

Operating Manual
DELTA SW4 - Manual Actuation
Single Seat and Change Over Valve



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

Manufacturer Declaration to be applied to the Pressure Equipment Directive 97/23 EC

APV Rosista GmbH, Zechenstr. 49, D-59425 Unna-Königsborn
as manufacturer with sole responsibility declares that the

double seat valves of the series

D2, DFplus2, SD4, SDM4, DA3, DE3, DEU3, DET3, DKR2, DKRT2, DKRH2

butterfly valves of the series

SV1, SVS1F

ball cocks of the series

KH, KHV

single seat valves of the series

S2, SW4, SWmini4, SWT4, M3, MF3, M4, MP4, MS4

process valves of the series

RG4, RGE4, PR2, PR3, PR4, CPV, UF3, RUF3, VRA, VRAH


comply with the requirements of the Pressure Equipment Directive 97/23 EC.

Due to the application of the a.m. valves in the beverage and food technology as well as in the pharmaceutical industry, the products are classified according to Article 9 Paragraph 2.2 of the Fluid Group 2 (gases/liquids).

For the classification of the valves into categories, in these cases diagrams 2 and 4 of Annex II are applied:

- The valves are either subject to Paragraph 3 according to Article 3 (Technical Requirements), are designed and manufactured by good engineering practice and have a manufacturer mark and must not have the CE-mark as mentioned in Article 15;
- Or would the a.m. valves at most be classified into Category I according to Article 9 and do not come under the scope of application of the Pressure Equipment Directive 97/23/EC due to Article 1 Paragraph 3.6. Therefore, a CE-mark attached to these valves is not the result of a conformity assessment according to DGRL, but of a different CE Directive (e.g. of the Machinery Directive 89/392/EEC).

D-59425 Unna-Königsborn, June 04, 2008, APV Rosista GmbH



Manager Research and Development

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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 !

- The technical safety symbol draws your attention to important directions for operating safety. You will find it wherever the activities described are bearing risks of personal injury.
- Depressurize the line system before any maintenance work. Clean the valve if possible and drain residual liquids.
- Observe service instructions to ensure safe maintenance of the valve.

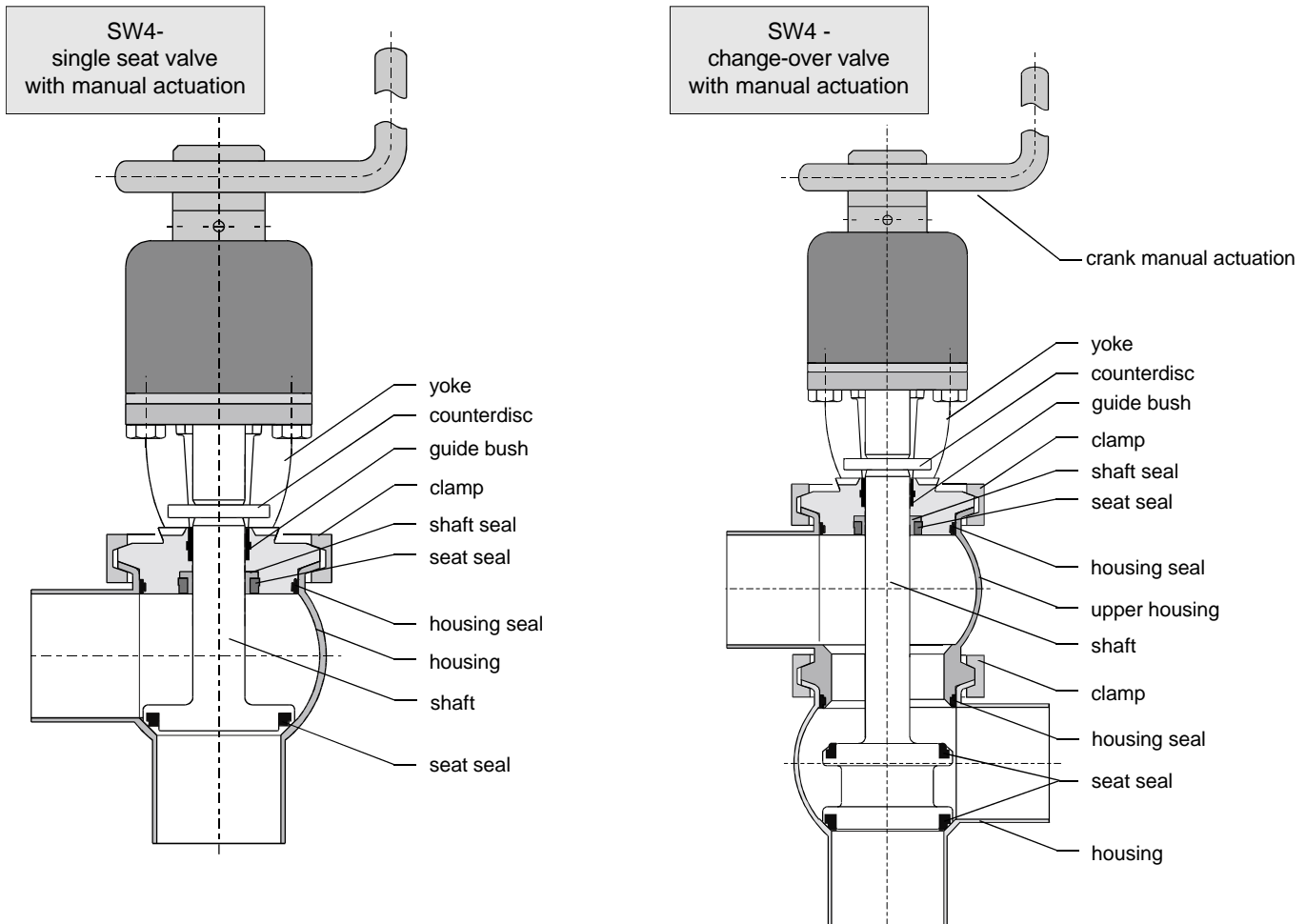
3. Mode of Operation

The single seat and change-over valves DELTA SW4 have been developed for applications in the brewing and beverage, dairy and food industries as well as for chemical and pharmaceutical use.

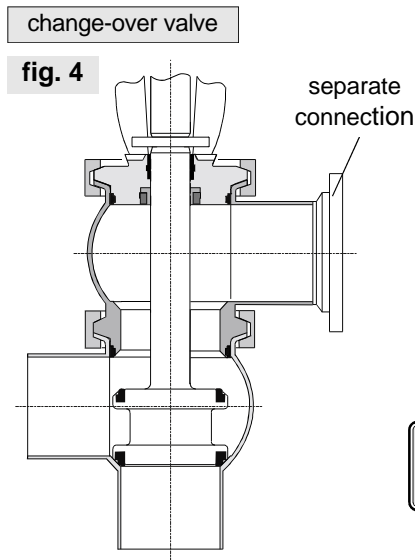
The valves are designed for universal application and stand out for their high mechanical reliability and absolute ease of handling.

The function of the DELTA SW4 - valve is to shut off and to change over line sections in processes.

- Operation by manual actuation.
- The cleaning of the inner valve is undertaken during CIP cleaning of the line system.



4. Installation



- The installation of the valve must be undertaken in such a manner that fluids can drain off the valve housing and should be provided preferably in vertical position.
- **Single seat valve :** The valve housing can be welded direct into the pipeline (completely dismantable valve insert).
- **Change-over valve :** Through a flange or clamp connection, the upper housing of change-over valves is detachable from the pipeline. (see fig 4).
- **Attention :** Observe welding instructions. (see chapter 4.2)

4.1 Connections:

Besides the housings with weld ends, the following connections are alternatively available:

- male part to DIN 11851
- male part IDF / ISS to ISO 2853
- male part RJT to BS 4825-5
- male part SMS
- male part to DS 722
- flange connection FGN1 DIN
- flange connection FGN1 Zoll
- clamp connection to DIN 32676
- clamp connection to ISO 2852

4. Installation

4.2 Welding instructions

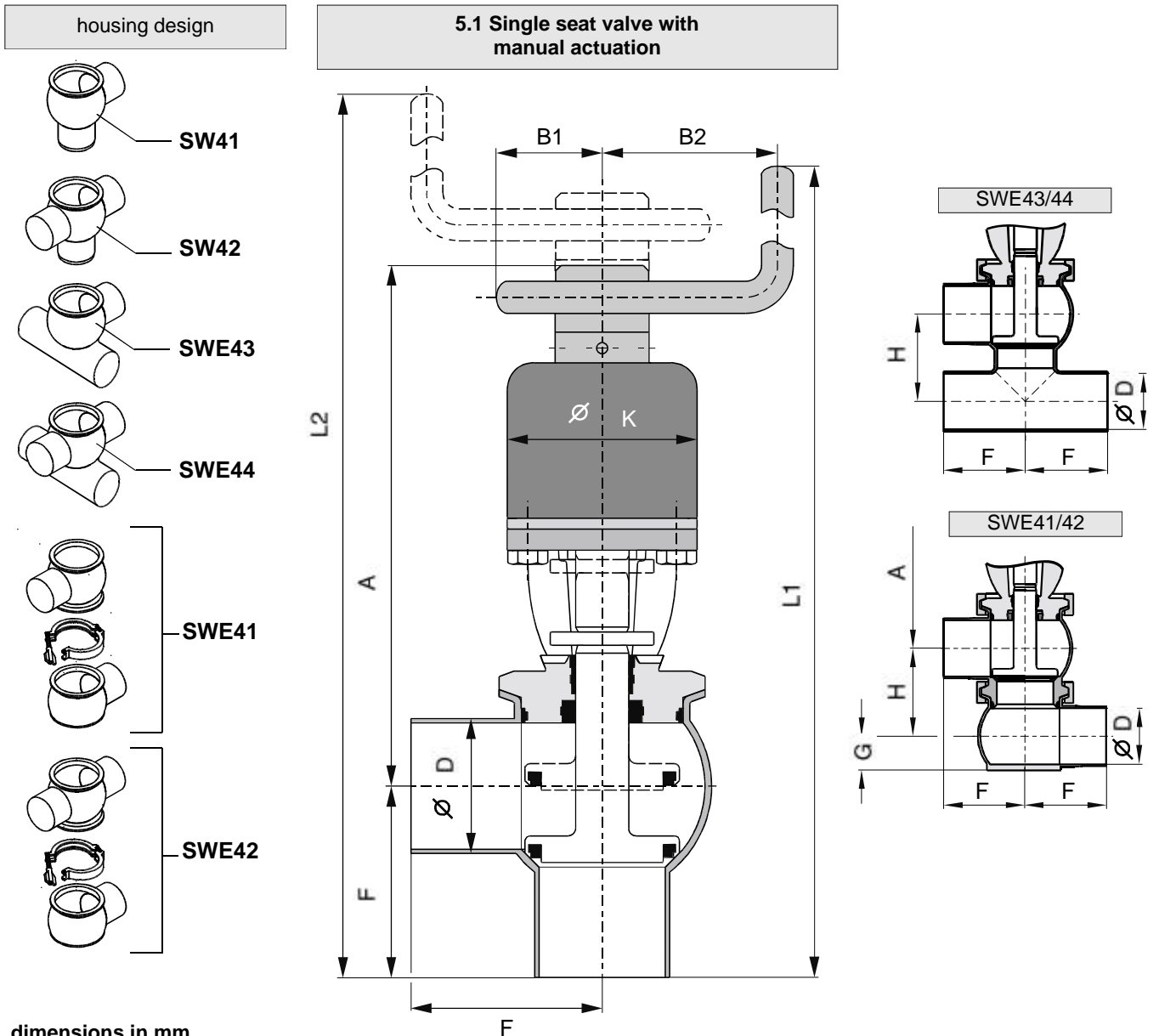
Single seat valve:

- Before welding of the valve, the valve insert must be dismantled from the housing. Careful handling to avoid damage to the parts is necessary.

Change-over valve:

- Before welding of the valves, the valve insert must be dismantled from the housing. The lower housing seal must be removed. Careful handling to avoid damage to the parts is necessary.
- 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 housings or of the mating flanges and after work at the pipelines, the corresponding parts of the installation or pipelines must be cleaned from welding residues and soiling. 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 / Weights

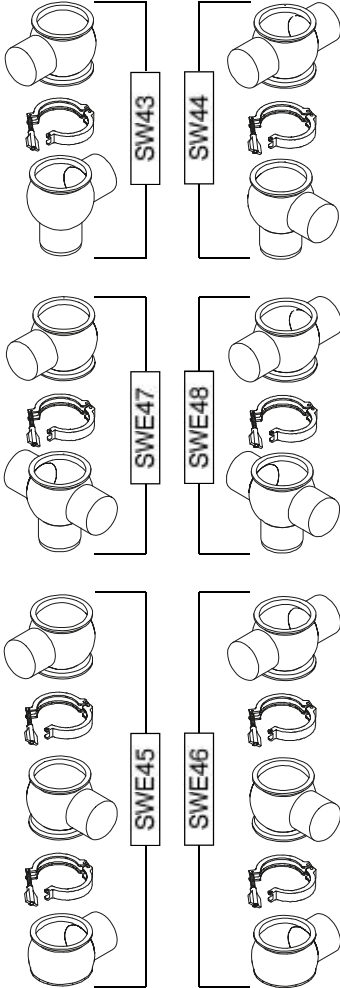


dimensions in mm

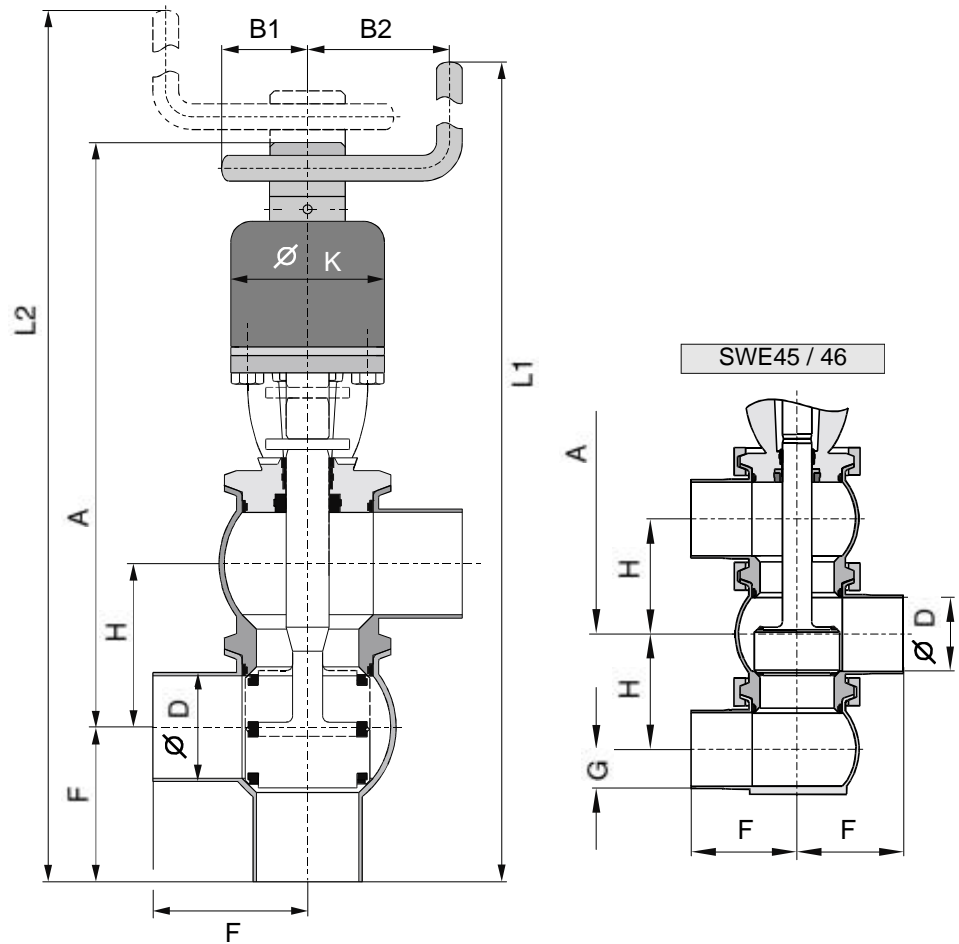
DN	Ø D	F	Ø K	A	L1	L2	B1	B2	G	H	weight in kg
25	26	50	72	201	309	321	40	72	18	54	5
40	38	67	72	194	319	342	40	72	24	66	5
50	50	72	72	197	327	353	40	72	32	78	7
65	66	85	72	205	348	374	40	72	40	94	7
80	81	98	72	213	369	395	40	72	47,5	109	13
100	100	111	72	223	392	418	40	72	57	128	15
inch											
1"	22,6	50	72	199	307	319	40	72	16,3	50,6	5
1,5"	34,9	67	72	192	317	340	40	72	22,45	62,9	5
2"	47,6	72	72	196	326	352	40	72	30,8	75,6	7
2,5"	60,3	85	72	203	346	372	40	72	37,2	88,3	7
3"	72,9	90	72	201	357	383	40	72	43,5	100,9	13
4"	97,6	111	72	222	391	417	40	72	55,8	125,6	15

5. Dimensions / Weights

housing design



5.2 Change-over valve with manual actuation



dimensions in mm

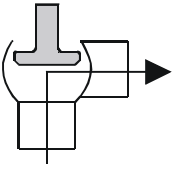
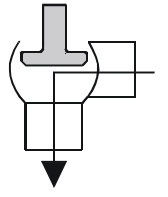
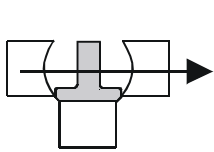
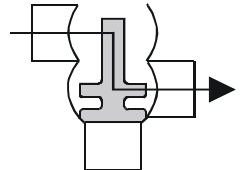
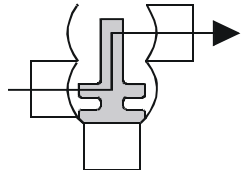
dimensions in mm											weight in kg
DN	Ø D	F	Ø K	A	L1	L2	B1	B2	G	H	
25	26	50	72	255	367	376	40	72	18	54	5
40	38	67	72	260	385	407	40	72	24	66	5
50	50	72	72	275	405	430	40	72	32	78	7
65	66	85	72	299	442	467	40	72	40	94	7
80	81	98	72	322	478	503	40	72	47,5	109	13
100	100	111	72	351	520	545	40	72	57	128	15
inch											
1"	22,6	50	72	249	357	367	40	72	16,3	50,6	5
1,5"	34,9	67	72	256	380	403	40	72	22,45	62,9	5
2"	47,6	72	72	272	402	427	40	72	30,8	75,6	7
2,5"	60,3	85	72	293	434	461	40	72	37,2	88,3	7
3"	72,9	90	72	303	450	486	40	72	43,5	100,9	13
4"	97,6	111	72	347	517	542	40	72	55,8	125,6	15

6. Technical Data

product - wetted parts :	316 L, 1.4404
other parts :	1.4301
seals : standard design :	EPDM
optional :	FPM, VMQ, HNBR
max. product pressure :	10bar
max. operating temperature :	135° C EPDM, HNBR *FPM, *VMQ
short-term load :	140° C EPDM, HNBR *FPM, *VMQ *(no steam)

stroke of valve seat		
DN	Single seat valve SW41, 42 SWE41, 42, 43, 44	Change-over valve SW43, 44, 47, 48 SWE45, 46
25	12mm	9mm
40	23mm	22mm
50	26mm	25mm
65	26mm	25mm
80	26mm	25mm
100	26mm	25mm
inch		
1"	12mm	9mm
1,5"	23mm	22mm
2"	26mm	25mm
2,5"	26mm	25mm
3"	26mm	25mm
4"	26mm	25mm

6. Technical Data

DELTA SW4					
Kvs - values in m ³ / h					
	SW41, 42 SWE41, 42 SWE43,44	SW41, 42 SWE41, 42 SWE43,44	SW42 SWE42 SW44	SW43, 44 SW47, 48	SW43, 44 SW47, 48
					
DN					
25	20	21	28	14	13
40	45	53	60	33	31
50	92	85	120	58	51
65	159	159	215	100	89
80	201	209	350	160	137
100	302	325	540	245	212
inch					
1"	16	18	26	10	10
1,5"	38	45	57	30	28
2"	83	77	118	54	49
2,5"	133	133	185	87	76
3"	176	176	300	137	114
4"	292	310	530	225	210

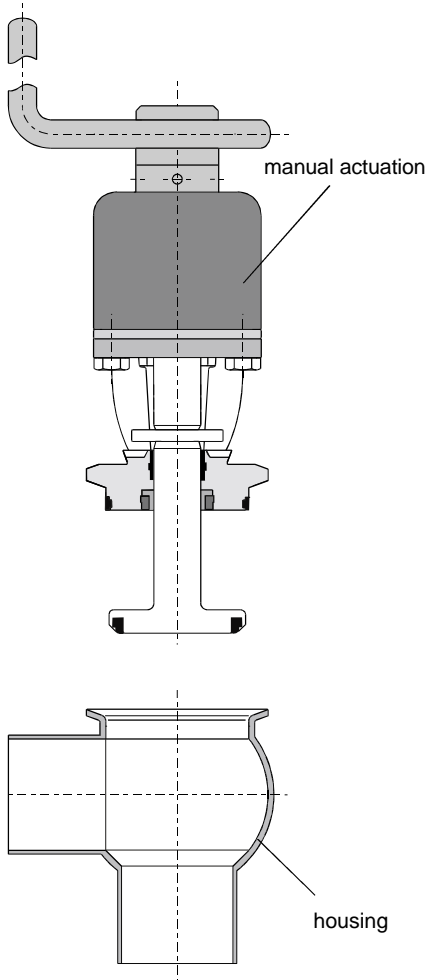
7. Maintenance



- The maintenance intervals depend on the corresponding application and are to be determined by the operator himself carrying out temporary checks.
- The valve must not be cleaned with products containing abrasive or polishing material. Especially the valve shaft must not, under any circumstances, be cleaned with such agents. Damage of the valve shaft can lead to leakages.
- Required tools :
 - 1x wrench SW13
 - 1x hexagon socket screw key 10
 - mandril or drift punch for dowel pin Ø 4mm
 - hammer
 - assembly tool for seat seal (see chapter 11.)
 - cleaning rags and a low solution of a suitable cleaning agent.
- Exchange of seals is done according to service instructions. A customer stock keeping of spare seals is recommended. For the valve service we supply complete seal kits including seal grease (see spare parts lists).
- Assembly of the valve according to service instructions.
- **Slightly grease all seals before their installation !!**
Recommendation:
APV food-grade-grease for EPDM, HNBR, FPM and NBR
 (0,75 kg/tin - ref.-No. 000 70-01-019/93)
 (60 g/tube - ref.-No. 000 70-01-018/93)
or
APV food-grade-grease for VMQ
 (0,6 kg/tin - ref.-No. 000 70-01-017/93)
 (60 g/tube - ref.-No. 000 70-01-016/93)
- !!! Do not use grease containing mineral oil for **EPDM** seals.
 !!! Do not use Silicone-based grease for **VMQ** seals.
- Disassembly and assembly of manual actuation according to service instructions. Grease all movable parts of the manual actuation with Molykote HSC (copper paste).

8. Service Instructions Single Seat Valve

single seat valve



Single seat valves

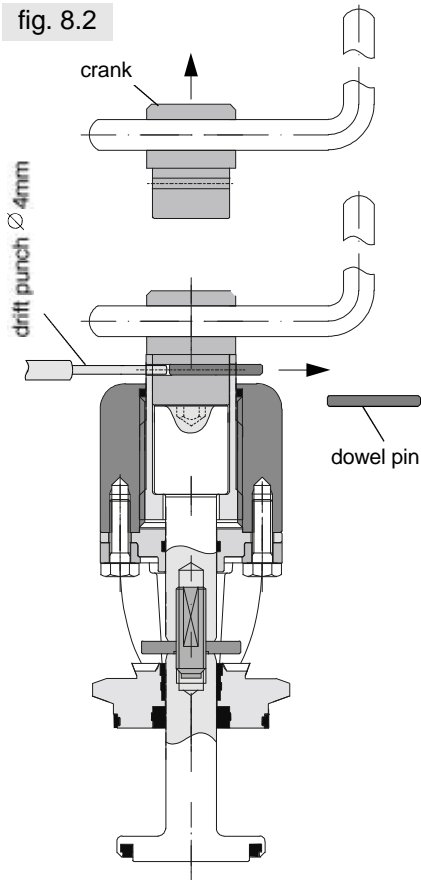
DELTA SW41, SW42, SWE41, SWE42, SWE43, SWE44

8.1 Dismantling from the line system

- a. Shut off line pressure und drain off lines if possible.
- b. Remove clamp.
- c. Turn manual actuation into the closed valve position.
The valve insert is lifted in the housing.
- d. Take valve insert out of the housing.

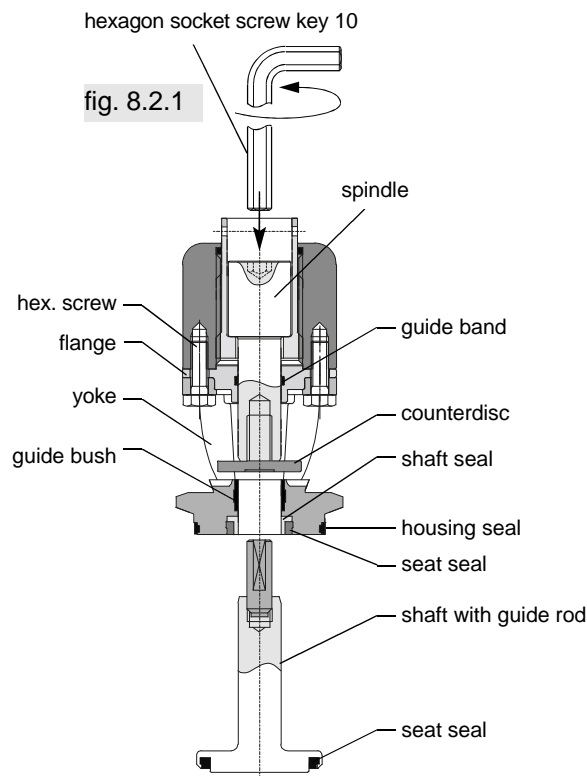
8. Service Instructions Single Seat Valve

fig. 8.2



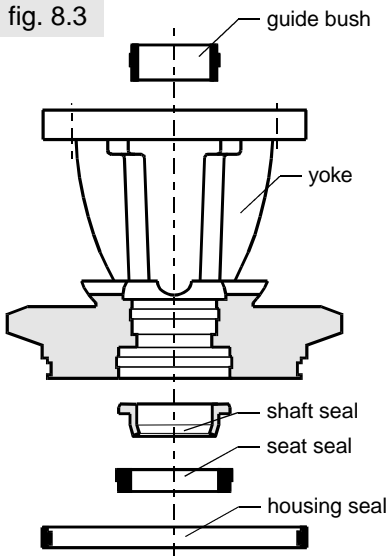
8.2 Dismantling of wear parts (product-wetted parts)

- a. Dismount the dowel pin from the manual actuation (fig. 8.2) by means of a drift punch $\varnothing 4\text{mm}$.
- b. Remove the handle from the guide bush.
- c. Unscrew the spindle in anticlockwise direction by means of a hexagon socket screw key 10. Valve shaft with guide rod are released (fig. 8.2.1).
- d. Remove the valve shaft with guide rod from the yoke.
- e. Dismantle the seat seal from the valve shaft.
- f. Remove the hexagon screws. Release yoke and flange from the manual actuation.
- g. Remove the counterdisc.
- h. Dismantle guide bush, seat seal, shaft seal and housing seal from the yoke grooves.



8. Service Instructions Single Seat Valve

fig. 8.3



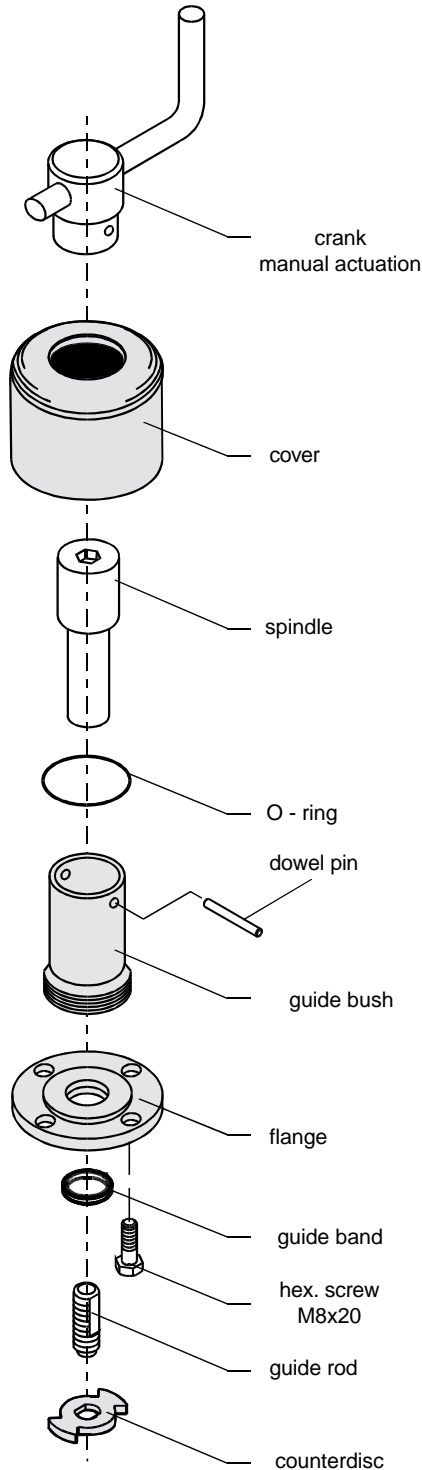
8.3 Installation of seals and assembly of valve

- a. Install the seat seal in the shaft. Use the APV assembly tool, **see chapter 11**, for the installation. Grease the seat seal only slightly before its installation.
In case of manual installation, vent the seal groove between seal and groove wall by means of a thin object.
- b. Insert the guide bush into the yoke.
Place the housing seal on the receiving groove.
Afterwards, place the shaft seal and press in the slightly greased seat seal (fig. 8.3).
See to the correct direction of installation.
- c. Place the counterdisc into the yoke.
Observe position of installation!
The smooth surface of the counterdisc must be visible from the top.
- d. Fasten flange and yoke at the cover by means of the hexagon screws.
- e. Slide valve shaft with guide rod through yoke and counterdisc.
Insert the spindle into the guide bush.
Fasten the spindle on the guide rod by means of the hexagon socket screw key.
- f. Insert the handle crank in the guide bush.
(Observe position of bore hole for the dowel pin.)
- g. Insert the dowel pin and beat it in.

8.4 Installation of the valve

- a. Turn handle crank in anticlockwise direction.
Turn valve shaft in the open position.
- b. Carefully place the valve insert into the housing and tighten the clamp.
The housing seal must not be damaged during its installation.

9. Service Instructions Manual Actuation



9.1 Disassembly and maintenance of manual actuation

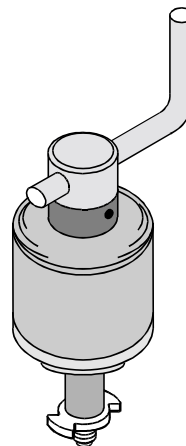
(Dismantling of valve and disassembly from valve as described in 8.1 for single seat valves and 10.1 for change-over valves.)

- a. Remove the straight grooved pin with a $\varnothing 4$ mm drift punch.
- b. Dismount the crank.
- c. Clamp the counterdisc in a vice (use protective jaws). Turn the spindle off the guide rod by means of a hexagon socket screw key 10.
- d. Remove the spindle from the guide bush.
- e. Remove the guide band from the flange.
- f. Turn the guide bush out of the cover.
- g. Remove the o-ring.

9.2 Assembly of manual actuation

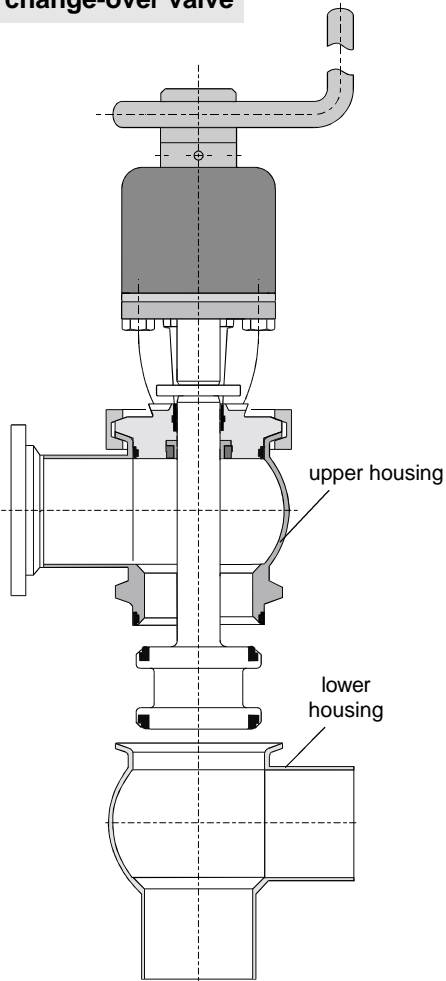
- Provide o-ring and guide band with a thin layer of grease. Use suitable seal grease.
- Grease all movable parts of the manual actuation with Molykote HSC (copper paste).
- Assembly to be carried out in reverse order to and as described in 9.1.

manual actuation complete



10. Service Instructions Change-Over Valve

change-over valve

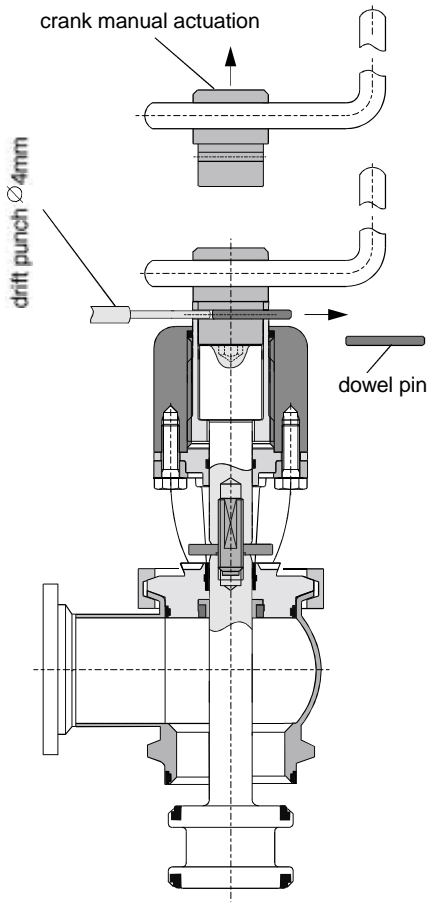


10.1 Dismantling from the line system

- a. Shut off line pressure and drain off lines if possible.
- b. Release the connection between the upper housing ball and the connected pipeline.
- c. Remove the lower clamp.
- d. Turn the manual actuation into the lower valve position.
The valve insert with the upper housing part are lifted from the lower housing.
- e. Take off the valve insert with the upper housing part.

10. Service Instructions Change-Over Valve

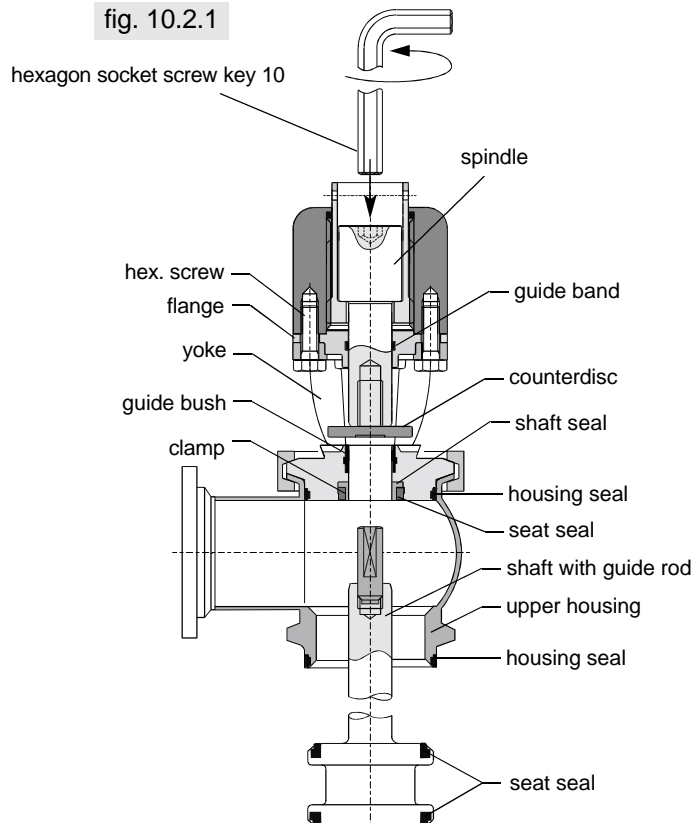
fig. 10.2



10.2 Dismantling of wear parts (product-wetted parts)

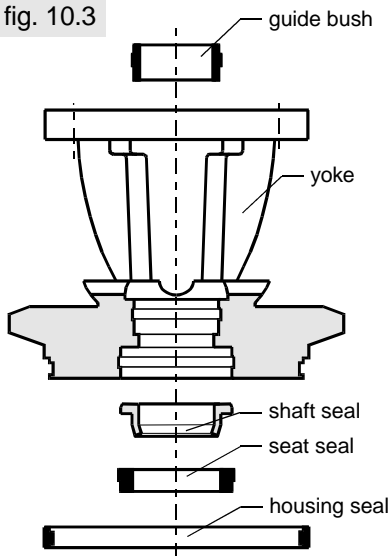
- a. Dismount the dowel pin from the manual actuation (fig. 10.2) by means of a drift punch $\varnothing 4\text{mm}$.
- b. Remove the handle from the guide bush.
- c. Unscrew the spindle in anticlockwise direction by means of a hexagon socket screw key 10. Valve shaft with guide rod are released (fig. 10.2.1).
- d. Remove the valve shaft with guide rod from the yoke.
- e. Dismantle the seat seal from the valve shaft.
- f. Remove the upper clamp.
- g. Separate upper housing part from yoke.
- h. Dismantle the housing seal from the upper housing part.
- i. Remove the hexagon screws. Release yoke and flange from the manual actuation.
- j. Remove the counterdisc.
- k. Dismantle guide bush, seat seal, shaft seal and housing seal from the yoke grooves.

fig. 10.2.1



10. Service Instructions Change-Over Valve

fig. 10.3



10.3 Installation of seals and assembly of valve

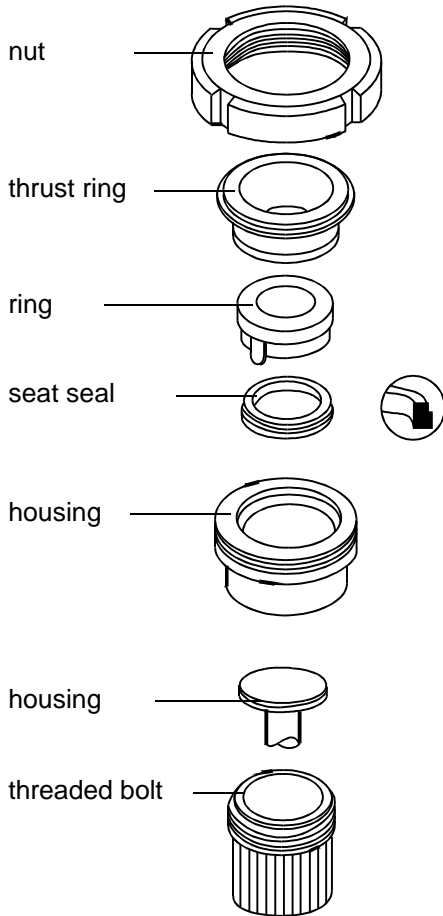
- a. Install the seat seal in the shaft. Use the APV assembly tool, **see chapter 11**, for the installation. Grease the seat seal only slightly before its installation.
In case of manual installation, vent the seal groove between seal and groove wall by means of a thin object.
- b. Insert the guide bush into the yoke.
Afterwards, place the shaft seal and press in the slightly greased seat seal (fig. 10.3).
See to the correct direction of installation.
- c. Slightly grease the housing seals and install them in the grooves of the yoke and of the upper housing part.
- d. Place the counterdisc into the yoke.
Observe position of installation!
The smooth surface of the counterdisc must be visible from the top.
- e. Fasten flange and yoke at the cover by means of the hexagon screws.
- f. Place the yoke in the upper housing part.
Attention! The housing seal must not be damaged during its installation.
- g. Fasten the upper clamp.
- h. Slide valve shaft with guide rod through upper housing, yoke and counterdisc. Insert the spindle into the guide bush of the manual actuation. Fasten the spindle on the guide rod by means of the hexagon socket screw key.
- i. Insert the handle crank in the guide bush.
(Observe position of bore hole for the dowel pin.)
- j. Insert the dowel pin and beat it in.

10.4 Installation of the valve

- a. Turn handle crank in anticlockwise direction.
Turn valve shaft in the open position.
- b. Carefully place the valve insert with upper housing part into the lower housing part and tighten the lower clamp.
Attention! The housing seal must not be damaged during its installation.

11. Service Instructions

11.1 Assembly tool for seat seal



The assembly tool consists of:

- nut
- thrust ring
- ring with venting nose
- housing
- threaded bolt

Installation of the seat seal in the valve shaft

1. Insert the valve shaft into the housing in such a way that the seal groove is in the housing.
2. Clamp the shaft into the housing by means of the threaded bolt. Clamp the housing into a vice.
3. Slightly grease the seat seal with APV food-grade grease. Then install the seal on the ring with the venting nose until it stops.
4. Introduce the ring with the installed seat seal into the housing and press it down until it stops sensibly.
5. Insert the thrust ring into the housing. Screw on the nut and tighten it with a hook spanner until it stops.
6. Release the nut. Take ring and thrust ring off the housing.
7. Take housing out of the vice, take off the threaded bolt. Detach the valve shaft from the housing.

Check the even fit of the seat seal.

Assembly tool for seat seal

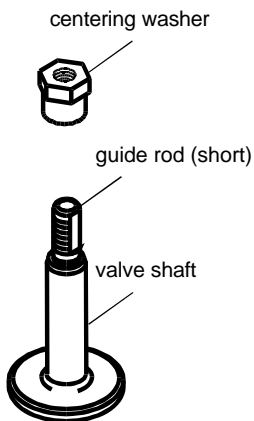
To simplify the installation of the seat seal, the following assembly tools are available:

Assembly tool SW4		
DN	inch	part no.:
25	1"	51 - 13 - 110/17
40	1,5"	51 - 13 - 111/17
50	2"	51 - 13 - 112/17
	2,5"	51 - 13 - 120/17
65		51 - 13 - 113/17
	3"	51 - 13 - 121/17
80		51 - 13 - 114/17
100	4"	51 - 13 - 115/17

12. Service Instructions

12.1 Reconstruction of the actuator type from „manual operation" to a „pneumatically actuated" DELTA SW4 valve.

valve shaft with guide rod for manually operated valve design



To change the actuator type, replace the guide rod as follows:

Dismantle the manually operated valve according to the corresponding chapters "Service Instructions" of this operating manual.

- Dismantling from the line system
- Dismantling of wear parts (product-wetted parts)
Seals should be replaced.

Dismantling of guide rod from valve shaft

- Clamp the valve shaft with the guide rod in a vice.

Attention: The valve shaft must not be damaged during this process (use protective jaws or cleaning rags). The slightest damage can produce leakages.

- Turn the guide rod out of the valve shaft by means of the centering washer and a wrench SW17.

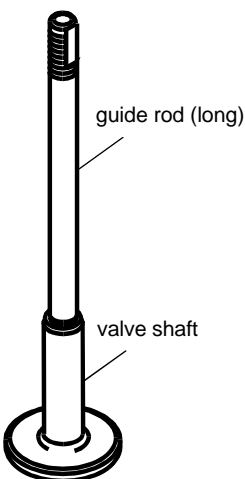
Assembly of the guide rod in the valve shaft for a pneumatically actuated valve

- Screw the guide rod (design complying with actuator size) into the valve shaft.

Tightening torque 40 Nm

- For the assembly of the valve, observe Service Instructions for the pneumatically actuated valve.

valve shaft with guide rod for pneumatically actuated valve design



13. Trouble Shooting

Failure	Remedy
<i>Valve closed and pressure in upper housing</i>	
Valve is untight	Replace seat seals. Check line pressure: Permissible line pressure see chapter 6.
Leakage in the area of the clamp	Replace housing seals.
Leakage at the upper valve shaft in the area of the valve yoke	Replace shaft seal, seat seal and guide bush.

14. Spare Parts Lists

The reference numbers of the spare parts for the different valve designs and sizes are included in the attached spare parts drawings with corresponding lists.

Please indicate the following data to place an order for spare parts:

- number of required parts
- reference number
- designation

BA SW4H 000002
ID-No.: H 3 1 3 4 2 2
Translation of original manual



rev. 0



Your local contact:



APV
Zeichenstraße 49
D-59425 Unna

Phone: +49(0) 23 03/ 108-0 Fax: +49(0) 23 03 / 108-210

For more information about our worldwide locations, approvals, certifications, and local representatives, please visit www.apv.com.

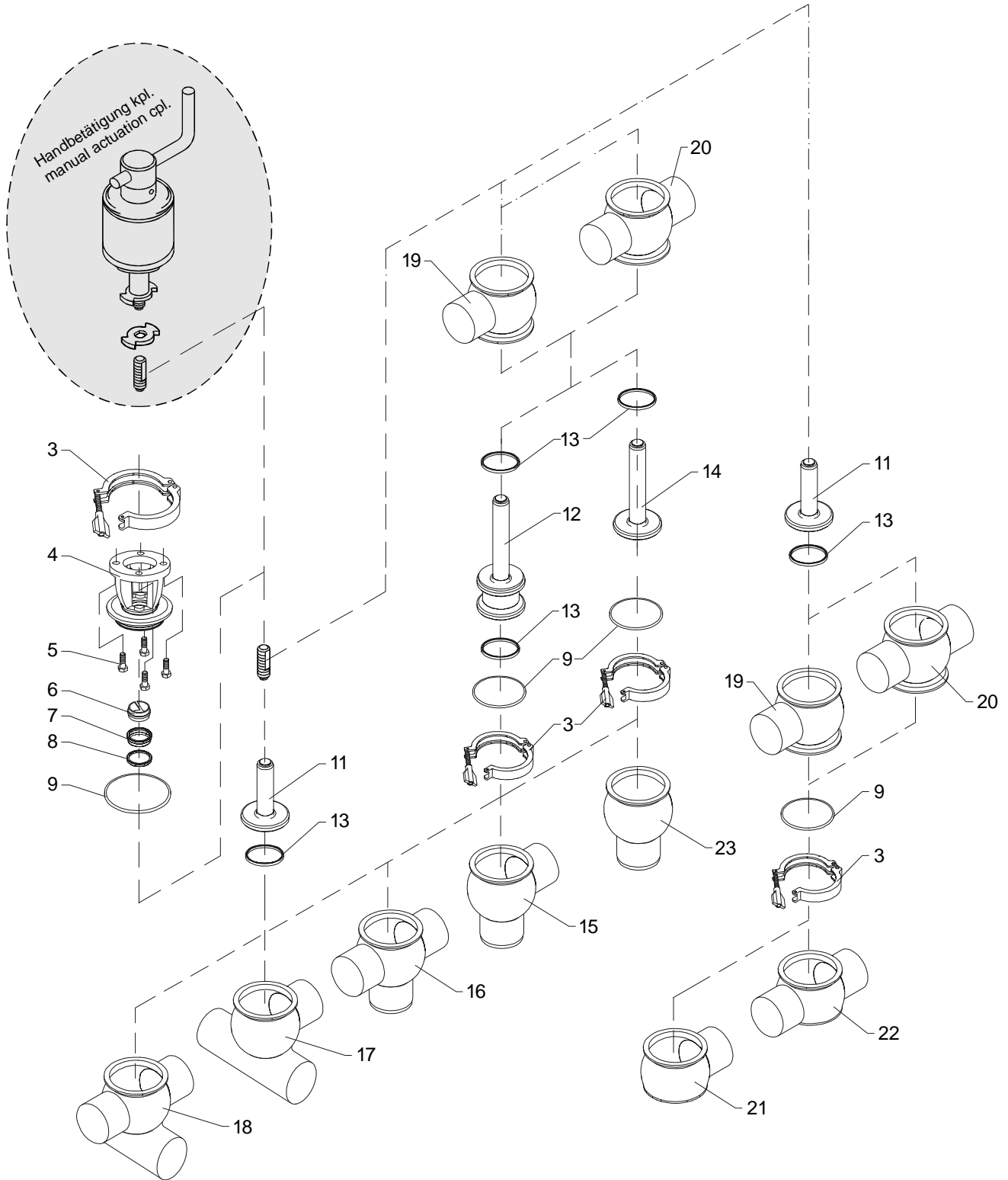
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14.1 Ventilgehäuse / Valve bodies

DN



14.1 Ventilgehäuse / Valve bodies

DN

Pos.	Stk./Qty.	Benennung	Description	DN25	DN40	DN50	DN65	DN80	DN100
				Ws.-Nr. / Part No.					
3	1-2	Gelenkklemme	Clamp	42-40-287/12	42-40-387/12	42-40-437/12	42-40-487/12	42-40-537/12	42-40-637/12
4	1	Laterne	Yoke	15-40-960/47	15-40-961/47	15-40-962/47	15-40-963/47	15-40-966/47	15-40-967/47
5	4	Skt. Schraube	Screw	DIN EN 24017-M8x20-A2-70					
6	1	Führungsbuchse	Bushing	08-01-178/23	08-01-178/23	08-01-178/23	08-01-178/23	08-01-178/23	08-01-178/23
7	1	Schaftdichtung	Shaft seal	58-33-150/26	58-33-150/26	58-33-150/26	58-33-150/26	58-33-150/26	58-33-150/26
8	1	Tellerdichtung*	Seat seal	58-33-293/**	58-33-293/**	58-33-293/**	58-33-293/**	58-33-293/**	58-33-293/**
9	1-2	Gehäusedichtung*	Housing seal	58-33-267/**	58-33-292/**	58-33-124/**	58-33-442/**	58-33-492/**	58-33-127/**
11	1	Schaft SW41	Shaft SW41	15-25-278/42	15-25-378/42	15-25-428/42	15-25-478/42	15-25-528/42	15-25-628/42
12	1	Schaft SW43	Shaft SW43	15-25-279/42	15-25-379/42	15-25-429/42	15-25-479/42	15-25-529/42	15-25-629/42
13	1-2	Tellerdichtung*	Seat seal	58-33-293/**	58-33-393/**	58-33-443/**	58-33-493/**	58-33-543/**	58-33-643/**
14	1	Schaft SWT4	Shaft SWT4	15-25-280/42	15-25-380/42	15-25-430/42	15-25-480/42	15-25-530/42	15-25-630/42
15	1	Gehäuse SW41	Housing SW41	15-60-290/47	15-60-390/47	15-60-440/47	15-60-490/47	15-60-540/47	15-60-640/47
16	1	Gehäuse SW42	Housing SW42	15-61-290/47	15-61-390/47	15-61-440/47	15-61-490/47	15-61-540/47	15-61-640/47
17	1	Gehäuse SWE43	Housing SWE43	15-66-280/47	15-66-380/47	15-66-430/47	15-66-480/47	15-66-530/47	15-66-630/47
18	1	Gehäuse SWE44	Housing SWE44	15-67-280/47	15-67-380/47	15-67-430/47	15-67-480/47	15-67-530/47	15-67-630/47
19	1	Geh.-Oberteil SW43	Hous.-upp. part SW43	15-62-001/47	15-62-002/47	15-62-003/47	15-62-004/47	15-62-005/47	15-62-006/47
20	1	Geh.-Oberteil SW44	Hous.-upp. part SW44	15-63-001/47	15-63-002/47	15-63-003/47	15-63-004/47	15-63-005/47	15-63-006/47
21	1	Geh.-Untert. SWE41	Hous.-low.part SWE41	15-60-100/47	15-60-101/47	15-60-102/47	15-60-103/47	15-60-104/47	15-60-105/47
22	1	Geh.-Untert. SWE48	Hous.-low.part SWE48	15-65-281/47	15-65-381/47	15-65-431/47	15-65-481/47	15-65-531/47	15-65-631/47
23	1	Kugelring SW41	Ball ring SW41	15-60-090/47	15-60-091/47	15-60-092/47	15-60-093/47	15-60-094/47	15-60-095/47

** /33: HNBR; /73: FPM (Viton); /93: EPDM; /13: VMQ***

 *** Wenn die Tellerdichtung in VMQ ist, wird die Gehäusedichtung (Pos.9) in HNBR eingesetzt.
 When seat seals are made of VMQ (silicone), the body seal (pos. 9) is to be made of HNBR

 * Dichtungssatz für SW41 + SW42 / SWE43+ SWE44
 Seal kit for SW41 + SW42 / SWE43+ SWE44

Pos.	Stk./Qty.	Benennung	Description	DN25	DN40	DN50	DN65	DN80	DN100
				Ws.-Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-34-700/00	58-34-701/00	58-34-702/00	58-34-703/00	58-34-704/00	58-34-705/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-34-700/01	58-34-701/01	58-34-702/01	58-34-703/01	58-34-704/01	58-34-705/01
	1	Dichtungssatz VMQ	Seal kit VMQ	58-34-700/02	58-34-701/02	58-34-702/02	58-34-703/02	58-34-704/02	58-34-705/02
	1	Dichtungssatz HNBR	Seal kit HNBR	58-34-700/06	58-34-701/06	58-34-702/06	58-34-703/06	58-34-704/06	58-34-705/06

 * Dichtungssatz für SWE41 + SWE42
 Seal kit for SWE41 + SWE42

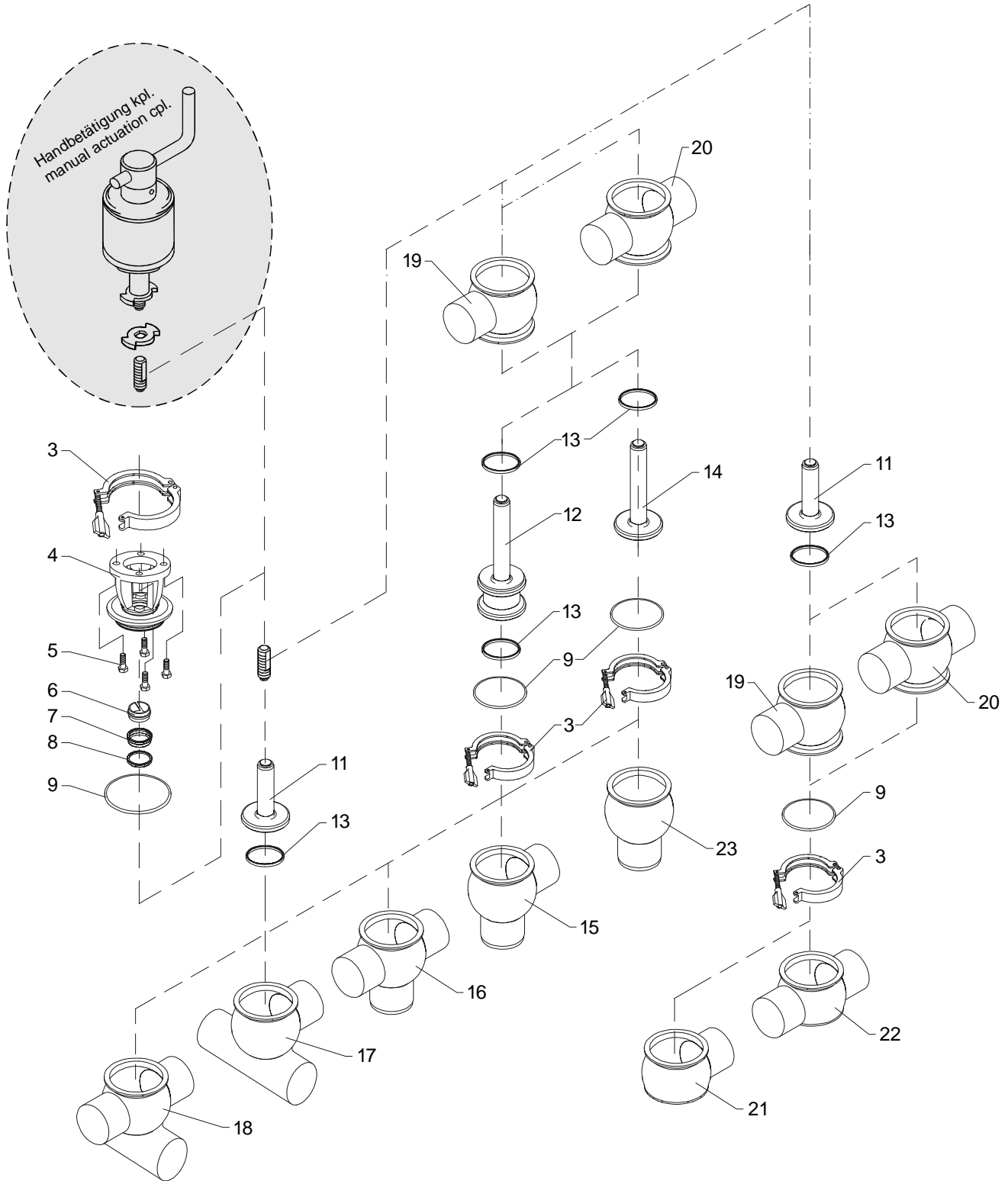
Pos.	Stk./Qty.	Benennung	Description	DN25	DN40	DN50	DN65	DN80	DN100
				Ws.-Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-34-715/00	58-34-716/00	58-34-717/00	58-34-718/00	58-34-719/00	58-34-720/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-34-715/01	58-34-716/01	58-34-717/01	58-34-718/01	58-34-719/01	58-34-720/01
	1	Dichtungssatz VMQ	Seal kit VMQ	58-34-715/02	58-34-716/02	58-34-717/02	58-34-718/02	58-34-719/02	58-34-720/02
	1	Dichtungssatz HNBR	Seal kit HNBR	58-34-715/06	58-34-716/06	58-34-717/06	58-34-718/06	58-34-719/06	58-34-720/06

 * Dichtungssatz für SW43 + SW44
 Seal kit for SW43 + SW44

Pos.	Stk./Qty.	Benennung	Description	DN25	DN40	DN50	DN65	DN80	DN100
				Ws.-Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-34-730/00	58-34-731/00	58-34-732/00	58-34-733/00	58-34-734/00	58-34-735/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-34-730/01	58-34-731/01	58-34-732/01	58-34-733/01	58-34-734/01	58-34-735/01
	1	Dichtungssatz VMQ	Seal kit VMQ	58-34-730/02	58-34-731/02	58-34-732/02	58-34-733/02	58-34-734/02	58-34-735/02
	1	Dichtungssatz HNBR	Seal kit HNBR	58-34-730/06	58-34-731/06	58-34-732/06	58-34-733/06	58-34-734/06	58-34-735/06

14.2 Ventilgehäuse / Valve bodies

Zoll / inch



14.2 Ventilgehäuse / Valve bodies

Zoll / inch

Pos.	Stk./Qty.	Benennung	Description	1"	1,5"	2"	2,5"	3"	4"
				Ws. - Nr. / Part No.					
3	1-2	Gelenkklemme	Clamp	42-40-287/12	42-40-387/12	42-40-437/12	42-40-487/12	42-40-537/12	42-40-637/17
4	1	Laterne	Yoke	15-40-960/47	15-40-961/47	15-40-962/47	15-40-964/47	15-40-965/47	15-40-967/47
5	4	Skt. Schraube	Screw	DIN EN 24017-M8x20-A2-70					
6	1	Führungsbuchse	Bushing	08-01-178/23	08-01-178/23	08-01-178/23	08-01-178/23	08-01-178/23	08-01-178/23
7	1	Schaftdichtung	Shaft seal	58-33-150/23	58-33-150/23	58-33-150/23	58-33-150/23	58-33-150/23	58-33-150/23
8	1	Tellerdichtung*	Seat seal	58-33-293/**	58-33-293/**	58-33-293/**	58-33-293/**	58-33-293/**	58-33-293/**
9	1-2	Gehäusedichtung*	Housing seal	58-33-267/**	58-33-292/**	58-33-124/**	58-33-125/**	58-33-126/**	58-33-127/**
11	1	Schaft SW41	Shaft SW41	15-25-303/42	15-25-403/42	15-25-453/42	15-25-503/42	15-25-553/42	15-25-653/42
12	1	Schaft SW43	Shaft SW43	15-25-304/42	15-25-404/42	15-25-454/42	15-25-504/42	15-25-554/42	15-25-654/42
13	1-2	Tellerdichtung*	Seat seal	58-33-293/**	58-33-393/**	58-33-443/**	58-33-109/**	58-33-568/**	58-33-643/**
14	1	Schaft SWT4	Shaft SWT4	15-25-305/42	15-25-405/42	15-25-455/42	15-25-505/42	15-25-555/42	15-25-655/42
15	1	Gehäuse SW41	Housing SW41	15-60-315/47	15-60-415/47	15-60-465/47	15-60-515/47	15-60-565/47	15-60-665/47
16	1	Gehäuse SW42	Housing SW42	15-61-315/47	15-61-415/47	15-61-465/47	15-61-515/47	15-61-565/47	15-61-665/47
17	1	Gehäuse SWE43	Housing SWE43	15-66-305/47	15-66-405/47	15-66-455/47	15-66-505/47	15-66-555/47	15-66-655/47
18	1	Gehäuse SWE44	Housing SWE44	15-67-305/47	15-67-405/47	15-67-455/47	15-67-505/47	15-67-555/47	15-67-655/47
19	1	Geh.-Oberteil SW43	Hous.-upp. part SW43	15-62-010/47	15-62-011/47	15-62-012/47	15-62-013/47	15-62-014/47	15-62-015/47
20	1	Geh.-Oberteil SW44	Hous.-upp. part SW44	15-63-010/47	15-63-011/47	15-63-012/47	15-63-013/47	15-63-014/47	15-63-015/47
21	1	Geh.-Untert. SWE41	Hous.-low.part SWE41	15-60-110/47	15-60-111/47	15-60-112/47	15-60-113/47	15-60-114/47	15-60-115/47
22	1	Geh.-Untert. SWE48	Hous.-low.part SWE48	15-65-306/47	15-65-406/47	15-65-456/47	15-65-506/47	15-65-556/47	15-65-656/47
23	1	Kugelring SW41	Ball ring SW41	15-60-083/47	15-60-084/47	15-60-085/47	15-60-086/47	15-60-087/47	15-60-088/47

** /33: HNBR; /73: FPM (Viton); /93: EPDM; /13: VMQ***

*** Wenn die Tellerdichtung in VMQ ist, wird die Gehäusedichtung (Pos.9) in HNBR eingesetzt.
When seat seals are made of VMQ (silicone), the body seal (pos. 9) is to be made of HNBR

* Dichtungssatz für SW41 + SW42 / SWE43+ SWE44
Seal kit for SW41 + SW42 / SWE43+ SWE44

Pos.	Stk./Qty.	Benennung	Description	1"	1,5"	2"	2,5"	3"	4"
				Ws. - Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-34-700/00	58-34-701/00	58-34-702/00	58-34-710/00	58-34-711/00	58-34-705/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-34-700/01	58-34-701/01	58-34-702/01	58-34-710/01	58-34-711/01	58-34-705/01
	1	Dichtungssatz VMQ	Seal kit VMQ	58-34-700/02	58-34-701/02	58-34-702/02	58-34-710/02	58-34-711/02	58-34-705/02
	1	Dichtungssatz HNBR	Seal kit HNBR	58-34-700/06	58-34-701/06	58-34-702/06	58-34-710/06	58-34-711/06	58-34-705/06

* Dichtungssatz für SWE41 + SWE42
Seal kit for SWE41 + SWE42

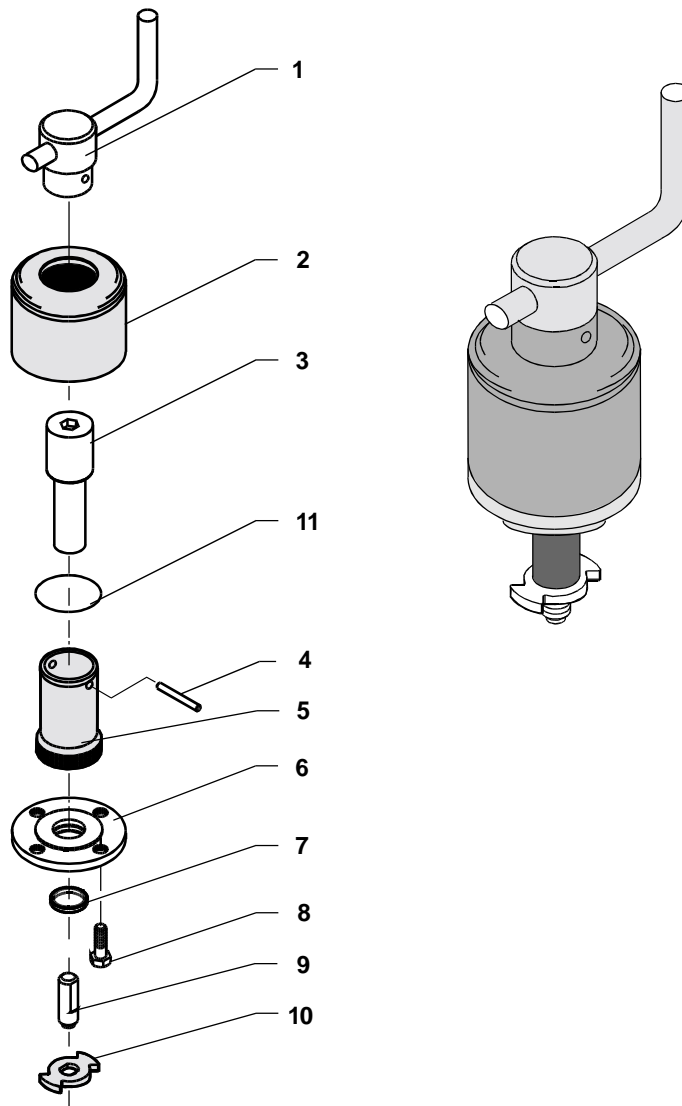
Pos.	Stk./Qty.	Benennung	Description	1"	1,5"	2"	2,5"	3"	4"
				Ws. - Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-34-715/00	58-34-716/00	58-34-717/00	58-34-725/00	58-34-726/00	58-34-720/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-34-715/01	58-34-716/01	58-34-717/01	58-34-725/01	58-34-726/01	58-34-720/01
	1	Dichtungssatz VMQ	Seal kit VMQ	58-34-715/02	58-34-716/02	58-34-717/02	58-34-725/02	58-34-726/02	58-34-720/02
	1	Dichtungssatz HNBR	Seal kit HNBR	58-34-715/06	58-34-716/06	58-34-717/06	58-34-725/06	58-34-726/06	58-34-720/06

* Dichtungssatz für SW43 + SW44
Seal kit for SW43 + SW44

Pos.	Stk./Qty.	Benennung	Description	1"	1,5"	2"	2,5"	3"	4"
				Ws. - Nr. / Part No.					
	1	Dichtungssatz FPM	Seal kit FPM	58-34-730/00	58-34-731/00	58-34-732/00	58-34-740/00	58-34-741/00	58-34-735/00
	1	Dichtungssatz EPDM	Seal kit EPDM	58-34-730/01	58-34-731/01	58-34-732/01	58-34-740/01	58-34-741/01	58-34-735/01
	1	Dichtungssatz VMQ	Seal kit VMQ	58-34-730/02	58-34-731/02	58-34-732/02	58-34-740/02	58-34-741/02	58-34-735/02
	1	Dichtungssatz HNBR	Seal kit HNBR	58-34-730/06	58-34-731/06	58-34-732/06	58-34-740/06	58-34-741/06	58-34-735/06

14.3 Handbetätigung / manual actuation

Delta SW4



Pos.	Stk./Qty.	Benennung	Description	Ws-Nr. / Part No.
-	-	Handbetätigung SW4 komplett	manual actuation SW4 cpl.	15-27-130/17
1	1	Kurbel Handbetätigung komplett	crank manual actuation complete	08-49-015/17
2	1	Deckel Handbetätigung	cover manually operated	15-28-246/17
3	1	Spindel Handbetätigung	spindle manually operated	15-28-230/12
4	1	Spannstift Ø 4x36 DIN1481	dowel pin Ø 4x36 DIN1481	08-02-093/12
5	1	Führungsbuchse	guide bush	15-28-245/17
6	1	Flansch	flange	09-51-090/17
7	1	Führungsband	guide band	08-39-079/93
8	4	Skt. Schraube M8x20 DIN933	hex. screw M8x20 DIN933	65-01-083/15
9	1	Zugstange	guide rod	15-23-855/12
10	1	Konterscheibe	counterdisc	15-28-247/12
11	1	O-Ring Ø35,5x3 NBR 70	O-ring Ø35,5x3 NBR 70	58-06-153/13