SPXFLOW

INSTRUCTION MANUAL

APV DELTA VPN

NON-RETURN VALVE

FORM NO.: H324445 REVISION: UK-3

READ AND UNDERSTAND THIS MANUAL PRIOR TO OPERATING OR SERVICING THIS PRODUCT.



APV®

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	VPN 12S DN25-100, 1"-4"	
	VPN 1CL 2S 1"-4"	

1. General Terms

This instruction manual should be read carefully by the competent operating and maintenance personnel.

We point out that we will not accept any liability for damage or malfunctions resulting from the non-compliance with this instruction manual.

Descriptions and data given herein are subject to technical changes.

2. Safety Instructions

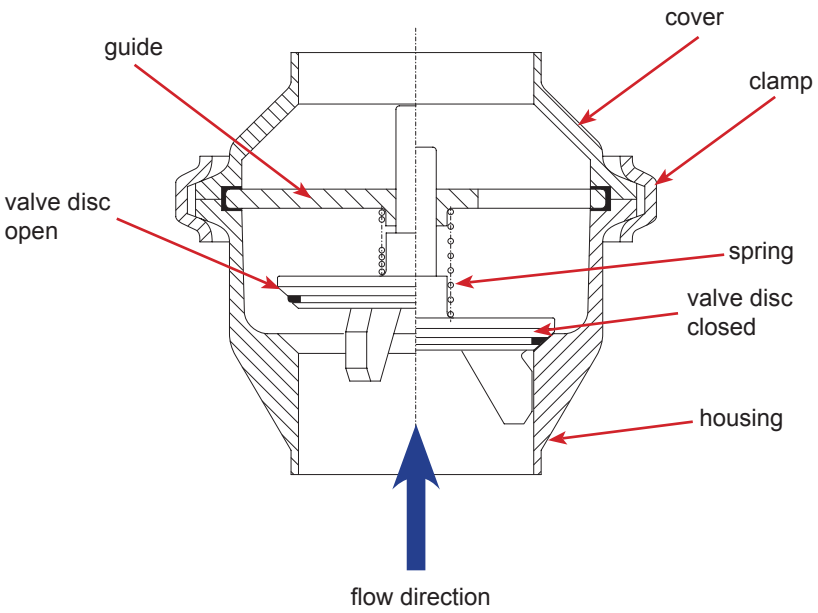


Danger!

- Before any maintenance of the valve, the line system must be depressurized and drained if possible.
- Observe Service Instructions to ensure safe maintenance of the valve.

3. Mode of Operation

The DELTA VPN valve is used in places at which the reflux into the pipelines must be prevented. The valve opens through the pressure of the liquid against the spring-loaded valve disc.
The closing process is introduced by the preloaded spring when the liquid flow into the flow direction stops.



4. Installation

- The VPN should be installed in vertical position with flow direction from the bottom to the top. In other installing positions, proper closing and/or emptying is not provided.
- For the valve design with two weld ends (DIN and ISO) a separate connection (e.g. clamp connection) must be provided in the continuing pipe system.
- The 1CL 2S version is already equipped with a clamp connection at the supply side so that the pipeline must also be provided with a clamp flange.

  Attention! Observe welding instruction.

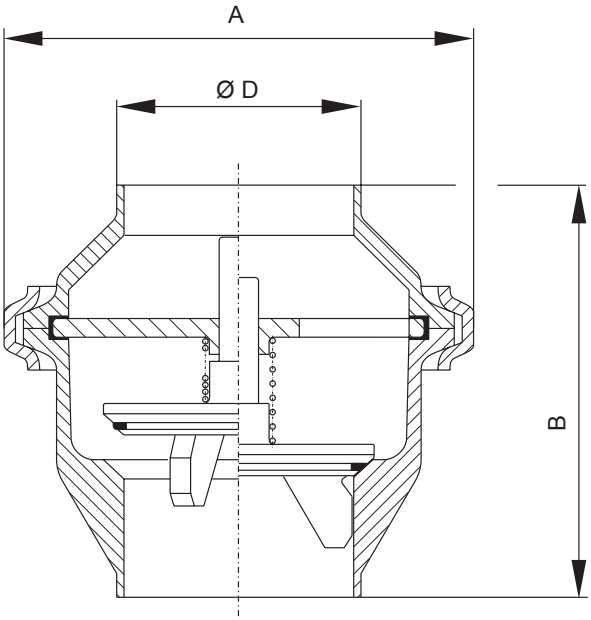
4.1 Welding instructions

VPN

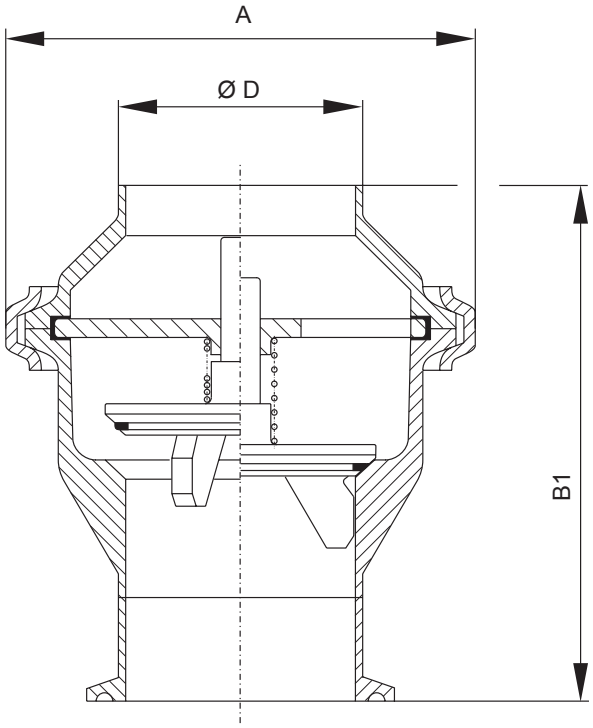
- Before welding, the guide with seal and the valve disc with spring must be dismantled from the housing.
- Welding should only be carried out by certified welders (DIN EN ISO 9606-1). (Seam quality DIN EN ISO 5817).
- The welding of the valve housings must be undertaken in such a way that the valve body is not deformed.
- The preparation of the weld seam up to 3 mm thickness must be carried out as a square butt joint without air. (Consider shrinkage!)
- TIG orbital welding is best!
- After welding of the valve housing or of the mating flanges and after work at the pipelines, the corresponding parts of the installation and pipelines must be cleaned from welding residues and soiling before operation of the valves to avoid damage to the valves and seals. If these cleaning instructions are not observed, welding residues and dirt particles can settle in the valve and cause damage.
- Any damage resulting from the non-observance of these welding instructions is not subject to our guarantee.

5. Dimensions

DELTA VPN II – DIN and ISO
with weld ends



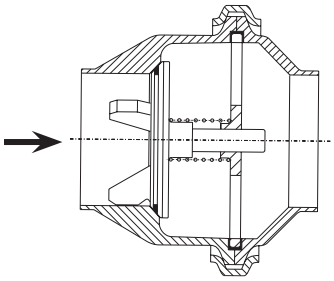
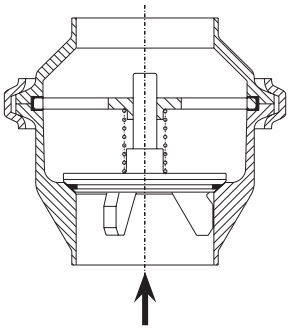
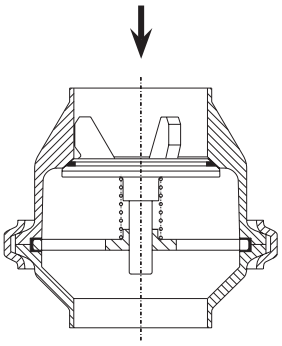
DELTA VPN II 1CL 2S
with clamp connection and weld ends



DN	A	B	B1	Ø D
25	72,5	71,2	92,7	29
40	86,0	80,2	101,7	41
50	100,0	87,5	109,0	54
65	129,0	100,7	122,2	70
80	160,0	131,2	152,7	85
100	156,0	141,0	162,5	104
Inch				
1"	72,5	71,2	92,7	25,4
1,5"	86,0	80,2	101,7	38,1
2"	100,0	87,5	109,0	50,8
2,5"	129,0	100,7	122,2	64,1
3"	160,0	131,2	152,7	76,7
4"	156,0	141,0	162,5	102,5

6. Technical Data

max. line pressure: **10 bar**
max. operating temperature: **135 °C EPDM**
short-term load: **140 °C EPDM**

Installation position	Theoretical response pressure in (bar)
	0,025
	0,04
	0,015

DN	Inch	kvs values in m³/h
25	1"	11
40		25
50		42
	2,5"	67
65		73
	3"	111
80		128

7. Materials

- Housing, valve disc, guide, cover: **1.4571, 1.4404** (DIN EN 10088)
- Clamp: **1.4301** (DIN EN 10088)
- Spring: **1.4436** (DIN EN 10088)
- Seal standard design: **EPDM**

8. Maintenance

- The maintenance intervals depend on the corresponding application and are to be determined by the operator himself carrying out temporary checks.
- Stock keeping by the customer of certain spare seals is recommended.
  For the valve service we supply complete seal kits..
- Exchange of seals is done according to service instructions
- **All seals must be provided with a thin layer of grease before their installation.**

  Recommendation:
  APV assembly grease for **EPDM**
  (750 g / tin - ref.-No. 000 70-01-019/93; H147382)
  (60 g / tube - ref.-No. 000 70-01-018/93; H147381)

  Do not use grease containing mineral oil for EPDM seals!

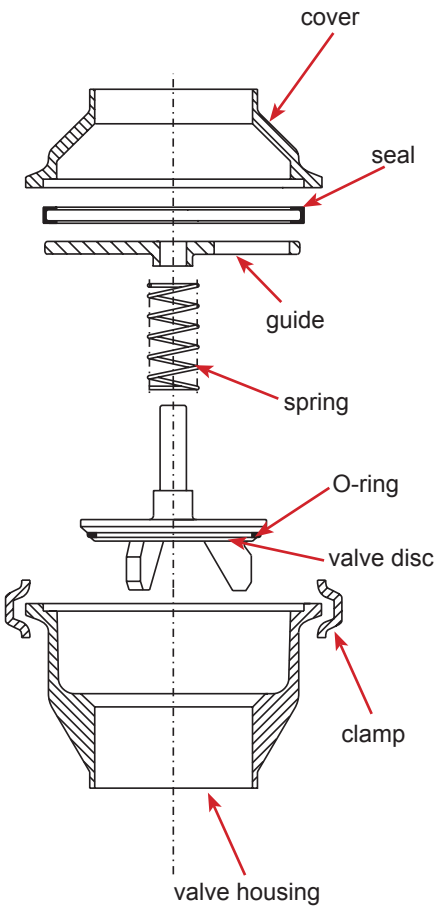
- Assembly of valve see Service Instructions.

Seal kits for DELTA VPN
EPDM seal material

DN	ref.-No.
25	H312562
40	H312563
50	H312558
65	H312564
80	H312565
100	H312566

Inch		ref.-No.
1"	(25)	H312556
1,5"	(38)	H312557
2"	(51)	H312558
2,5"	(63)	H312559
3"	(76)	H312560
4"	(102)	H312561

9. Service Instructions



The item numbers refer to the spare parts drawings.

9.1 Dismantling from the line system

a. Shut off the line pressure, drain the lines if possible.

b. Remove the clamp **(5)**.

c. Dismantle the cover (8) from the housing (1).

9.2 Dismantling of wear parts

a. Take the guide (7), valve disc (2) and spring (4) out of the housing.

b. Remove the seal (6) from the guide.

c. Dismantle the o-ring (3) from the valve disc. Stick into the o-ring with a pointed object (e.g. small screwdriver) and pull it out.

9.3 Installation of seals and assembly of valve

a. Insert the slightly greased o-ring. Check the even fit of the seal after its installation.

b. Insert the slightly greased seal into the guide. Check the even fit of the seal after its installation.

c. Install the valve disc with spring and guide in the housing.

d. Place the cover on the housing and fix it with the clamp.

10. Trouble Shooting

Valve does not close tightly:	Replace **O-ring (3)**.
Leakage between cover and valve housing:	Check **seal (6)** prüfen, replace deffective seal.
Valve does not work properly:	Check mobility of the valve disc, replace damaged parts if necessary.

11. Spare Parts Lists

(see annex)

The order numbers of the spare parts for the different valve designs and sizes are indicated in the attached spare parts drawings with corresponding lists.
When placing an order for spare parts, please indicate the following data:
- required number of pieces
- order number
- designation

subject to change

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht schriftlich zugestanden. Verstoß verpflichtet zum Schadensersatz und kann strafrechtliche Folgen haben (Paragraph 18 UWG, Paragraph 106 UrhG). Eigentum und alle Rechte, auch für Patenterteilung und Gebrauchsmustereintragung, vorbehalten. SPX Flow Technology Germany GmbH.

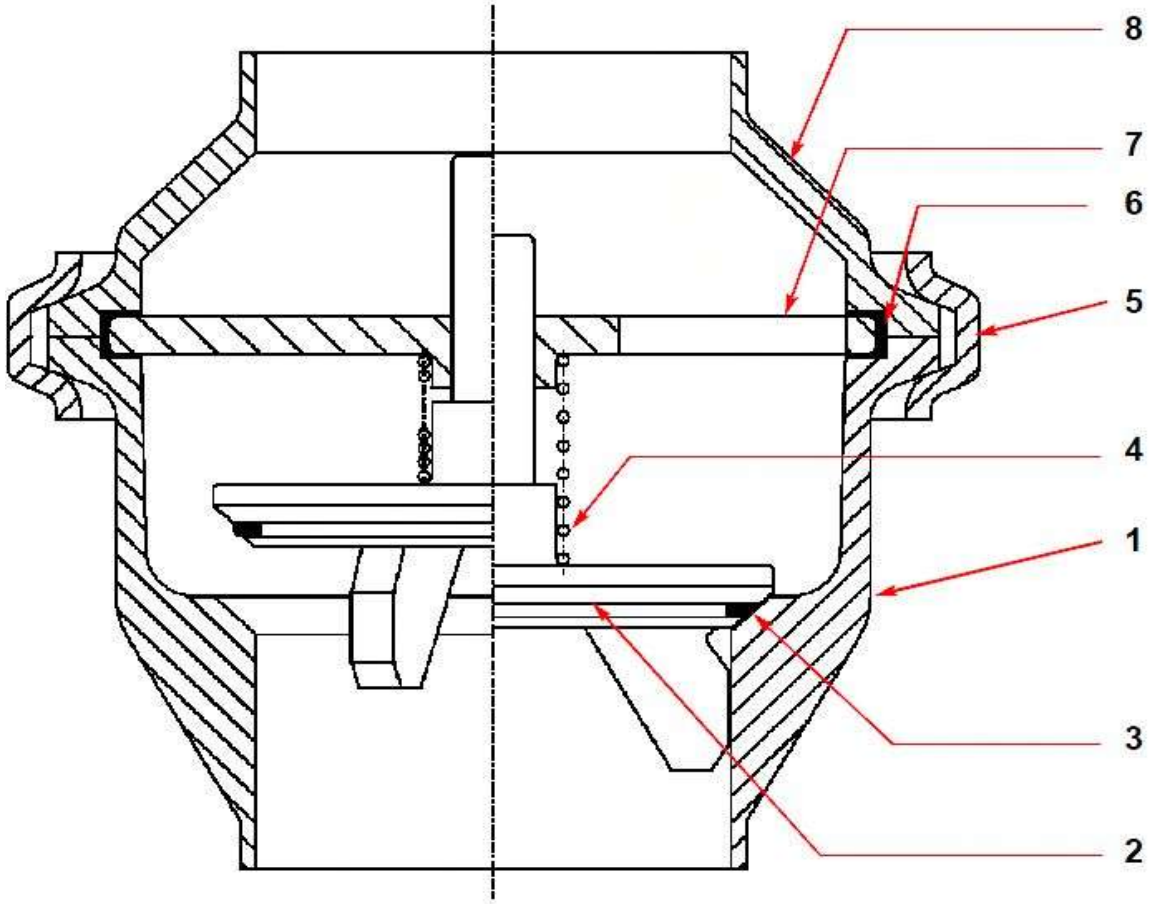
Ersatzteilliste: spare parts list

Rückschlagventil DELTA VPN 12S DN25-100 1-4 Zoll
Non-return valve DELTA VPN 12S DN25-100 1-4 inch

Datum:	13.08.19				
Name:	Waltenb.				
Geprüft:					

Datum:					
Name:					
Geprüft:					

RN01.102-1



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Ersatzteilliste: spare parts list

Rückschlagventil DELTA VPN 12S DN25-100 1-4 Zoll
Non-return valve DELTA VPN 12S DN25-100 1-4 inch

Datum:	13.08.19				
Name:	Waltenb.				
Geprüft:					

Datum:					
Name:					
Geprüft:					

RN01.102-1

pos. item	Menge quantity	Beschreibung description	Material material	DN25 WS-Nr. ref.-no.	1" WS-Nr. ref.-no.	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	2" WS-Nr. ref.-no.
1	1	Ventilgehäuse Valve body		L268135	L260360	L268136	L260361	L268137	L268240
2	1	Ventilteller Valve flap		L194044 H470041	L194042 H470039	L194045 H470042	L194043 H470040	L188272 H470019	L188268 H470015
3	1	O-Ring O-ring	EPDM	L772149 H169652	L772233 H121794	L772235 H209907	L772234 H209906	L772236 H209908	
4	1	Feder Spring		L254905 H470052				L254690 H470045	
5	1	Gelenkklemme Clamp		L169847 H209620		L169848 H209621		L169849 H209622	
6	1	Dichtung Seal	EPDM	L771167 H209843		L771168 H209844		58-33-477/01 H339158	
7	1	Führungsscheibe Guide disc		L254846 H470047		L254847 H470048		L254848 H470049	
8	1	Deckel Cover		L254871	L254912 H470059	L254872	L254833	L254873	L254835
		Pos. 3, 6 nur im kompletten Dichtungssatz erhältlich **Item 3, 6 available as complete seal kits only**							
	1	Dichtungssatz Seal kit	EPDM	58-36-010/01 H312562	58-36-001/01 H312556	58-36-011/01 H312563	58-36-002/01 H312557	58-36-003/01 H312558	

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Ersatzteilliste: spare parts list

Rückschlagventil DELTA VPN 12S DN25-100 1-4 Zoll
Non-return valve DELTA VPN 12S DN25-100 1-4 inch

Datum:	13.08.19			
Name:	Waltenb.			
Geprüft:				

Datum:				
Name:				
Geprüft:				

RN01.102-1

pos. item	Menge quantity	Beschreibung description	Material material	DN65 WS-Nr. ref.-no.	2,5" WS-Nr. ref.-no.	DN80 WS-Nr. ref.-no.	3" WS-Nr. ref.-no.	DN100 WS-Nr. ref.-no.	4" WS-Nr. ref.-no.
1	1	Ventilgehäuse Valve body		L268138	L268241	L268139	L260364	L267406	L267407
2	1	Ventilteller Valve flap		L188273 H470020	L188269 H470016	L188274 H470021	L188270 H470017	L188275 H470022	L188271 H470018
3	1	O-Ring O-ring	EPDM	L772239 H209910	L772238 H209909	L772150 H77039	L772240 H209911	L772151 H209900	L772241 H121792
4	1	Feder Spring		L254690 H470045		L254715 H470046		L255195 H470053	
5	1	Gelenkklemme Clamp		L169850 H209623		L175705 H209636			
6	1	Dichtung Seal	EPDM	L771170 H209845		L771171 H209846		L771170 H209845	
7	1	Führungsscheibe Guide disc		L254849 H470050		L254850 H470051		L256058 H470054	
8	1	Deckel Cover		L254874	L254837	L254875	L254839	L256001	L254161
		Pos. 3, 6 nur im kompletten Dichtungssatz erhältlich **Item 3, 6 available as complete seal kits only**							
	1	Dichtungssatz Seal kit	EPDM	58-36-013/01 H312564	58-36-004/01 H312559	58-36-014/01 H312565	58-36-005/01 H312560	58-36-015/01 H312566	58-36-006/01 H312561

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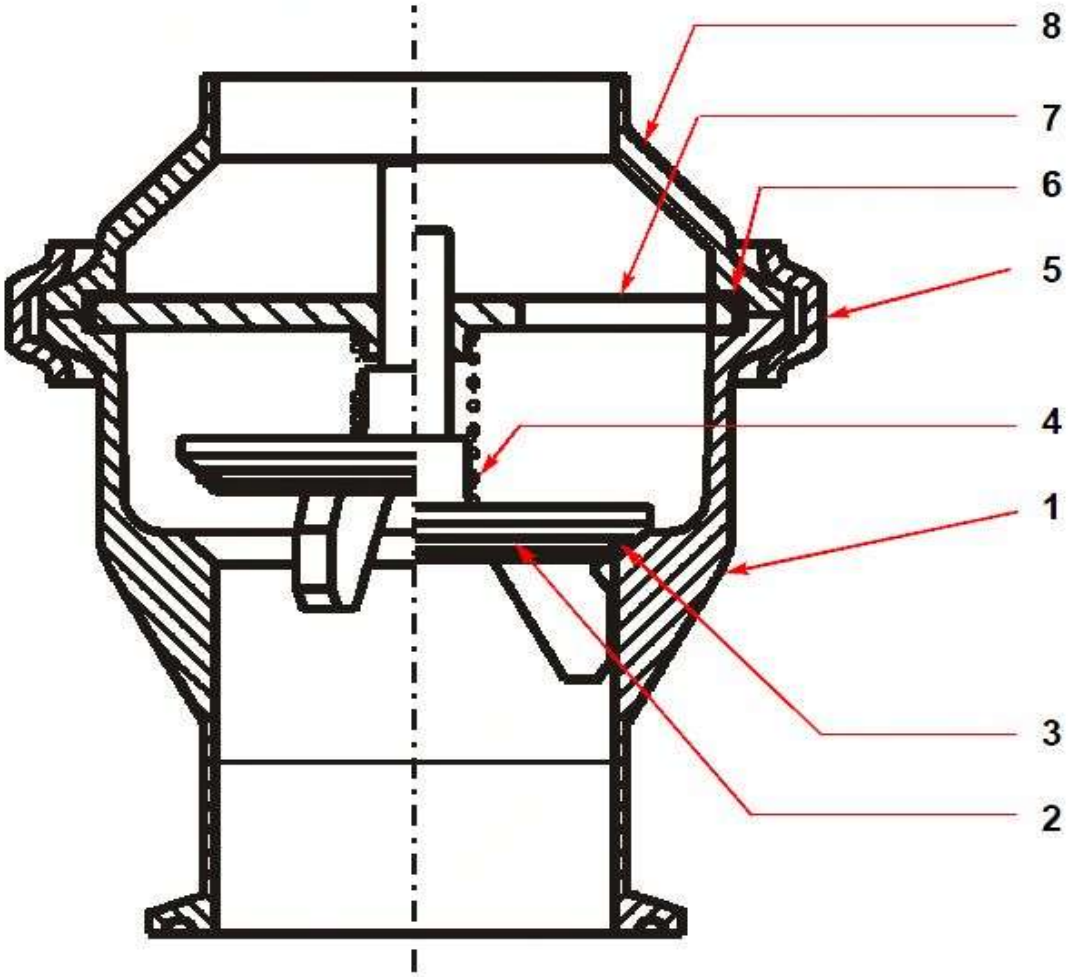
Ersatzteilliste: spare parts list

Rückschlagventil DELTA VPN 1CL 2S 1-4 Zoll
Non-return valve DELTA VPN 1CL 2S 1-4 inch

Datum:	15.08.19				
Name:	Waltenb.				
Geprüft:					

Datum:					
Name:					
Geprüft:					

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Ersatzteilliste: spare parts list

Rückschlagventil DELTA VPN 1CL 2S 1-4 Zoll
Non-return valve DELTA VPN 1CL 2S 1-4 inch

Datum:	15.08.19			
Name:	Waltenb.			
Geprüft:				

Datum:				
Name:				
Geprüft:				

RN01.102-2

pos. item	Menge quantity	Beschreibung description	Material material	DN25 WS-Nr. ref.-no.	1" WS-Nr. ref.-no.	DN40 WS-Nr. ref.-no.	1,5" WS-Nr. ref.-no.	DN50 WS-Nr. ref.-no.	2" WS-Nr. ref.-no.
1	1	Ventilgehäuse Valve body			L188235		L188236		L188237
2	1	Ventilteller Valve flap			L194046 H470043		L194047 H470044		L188276 H470023
3	1	O-Ring O-ring	EPDM		58-06-078/64 H121794		L772234 H209906		L772236 H209908
4	1	Feder Spring			L254905 H470052		L254905 H470052		L254690 H470045
5	1	Gelenkklemme Clamp			L169847 H209620		L169848 H209621		L169849 H209622
6	1	Dichtung Seal	EPDM		L771167 H209843		L771168 H209844		58-33-477/01 H339158
7	1	Führungsscheibe Guide disc			L259784 H470055		L259785		L259786 H313590
8	1	Deckel Cover			L254865		L254866		L254867
		Pos. 3, 6 nur im kompletten Dichtungssatz erhältlich **Item 3, 6 available as complete seal kits only**							
	1	Dichtungssatz Seal kit	EPDM		58-36-001/01 H312556		58-36-002/01 H312557		58-36-003/01 H312558

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Ersatzteilliste: spare parts list

Rückschlagventil DELTA VPN 1CL 2S 1-4 Zoll
Non-return valve DELTA VPN 1CL 2S 1-4 inch

Datum:	15.08.19			
Name:	Waltenb.			
Geprüft:				

Datum:				
Name:				
Geprüft:				

Blatt 3 von 3

RN01.102-2

pos. item	Menge quantity	Beschreibung description	Material material	DN65 WS-Nr. ref.-no.	2,5" WS-Nr. ref.-no.	DN80 WS-Nr. ref.-no.	3" WS-Nr. ref.-no.	DN100 WS-Nr. ref.-no.	4" WS-Nr. ref.-no.
1	1	Ventilgehäuse Valve body			L188238		L188239		L188340
2	1	Ventilteller Valve flap			L188277 H470024		L188278 H470025		L188279 H470026
3	1	O-Ring O-ring	EPDM		L772238 H209909		L772240 H209911		L772241 H121792
4	1	Feder Spring			L254690 H470045		L254715 H470046		L255195 H470053
5	1	Gelenkklemme Clamp			L169850 H209623		L175705 H209636		L175705 H209636
6	1	Dichtung Seal	EPDM		L771170 H209845		L771171 H209846		L771170 H209845
7	1	Führungsscheibe Guide disc			L259787		L259788 H470056		L267419
8	1	Deckel Cover			L254868		L254869		L254165
		Pos. 3, 6 nur im kompletten Dichtungssatz erhältlich **Item 3, 6 available as complete seal kits only**							
	1	Dichtungssatz Seal kit	EPDM		58-36-004/01 H312559		58-36-005/01 H312560		58-36-006/01 H312561

APV DELTA VPN

NON-RETURN VALVE

SPXFLOW

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