



KIESELMANN

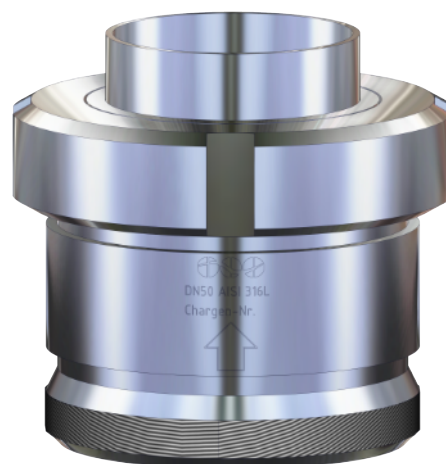
FLUID PROCESS GROUP

Translation of the original

Operating instruction


Ball-type check valve

Type 5080



KIESELMANN GmbH

Paul-Kieselmann-Str. 4-10
D - 75438 Knittlingen

 +49(0) 7043 371-0 •  +49(0) 7043 371-125
www.kieselmann.de • info@kieselmann.de

Copyright: © KIESELMANN FLUID PROCESS GROUP

Table of contents

1	General informations	4
1.1	Informations for your safety	4
1.2	Marking of security instructions	4
1.3	General designated use	4
1.4	Personnel	4
1.5	Modifications, spare parts, accessories	5
1.6	General instructions	5
2	Safety instructions	6
2.1	Intended use	6
2.2	General notes	6
2.3	General safety instructions	6
3	Delivery, transport and storage	7
3.1	Delivery	7
3.2	Transport	7
3.3	Storage	7
4	Specification	8
4.1	Modular system	8
5	Function and operation	9
5.1	Description of function	9
5.2	Commissioning	9
5.2.1	Installation instructions	9
5.2.2	General welding guidelines	9
5.2.3	ATEX - Guidelines	9
5.2.4	Service	10
5.2.5	Cleaning	10
6	Technical data	11
6.1	Performance chart	11
7	Disassembly and assembly	12
7.1	Disassembly	12
7.2	Assembly	12
8	Drawings and dimensions	13
8.1	Drawings	13
8.2	Dimensions	15
9	Wearing parts	16
9.1	Wear parts kit	16

1 General informations

1.1 Informations for your safety

We are pleased that you have decided for a high-class KIESELMANN GmbH product. With correct application and adequate maintenance, our products provide long time and reliable operation.






Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN GmbH - service team will naturally be at your disposal.

1.2 Marking of security instructions

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which will result severe personal injury or death.
	WARNING	Imminent danger which may result severe personal injury or death.
	CAUTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTICE	An harmful situation which may result in damages of the product itself or of adjacent vicinity.
	INFORMATION	Marks application hints and other information which is particularly useful.

1.3 General designated use

The fitting is designed exclusively for the purposes described below. Using the fitting for purposes other than those mentioned is considered contrary to its designated use. KIESELMANN GmbH cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user. The prerequisite for the reliable and safe operation of the fitting is proper transportation and storage as well as competent installation and assembly. Operating the fitting within the limits of its designated use also involves observing the operating, inspection and maintenance instructions.

1.4 Personnel

Personnel entrusted with the operation and maintenance of the tank safety system must have the suitable qualification to carry out their tasks. They must be informed about possible dangers and must understand and observe the safety instructions given in the relevant manual. Only allow qualified personnel to make electrical connections.

1.5 Modifications, spare parts, accessories

Unauthorized modifications, additions or conversions which affect the safety of the fitting are not permitted. Safety devices must not be bypassed, removed or made inactive. Only use original spare parts and accessories recommended by the manufacturer.

1.6 General instructions

The user is obliged to operate the fitting only when it is in good working order. In addition to the instructions given in the operating manual, please observe the relevant accident prevention regulations, generally accepted safety regulations, regulations effective in the country of installation, working and safety instructions effective in the user's plant.

2 Safety instructions

2.1 Intended use

The valve is suitable for use as a reflux - check valve for gas and fluid in plants in the food and beverage, in pharmaceutical, biotechnological and chemical industries.

2.2 General notes



NOTICE - observe the operating instructions

To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.



NOTICE

All data are in line with the current state of development. Subject to change as a result of technical progress.

2.3 General safety instructions



⚠ WARNING

Risk of injury by outflowing medium

Dismantling the valve or valve assemblies from the plant can cause injuries.

- Medias flowing through the leakage drain outlet are to be drained off without splashing into a discharge arrangement.
- Carry the disassembling only if when the plant has been rendered pressure-less and free of liquid and gas.



⚠ WARNING

ATEX - Guidelines

If the valve or the plant is operated in a potentially explosive atmosphere, the valid ATEX directive of the EC and the installation instructions in this operating manual must be observed.



⚠ CAUTION

Before starting the system, the entire pipeline system must be thoroughly cleaned.



⚠ CAUTION

Steps should be taken to ensure that no external forces are exerted on the fitting.

3 Delivery, transport and storage

3.1 Delivery

- Immediately after receipt check the delivery for completeness and transport damages.
- Remove the packaging from the product.
- Retain packaging material, or expose of according to local regulations.

3.2 Transport



CAUTION

Risk of injury and damage to the product

During the transport the generally acknowledged rules of technology, the national accident prevention regulations and company internal work and safety regulations must be observed.

3.3 Storage



NOTICE

Damage to the product due to improper storage!

Observe storage instructions
avoid a prolonged storage



INFORMATION

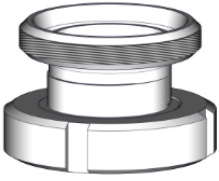
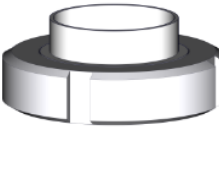

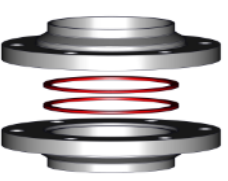
Recommendation for longer storage


We recommend regularly checking the product and the prevailing storage conditions during long storage times.


- To avoid damage to seals and bearings,
 - products up to DN 125 / OD 5 inch should be stored horizontally for maximum 6 months.
 - products larger than DN 125 / 5 inch, should be stored in the upright position with the actuator on top.
- Don't store any objects on the products.
- Protect the products for wetness, dust and dirt.
- The product should be stored in a dry and well ventilated room at a constant temperature (optimal indoor temperature: 25 C ±5; indoor humidity data 70% ±5%).
- Protect seals, bearings and plastic parts for UV light and ozone.





4 Specification

4.1 Modular system

Connecting piece			
Threaded piece	Welded piece	Liner/nut-piece	intermediate flange
			

ball	
	EPDM NBR FKM VMQ

Seal material	
	PTFE-Full material Steel core/EPDM Steel core/FKM Steel core/NBR

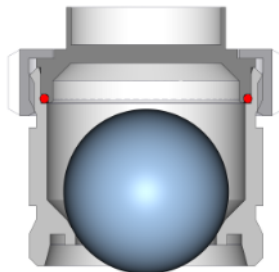
Housing			
G - G	G - S	G - KM	Zfl
			

5 Function and operation

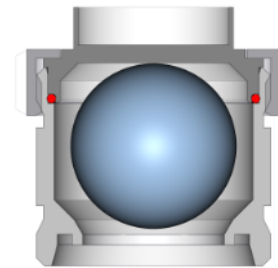
5.1 Description of function

The valve has the function to prevent the return flow of liquid media in pipings. During opposite direction of flow the ball is pressed into the seat and prevents the return flow of the medium.

valve "CLOSE"

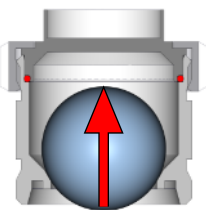


valve "OPEN"



5.2 Commissioning

5.2.1 Installation instructions



Fitting position

The installation position must always be vertical with the flow direction upwards.

5.2.2 General welding guidelines

Sealing elements integrated in weld components must generally be removed prior to welding. To prevent damage, welding should be undertaken by certified personnel (EN ISO 9606-1). Use the TIG (Tungsten Inert Gas) welding process.



CAUTION

Damage and injuries due to high temperature supply

To avoid a distortion of the components, all welding parts must be welded to stress-relieved. Allow all components to cool before assembling.



NOTICE

Damage due to impurities

Impurities can cause damage to the seals and seals area. Clean inside areas prior to assembly.

5.2.3 ATEX - Guidelines

For valves or plants/installations that are operated in the ATEX area, sufficient bonding (grounding) must be ensured (see valid ATEX Guidelines EG).

5.2.4 Service



RECOMMENDATION

Replacement of seals

To achieve optimal maintenance cycles, the following points must be observed!

- When replacement of seals, all product-contacting seals should be replaced.
- Only original spare parts may be installed.

Maintenance interval

The maintenance intervals depend on the operating conditions "temperature, temperature-intervals, medium, cleaning medium, pressure and opening frequency". We recommend replacing the seals 3-year cycle. The user, however should establish appropriate maintenance intervals according to the condition of the seals.

Lubricant recommendation

	EPDM; HNBR; NBR; FKM; k-flex	-	Klüber Paraliq GTE703*
	Silicone	-	Klüber Sintheso pro AA2*
	Thread	-	Interflon Food*
<p>*) It is only permitted to use approved lubricants, if the respective fitting is used for the production of food or drink. Please observe the relevant safety data sheets of the manufacturers of lubricants.</p>			

5.2.5 Cleaning

Cleaning

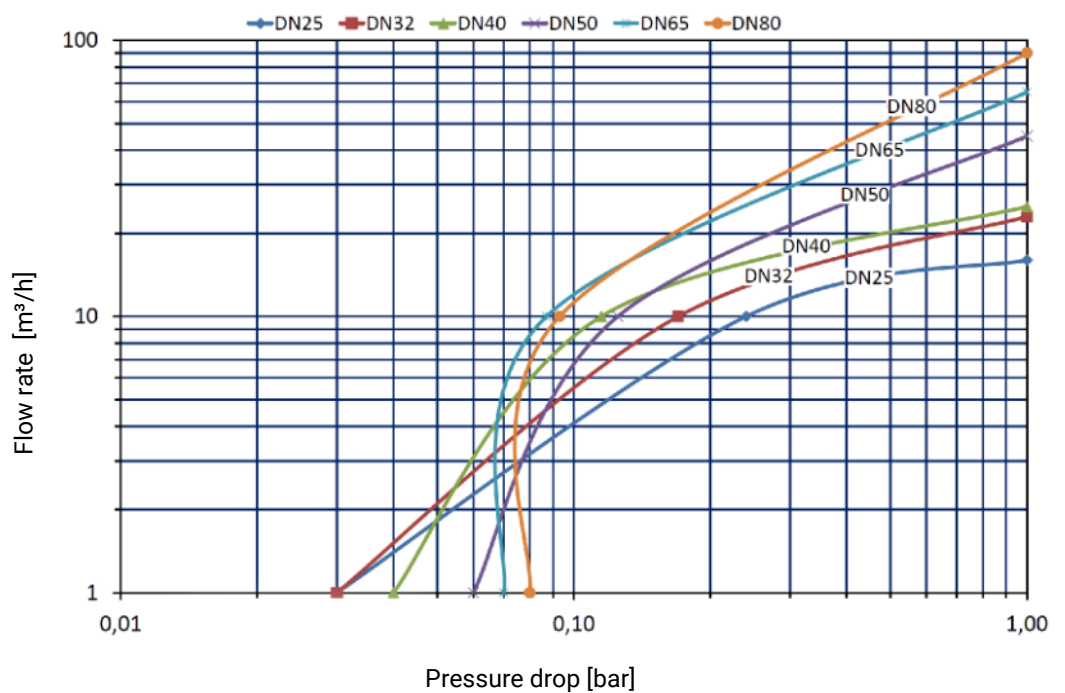
The optimum cleaning is carried out with the pipe cleaning.

6 Technical data

Model	ball-type check valve	
Valve size	DN25 - DN80	
Connection type	weld-on end DIN EN 10357 Male part DIN11851 Liner/nut DIN 11851	
Operating pressure	10 bar	
Temperature range	Operating temperature:	+4° to +95°C (medium dependent)
	Sterilization temperature:	EPDM +130°C (SIP 30 min) NBR +100°C FKM +100°C PTFE +100°C
Material: (in product contact)	Stainless steel:	1.4301 / AISI 304
	Surface:	Ra < 0,8µm e-polished
	Sealing material:	EPDM; NBR; FMK; VMQ
	Ball:	- PTFE-Full material - Steel core / EPDM - Steel core / FKM - Steel core / NBR

6.1 Performance chart

Flow rate:	DN25	DN32	DN40	DN50	DN65	DN80
KV-value = m³/h	15	23	25	48	65	90



7 Disassembly and assembly

7.1 Disassembly

Disassembly Design S-S; S-G; G-G; K-M/G

- Unscrew the union nut (2).
- Remove the connection piece (1) and the ball (4).
- Remove and replace the seal (3).

Disassembly Design FI-FI

- Unscrew the nut (15) and develop the screws (6).
- Remove the housing (12).
- Unscrew the headless pins (10) and develop the tightly seat (8) and (13).
- Remove the ball (4), the O-Rings (11) and the seal (9).

7.2 Assembly

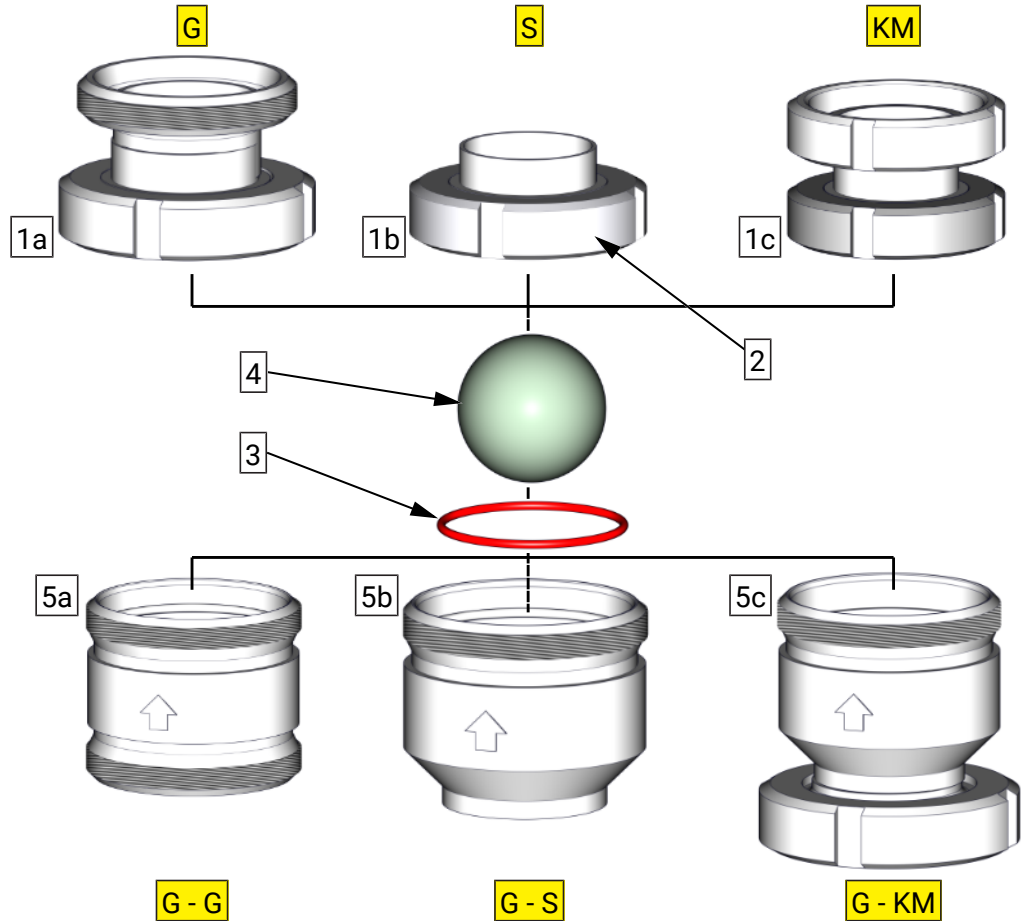
- Before installation, thoroughly clean and slightly lubricate mounting areas and running surfaces.
- Assemble in reverse order.

8 Drawings and dimensions

8.1 Drawings

ball-type check valve

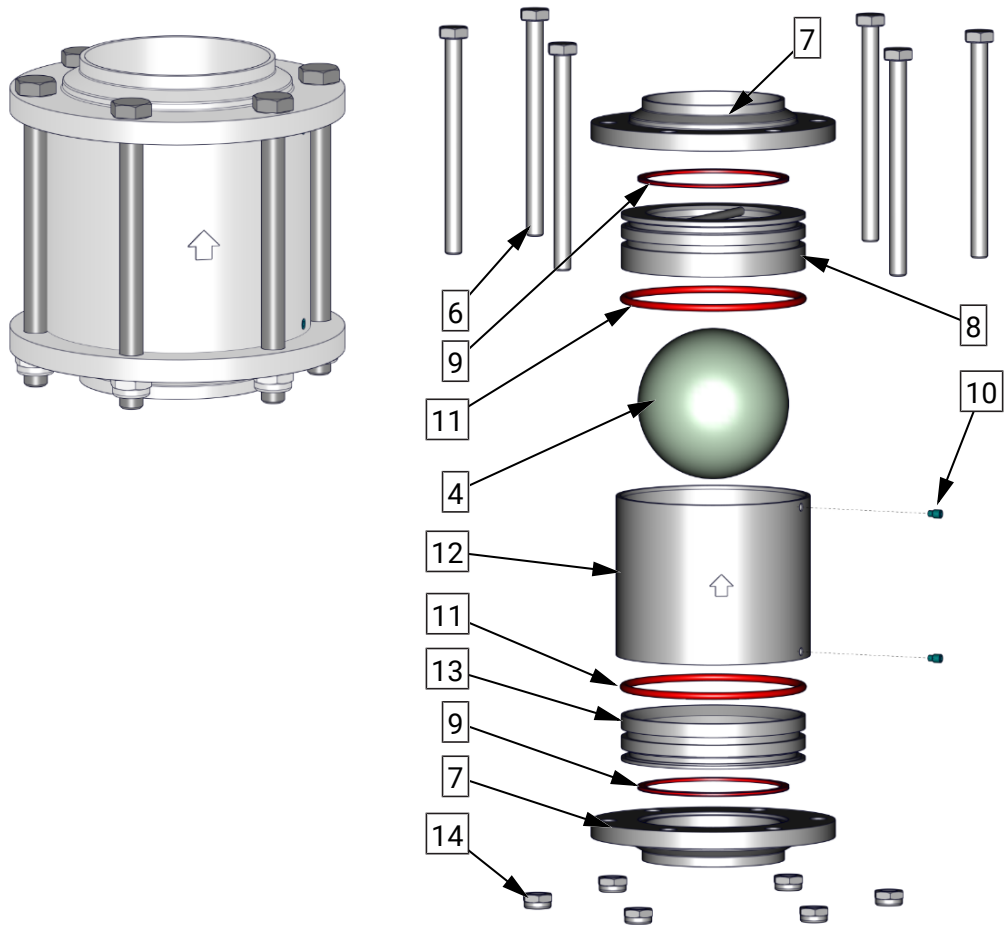
- with connecting piece welded end, male, cone/nut



1a Male - connecting piece	4 ball
1b Welded end - connecting piece	5a Housing male-male
1c Liner/nut - connecting piece	5b Housing male-welded end
2 Slotted nut	5c Housing male-Liner/nut
3 O-ring	

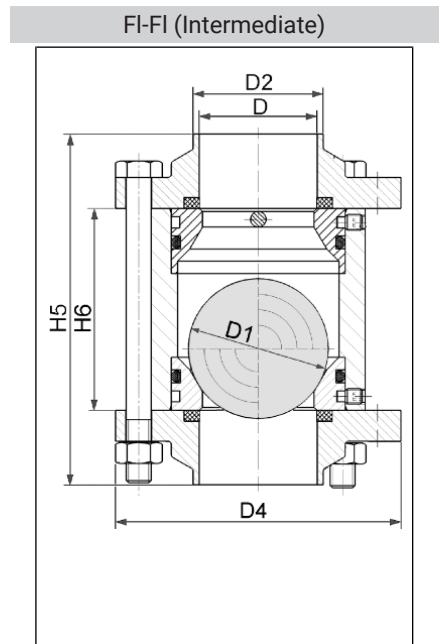
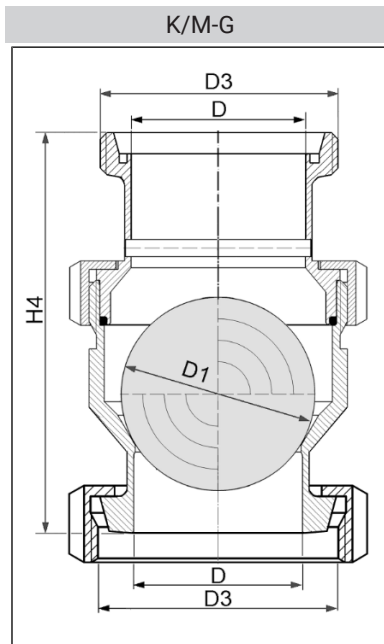
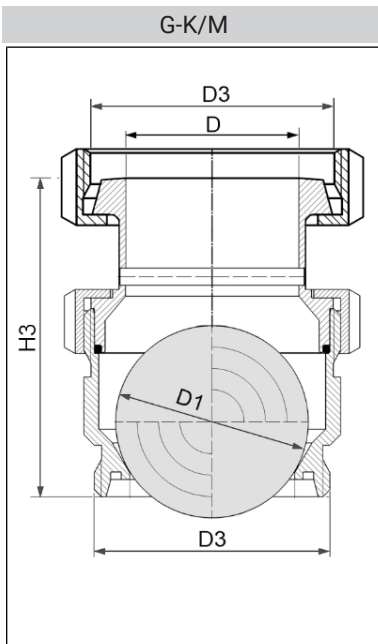
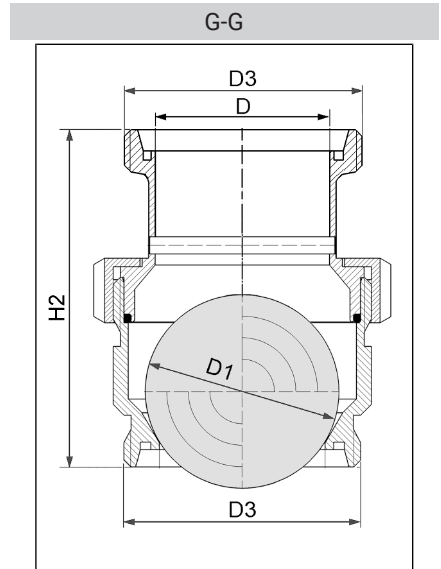
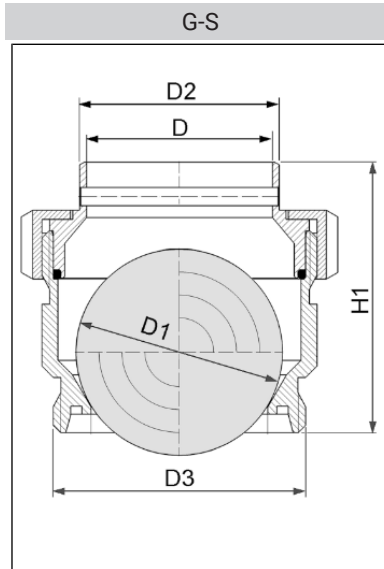
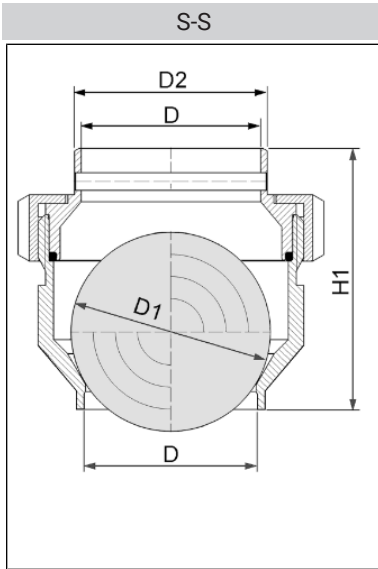
ball-type check valve

- Intermediate



1 -	8 Tightly seat
2 -	9 Seal
3 -	10 Headless pin
4 ball	11 O-ring
5 -	12 Housing
6 Screw	13 Tightly seat
7 Flange	14 Nut

8.2 Dimensions



Nominal width	D	D1	D2	D3	D4	H1	H2	H3	H4	H5	H6
DN 25	26	32	Ø 29	Rd 52x1/6	80	~ 65	87	80	95	104	65
DN 32	32	35	Ø 35	Rd 58x1/6	86	~ 69	91	84	99	104	56
DN 40	38	45	Ø 41	Rd 65x1/6	92	~ 78	100	93	108	113	65
DN 50	50	55	Ø 53	Rd 78x1/6	108	~ 86	109	102	118	119	71
DN 65	66	75	Ø 70	Rd 95x1/6	130	~ 103	128	120	137	127	79
DN 80	81	90	Ø 85	Rd 110x1/4	146	~ 118	143	135	152	144	96

9 Wearing parts

9.1 Wear parts kit

Wear parts kit (VTS)

- for Ball-type check valve type 5080

Pos. 3 O-ring				
DN	VMQ	EPDM	FKM	NBR
25	-	2304 035 030-170	2304 035 030-051	2304 035 030-055
32	2304 042 030-052	2304 042 030-170	2304 042 030-051	2304 042 030-055
40	-	2304 046 030-170	2304 046 030-051	2304 046 030-055
50	2304 060 030-052	2304 060 030-170	2304 060 030-251	-
65	2304 085 035-052	2304 085 035-159	2304 085 035-078	2304 085 035-055
80	2304 100 040-182	2304 100 040-159	2304 100 040-051	2304 100 040-055

Pos. 4 Ball				
DN	PTFE-Full material	Steel core / EPDM	Steel core / FKM	Steel core / NBR
25	2341 032 000-053	2342 032 025-068	2342 032 025-051	2342 032 025-055
32	2341 035 000-053	2342 035 025-068	2342 035 025-051	2342 035 025-055
40	2341 045 000-053	2342 045 035-068	2342 045 035-051	2342 045 035-055
50	2341 055 000-053	2342 055 045-068	2342 055 045-051	2342 055 045-055
65	2341 075 000-053	2342 075 065-068	2342 075 065-051	2342 075 065-051
80	2341 090 000-053	2342 090 080-068	2342 090 080-051	2342 090 080-055

Wear parts kit (VTS)

- for Ball-type check valve type 5080 - Intermediate flange

Pos. 4 Ball				
DN	PTFE-Full material	Steel core / EPDM	Steel core / FKM	Steel core / NBR
25	2341 032 000-053	2342 032 025-068	2342 032 025-051	2342 032 025-055
32	2341 035 000-053	2342 035 025-068	2342 035 025-051	2342 035 025-055
40	2341 045 000-053	2342 045 035-068	2342 045 035-051	2342 045 035-055
50	2341 055 000-053	2342 055 045-068	2342 055 045-051	2342 055 045-055
65	2341 075 000-053	2342 075 065-068	2342 075 065-051	2342 075 065-051
80	2341 090 000-053	2342 090 080-068	2342 090 080-051	2342 090 080-055

Pos. 9 Seal			Pos. 11 O-ring	
DN	k-flex		EPDM	
25	-		-	
32	-		-	
40	2353 047 038-114		2304 047 035-159	
50	2353 059 050-114		2304 062 035-159	
65	-		-	
80	2353 090 081-114		2304 100 040-159	