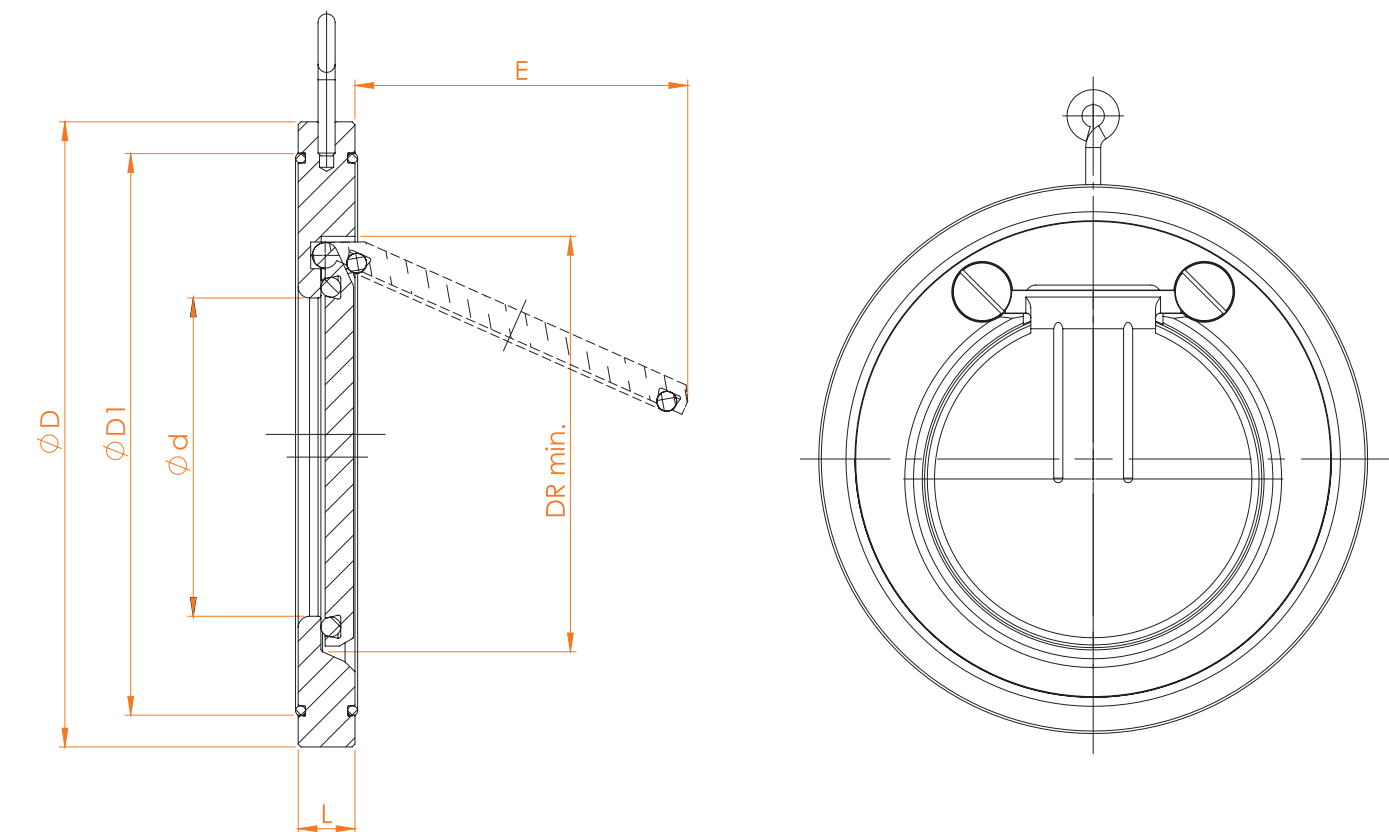
*4 for some designs, the temperature range is additionally
limited by the temperature range of the metallic parts
(see temperature range for metal seated)

Seals for valves up to and including DN 300 comply with the following approvals / conformities:

NBR: DIN EN 549, BAM, REACH, RoHS etc.
EPDM: KTW UBA, DVGW W 270, WRAS, NSF, FDA, BfR XXI Kat. 4, ADI-free, 3A, USP Cl. 6, BAM, REACH, RohS etc.
FKM: DIN EN 549, ADI-free, REACH, RoHS etc.
PTFE: KTW UBA, DVGW W 270, WRAS, FDA, BfR, ADI-free, EU 10/2011, 3A, USP Cl. 6, REACH, RoHS etc.

TECHNICAL DATA

SWING CHECK VALVE WAFER TYPE | SERIES ZRK



Nominal size	Ø D*5								L	Ø d	Ø D1	E	DR	Kv value	Opening pressure [mbar]		Weight*6
	PN 6	PN 10	PN 16	PN 25	PN 40	ANSI 150	ANSI 300	JIS 10K							[m³/h]	↔	↑
DN 32	79	85	85	85	85	74	85	85	15	18	59	22	37	16,2	~ 2	~ 10	0,67
DN 40	89	95	95	95	95	83	95	91	16	22	72	25	43	22,2	~ 2	~ 10	0,85
DN 50	98	109	109	109	109	105	112	105	14	32	86	37	54	54	~ 2	~ 10	0,91
DN 65	118	129	129	129	129	124	129	124	14	40	109	50	70	75	~ 2	~ 10	1,2
DN 80	134	144	144	144	144	137	150	135	14	54	119	61	82	112	~ 2	~ 10	1,5
DN 100	154	164	164	170	170	175	181,5	160	18	70	146	77	106	172	~ 2	~ 10	2,4
DN 125	184	195	195	196	196	197	216,5	191	18	92	173	98	131	342	~ 2	~ 10	3,4
DN 150	209	220	220	226	226	222	251,5	220	20	112	197	120	159	490	~ 2	~ 10	4,7
DN 200	264	275	275	286	294	279	308	271	22	154	255	160	207	1128	~ 4	~ 14	7,7
DN 250	319	330	331	344	356	340	362	330	26	192	312	190	260	1500	~ 4	~ 14	13
DN 300	375	380	386	404	421	410	423	380	32	227	363	220	309	2290	~ 4	~ 14	21
DN 350	425	440	446	461	478	451	487	424	38	266	416	250	341	2890	~ 6	~ 18	33
DN 400	475	491	499	518	550	514	541	487	44	310	467	290	392	3700	~ 6	~ 18	46
DN 450	530	541	558	568	575	549	598	541	52	350	520	340	442	5000	~ 6	~ 18	67
DN 500	580	596	621	628	632	606	655	596	58	400	550	390	493	6550	~ 6	~ 24	89
DN 600	681	698	738	735	751	718	775	698	62	486	660	470	594	9550	~ 6	~ 26	128
DN 700	785	813	807	836	-	-	-	-	67	588	770	563	693	23000	~ 6	~ 26	190
DN 800	893	920	914	945	-	-	-	-	78	622	-	680	795	38000	~ 6	~ 30	292
DN 900	993	1020	1014	1045	-	-	-	-	95	720	-	750	889	60000	~ 6	~ 32	412
DN 1000	1093	1127	1131	1159	-	-	-	-	105	810	-	840	991	80000	~ 6	~ 36	550

*5 in order to realise the flange connection diameters, flange center-rings may be used

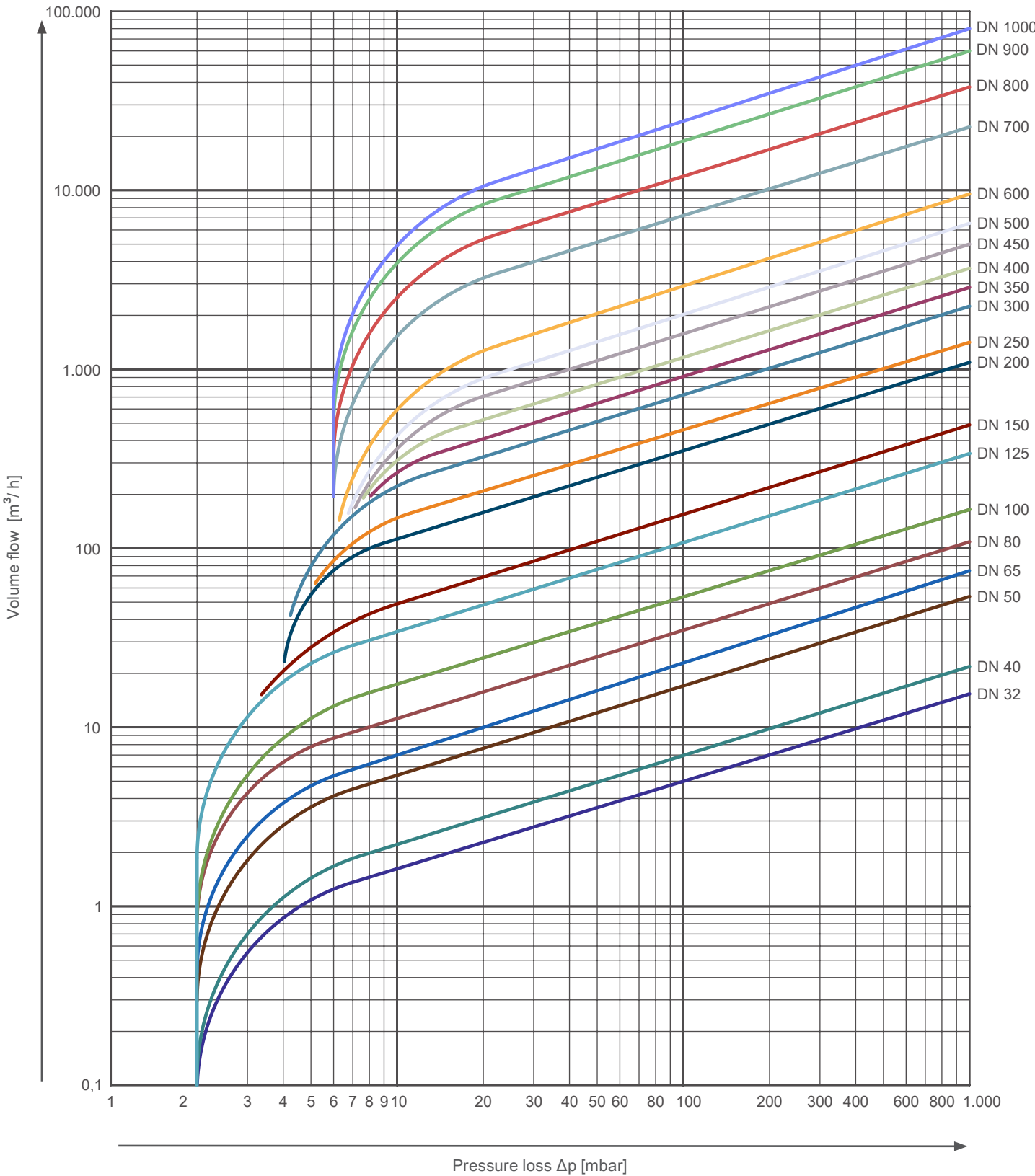
*6 weight refers to valve suitable for PN 10 flanges and may vary slightly, depending on the design

TECHNICAL DATA

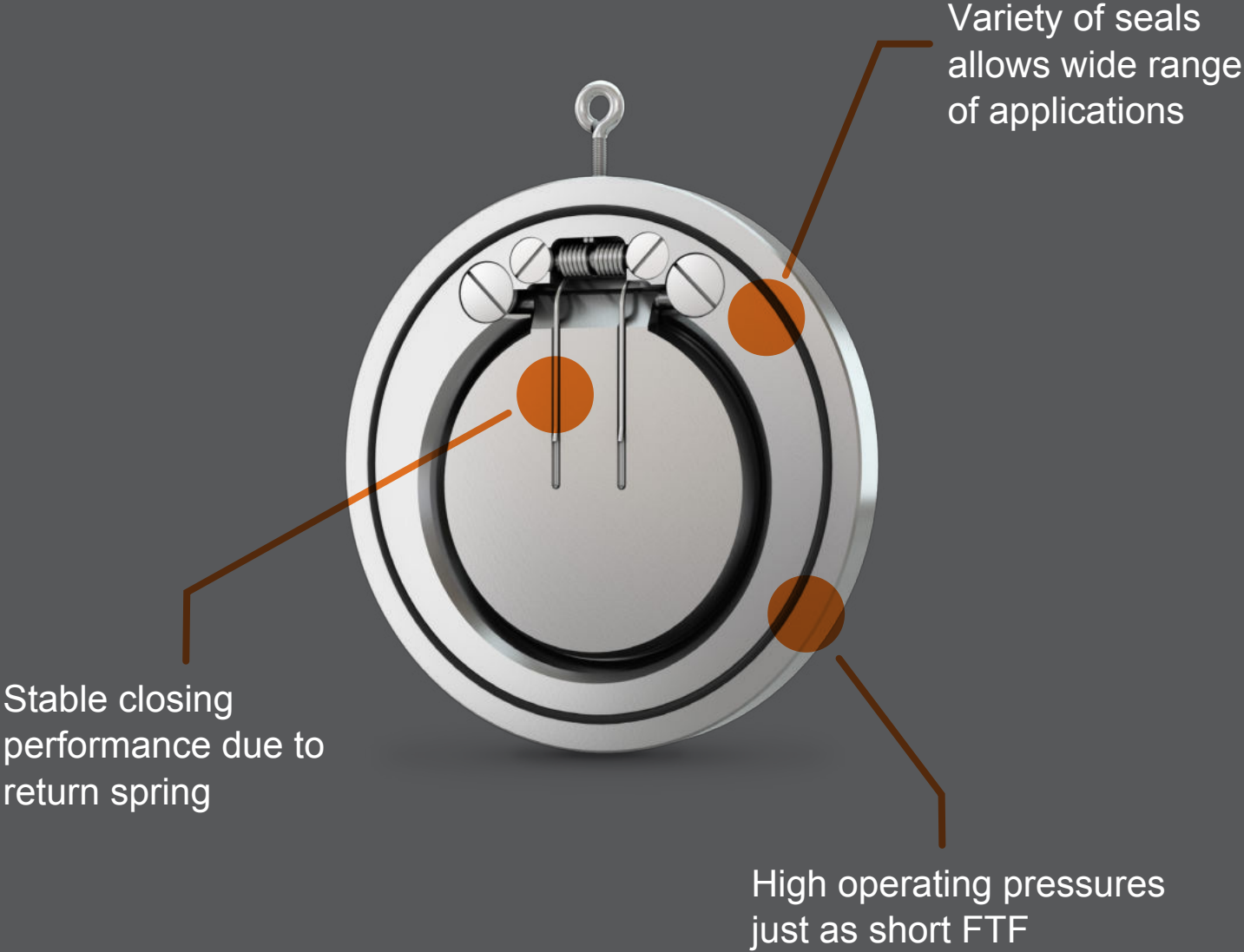
SWING CHECK VALVE WAFER TYPE | SERIES ZRK

Pressure-Loss Diagram Type ZRK

The diagram values are valid for water at a temperature of 20 °C and for valves with face-to-face dimensions in accordance with DIN EN 558, suitable for flanges in accordance with PN 10 - PN 40. At the opening of the valve, the curves apply to operation in horizontal pipelines. For calculations for other fluids or temperatures, please contact us.



TECHNICAL DATA
SWING CHECK VALVE WAFER TYPE | SERIES ZRKF



Nominal sizes
DN 32 - DN 400
Flange connection
PN 6 - PN 40 | Class 150 - 300 | JIS 10K
Max. Pressure
16 to 50 bar
Temperature range
-200 °C to +450 °C

TECHNICAL DATA
SWING CHECK VALVE WAFER TYPE | SERIES ZRKF



Design	Body	Disc	Spring	Max. allowbale pressure*1				
ST-ST	1.0460, zinc plated	1.0619 / 1.0460, zinc plated	1.4571	DN 32 - 40 40 bar		DN 50 25 bar	DN 65 - 400 16 bar	
ST-VA	1.0460, zinc plated	1.4408	1.4571	DN 32 - 40 40 bar		DN 50 25 bar	DN 65 - 400 16 bar	
VA-VA	1.4408	1.4408	1.4571	DN 32 - 50 40 bar	DN 65 30 bar	DN 80 -100 20 bar	DN 125 - 400 16 bar	
VA1-VA1	1.4571	1.4571	1.4571	DN 32 - 50 50 bar	DN 65 40 bar	DN 80 30 bar	DN 100 -150 25 bar	DN 200 - 400 20 bar
AB-DU	CC333G (2.0975)	1.4469 (Superduplex)	Hastelloy C4 (2.4610)	DN 32 - 50 40 bar	DN 65 - 125 30 bar	DN 150 - 300 20 bar	DN 350 - 400 10 bar	
DU-DU	1.4469 (Superduplex)	1.4469 (Superduplex)	Hastelloy C4 (2.4610)	DN 32 - 65 50 bar	DN 80 - 100 40 bar	DN 125 - 150 30 bar	DN 200 - 400 20 bar	

*1 max. allowable pressure is dependent on the temperature

Seal	Design	Temperature	Leakage rate*2
Metal seated*3	ST-VA	-10 °C to +300 °C*4	G
	VA-VA	-196 °C to +300 °C*5	
	VA1-VA1	-200 °C to +300 °C*6	
	AB-DU	-10 °C to +250 °C	
	DU-DU	-10 °C to +250 °C	
NBR*7	-	-30 °C to +100 °C	A
EPDM*7	-	-65 °C to +150 °C	A
FKM*7	-	-30 °C to +230 °C	A
PTFE*7	-	-200 °C to +250 °C	A

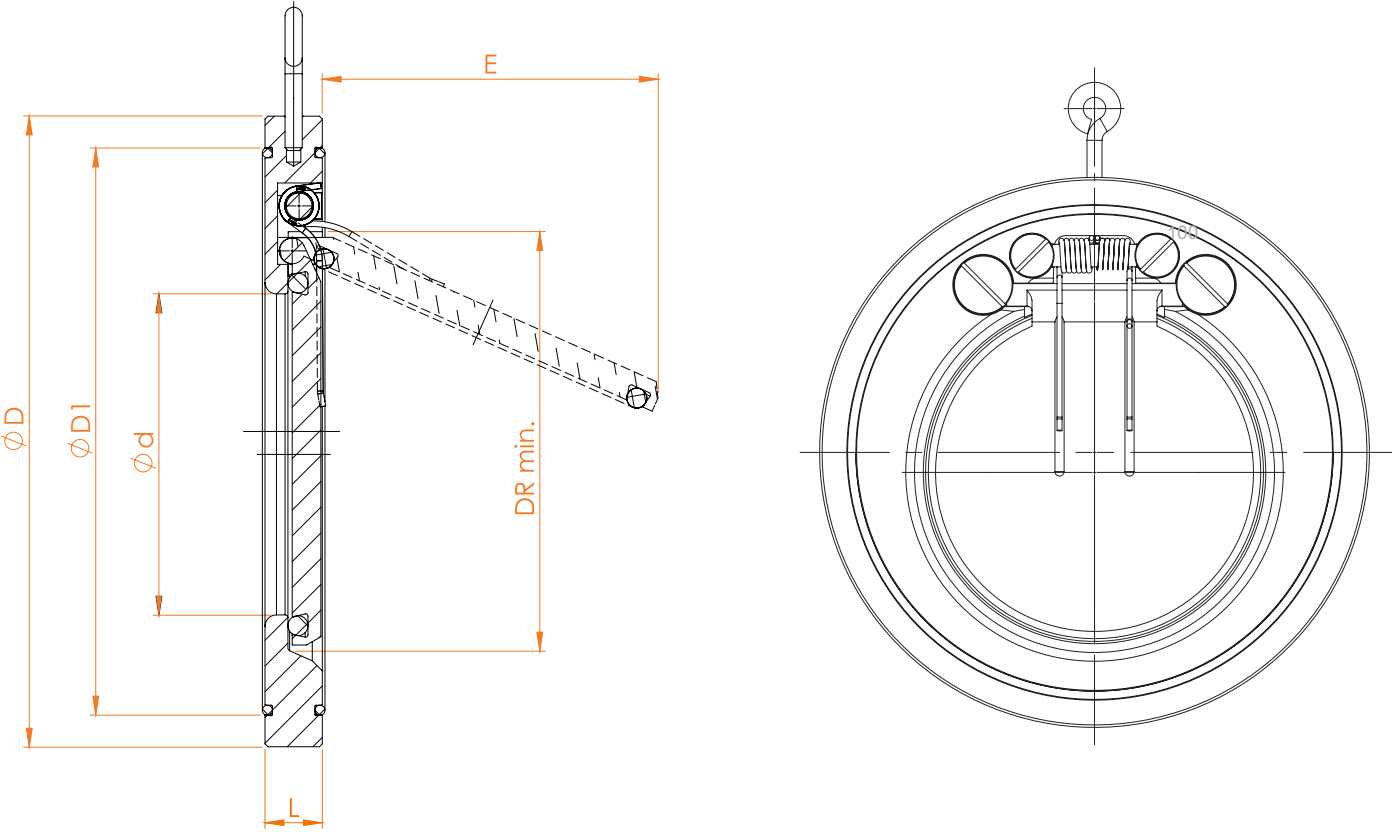
*2 acc. to EN 12266-1
*3 metal seated valves are supplied without O-rings in body as standard
*4 optional with spring made of Hastelloy C4: -10 °C to +450 °C
*5 optional with spring made of Hastelloy C4: -100 °C to +400 °C
*6 optional with spring made of Hastelloy C4: -100 °C to +450 °C
*7 for some designs, the temperature range is additionally limited by the temperature range of the metallic parts (see temperature range for metal seated)

Seals for valves up to and including DN 300 comply with the following approvals / conformities:

NBR: DIN EN 549, BAM, REACH, RoHS etc.
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FKM: DIN EN 549, ADI-free, REACH, RoHS etc.
PTFE: KTW UBA, DVGW W 270, WRAS, FDA, BfR, ADI-free, EU 10/2011, 3A, USP Cl. 6, REACH, RoHS etc.

TECHNICAL DATA

SWING CHECK VALVE WAFER TYPE | SERIES ZRKF



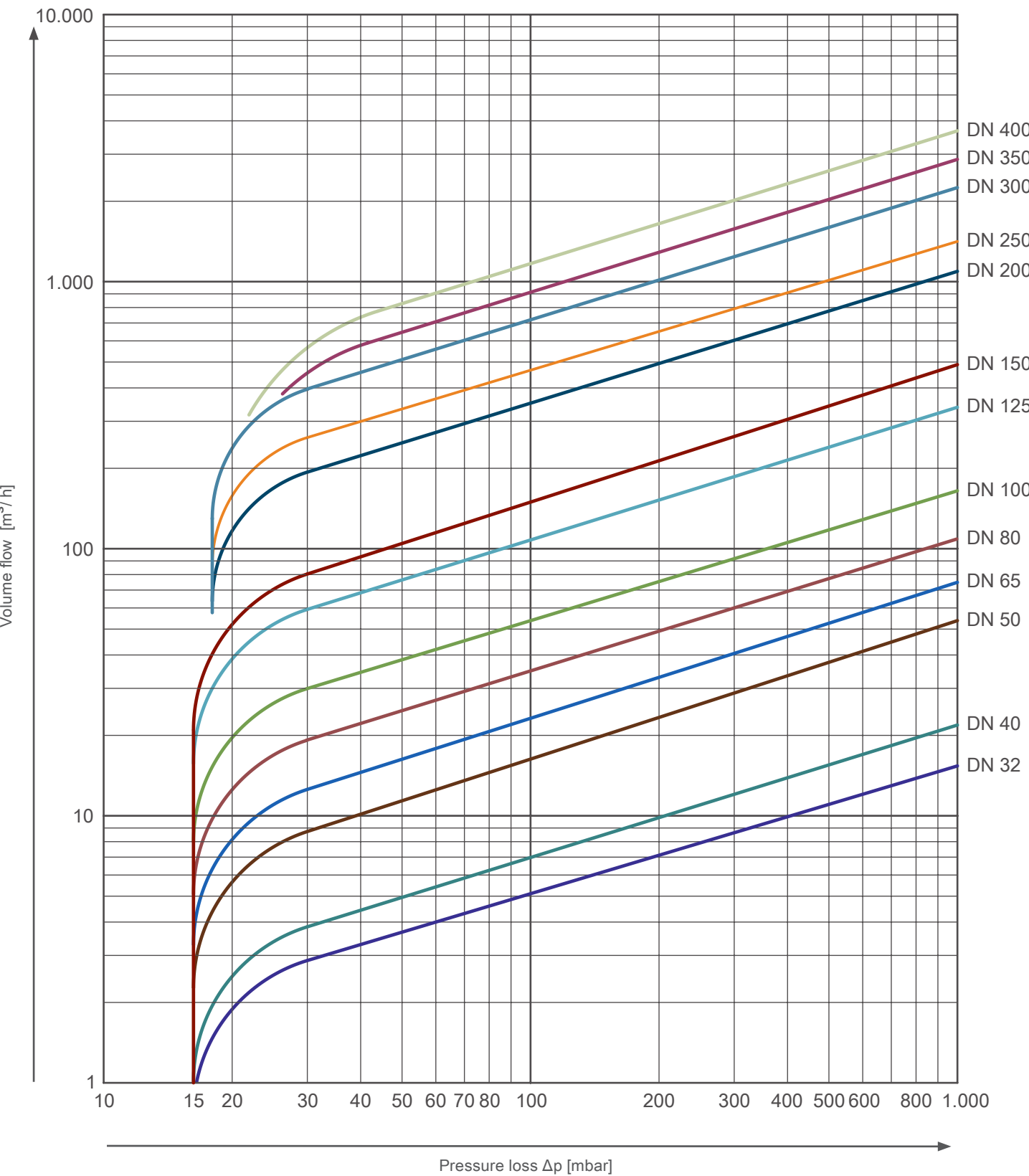
Nominal size	$\varnothing D^{*8}$								L	$\varnothing d$	$\varnothing D1$	E	DR	Kv value [m³/h]	Opening pressure [mbar]		Weight* ⁹ [kg]
	PN 6	PN 10	PN 16	PN 25	PN 40	ANSI 150	ANSI 300	JIS 10K							↔	↑	
DN 32	79	85	85	85	85	74	85	85	15	18	59	22	37	16,2	~ 15	~ 25	0,67
DN 40	89	95	95	95	95	83	95	91	16	22	72	25	43	22,2	~ 15	~ 25	0,85
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DN 80	134	144	144	144	144	137	150	135	14	54	119	61	82	112	~ 15	~ 25	1,5
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DN 150	209	220	220	226	226	222	251,5	220	20	112	197	120	159	490	~ 15	~ 25	4,7
DN 200	264	275	275	286	294	279	308	271	22	154	255	160	207	1128	~ 17	~ 25	7,7
DN 250	319	330	331	344	356	340	362	330	26	192	312	190	260	1500	~ 17	~ 25	13
DN 300	375	380	386	404	421	410	423	380	32	227	363	220	309	2290	~ 17	~ 25	21
DN 350	425	440	446	461	478	451	487	424	38	266	416	250	341	2890	~ 18	~ 27	33
DN 400	475	491	499	518	550	514	541	487	44	310	467	290	392	3700	~ 18	~ 28	46

^{*8} in order to realise the flange connection diameters, flange center-rings may be used
^{*9} weight refers to valve suitable for PN 10 flanges and may vary slightly, depending on the design

TECHNICAL DATA

SWING CHECK VALVE WAFER TYPE | SERIES ZRKF

Pressure-Loss Diagram Type ZRKF
The diagram values are valid for water at a temperature of 20 °C and for valves with face-to-face dimensions in accordance with DIN EN 558, suitable for flanges in accordance with PN 10 - PN 40. At the opening of the valve, the curves apply to operation in horizontal pipelines. For calculations for other fluids or temperatures, please contact us.



SPECIAL OPTIONS

SWING CHECK VALVES WAFER TYPE

With our many years of experience, and our understanding of the demands of the market and the constantly rising expectations of our customers, we always strive to develop and implement solutions that go well beyond the standard. Here are just a few examples of special designs that we have created either in-house, based on our standard models, or with the help of our long-standing pool of partners. Here we adhere to the criteria of technical and economic feasibility combined with a healthy dose of pragmatism.



With mounting holes



Lug type body



With manual override



With attached ground cable



Reinforced design with holding plates



Disc with integrated pressure relief valve

Oher special options:

- Cleaned free of oil and grease
 - Cleaned free of silicone
 - Cleaned free of PWIS
- Seals with additional approvals which go beyond the standard
 - With seal that is glued in for vacuum applications
- Other materials on request
 - Other flange dimensions on request
 - Other special options on request



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