

Operating instructions

- Translation of the original -

Double seat valve

Type: 567x

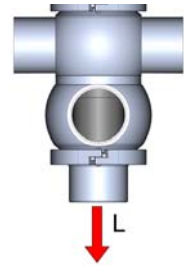
EPDM, HNBR



4. Function and operation

4.1 Description of function

The valve opens from the top down by means of control air and closes bottom to top by means of spring tension without loss of product. In the closed setting, mix-proof separation of the media flowing in the upper and lower valve chambers is ensured by two independently closed valve plates. Any leaks occurring due to damaged valve plate seals are drained to the exterior without pressure via the leakage discharge (L).



4.2 Installation instructions

➤ Fitting position

The valve must be installed vertically with the actuator at the upwards. Liquid must be able to flow freely from the valve housing.



ATTENTION

- Impurities can cause damage to the seals and seals area. Clean inside areas prior to assembly.
- To avoid a distortion of the components, all welding parts must be welded to stress-relieved.

4.3 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.

4.4 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).

4.5 Control system and feedback unit

➤ Control head -optional-

Optionally, modular valve control head systems can be installed to the actuator for reading and actuating valve positions. The standard version is a closed system with SPS or ASI-bus switch-on electronics, and integrated 3/2-way solenoid valves. For tough operating conditions we recommend employing a high-grade steel cover.



➤ Feedback unit with finger guard -optional-

For the acquisition of the valve positions over inductive initiators (Sensors), a feedback unit is mounted on the actuation. The enquiry takes place over the position of the piston rod.



➤ Pneumatic valve actuation

Valve function	Pneum. control ➡ with integrated (MV) in control unit (fig. 4 - 1 /page 7)	Pneum. control ➡ with external (MV) (fig. 4 - 2 /page 7)
Valve stroke valve "OPEN"	control air feed P ➡ MV1 ➡ P1/LA1	control air feed ext.MV1 ➡ LA1
Valve stroke valve "CLOSED"	de-aeration P1/LA1 ➡ MV1 ➡ R valve is closing by spring	de-aeration LA1 ➡ ext.MV1 valve is closing by spring
Lower seat lift	AUF = control air feed P ➡ MV2 ➡ P2/LA2	AUF = control air feed ext.MV2 ➡ P ➡ LA2
	CLOSE = de-aeration P2/LA2 ➡ MV2 ➡ R valve is closing by spring	CLOSE = de-aeration LA2 ➡ P ➡ ext.MV2 valve is closing by spring
Upper seat lift	AUF = control air feed P ➡ MV3 ➡ P3/LA3	AUF = control air feed ext.MV3 ➡ LA3
	CLOSE = de-aeration P3/LA3 ➡ MV3 ➡ R valve is closing by spring	CLOSE = de-aeration LA3 ➡ ext.MV3 valve is closing by spring

MV = solenoid valve

MV1 = valve stroke

MV2 = lower seat lift

MV3 = upper seat lift

R = de-aeration, sound absorber

P = compressed-air inlet (control unit)

LA = compressed-air inlet (actuation)

S = slide switch - manual control (solenoid valves)

E = proximity switch M12x1

H = feedback unit

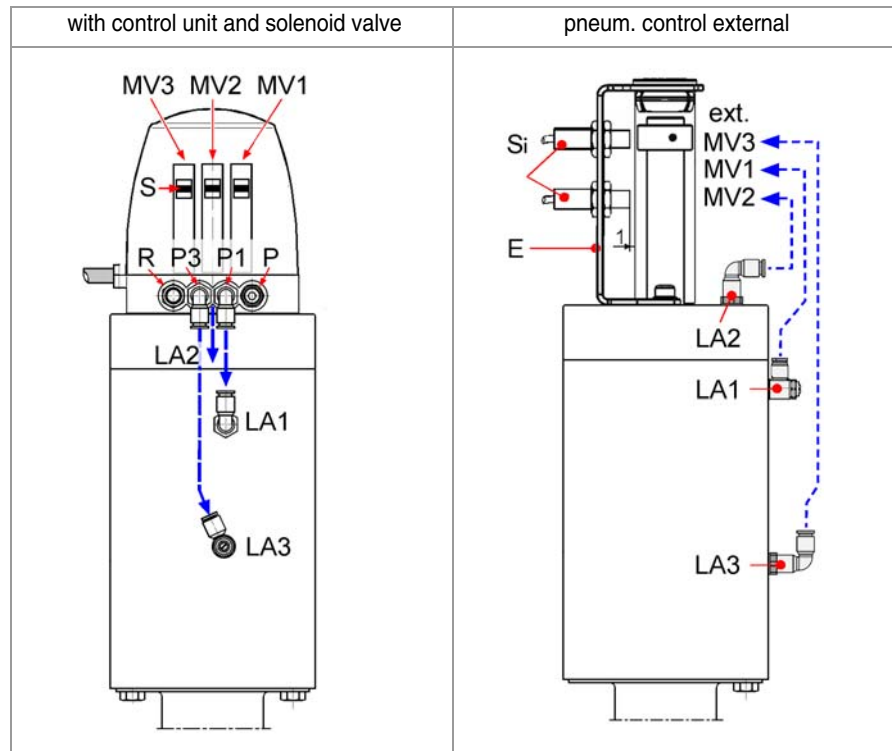


Fig. 4 - 1

Fig. 4 - 2

4.6 Service and maintenance

► Service

The maintenance intervals depend on the operating conditions "temperature, temperature-intervals, medium, cleaning medium, pressure and opening frequency". We recommend replacing the seals every 1 years. The user, however should establish appropriate maintenance intervals according to the condition of the seals.

Lift actuator

The actuator is maintenance-free and non-removable.



NOTICE

EPDM; Viton; k-flex; NBR; HNBR ⇒
Silicone ⇒
Thread ⇒

Lubricant recommendation

Klüber Paraliq GTE703*
Klüber Sintheso pro AA2*
Interflon Food Grease*

**) 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.*

► Cleaning

Cleaning of the housing is performed with the pipe cleaning system. As part of the cleaning program, the leakage chamber and the drain pipe can be cleaned by cycling the valve discs. The valve disc shaft is also cleaned when the upper valve disc is cycled.

Alternatively, the leakage chamber and the shaft of the upper valve disc can be cleaned by means of the external rinsing connection (Sp). For cleaning the shaft, the upper valve disc has to be lifted.

Cleaning flow rate

Cleaning parameters¹

for the leakage chamber

Cleaning step	Aerate valve disc
Pre-Rinse	-
Wash 80°C	3 x 5 sec.
Intermediate rinse	2 x 5 sec.
Acid	3 x 5 sec.
Final rinse	2 x 5 sec.

DIN INCH
clocking at top

clocking at bottom

Nominal diameter DN / OD								
25 1	40 1½	50 2	65 2½	80 3	100 4	125 -	150 -	
0,97	1,10	1,1	1,38	1,66	2,08	2,50	4,02	
(l/s at 3bar)								
0,54	0,69	0,69	0,83	0,83	1,25	1,66	2,50	

1. Recommended for the Beverage Industry

4.7 Technical Data







Model:	Double seat valve	
Valve size:	DIN: DN25 - DN150 INCH: DN1 - DN4	
Connection:	Welding end DIN EN 10357	
Temperature range:	<ul style="list-style-type: none"> Ambient temperature: +4° - +45°C Product temperature: +0° - +95°C medium dependent Sterilization temperature: EPDM +140°C (short time 30min) HNBR +110°C 	
Operations pressure:	DIN: DN25 - 100 = max. 10 bar DN125 - 150 = max. 6 bar INCH: OD1 - OD4 = max. 10 bar	
Pressure resistance:	40 bar	
Leak rate:	A (DIN EN 12268-1)	
Control air pressure:	5,5 - 8,0 bar	
Quality of control air:	ISO 8573-1 : 2001 quality class 3	
Material:	in product contact	not in product contact
Stainless steel:	1.4404 / AISI316L	1.4301 / AISI304
Surfaces:	RA ≤0,8µm e-pol.	metallic bright, e-pol.
Seals:	EPDM (FDA) HNBR (FDA)	NBR

DIN INCH	25 1	40 1½	50 2	65 2½	80 3	100 4	125 -	150 -
Retaining clamp:	15	15	15	25	25	55	65	65

DIN INCH	25 1	40 1½	50 2	65 2½	80 3	100 4	125 -	150 -
transition-flow at top ⇔	26	50	95	150	240	380	580	940
transition-flow at bottom ⇔	26	55	100	155	250	390	590	940
from bottom to top ↗	16	26	45	72	98	155	245	370
from top to bottom ↘	16	24	43	67	93	150	240	330

5. Disassembly / Assembly

► Mounting tools

		Mounting tool sets:	DN40 - DN65 DN80 - DN100 DN125 - DN150	5670 065 100-000 5670 100 100-000 5670 150 100-000	■	■	■
M1		Socket	DN40 - DN65 DN80 - DN150	5620 065 131-130 5620 100 131-130	■	■	■
M2		Eccentric socket	DN40 - DN65 DN80 - DN150	5620 065 134-130 5620 100 134-130	■	■	■
M3		Eccentric ring	DN40/50 DN65 DN80 DN100 DN125 DN150	5620 050 025-020 5620 065 025-020 5620 080 025-020 5620 100 025-020 5620 125 025-020 5620 150 025-020	■ ■	■ ■	■ ■
M4		Joint -pin wrench	DN40 - DN65 DN80 - DN150	5620 065 015-000 5620 150 015-000	■	■	■
M5		Socket + guide bush (POM) and O-Ring	DN40 - DN65 DN80 - DN100 DN125 - DN150	5670 080 105-000 5670 100 105-000 5670 150 105-000	■	■ ■	■
M6		Mounting plate	DN40 - DN65 DN80 - DN100 DN125 - DN150	5620 065 121-020 5620 100 121-020 5620 150 121-020	■	■	■



NOTICE

- All threaded joint have right-hand thread.
- Unscrew and remove control air, steam resp. cleaning lines and electrical lines, complete feedback unit or control head.

5.1 Assembly valve insert VE

5 - 1 ⇌

- Unscrew the upper retaining clamp (VK).
- Connect compressed air to LA1 and pressurize the actuator with air. - The valve insert lift up of the valve housing (VG).
- Pinch a rubber (T) between the Lantern (15) and the housing (VG).
- Disconnect compressed air at LA1 and depressurize the drive - The valve piston move in.
- Remove the complete valve insert with the upper shaft seal (D1), the O-rings (D2), the insert (5) and the bearing bush (4) from the housing (VG).
- Unscrew the lower retaining clamp (VK).
- Remove the housing bottom (2) with the lower shaft seal (D1), the O-rings (D2), the insert (5) and the bearing bush (4) from the housing (VG).

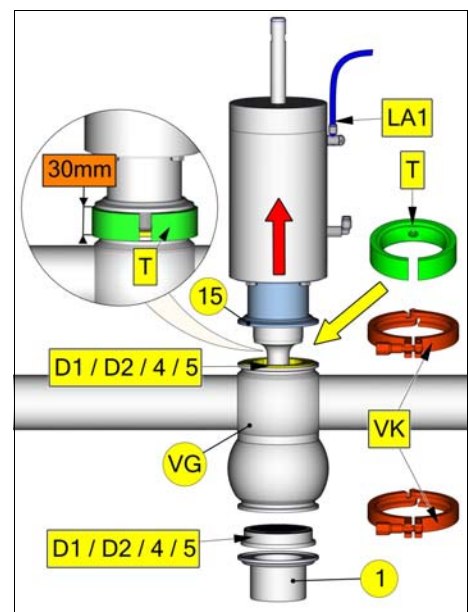


Fig. 5 - 1

5.2 Replacement wear parts

► Disassembly

- 5 - 2 ⇨
- Unscrew nut (11) and remove disc (10).
 - Dismount the upper piston (6) from the upper piston (7) in direction X.
 - Remove the split washer (13).

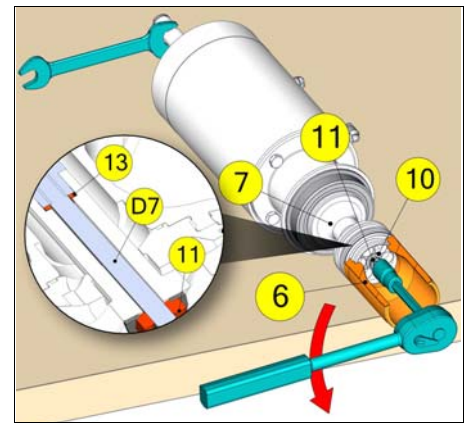


Fig. 5 - 2

- 5 - 3 ⇨
- Remove O-ring (D5).
 - Unscrew the hexagon screws (14).
 - Push the lantern (15) in direction 'X' until the hole (B1) is freely visible.

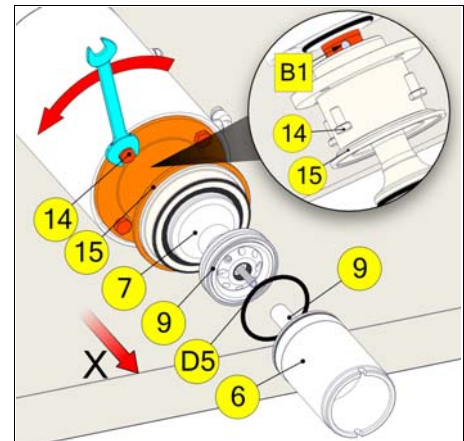


Fig. 5 - 3

- 5 - 4 ⇨
- Unscrew the upper piston (7) from piston rod (3). Use the mounting plate M6. Counter with the pin wrench M4 at the hole (B1).



≥ DN40 / 1½ (valves with divided pistons):

Should be untighten the piston plate (8) before piston (7), then unscrew the piston (7) with the eccentric M2 and a ratchet.

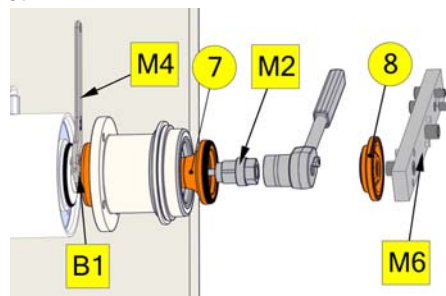


Fig. 6 - 4a

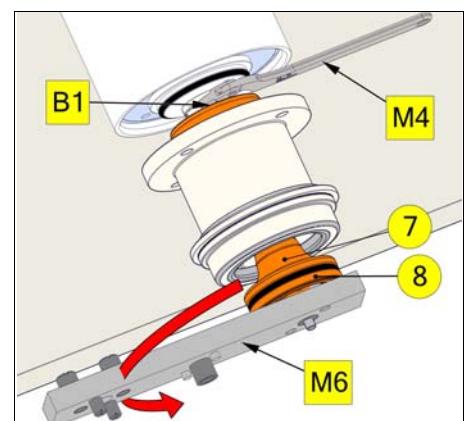


Fig. 5 - 4

- 5 - 5 ⇨
- Push the lantern (15), the upper shaft seal (D1) with the insert (5) and the bearing bush (4) from the piston (7).
 - Dismount the valve lift stop (16).
 - Remove seals: Pos. (D1); (D2); (D8); (D9); (D10).

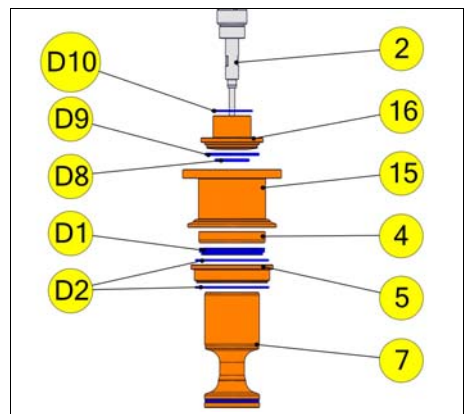


Fig. 5 - 5

➤ **Assembly seal (D4)**

5 - 6 ⇨

Model Seal (D4)	Piston (6) and (7)	Pair of pistons upper: (7) + (8) Pair of pistons lower: (6) + (9)	
	DN 25 OD 1"	DN 40 - 125 OD 1½" - 5"	DN 150 OD 6"
	Piston undivided ¹	Piston divided	Piston divided
O-ring	X	X	X
Seal (with backup ring)	-	X	-

1. According their construction from valve size DN 25/1", the pistons (6) and (7) are not divided.

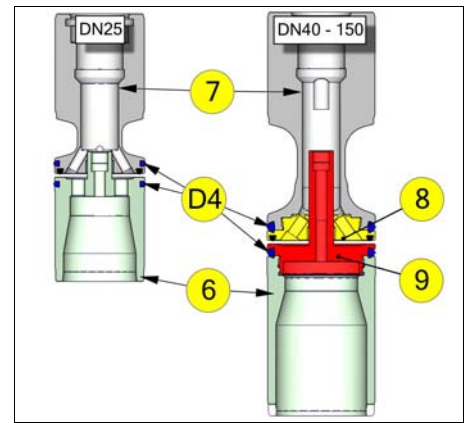


Fig. 5 - 6

5 - 7 ⇨

DN25 Dismount - (D4) O-ring version

- Puncture the O-ring (D4) with a needle and remove them from the groove of piston (6) and (7).

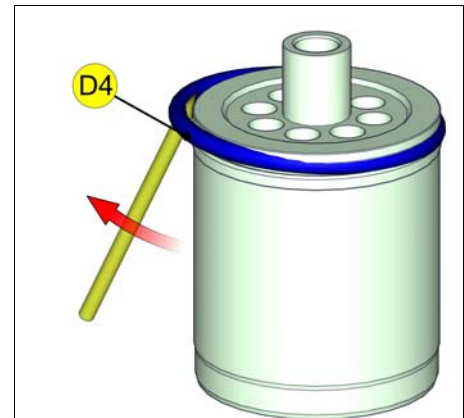


Fig. 5 - 7

5 - 8 ⇨

DN40 - DN150 Dismount O-ring / seal (D4)

- Clamp the mounting plate M6 into the vice.
- Put the piston (8) resp. (7) in the fittingly pins. (see Fig. 5 - 8)
- Unscrew the piston (6) from piston plate (9) with the socket M5 and the mating reducing bush.
- Unscrew the piston (7) from piston plate (8) with the socket M1.

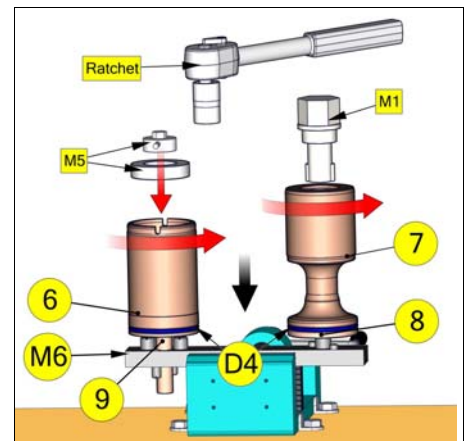


Fig. 5 - 8

5 - 9 ⇨

- Remove seals resp. O-rings (D4).

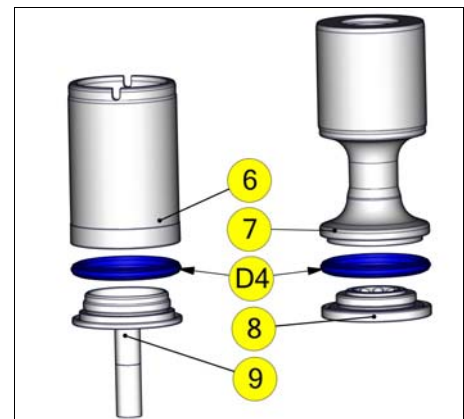


Fig. 5 - 9

► Assembly

Assemble in reverse order.

Thoroughly clean and slightly lubricate mounting areas and running surfaces.



NOTICE

- Fit valve insert carefully into the casing. When fitting the valve insert and running surfaces onto the piston, do not damage.
- Always replace the hexagon lock nut (11) by a new one after unscrewing.
- Check valve functions by manually activating the 3/2-way solenoid valves after assembly!

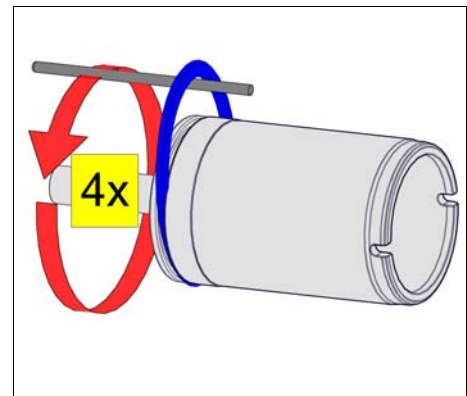


Fig. 5 - 10

Mounting O-ring (D4) for undivided piston

5 - 10 ⇔

- Slide the O-ring onto the groove.
- Resolve contingently twistings of the seal with a rod between seal and Groove.
- Alternately press and roll the seal into the groove with round body.

Mounting seal (D4) for divided piston

- Pair of piston upper = Piston (7) and piston plate (8)
- Pair of piston lower = Piston (6) and piston plate (9)

5 - 11 ⇔

- Screw together the pair of piston (7) / (8) and (6) / (9) without the seal (D4) to the metal limit stop by hand.
- Make a coloured mark at the piston surfaces.
- After then, unscrew the pairs of piston (7) / (8) and (6) / (9) again.

5 - 12 ⇔

- Push the seal (D4) onto the pistons.
- Screw together the pair of piston by hand again.
- Clamp the mounting plate M6 into the vice.
- Fix the lower pair of piston (6) / (9) with the piston plate (9) in the mounting plate M6.
- Position the eccentric ring (M3) on seal (D4).
- Screw up the piston (6) to the final limit mark. Use the socket M5 and a ratchet.

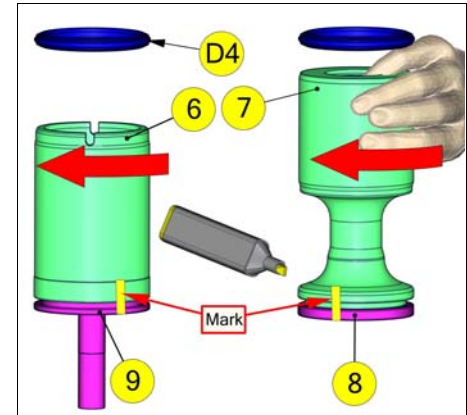


Fig. 5 - 11

5 - 13 ⇔

- Clamp the socket M1 into the vice at the hexagon flat.
- Fix the upper pair of piston (7) / (8) with the piston (7) of the socket M1.
- Position the eccentric ring (M3) on seal (D4).
- Screw up the piston plate (8) to the final limit mark. Use the mounting plate M6.

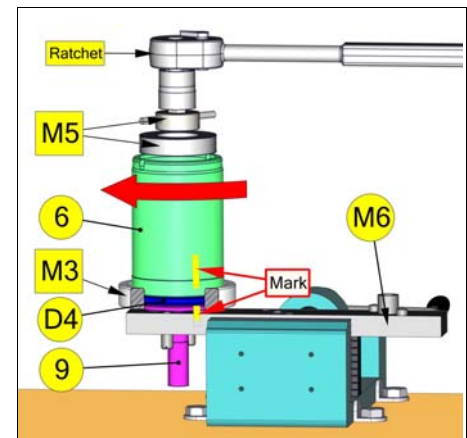


Fig. 5 - 12

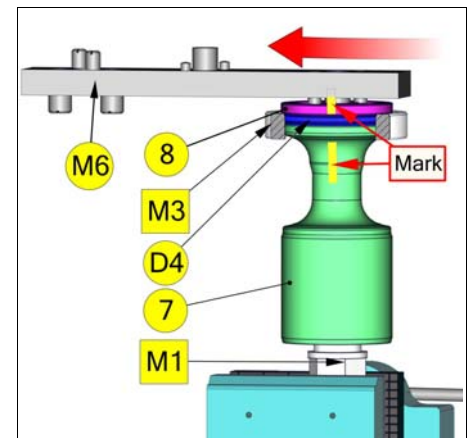


Fig. 5 - 13

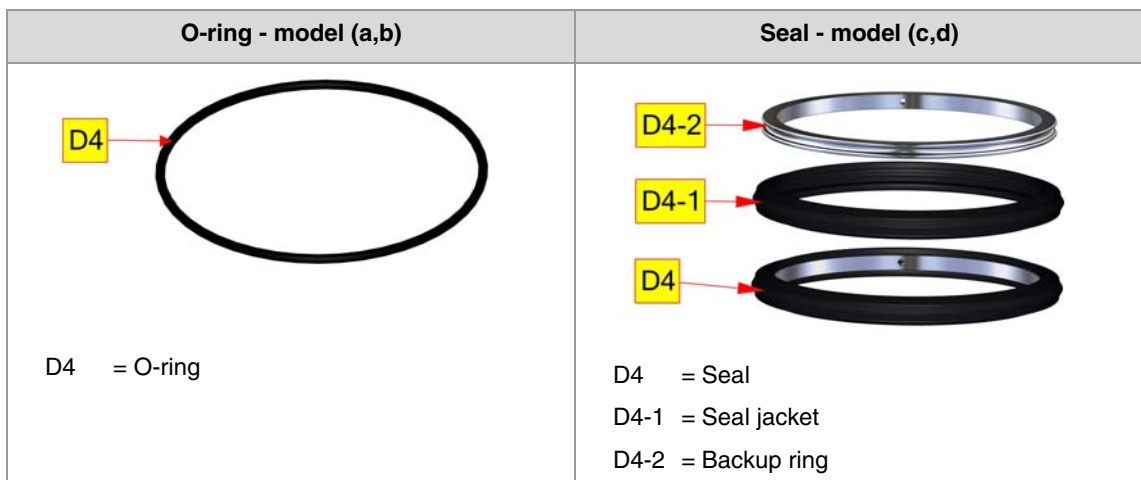
5.8 Seal (D4)

Model Seal (D4)	Piston (6) and (7)	Pair of pistons upper: (7) + (8) Pair of pistons lower: (6) + (9)	
	DN 25 OD 1"	DN 40 - 125 OD 1½" - 5"	DN 150 OD 6"
	Piston undivided ¹	Piston divided	Piston divided
a) O-ring EPDM	X	X ²	X
b) O-ring HNBR	X	X ³	X
c) Seal EPDM (with backup ring)	-	X	-
d) Seal HNBR (with backup ring)	-	X	-

1. According their construction from valve size DN 25/1", the pistons (6) and (7) are not divided.

2. till 05/2016 thereafter seal (D4)c

3. till 05/2016 thereafter seal (D4)d



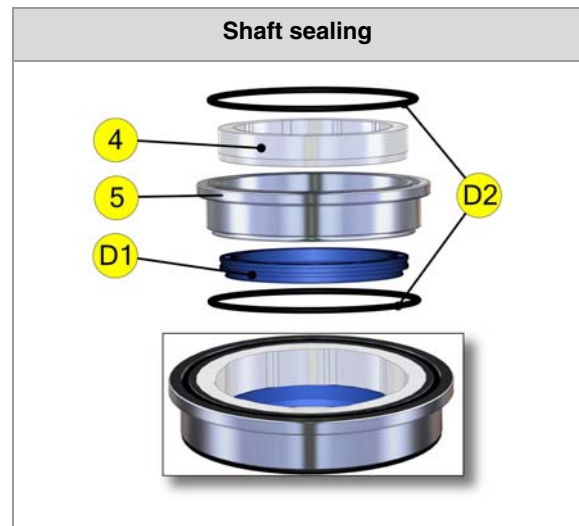
5.9 Shaft sealing

D1 = Shaft seal

D2 = O-rings

4 = Bearing bush

5 = Housing insert



6. Drawings and Dimensions

6.1 Double seat valve Type: 567x

A1 = Control head
 A2 = Feedback unit
 IG = Pulse generator
 K = Cap
 VE = Valve insert

VG = Valve housing
 S-S
 SS-S
 S-SS
 SS-SS

VK = Retaining clamp

1a = Housing bottom

1b = Housing bottom with rinsing connection

4 = Bearing bush

5 = Housing insert

14 = Screws

15a = Lantern

15b = Lantern with rinsing connection

Sp1 = Screwed socket:
 Rinsing connection M14x1,5
 cutting ring union

Sp2 = Screwed socket:
 Rinsing connection DN15

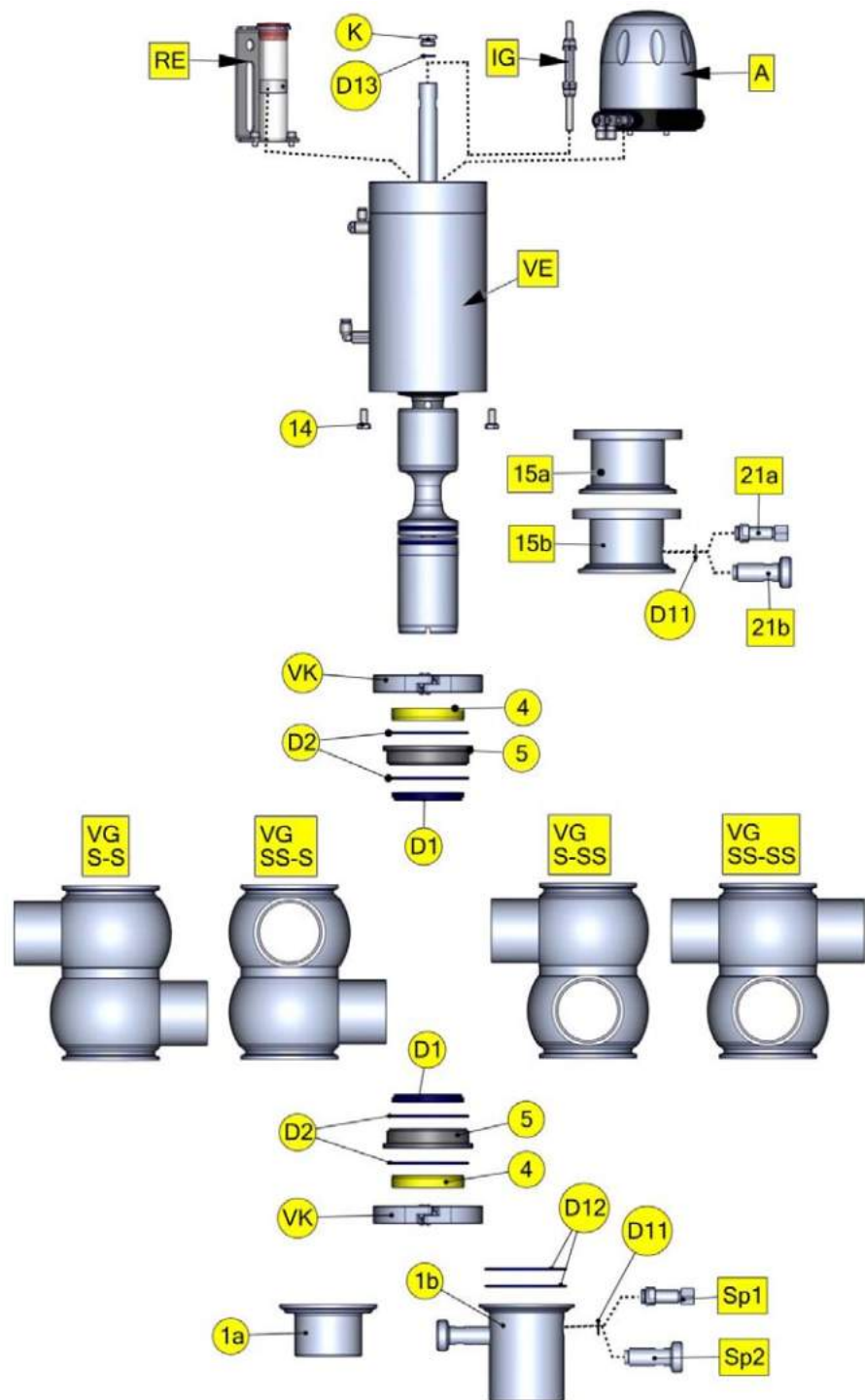
D1 = Shaft seal

D2 = O-rings

D11 = O-ring

D12 = O-ring

D13 = O-ring



6.2 Valve insert VE DN25 / 1 INCH

- 1) -
- 2) Spindle
- 3) Piston rod
- 4) Bearing bush
- 5) Housing insert
- 6) Piston lower
- 7) Piston upper
- 8) -
- 9) -
- 10) Disc
- 11) Hexagon nut
- 12) Plain bearing
- 13) Split washer
- 14) Hexagon screws
- 15) Lantern
- 16) Valve lift stop
- 17) pneum. actuator

Seal kit

- D1) Shaft seal
- D2) O-ring
- D3) -
- D4) Seal
- D5) O-ring
- D6) -
- D7) Headless pin
- D8) O-ring
- D9) O-ring
- D10) O-ring

B = Bore for mounting
L = Leakage tell taue

G1 = Lock nut high strength
(e.g. Loctite 2701)

LA1 = Main valve lift
LA2 = Lower seat lift
LA3 = Upper seat lift
Y = Detail

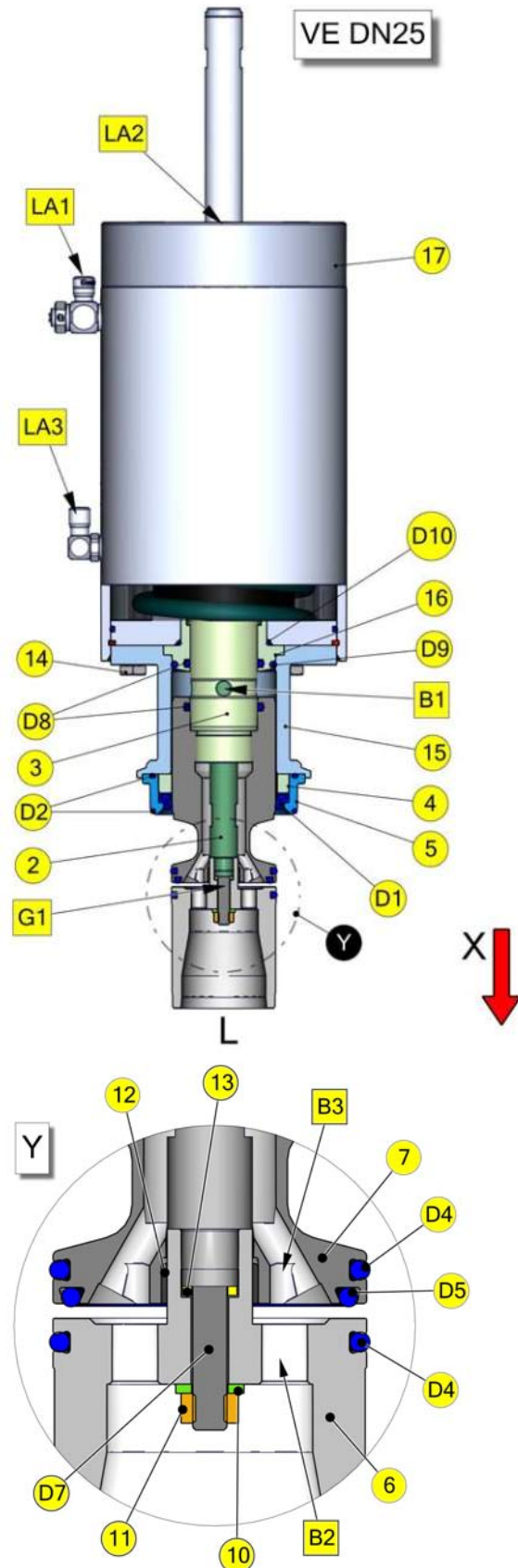


Fig. 6 - 2

6.3 Valve insert VE DN40 - DN150 / 1½ - 4 INCH

- 1) -
- 2) Spindle
- 3) Piston rod
- 4) Bearing bush
- 5) Housing insert
- 6) Piston lower
- 7) Piston upper
- 8) Piston plate upper
- 9) Piston plate lower
- 10) Disc
- 11) Hexagon nut
- 12) Plain bearing
- 13) Split washer
- 14) Hexagon screws
- 15) Lantern
- 16) Valve lift stop
- 17) pneum. actuator

Seal kit

- D1) Shaft seal
- D2) O-ring
- D3) O-ring
- D4) seal
- D5) O-ring
- D6) O-ring
- D7) Headless pin
- D8) O-ring
- D9) O-ring
- D10) O-ring

- B = Bore for mounting
- E = Nut
- L = Leakage tell taue

G1 = Lock nut high strength
(e.g. Loctite 2701)

- LA1 = Main valve lift
- LA2 = Lower seat lift
- LA3 = Upper seat lift
- Y = Detail

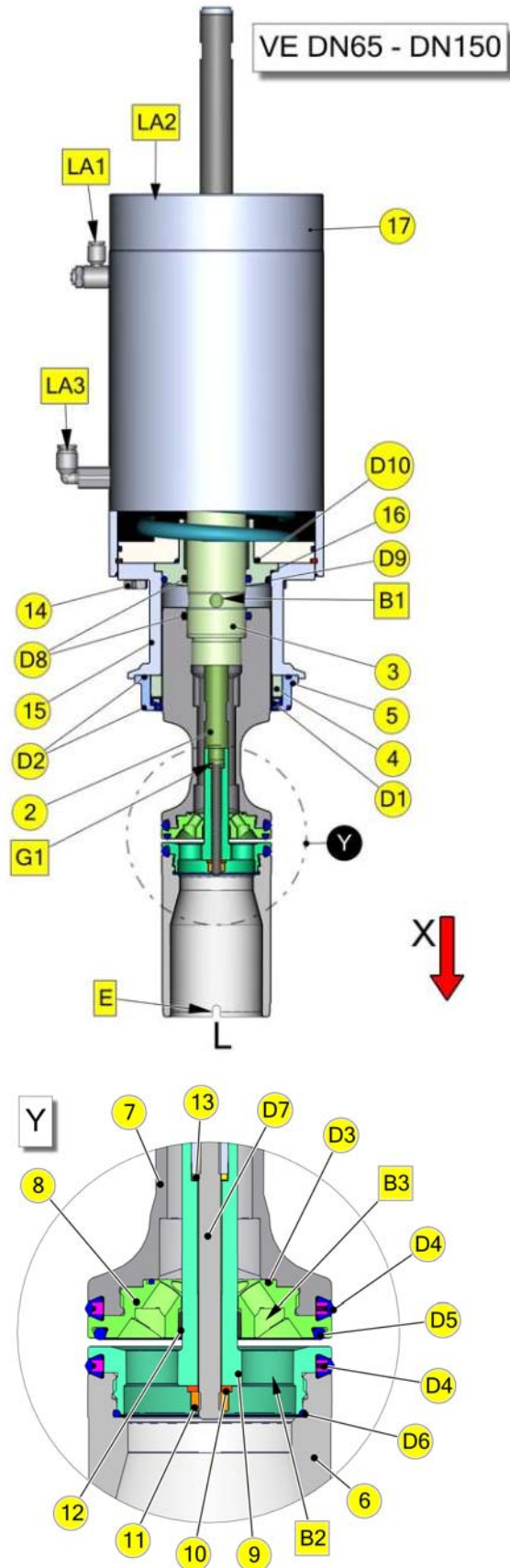


Fig. 6 - 3

6.4 Dimensions

	DIN INCH	25 1	40 1½	50 2	65 2½	80 3	100 4	125 -	150 -
D1 / D2	DIN INCH	∅ 29x1,5 ∅ 25,4x1,65	∅ 41x1,5 ∅ 38,1x1,65	∅ 53x1,5 ∅ 50,8x1,65	∅ 70x2 ∅ 63,5x1,65	∅ 85x2 ∅ 76,1x2,0	∅ 104x2 ∅ 101,6x2,0	∅ 129x2 -	∅ 154x2 -
D3	DIN INCH	∅ 128 ∅ 128	∅ 128 ∅ 128	∅ 128 ∅ 128	∅ 128 ∅ 128	∅ 160 ∅ 160	∅ 160 ∅ 160	∅ 230 -	∅ 230 -
Sp1 Sp2	- Rinsing connection: with cutting ring union M14x1,5 for tube ∅8x1 - Rinsing connection: screwed socket DN15 DIN11851								
L1	DIN INCH	150 150	170 170	170 170	210 210	230 230	260 260	320 -	345 -
L2	DIN INCH	112 112	132 127,5	155 152	193 189	228 220	269 265	315 -	351 -
L3	DIN INCH	46 42	59 56	71 69	87 81	106 98	125 122	150 -	175 -
L4	DIN INCH	448 448	447 447	446 446	464 464	531 531	560 560	615 -	628 -
L5	DIN INCH	- -	- -	- -	172 -	192,5 -	232 -	- -	- -

Size when completed

Valve with control head	M1	DIN INCH	580 580	600 600	625 625	680 680	785 785	850 850	960 -	1015 -
Valve with control head + upper rinsing connection	M2	DIN INCH	- -	- -	- -	955 -	1080 -	1185 -	- -	- -

➤ Dimensioned drawing

