

Operating Manual

DELTA VPN

Non - return Valve



Read and understand this manual prior to operating or servicing this product.

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VPN II - ISO	12S
VPN II - DIN	12S
VPN II - 3A	1Clamp + 2S

1. General Terms

This operating 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 operating manual.

Descriptions and data given herein are subject to technical changes.

2. Safety Instructions

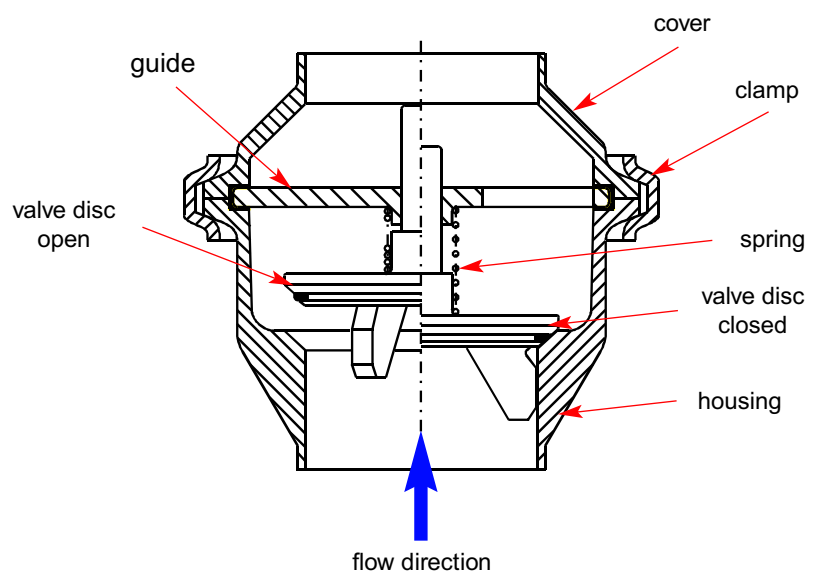


Danger !

- 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 valve can be installed in optional position. The flow direction must be in the direction of arrows.
- To provide for a complete discharge of the valve, a vertical installation position should be favoured.
- 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 3A-design 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 instructions.

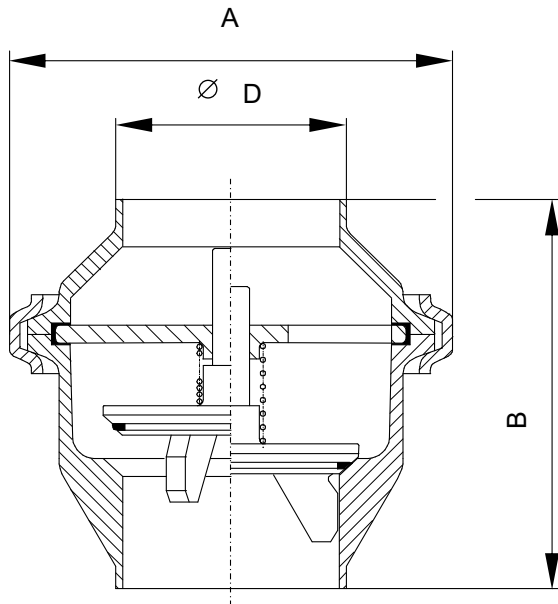
4.1 Welding instructions

VPN

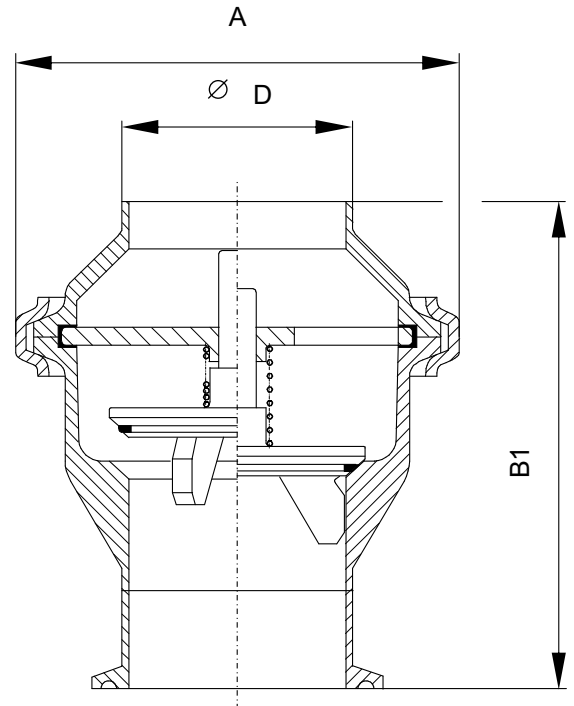
- Before welding, the guide with seal and the valve disc with spring must be dismantled from the housing.
- Welding should only be carried out by certified welders (EN 287-1). (Seam quality EN 25817 "B").
- The welding of the valve housings must be undertaken in such a way that the valve body is not 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



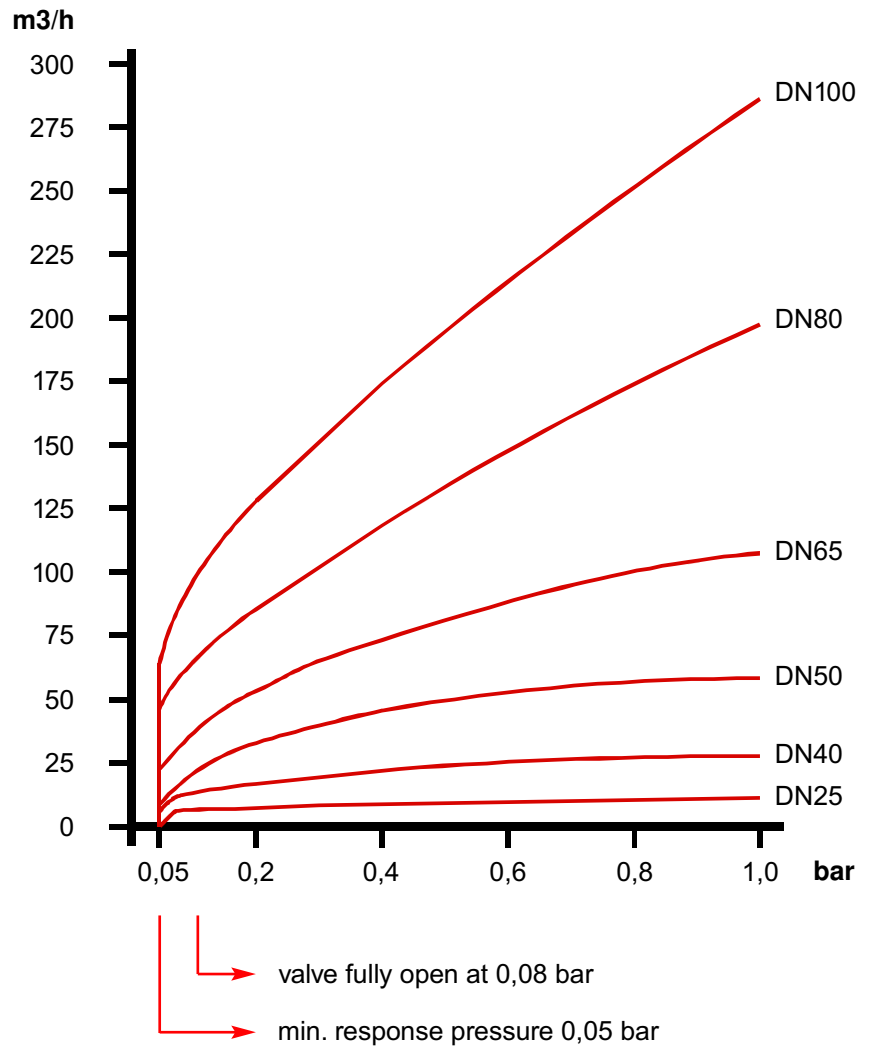
DELTA VPN II 3A - design
with clamp connection and weld ends



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, HNBR, *FPM
short-term load	= 140° C EPDM, HNBR, *FPM
	*(no steam)



7. Materials

- Housing, valve disc, guide, cover : **1.4571, 1.4404**
- Clamp : **1.4301**
- Spring : **1.4436**
- Seals standard design : **EPDM**
- Options : **FPM, HNBR**

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 food-grade-grease for **EPDM, FPM, HNBR**
 (0,75 kg/ tin - ref.-No. 000 70-01-019/93)
 (60 g/ tube - ref.-No. 000 70-01-018/93)

- !!! Do not use grease containing mineral oil for EPDM seals !!!**
- **Assembly of valve see Service Instructions.**

Seal kits for DELTA VPN					
Different seal materials are available:					
		/00 = FPM		/01 = EPDM	/06 = HNBR
DN	ref.-No.:	inch		ref.-No.:	
25	58 - 36 - 010/..	1"	(25)	58 - 36 - 001/..	
40	58 - 36 - 011/..	1,5"	(38)	58 - 36 - 002/..	
50	58 - 36 - 003/..	2"	(51)	58 - 36 - 003/..	
65	58 - 36 - 013/..	2,5"	(63)	58 - 36 - 004/..	
80	58 - 36 - 014/..	3"	(76)	58 - 36 - 005/..	
100	58 - 36 - 015/..	4"	(102)	58 - 36 - 006/..	

9. Service Instructions

The item numbers refer to the spare parts drawings.

9.1 Dismantling from the line system

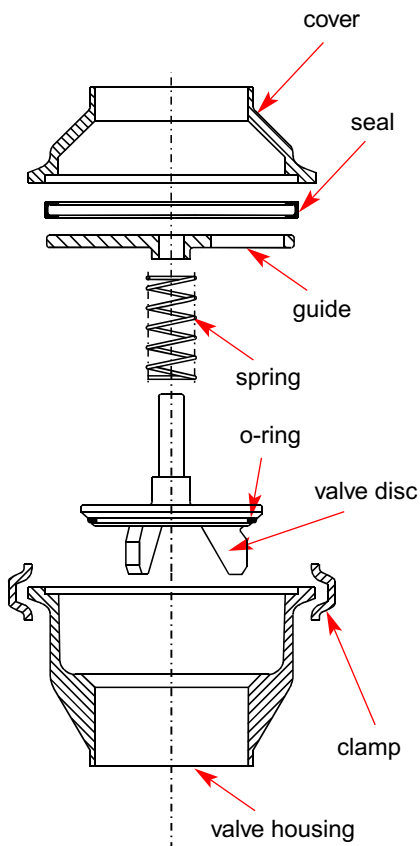
- a. Shut off the line pressure, drain the lines if possible.
- b. Remove the clamp (5).
- c. Dismantle the cover (8) from the housing (1).

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) , replace defective 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

BA VPN 000002



Translation of original manual

rev. 0



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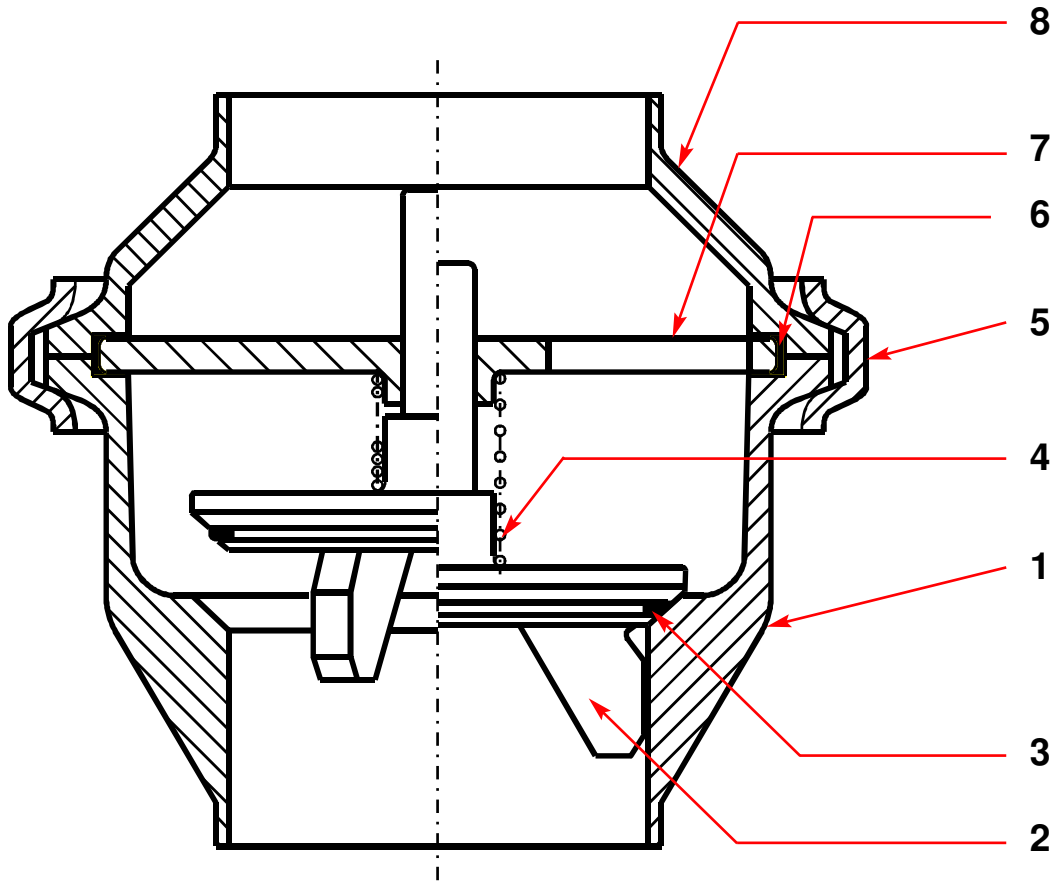
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DELTA VPN II-ISO / VPN II-DIN



DELTA VPN II-ISO

DN

				1"	1,5"	2"	2,5"	3"	4"
Pos.	Stk./Qty.	Benennung	Description	Ws.-Nr. / Part No.					
-	-	Ventil komplett	valve complete	187800	187801	187802	187803	187804	187805
1	1	Ventilgehäuse	valve body	260360	260361	268240	268241	260364	267407
2	1	Ventilteller	valve flap	194042	194043	188268	188269	188270	188271
3*	1	O-Ring EPDM	o-ring EPDM	772233	772234	772236	772238	772240	772241
		FPM	FPM	772251	772252	772254	772256	772258	772259
		HNBR	HNBR	772242	772243	772245	772247	772249	772250
4	1	Feder	spring	254905	254905	254690	254690	254715	255195
5	1	Gelenkklemme	clamp	169847	169848	169849	169850	175705	175705
6	1	Dichtung EPDM	seal EPDM	771167	771167	771168	771170	771171	771170
		FPM	FPM	772229	772229	772230	772231	772232	772231
		HNBR	HNBR	770563	770563	770564	770566	770567	770566
7	1	Führungsscheibe	guide disc	254846	254847	254848	254849	254850	256058
8	1	Deckel	cover	254912	254833	254835	254837	254839	254161

* Dichtungssatz für DELTA VPN II-ISO
Seal kit for DELTA VPN II-ISO

				1"	1,5"	2" (DN50)	2,5"	3"	4"
Pos.	Stk./Qty.	Benennung	Description	Ws.-Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-36-001/00	58-36-002/00	58-36-003/00	58-36-004/00	58-36-005/00	58-36-006/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-36-001/01	58-36-002/01	58-36-003/01	58-36-004/01	58-36-005/01	58-36-006/01
	1	Dichtungssatz HNBR	Seal kit HNBR	58-36-001/06	58-36-002/06	58-36-003/06	58-36-004/06	58-36-005/06	58-36-006/06

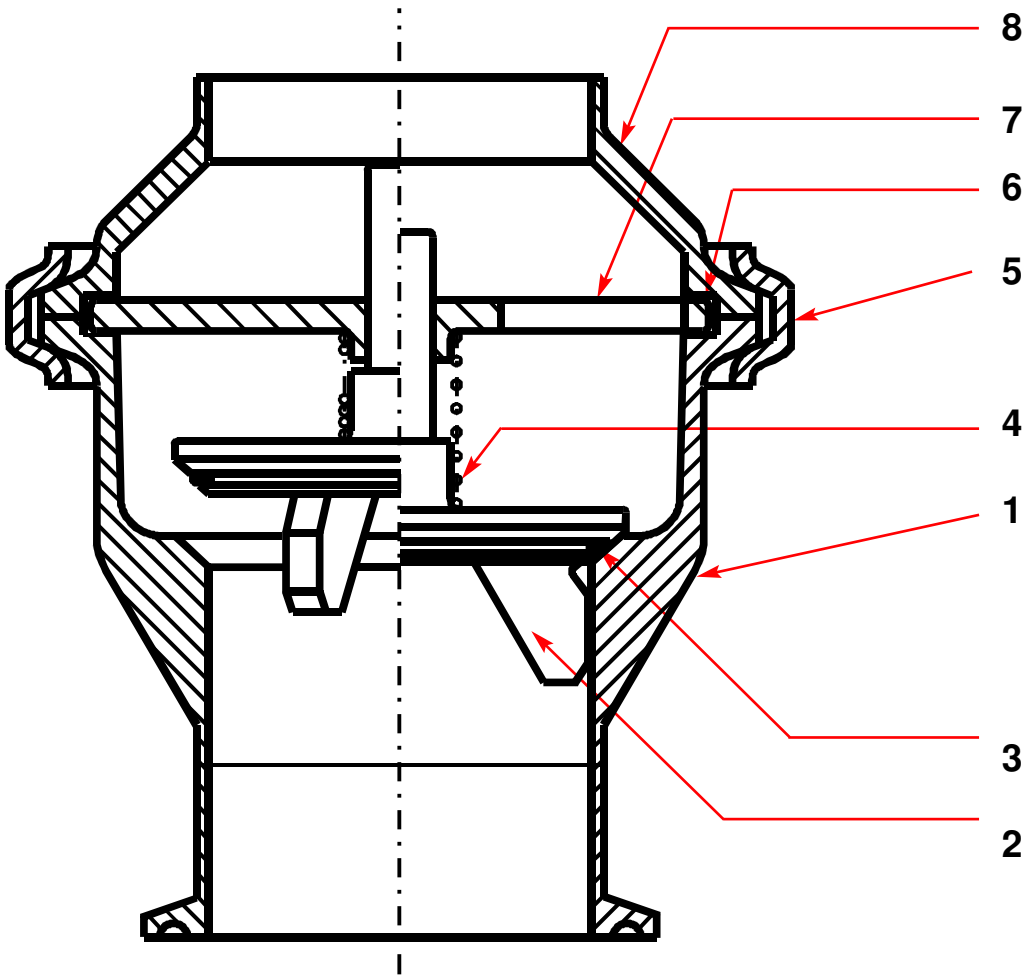
DELTA VPN II-DIN

				DN25	DN40	DN50	DN65	DN80	DN100
Pos.	Stk./Qty.	Benennung	Description	Ws.-Nr. / Part No.					
-	-	Ventil komplett	valve complete	194024	194025	194026	194027	194028	194029
1	1	Ventilgehäuse	valve body	268135	268136	268137	268138	268139	267406
2	1	Ventilteller	valve flap	194044	194045	188272	188273	188274	188275
3*	1	O-Ring EPDM	o-ring EPDM	772149	772235	772236	772239	772150	772151
		FPM	FPM	772152	772253	772254	772257	772153	772154
		HNBR	HNBR	772155	772244	772245	772248	772156	772157
4	1	Feder	spring	254905	254905	254690	254690	254715	255195
5	1	Gelenkklemme	clamp	169847	169848	169849	169850	175705	175705
6	1	Dichtung EPDM	seal EPDM	771167	771167	771168	771170	771171	771170
		FPM	FPM	772229	772229	772230	772231	772232	772231
		HNBR	HNBR	770563	770563	770564	770566	770567	770566
7	1	Führungsscheibe	guide disc	254846	254847	254848	254849	254850	256058
8	1	Deckel	cover	254871	254872	254873	254874	254875	256001

* Dichtungssatz für DELTA VPN II-DN
Seal kit for DELTA VPN II-DN

				DN25	DN40	DN50 (2")	DN65	DN80	DN100
Pos.	Stk./Qty.	Benennung	Description	Ws.-Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-36-010/00	58-36-011/00	58-36-003/00	58-36-013/00	58-36-014/00	58-36-0015/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-36-010/01	58-36-011/01	58-36-003/01	58-36-013/01	58-36-014/01	58-36-015/01
	1	Dichtungssatz HNBR	Seal kit HNBR	58-36-010/06	58-36-011/06	58-36-003/06	58-36-013/06	58-36-014/06	58-36-015/06

DELTA VPN II-3A



Pos.	Stk./Qty.	Benennung	Description	1"	1,5"	2"	2,5"	3"	4"
				Ws.-Nr. / Part No.					
-	-	Ventil komplett	valve complete	194032	194033	194034	194035	194036	194037
1	1	Ventilgehäuse	valve body	188235	188236	188237	188238	188239	188240
2	1	Ventilteller	valve flap	194046	194047	188276	188277	188278	188279
3*	1	O-Ring	o-ring	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM
				FPM	FPM	FPM	FPM	FPM	FPM
				HNBR	HNBR	HNBR	HNBR	HNBR	HNBR
4	1	Feder	spring	254905	254905	254690	254690	254715	255195
5	1	Gelenkklemme	clamp	169847	169848	169849	169850	175705	175705
6	1	Dichtung	seal	EPDM	EPDM	EPDM	EPDM	EPDM	EPDM
				FPM	FPM	FPM	FPM	FPM	FPM
				HNBR	HNBR	HNBR	HNBR	HNBR	HNBR
7	1	Führungsscheibe	guide disc	259784	259785	259786	259787	259788	267419
8	1	Deckel	cover	254865	254866	254867	254868	254869	254165

* Dichtungssatz für DELTA VPN II-3A
Seal kit for DELTA VPN II-3A

Pos.	Stk./Qty.	Benennung	Description	1"	1,5"	2"	2,5"	3"	4"
				Ws.-Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-36-001/00	58-36-002/00	58-36-003/00	58-36-004/00	58-36-005/00	58-36-006/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-36-001/01	58-36-002/01	58-36-003/01	58-36-004/01	58-36-005/01	58-36-006/01
	1	Dichtungssatz HNBR	Seal kit HNBR	58-36-001/06	58-36-002/06	58-36-003/06	58-36-004/06	58-36-005/06	58-36-006/06