

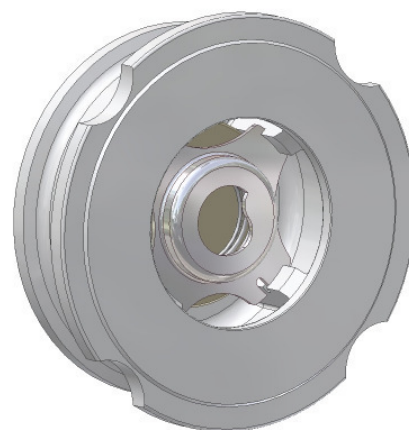


CE 0036



Non Return Valve Type CSD DN015 - 100

Designation	Material
Body	see table
Valve Plate	1.4404
Spring Cap	1.4401
Spring	1.4401
Soft sealing	see table



Technical Specifications

Classification of these products according to DGRL 97/23/EC, fluid group 1

Installation with sealing between flanges according to

DIN EN 1092-1 Form B1, PN 6-40 and ANSI B16.5 Class 150/ 300 RF

Nominal pressure max. PN40

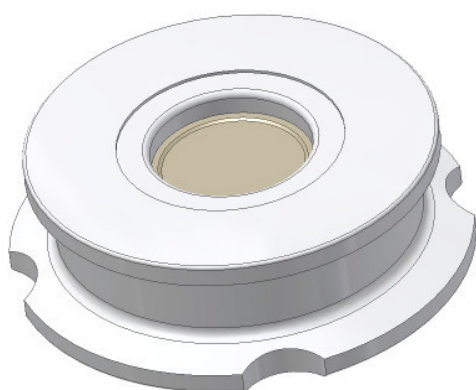
Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10

Tightness according to DIN EN 12266-1, Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)

Overall lengths according to DIN EN 558-1, line 49

Identification according to DIN EN 19

Packed in separate card board boxes



Utilisation

For liquids, gases and steams in all process technologies

Constructional features

Centre ring integrated on the body

Guiding of valve plate by body ribs

New planed spring cap for an optimal safety

Serially adequate for PN 6-40 and ANSI Class 150/ 300

Special Types

Hastelloy C4 springs (up to 400°C) and Nimonic (up to 500°C).

Special springs for different opening pressures up to max. 400 mbar

Designation CSD- 6 4 6 4 - M - 1 0 0
CSD- □□ - □□ - □ - □□□ → DN015 - 100

Body			Valve plate			Soft sealing		
Material	Nr.	Code	Material	Nr.	Code	Material	Temperatur	Code
Steel	1.0619	27	Austenit	1.4404	64	Metal-seated	-200 to 500°C	M
Austenit	1.4408	64				EPDM	-50 to 130°C	E
						NBR	-30 to 120°C	P
						VITON	-20 to 200°C	V
						PTFE	-200 to 200°C	T

Subject to change without notice



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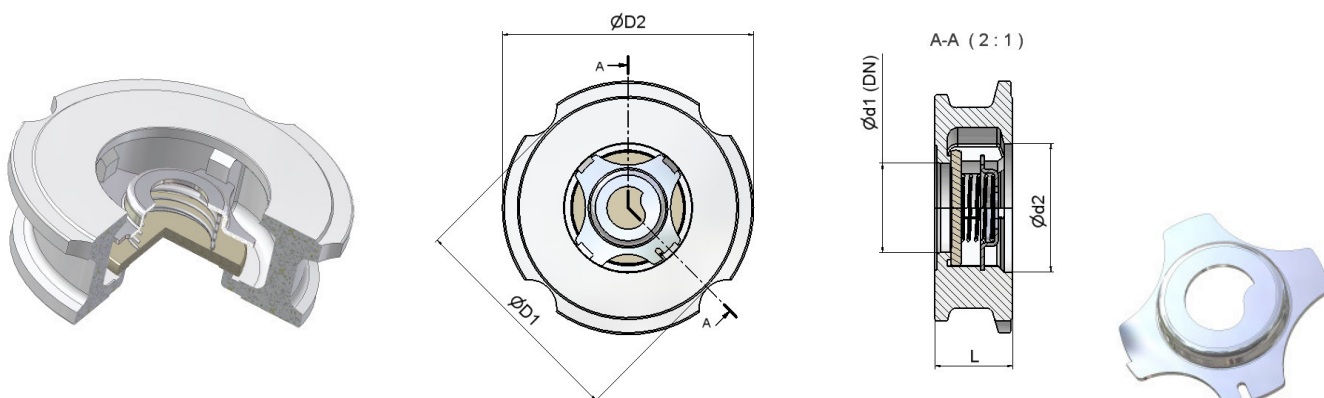


ChemValve-Schmid
Valve Technology

::Data Sheet:: | ::Chapter 3:

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::Non Return Valve Type CSD:: | ::DN015 - 100:: | ::PN6 - 40:: | ::ANSI150 - 300::



DN (mm)	015	020	025	032	040	050	065	080	100
DN (zoll)	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
Ø d1	15	20	25	32	39	48	62	72.5	89
Ø d2	26	31	36	44	51.5	62	77.5	92	107
Ø D1	44	54	63.5	73	82.5	96	116	132	152
Ø D2	51	61	71	79.5	92	107	127	142	162/168
L	16	19	22	28	31.5	40	46	50	60
weight	0.1	0.2	0.3	0.5	0.7	1.1	1.6	3.0	3.5

Opening pressures (mbar)

ΔP ↑	25	25	25	27	28	29	30	31	33
ΔP →	20	20	20	20	20	20	20	20	20
ΔP ↓	15	15	15	13	12	11	10	9	7

Opening pressures without spring (mbar)

ΔP ↑	5	5	5	7	8	9	10	11	13
------	---	---	---	---	---	---	----	----	----

If lowest opening pressures are necessary, the valves without spring can be installed in vertical directions with direction of flow from bottom to top.

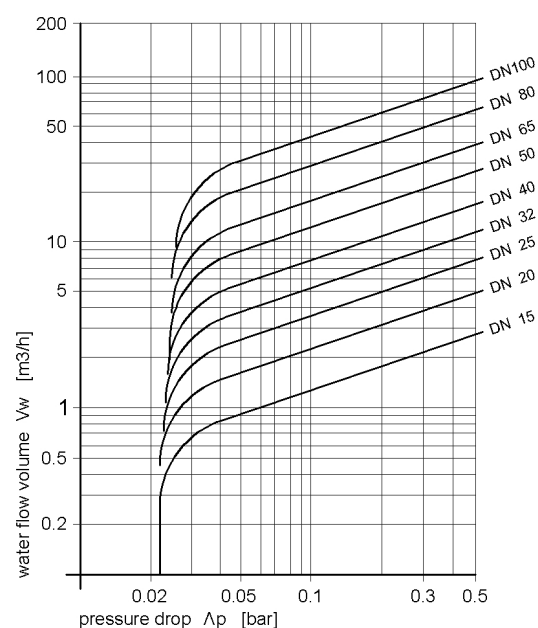
Pressure drop diagram

Pressure drop diagram for water at 20°C with opened valve and horizontal flow.

For calculating the pressure drop of the medium the equivalent water flow volume has to be calculated.

$$\dot{V}_w = \dot{V} \sqrt{\frac{\rho}{1000}}$$

$\dot{V}_w$ = Equivalent water flow volume in m³/h
 ρ = Density of the medium in kg/m³
 $\dot{V}$ = Flow volume of the medium in m³/h (working condition)



Subject to change without notice



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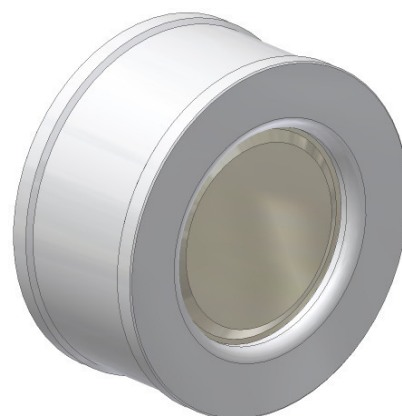
::Data Sheet:: | ::Chapter 3::

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::Non Return Valve Type CSD:: | ::DN125 - 350:: | ::PN10 - 40:: | ::ANSI150 - 300::

Non Return Valve Type CSD DN125 - 350

Designation	Material
Body	see table
Flange	see table
Disc	see table
Spring	see pricelist
Soft sealing	see table
Centre ring	see page 2/2



Technical specifications

Placement between flange according to DIN EN 1092-1, PN 10

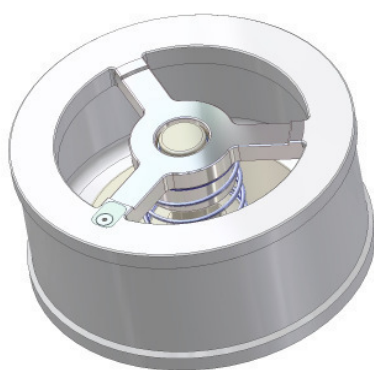
Nominal pressure max. PN40

Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10

Tightness according to DIN EN 12266-1, Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)

Overall lengths according to DIN EN 558-1, Gr. 49, from DN 250 on DIN EN 558-2, Gr. 52

Identification according to DIN EN 19



Utilisation

For liquids, gases and steams in all process technology.

Constructional features

Centering by the outside diameter of the body or centre ring

Guiding of valve plate by body ribs

Special types

Hastelloy C4 springs (up to 400°C) and Nimonic (up to 500°C).

Special springs for different opening pressures

Placement between flange according to DIN 1092-1, PN 16 - 40 and ANSI B 16.5 CL. 150-300 lbs with centre ring according to the following page 2/2

Designation: CSD- 6 4 6 4 - M - 1 5 0
CSD- □□ - □□ - □ - □□□ → **DN125 - 350**

Body			Valve plate			Soft sealing		
Material	Nr.	Code	Material	Nr.	Code	Material	Temperatur	Code
Steel	1.0619	27	Steel	1.0619	27	Metal-seated	-200 bis 500°C	M
Bronze	2.1086	33	Austenit	1.4408	64	EPDM	-50 bis 130°C	E
Austenit	1.4408	64				NBR	-30 bis 120°C	P
						VITON	-20 bis 200°C	V
						PTFE	-200 bis 200°C	T
						Depending on pressure and medium		

Subject to change without notice



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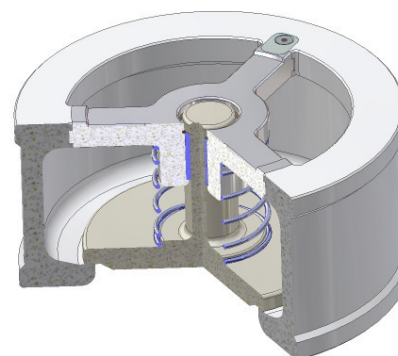
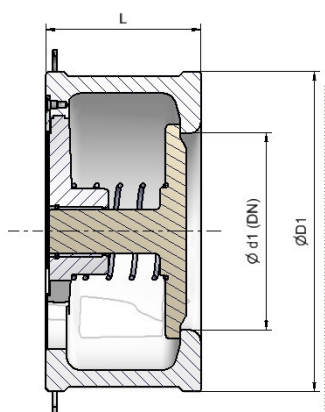
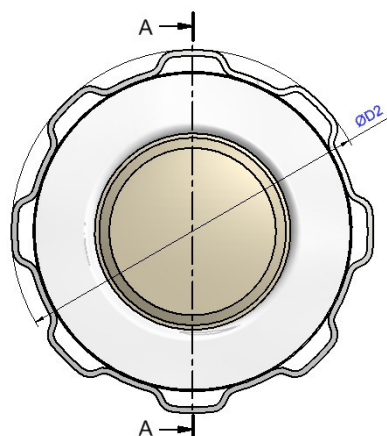


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::Data Sheet:: | ::Chapter 3::

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::Non Return Valve Type CSD:: | ::DN125 - 350:: | ::PN10 - 40:: | ::ANSI150 - 300::



DN (mm)	125	150	200	250	300	350
DN (Zoll)	5"	6"	8"	10"	12"	14"
Ø D1, PN10	192	218	273	328	378	438
Ø D1, PN16	192	218	273	328	378	444
Ø D1, D2, PN25	192	226	283	338	400	457
Ø D1, D2, PN40	192	226	290	352	417	474
Ø D1, D2, ANSI150	192	218	273	338	400	447
Ø D1, D2, ANSI300	212	247	304	352	417	482
L	90	106	140	200	250	280
Weight (kg)	10	14	24	50	77	108

The pressure rates marked in **blue** are indicating the use of a centre ring. (See extra charges on the price list).
D2 shows the outer diameter of the centre ring.

Opening pressures (mbar)

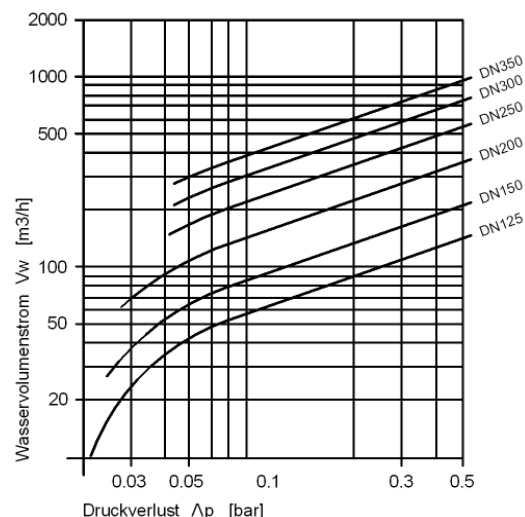
DN (mm)	125	150	200	250	300	350
DN (Zoll)	5"	6"	8"	10"	12"	14"
ΔP ↑	37	40	46	69	73	73
ΔP →	22	25	28	42	44	44
ΔP ↓	7	10	10	15	15	15

Pressure drop diagramm

Pressure drop diagram for water at 20°C with opened valve and horizontal flow.
For calculating the pressure drop of the medium the equivalent water flow volume has to be calculated..

$$\dot{V}_w = \dot{V} \sqrt{\frac{\rho}{1000}}$$

$\dot{V}_w$ = Equivalent water flow volume in m3/h
 ρ = Density of the medium (in use) kg/m3
 $\dot{V}$ = Flow volume of the medium (in use) in m3/h



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Operating instructions and security regulations for putting into operation and maintenance of the non-return valve CSD and CVD.

Please read carefully!

Security note

Only qualified skilled workers are permitted to install the armature. This should be staff that is well acquainted with setting up, fitting, putting into operation, operating and maintain the equipment. The staff must have a qualification at their disposal which corresponds with their function and occupation, such as:

- Instruction and commitment for the observance of all regional and internal regulations and commitments regarding operation.
- Education in accordance with the standards of security engineering, in application and maintenance of adequate equipments of security and labour protection.
- Training in first aid etc.

Proper maintenance

Inset in pipes for prevention of return flow of the media within the permissible limits of pressure and temperature, observing the chemical and corrosive influences on the valve.

The media-resistance of the valve must be tested for operating conditions.



Danger notes

During operation the valve is under pressure!

If flange connections or screw plugs are loosened, hot water, steam, corroding liquids or toxic gases will escape. Serious scalds and burns on the whole body are possible! Serious contaminations are possible!

- Work for assembly or maintenance to be done in pressure less condition only.
- During operation, the valve will be hot or extremely cold.
- Work for assembly or maintenance to be done at room temperature only.
- Sharp-edged interior parts can cause cuts on hands. Wearing gloves for exchanging the valve is necessary!
- Further measurements, materials and fields of application can found in the correspondent Data Sheet.

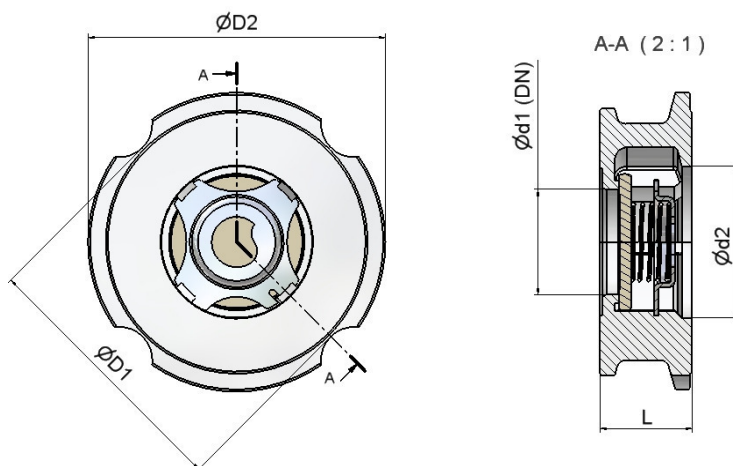
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Installation



Non return valve Type CSD and CVD for installation between flanges according to the drawings

- Installation between flanges according to DIN EN 1092-1 Form B1, PN 6/10/16/40 and ASA B16.5 Class 150/300 RF. The centring between the flanges is executed at the body integrated centre ring band by means of the flange connecting screws. The centring ØD1 is for the nominal pressure classification PN6 and ASA Class 150, ØD2 for PN 10-40 and ASA Class 300 interpreted. Installation between flanges of other norms on inquiry. The installation length corresponds to DIN EN 558-1, line 49. For special applications corresponding regulations have to be noted e.g. AD- Merkblätter (working group for pressure devices) or TRD-directives (technical rules for steam boilers).

Preparation for installation

- The assembly must be carried out according to the recognized rules of technology.
- The non-return valve assemble with two seals, a flange pair and at least two screws weld to the piping. Removing the non-return valve and seals and carry out the flange welding. The welding residue must be removed and the weld must be cleaned. The cleaned non-return valve can be reinstalled with the seals.

Note direction of flow (direction of arrow on valve body)!

- The installation position is optional.
- For oscillatory systems (e.g. compressors, diaphragm pumps etc.) please pay attention that the standard execution corresponds with the operation.
- A holding flange is required if the non-return valve shall be bolt between the flange of the outlet side and the piping flanges or if the non-return valve as ventilation, vacuum breaker, suck valve etc. must get connected to the individual flange.
- Non-return valves mustn't be disassembled.
- Using only original spare parts.
- Functional test.

Subject to change without notice



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::Operating Instructions:: | ::Chapter 3::

Page 3/5

::Non Return Valve Type CSD/CVD:: | ::DN015 - 350:: | ::PN6 - 40:: | ::ANSI150-300::

Product classification according to article 9 of pressure devices 97/23/EC (DGRL)**Group 1** (Dangerous fluids)**Appendix II** (Diagram 6)

Category with pressure limit PN 40 and ANSI 300 LBS	Exception according to article 3.3	I	II
Nominal DN	15-25	none	32-100
CE-Marking	no		CE 0036
all types except CSD3364	all		all

Category with pressure limit PN 40 and ANSI 150 LBS	Exception according to article 3.3	I	II
Nominal DN	15-25	32-50	65-100
CE-Marking	no	CE 0036	CE 0036
Type CSD3364	all	all	all

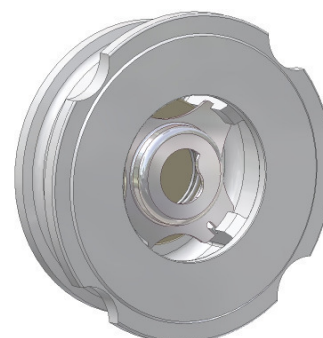
Technical data Non Return Valve Type CSD, DN 15 – 100 (PN40, ANSI 300 LBS)**Application limits according to DIN EN 1092-1 and AD-Merkblätter W10**

CSD2764M					
DN015-100					
t (°C)	-10	RT	150	250	400
Ps (bar)	40	40	35.2	30.4	23.8

CSD6464M							
DN015-100							
t (°C)	-200	RT	100	200	300	400	500
Ps (bar)	40	40	37.9	31.8	27.6	25.7	24.3

Applications limits for soft sealing

Soft Sealing	Temperature Range	Code
EPDM	-50 bis 130°C	E
NBR	-30 bis 120°C	P
VITON	-20 bis 200°C	V
PTFE	-200 bis 200°C	T



For further technical information please consult the corresponding Data Sheet.

Subject to change without notice



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Technical data Non Return Valve Type CVD, DN015 – 100 (PN40, ANSI 300 LBS)
Application limits according to DIN EN 1092-1 and AD-Merkblätter W10

CVD3364M					
DN015-100					
t (°C)	-60	RT	120	200	250
Ps (bar)	16	16	16	14	13

CVD6565M					
DN015-100					
t (°C)	-200	RT	150	300	500
Ps (bar)	40	40	32.7	25.7	22.8

CVD6868M					
DN015-100					
t (°C)	-60	RT	150	300	400
Ps (bar)	40	40	34.4	27.6	24.3

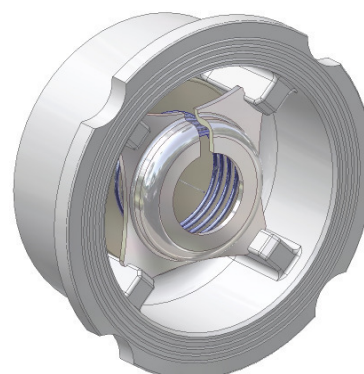
CVD9090M					
DN015-100					
t (°C)	-200	RT	120	200	300
Ps (bar)	40	40	40	23	14

CVD9494M					
DN015-100					
t (°C)	-200	RT	120	250	400
Ps (bar)	40	40	40	34	32

CVD9595M					
DN015-100					
t (°C)	-200	RT	120	250	400
Ps (bar)	40	40	40	34	32

Applications limits for soft sealing

Soft Sealing	Temperature Range	Code
EPDM	-50 bis 130°C	E
NBR	-30 bis 120°C	P
VITON	-20 bis 200°C	V
PTFE	-200 bis 200°C	T



For further technical information please consult the corresponding Data Sheet.

Subject to change without notice



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Technical data Non Return Valve Type CSD and CVD, DN125 – 350 (PN40, ANSI 300 LBS)
Application limits according to DIN EN 1092-1 and AD-Merkblätter W10

CSD2727M						
DN125-350						
t (°C)	-10	RT	150	200	300	400
Ps (bar)	40	40	35.2	33.3	27.6	23.8

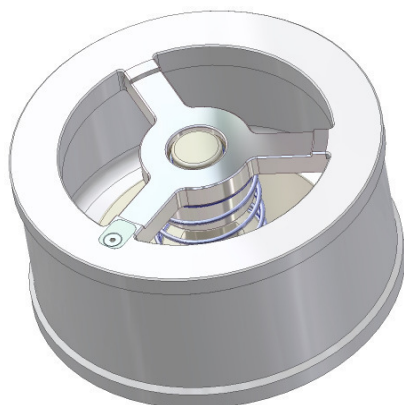
CSD2764M						
DN125-350						
t (°C)	-10	RT	150	200	300	400
Ps (bar)	40	40	35.2	33.3	27.6	23.8

CSD6464M						
DN125-350						
t (°C)	-200	RT	150	300	400	500
Ps (bar)	40	40	36.3	29.7	27.4	26.4

CVD3364M					
DN125-200					
t (°C)	-60	RT	120	200	250
Ps (bar)	16	16	16	14	13

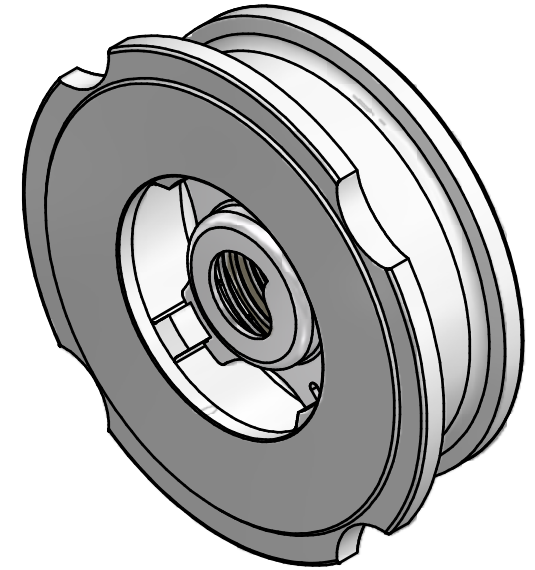
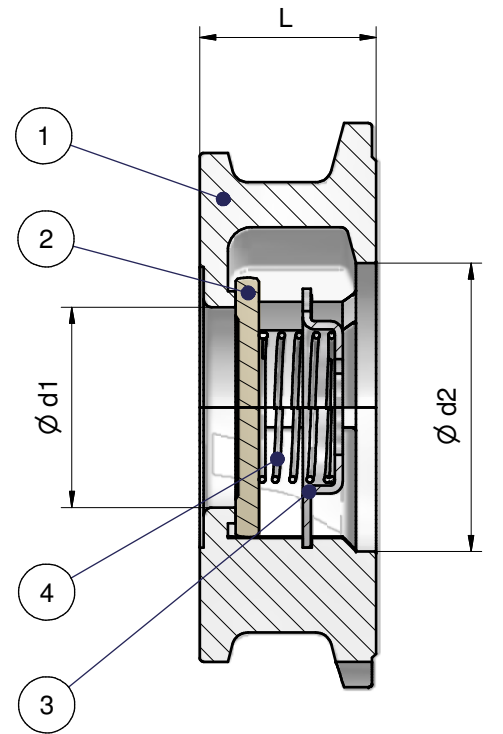
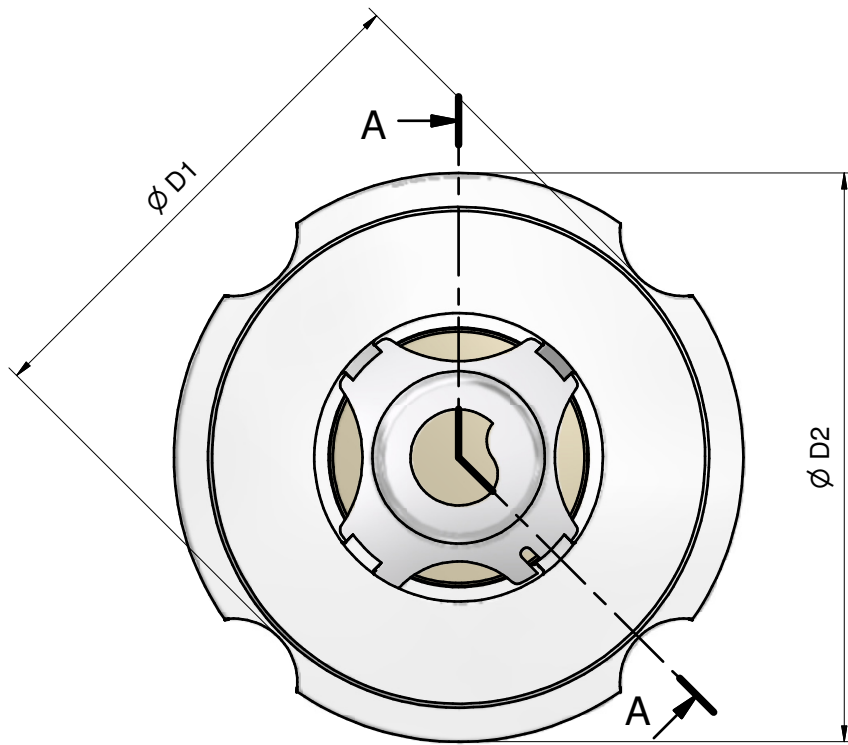
Applications limits for soft sealing

Soft Sealing	Temperature Range	Code
EPDM	-50 bis 130°C	E
NBR	-30 bis 120°C	P
VITON	-20 bis 200°C	V
PTFE	-200 bis 200°C	T



For further technical information please consult the corresponding Data Sheet.

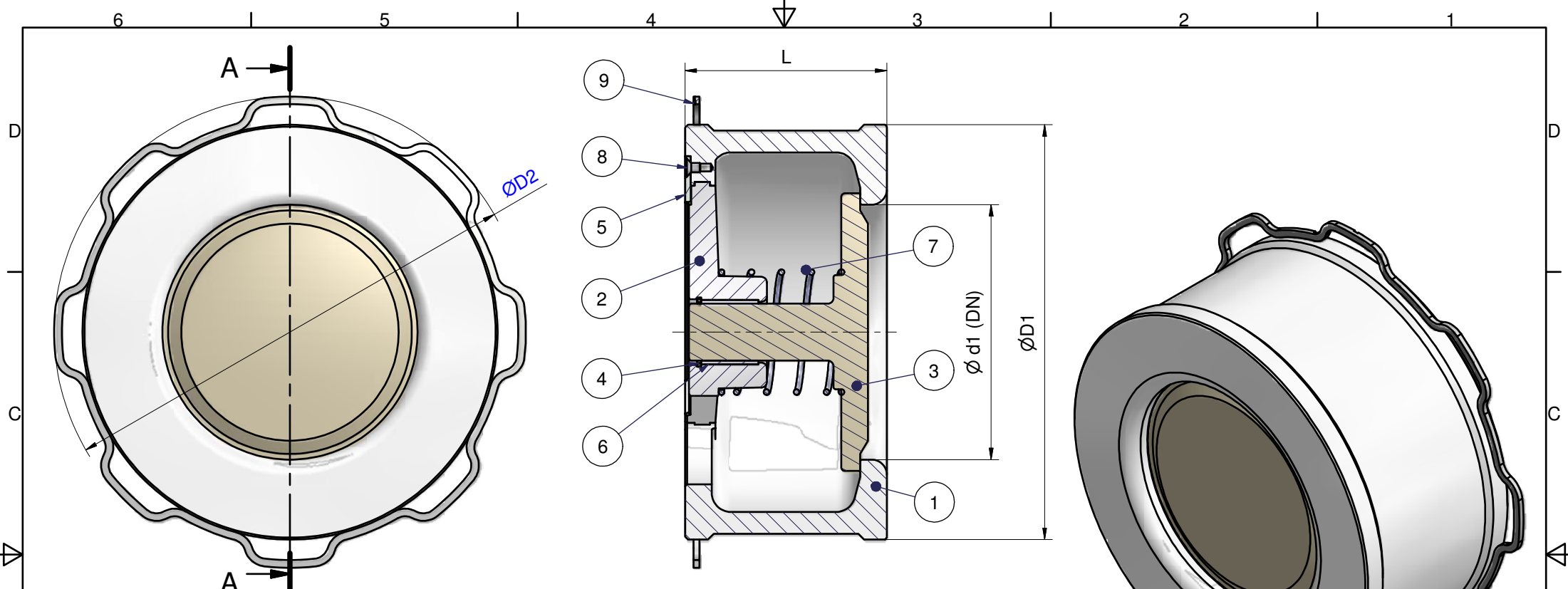
Subject to change without notice



- Product classification according to DGRL 97/23/EC, Fluid Group 1
- Placement between flanges according to DIN EN 1092-1, Form B1, PN 6-40 and ANSI B16.5 Class 150/ 300 RF
- Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10
- Tightness according to DIN EN 12266-1
 - Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)
- Overall length according to DIN EN 558-1, line 49 (K4)
- Identification according to DIN EN 19

DN (mm)	15	20	25	32	40	50	65	80	100
DN (zoll)	½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	4"
Ø d1	15	20	25	32	39	48	62	72.5	89
Ø d2	26	31	36	44	51.5	62	77.5	92	107
Ø D1	44	54	63.5	73	82.5	96	116	132	152
Ø D2	51	61	71	79.5	92	107	127	142	162/168
L	16	19	22	28	31.5	40	46	50	60
weight	0.1	0.2	0.3	0.5	0.7	1.1	1.6	3	3.5

Stückliste				
PO	ANZA	BAUTEILNUMMER	BEZEICHNUNG	MAT
4	1	csdfe__-025	CSD-Spring	see data sheet CSD
3	1	csdfk64-025	CSD-Spring Holder	see data sheet CSD
2	1	csdvp__-025	CSD-Valve PlateDN 15-100	see data sheet CSD
1	1	csdge__-025	CSD-Body DN 15-100	see data sheet CSD
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Änd.		Änd.		Ersteller
ChemValve-Schmid		Benennung		Zeichnungs-Nr.
Armaturentechnik		Non Return Valve Type CSD 15-100		csd-__m025.iam
				Masstab 1.5:1



A-A

- Product classification according to DGRL 97/23/EC, Fluid Group 1
 - Placement between flanges according to DIN EN 1092-1, Form B1, PN 10-40 and ANSI B16.5 Class 150/ 300 RF
 - Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10
 - Tightness according to DIN EN 12266-1, Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)
 - DN125-200, Overall length according to DIN EN 558-1, line 49
 - DN250-350, Overall length according to DIN EN 558-2, line 52
 - Identification according to DIN EN 19
- The pressure rates marked in blue are indicating the use of a centre ring.
D2 shows the outer diameter of the centre ring.

DN (mm)	125	150	200	250	300	350
DN (zoll)	5"	6"	8"	10"	12"	14"
Ø D1,PN10	192	218	273	328	378	438
Ø D1,PN16	192	218	273	328	378	444
Ø D1,D2,PN25	192	226	283	338	400	457
Ø D1,D2,PN40	192	226	290	352	417	474
D1,D2,ANSI150	192	218	273	338	400	447
D1,D2,ANSI300	212	247	304	352	417	482
L	90	106	140	200	250	280
Weight (kg)	10	14	24	50	77	108

Stückliste				
PO	ANZA	BAUTEILNUMM	BEZEICHNUNG	MATERIAL
9	1	zr11-150	Centre Ring DN150	1.4301
8	1	M5 x 8	ISK mit Senkkopf	St. Steel
7	1	csdfe_-150	CSD-Spring DN125-350	1.4401/ Hastelloy
6	1	csddu_-150	CSD-Bearing	PTFE MoS2/St.Steel
5	1	cschp_-125-150	CSD-Anti-Twist Holder 125-150	1.4408/ Hastelloy
4	1	csdsr_-125-150	CSD-Safety Ring DN125-150	see data sheet CSD
3	1	csdvp_-150	CSD-Valve Platte DN125-350	see data sheet CSD
2	1	csdst_-150	CSD-Star DN125-350	see data sheet CSD
1	1	csdge_-150	CSD-Body DN125-350	see data sheet CSD
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Armaturentechnik		Non Return Valve Type CSD 125-350		CSD____m150_broschüre.iam