

SECTION 3 SPARES PARTS CUT SHEETS

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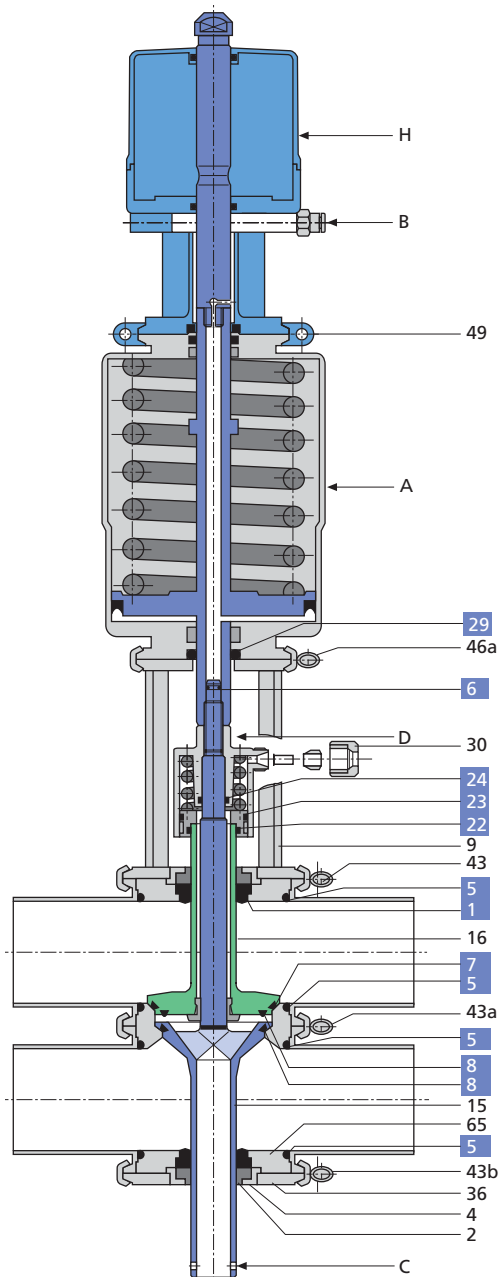
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Original Spare Parts – VARIVENT® Mixproof Valve Type D - Maintenance



1.0 Dismantling

- 1.1 Remove CIP connection (30).
- 1.2 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.3 Remove hinged clamp (43).
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.5 After removal of the clamps (49) draw off control module (H).
- 1.6 Withdraw valve insert from the top, complete with actuator (A) and lifting actuator (L).
- 1.7 Hold actuator (A) with a belt wrench and separate valve disk (15) complete with CIP bonnet (11) from the actuator (A) at wrench area (C).
- 1.8 Hold valve disk (15) by inserting a pin \varnothing 5 mm into bore (C) and remove CIP bonnet (11) by using a wrench at wrench area (D).
- 1.9 Remove the hinged clamp (43b) and take out the component parts (1, 2, 3, 4, 5 and 36).

2.0 Replacement of seals

Remove the seals marked with **grey** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function.

For this purpose actuate valve with compressed air at (B).

In closed valve position, the bearing plug and CIP bonnet must at flush level.

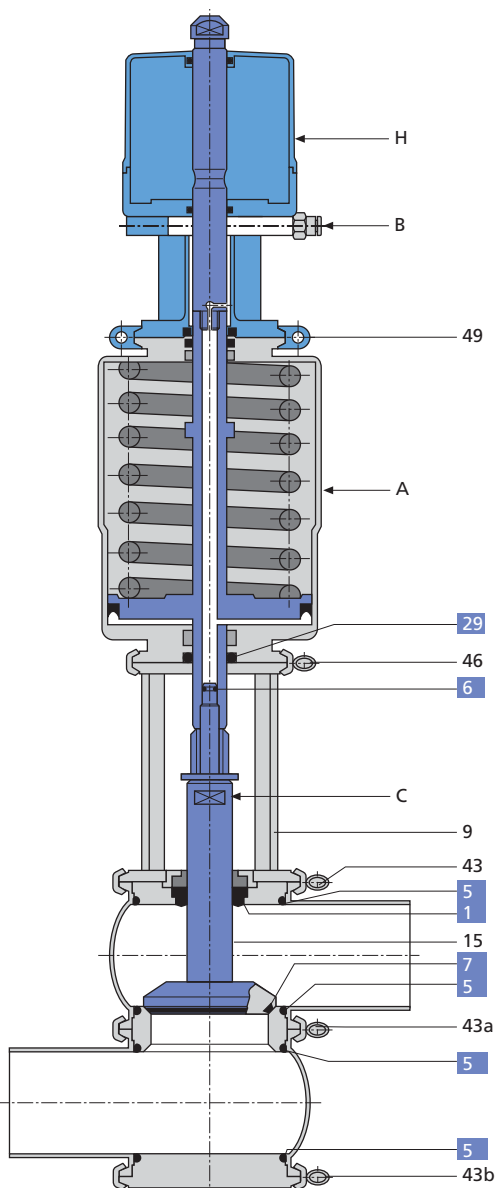
Seals for VARIVENT® Mixproof Valve Type D

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	2	Seal ring	\varnothing	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
5	4	O-ring	\varnothing	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-ring	\varnothing	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
			\varnothing	35-5	52-6	76-6	104-6	148-6
7	1	V-ring	EPDM	932-046	932-021	932-024	932-028	932-042
			FPM	932-030	932-033	932-035	932-039	932-041
			\varnothing	28-5	44-6	68-6	96-6	140-6
8	2	V-ring	EPDM	932-017	932-019	932-023	932-027	932-045
			FPM	932-029	932-032	932-034	932-038	932-044
			\varnothing	22x3	22x3	28x3	28x3	35x3
22	1	O-ring	EPDM	930-268	930-268	930-243	930-243	930-356
			FPM	930-164	930-164	930-244	930-244	930-357
			\varnothing	30x3	38x3	38x3	38x3	56x3
23	1	O-ring	EPDM	930-525	930-246	930-246	930-246	930-266
			FPM	930-512	930-247	930-247	930-247	930-265
			\varnothing	10x2,5	16x3	16x3	16x3	22x3
24	1	O-ring	EPDM	930-368	930-235	930-235	930-235	930-268
			FPM	930-616	930-162	930-162	930-162	930-164
			\varnothing	20x3	20x3	20x3	20x3	25x3
29	1	O-ring	NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-519.58	221-304.07	221-304.08	221-304.09	221-304.11
	FPM	221-519.60	221-519.01	221-519.02	221-519.03	221-519.05

Original Spare Parts – VARIVENT® Shut-Off Valve Type N - Maintenance



1.0 Dismantling

- 1.1 In the non-actuated position, the valve disk (15) is in the closed position. Lift the valve disk (15) by actuating the valve with compressed air at connection (B) or using the emergency.
- 1.2 Remove hinged clamp (43).
- 1.3 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.4 After removal of the clamps (49) draw off control module (H).
- 1.5 Withdraw valve insert from the top, complete with actuator (A)
- 1.6 Hold actuator (A) with a belt wrench and separate valve disk (15) from the actuator (A) at wrench area (C).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-ring (7). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function.
For this purpose actuate valve with compressed air at (B).

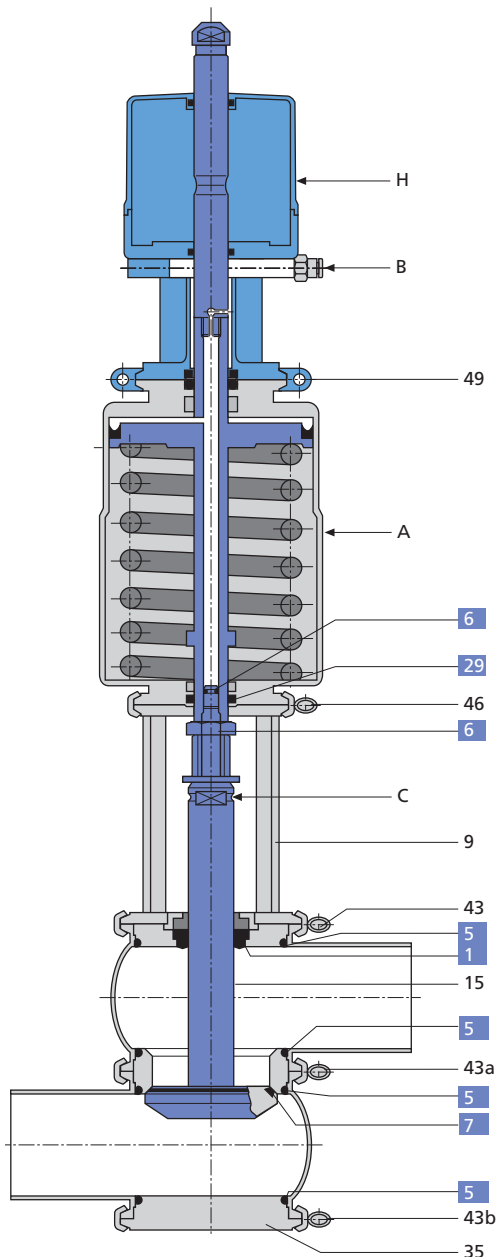
Seals for VARIVENT® Shut-Off Valve Type N

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	1	Seal ring	Ø	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
5	4	O-ring	Ø	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
			EPDM	932-046	932-021	932-024	932-028	932-042
7	1	V-ring	Ø	35-5	52-6	76-6	104-6	148-6
			FPM	932-030	932-033	932-035	932-039	932-041
			NBR	930-026	930-026	930-026	930-026	930-035
29	1	O-ring	Ø	20x3	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-304.01	221-304.02	221-304.03	221-304.04	221-304.06
	FPM	221-511.80	221-511.81	221-511.82	221-511.83	221-511.85

Original Spare Parts – VARIVENT® Shut-Off Valve Type U - Maintenance



1.0 Dismantling

- 1.1 Remove hinged clamp (43) and locking device (35) at the lower valve housing (40).
- 1.2 In the non-actuated position, the valve disk (15) is in the closed position. Lift the valve disk (15) by actuating the valve with compressed air at connection (B) or using the emergency.
- 1.3 Loosen valve disk (15) at wrench area (C) by approx. 5 – 6 mm.
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device. Separate valve disk from actuator
- 1.5 After removal of the clamps (49) draw off control module (H).
- 1.6 Remove hinged clamp (43) between lantern (9) and the upper valve housing.
- 1.7 Remove actuator (A) from the top.

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-ring (7). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function. For this purpose actuate valve with compressed air at (B).

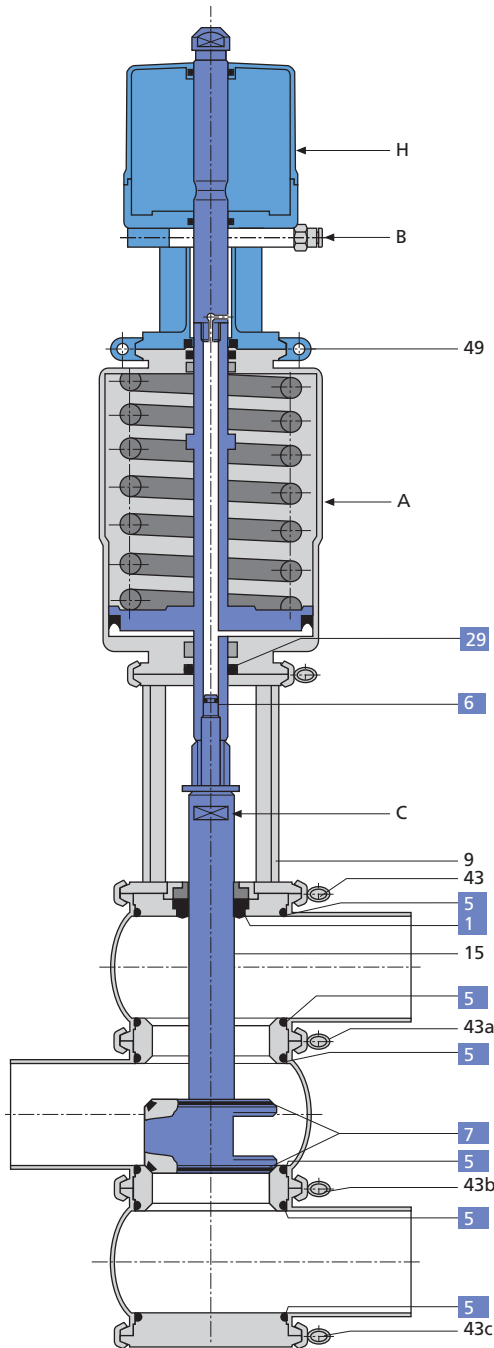
Seals for VARIVENT® Shut-Off Valve Type U

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	1	Seal ring	Ø	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
5	4	O-ring	Ø	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
7	1	V-ring	Ø	35-5	52-6	76-6	104-6	148-6
			EPDM	932-046	932-021	932-024	932-028	932-042
			FPM	932-030	932-033	932-035	932-039	932-041
29	1	O-ring	Ø	20x3	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-304.01	221-304.02	221-304.03	221-304.04	221-304.06
	FPM	221-511.80	221-511.81	221-511.82	221-511.83	221-511.85

Original Spare Parts – VARIVENT® Shuttle Valve Type W - Maintenance



1.0 Dismantling

- 1.1 In the non-actuated position, the valve disk (15) is in the lower position. Lift the valve disks (15) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.2 Remove the hinged clamps (43) and (43a).
- 1.3 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.4 After removal of the clamps (49) draw off control module (H).
- 1.5 Withdraw valve insert from the top, complete with actuator (A)
- 1.6 Hold actuator (A) with a belt wrench and separate valve disk (15) from the actuator (A) at wrench area (C).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function. For this purpose actuate valve with compressed air at (B).

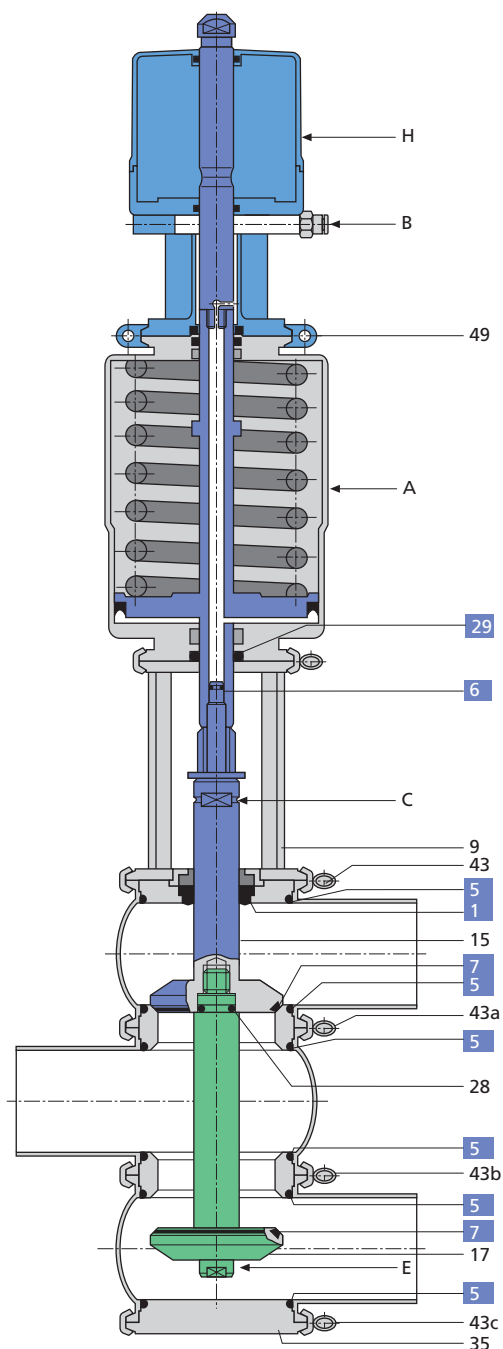
Seals for VARIVENT® Shuttle Valve Type W

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	1	Dichtring Seal ring	Ø	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
5	6	O-Ring O-ring	Ø	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-Ring O-ring	Ø	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
7	2	V-Ring V-ring	Ø	35-5	52-6	76-6	104-6	148-6
			EPDM	932-046	932-021	932-024	932-028	932-042
			FPM	932-030	932-033	932-035	932-039	932-041
29	1	O-Ring O-ring	Ø	20x3	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-304.18	221-304.19	221-304.20	221-304.21	221-304.23
	FPM	221-511.87	221-511.88	221-511.89	221-511.90	221-511.92

Original Spare Parts – VARIVENT® Shuttle Valve Type X - Maintenance



1.0 Dismantling

- 1.1 In the non-actuated position, the valve disk (15) is in the closed position and valve disk (17) is in the opened position.
- 1.2 Remove hinged clamp (43c) and the locking device (35).
- 1.3 Screw-out lower valve disk (17) at wrench area (E).
- 1.4 Lift the valve disk (15) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.5 Remove hinged clamp (43).
- 1.6 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.7 After removal of the clamps (49) draw off control module (H).
- 1.8 Withdraw valve insert from the top, complete with actuator (A)
- 1.9 Hold actuator (A) with a belt wrench and separate valve disk (15) from the actuator (A) at wrench area (C).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-ring (7). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order. The lower disk (17) must be tightened with the following torque (wrench area E).

- 1"-2" = > 24 Nm
- 2 1/2"-4" = > 58 Nm
- 6" = > 70 Nm

4.0 Function check

After assembly check the valve function. For this purpose actuate valve with compressed air at (B).

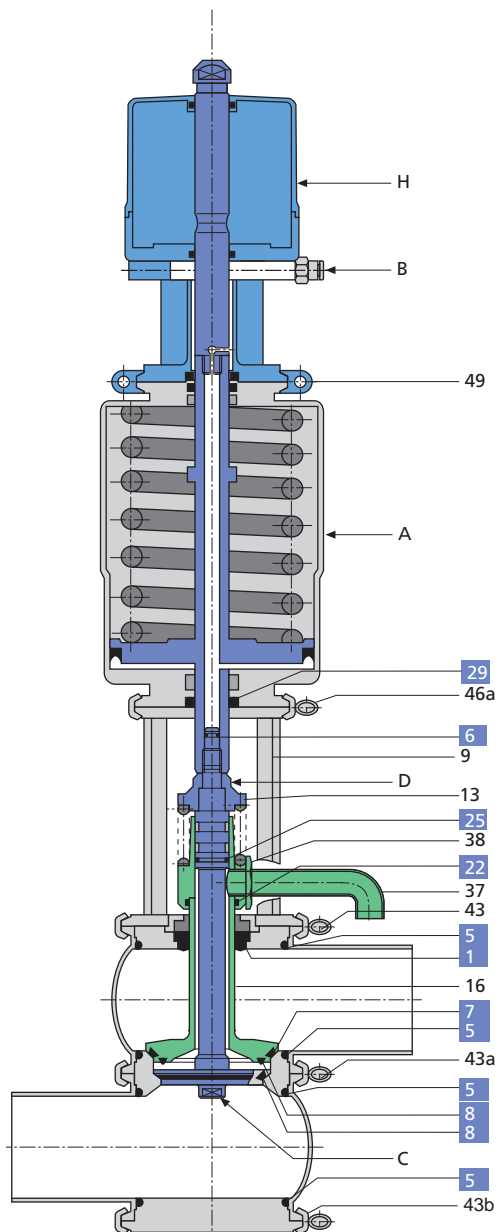
Seals for VARIVENT® Shuttle Valve Type X

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	1	Seal ring	Ø	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
5	6	O-ring	Ø	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
7	2	V-ring	Ø	35-5	52-6	76-6	104-6	148-6
			EPDM	932-046	932-021	932-024	932-028	932-042
			FPM	932-030	932-033	932-035	932-039	932-041
28	1	O-ring	Ø	15x3	15x3	23x3	23x3	29x3
			EPDM	930-276	930-276	930-350	930-350	930-373
			FPM	930-277	930-277	930-269	930-269	930-383
29	1	O-ring	Ø	20x3	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-304.24	221-304.25	221-304.26	221-304.27	221-304.29
	FPM	221-511.93	221-511.94	221-511.95	221-511.96	221-511.98

Original Spare Parts – VARIVENT® Mixproof Valve Type K - Maintenance



1.0 Dismantling

- 1.1 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.2 Remove hinged clamp (43).
- 1.3 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.4 After removal of the clamps (49) draw off control module (H).
- 1.5 Withdraw valve insert from the top, complete with actuator (A).
- 1.6 Screw-off the leakage pipe (37 and 38).
- 1.7 Hold actuator (A) with a belt wrench and separate valve disk (15) from the actuator (A) at wrench area (C).
- 1.8 Hold valve disk (15) at wrench area (C) and screw-out spring plate (13) at wrench area (D).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function.
For this purpose actuate valve with compressed air at (B).

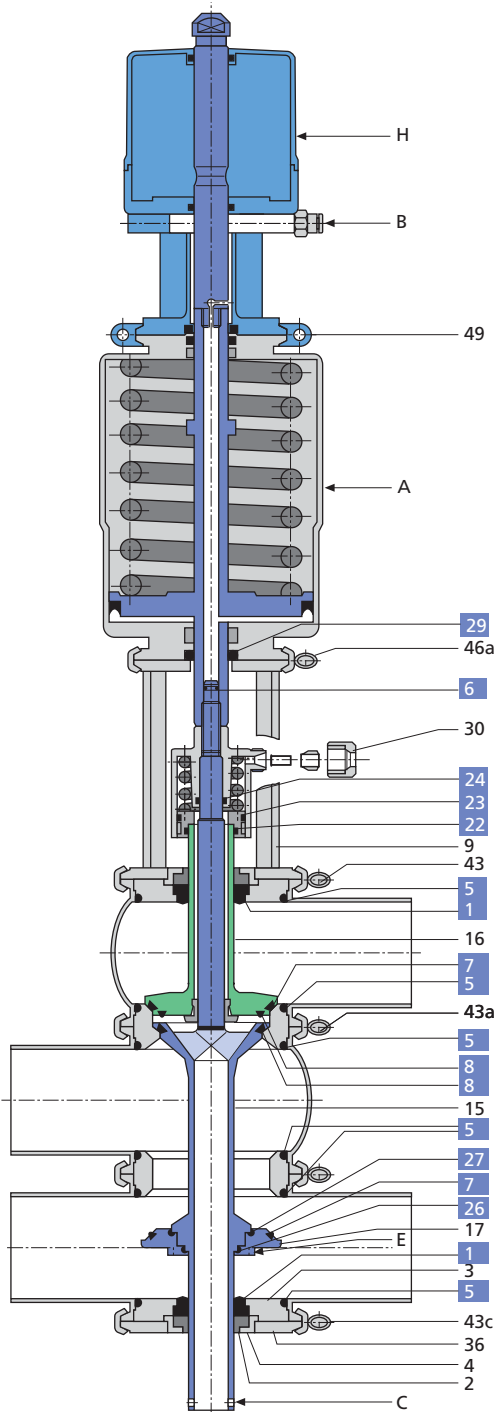
Seals for VARIVENT® Mixproof Valve Type K

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	2	Seal ring	Ø	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
			Ø	42x3	60x3	85x4	113x4	158x5
5	4	O-ring	EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
7	1	V-ring	Ø	35-5	52-6	76-6	104-6	148-6
			EPDM	932-046	932-021	932-024	932-028	932-042
			FPM	932-030	932-033	932-035	932-039	932-041
8	2	V-ring	Ø	28-5	44-6	68-6	96-6	140-6
			EPDM	932-017	932-019	932-023	932-027	932-045
			FPM	932-029	932-032	932-034	932-038	932-044
22	1	O-ring	Ø	22x3	22x3	28x3	28x3	35x3
			EPDM	930-268	930-268	930-243	930-243	930-356
			FPM	930-164	930-164	930-244	930-244	930-357
25		O-ring	Ø	11x3	11x3	15x3	15x3	20x3
			EPDM	930-311	930-311	930-276	930-276	930-270
			FPM	930-335	930-335	930-277	930-277	930-163
29	1	O-ring	Ø	20x3	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-304.12	221-304.13	221-304.14	221-304.15	221-304.17
	FPM	221-519.32	221-519.33	221-519.34	221-519.35	221-519.37

Original Spare Parts – VARIVENT® Mixproof Shuttle Valve Type Y - Maintenance



1.0 Dismantling

- 1.1 Remove CIP connection (30).
- 1.2 Remove the hinged clamp (43c) and take out the component parts (1, 2, 3, 4, 5, 36).
- 1.3 In the non-actuated position, the valve disks (15 and 16) are in the closed position, the valve disk (17) is in the opened position.
- 1.4 Hold actuator (A) with a belt wrench and turn off additional valve disk (17) at wrench area (E).
- 1.5 Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.6 Remove the hinged clamp (43)
- 1.7 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.8 After removal of the clamps (49) draw off control module (H).
- 1.9 Withdraw valve insert from the top, complete with actuator (A)
- 1.10 Hold actuator (A) with a belt wrench and separate valve disk (15) complete with CIP bonnet (11) from the actuator (A) at wrench area (D).
- 1.11 Hold valve disk (15) by inserting a pin \varnothing 5 mm into bore (C) and remove CIP bonnet (11) by using a wrench at wrench area (D).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function. For this purpose actuate valve with compressed air at (B). In closed valve position, the bearing plug and CIP bonnet must at flush level.

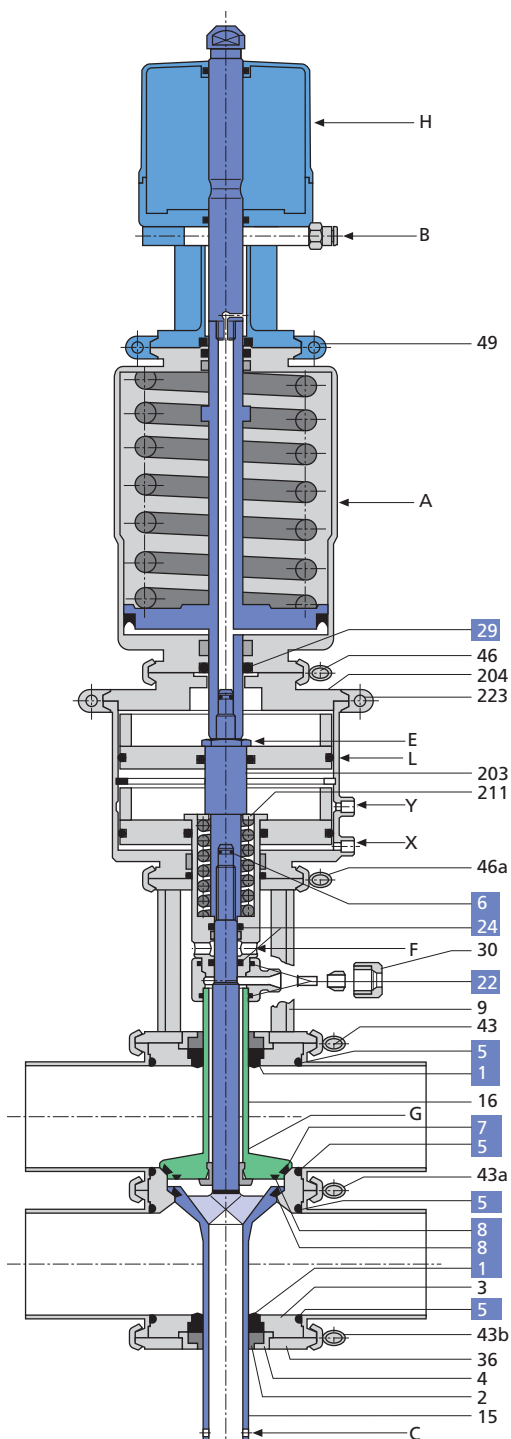
Seals for VARIVENT® Mixproof Shuttle Valve Type Y

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	2	Seal ring	\varnothing	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
5	6	O-ring	\varnothing	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-ring	\varnothing	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
			EPDM	932-046	932-021	932-024	932-028	932-042
7	2	V-ring	\varnothing	35-5	52-6	76-6	104-6	148-6
			EPDM	932-030	932-033	932-035	932-039	932-041
			FPM	932-017	932-019	932-023	932-027	932-045
8	2	V-ring	\varnothing	28-5	44-6	68-6	96-6	140-6
			EPDM	932-017	932-019	932-023	932-027	932-045
			FPM	932-029	932-032	932-034	932-038	932-044
22	1	O-ring	\varnothing	22x3	22x3	28x3	28x3	35x3
			EPDM	930-268	930-268	930-243	930-243	930-356
			FPM	930-164	930-164	930-244	930-244	930-357
23	1	O-ring	\varnothing	30x3	38x3	38x3	38x3	56x3
			EPDM	930-525	930-246	930-246	930-246	930-266
			FPM	930-512	930-247	930-247	930-247	930-265
24	1	O-ring	\varnothing	10x2,5	16x3	16x3	16x3	22x3
			EPDM	930-368	930-235	930-235	930-235	930-268
			FPM	930-616	930-162	930-162	930-162	930-164
26	1	O-ring	\varnothing		20x3	26x3	26x3	38x3
			EPDM		930-270	930-252	930-252	930-246
			FPM		930-163	930-165	930-165	930-247
27	1	O-ring	\varnothing	23x3	32x3	38x3	38x3	50x3
			EPDM	930-350	930-312	930-246	930-246	930-364
			FPM	930-269	930-166	930-247	930-247	930-299
29	1	O-ring	\varnothing	20x3	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-519.59	221-304.30	221-304.31	221-304.32	221-304.34
	FPM	221-519.61	221-519.39	221-519.40	221-519.41	221-519.43

Original Spare Parts – VARIVENT® Mixproof Valve Type D.L - Maintenance



1.0 Dismantling

- 1.1 Remove CIP connection (30).
- 1.2 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.3 Remove hinged clamp (43).
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.5 After removal of the clamps (49) draw off control module (H).
- 1.6 Withdraw valve insert from the top, complete with actuator (A) and lifting actuator (L).
- 1.7 Remove hinged clamp (46). Hold valve disk (15) by inserting a pin Ø 5 mm into bore (C) and separate actuator (A) from the lifting actuator (L) using a belt wrench.
- 1.8 Remove clamps (223) and take out cylinder cover (204).
- 1.9 Hold valve disk (15) by inserting a pin Ø 5 mm into bore (C) and separate drive spindle (203) from the valve disk (15) by turning the hexagon (E) to the left.
Caution: Do not pull out drive spindle (203), thrust washer (211) may fall out !
- 1.10 The double seat disk (16) is separated from the drive spindle using a round rod (inserted in bore F) and by turning at wrench area (G) and then to be withdrawn from the bottom.
- 1.11 Remove the hinged clamp (46a) and separate the lifting actuator (L) from the lantern (9).
- 1.12 Remove the hinged clamp (43b) and take out the component parts (1, 2, 3, 4, 5 and 36).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing.
Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8).
For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function and the total stroke. For this purpose actuate valve with compressed air at (B).

4.1 Check the lifting stroke:

On actuation of the valve via (X) the stroke of the double seat disk (16) must be 1 to 2 mm.
On actuation via (Y) the stroke of the valve disk (15) must be 0,9 to 1,4 mm.

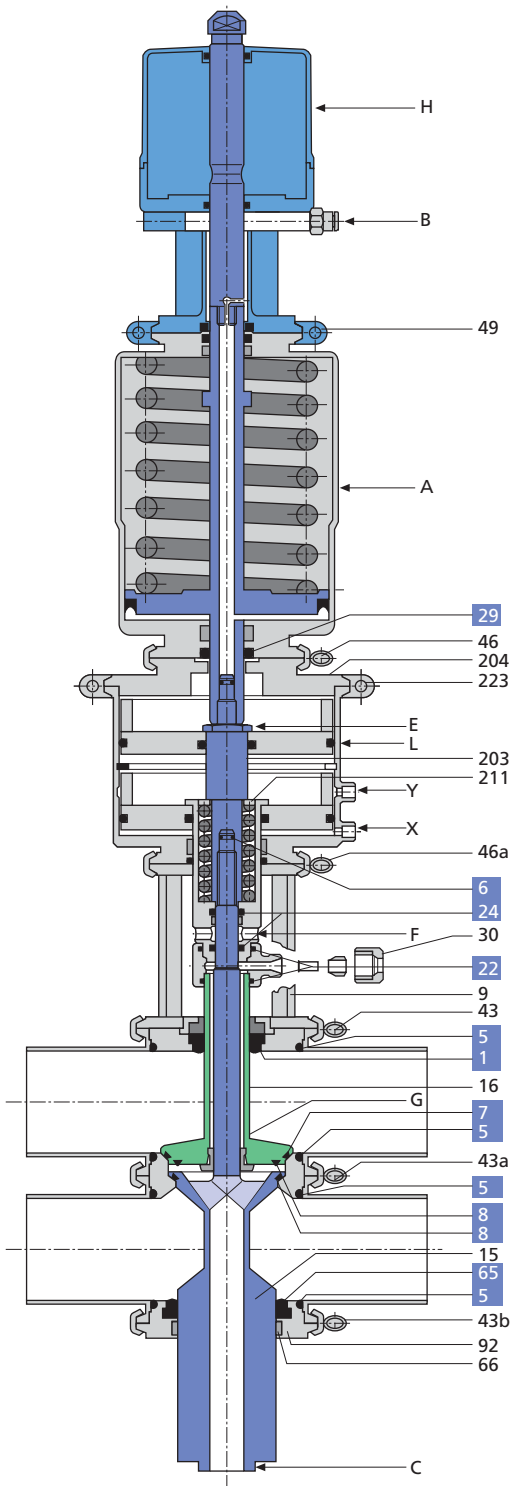
Seals for VARIVENT® Mixproof Valve Type D.L

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	1	Seal ring	Ø	22	28	28	28	35
			EPDM	924-084	924-085	924-085	924-085	924-088
			FPM	924-082	924-083	924-083	924-083	924-087
1	1	Seal ring	Ø	22	22	28	28	35
			EPDM	924-084	924-084	924-085	924-085	924-088
			FPM	924-082	924-082	924-083	924-083	924-087
5	4	O-ring	Ø	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM	930-168	930-171	930-176	930-178	930-259
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
			EPDM	932-046	932-021	932-024	932-028	932-042
7	1	V-ring	Ø	35-5	52-6	76-6	104-6	148-6
			FPM	932-030	932-033	932-035	932-039	932-041
			EPDM	932-017	932-019	932-023	932-027	932-045
8	2	V-ring	Ø	28-5	44-6	68-6	96-6	140-6
			FPM	932-029	932-032	932-034	932-038	932-044
			EPDM	930-268	930-243	930-243	930-243	930-356
22	2	O-ring	Ø	22x3	28x3	28x3	28x3	35x3
			FPM	930-164	930-244	930-244	930-244	930-357
			EPDM	930-368 (1x)	930-235	930-235	930-235	930-268
24	2	O-ring	Ø	10x2,5	16x3	16x3	16x3	22x3
			FPM	930-616 (1x)	930-162	930-162	930-162	930-164
			NBR	930-026	930-026	930-026	930-026	930-035

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-528.39	221-511.27	221-511.28	221-511.29	221-511.31
	FPM	221-528.40	221-519.06	221-519.07	221-519.08	221-519.10

Original Spare Parts – VARIVENT® Mixproof Valve Type B.L - Maintenance



1.0 Dismantling

- 1.1 Remove CIP connection (30).
- 1.2 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.3 Remove hinged clamp (43).
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.5 After removal of the clamps (49) draw-off control module (H).
- 1.6 Withdraw valve insert from the top, complete with actuator (A) and lifting actuator (L).
- 1.7 Remove hinged clamp (46). Hold actuator (A) using a belt wrench and separate lifting actuator (L) from actuator (A) at wrench area C
- 1.8 Remove clamps (223) and take out cylinder cover (204).
- 1.9 Hold valve disk (15) at wrench area (C) and separate drive spindle (203) from the valve disk (15) by turning the hexagon (E) to the left.
Caution: Do not pull out drive spindle (203), circlip (211) may fall out !
- 1.10 The double seat disk (16) is separated from the drive spindle using a round rod (inserted in bore F) and by turning at wrench area (G) and then to be withdrawn from the bottom.
- 1.11 Remove the hinged clamp (46a) and separate the lifting actuator (L) from the lantern (9).
- 1.12 Remove the hinged clamp (43b) and take out the component parts (5, 65, 66, 92).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function and the total stroke. For this purpose actuate valve with compressed air at (B).

4.1 Check the lifting stroke:

On actuation of the valve via (X) the stroke of the double seat disk (16) must be 1 to 2 mm.
On actuation via (Y) the stroke of the valve disk (15) must be 0,9 to 1,4 mm.

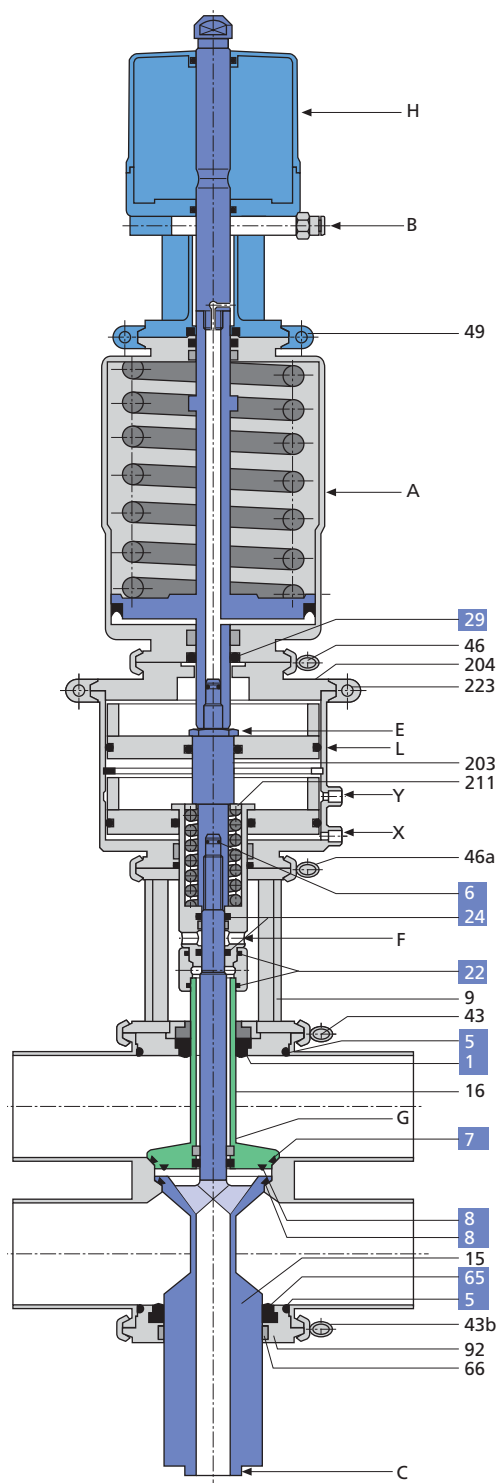
Seals for VARIVENT® Mixproof Valve Type B.L

Item	Qty	Designation	Material	2"	2 1/2"/3"	4"	6"
1	1	Seal ring	Ø	28	28	28	35
			EPDM	924-085	924-085	924-085	924-088
			FPM	924-083	924-083	924-083	924-087
5	4	O-ring	Ø	60x3	85x4	113x4	158x5
			EPDM	930-144	930-150	930-156	930-260
			FPM	930-171	930-176	930-178	930-259
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-007
7	1	V-ring	Ø	52-6	76-6	104-6	148-6
			EPDM	932-021	932-024	932-028	932-042
			FPM	932-033	932-035	932-039	932-041
8	2	V-ring	Ø	44-6	68-6	96-6	140-6
			EPDM	932-019	932-023	932-027	932-045
			FPM	932-032	932-034	932-038	932-044
22	2	O-ring	Ø	28x3	28x3	28x3	35x3
			EPDM	930-243	930-243	930-243	930-356
			FPM	930-244	930-244	930-244	930-357
24	2	O-ring	Ø	16x3	16x3	16x3	22x3
			EPDM	930-235	930-235	930-235	930-268
			FPM	930-162	930-162	930-162	930-164
29	1	O-ring	Ø	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-035
65	1	Seal ring	Ø	46	69	97	142
			EPDM	924-305	924-296	924-254	924-261
			FPM	924-307	924-308	924-309	924-320

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	2"	2 1/2"/3"	4"	6"
	EPDM	221-511.42	221-511.43	221-511.44	221-511.46
	FPM	221-519.21	221-519.22	221-519.23	221-519.25

Original Spare Parts – VARIVENT® Mixproof Valve Type B.C - Maintenance



1.0 Dismantling

- 1.1 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.2 Remove hinged clamp (43).
- 1.3 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.4 After removal of the clamps (49) draw off control module (H).
- 1.5 Withdraw valve insert from the top, complete with actuator (A) and lifting actuator (L).
- 1.6 Remove hinged clamp (46). Hold actuator (A) with a belt wrench and separate the lifting actuator (L) from the actuator (A) at wrench area (C).
- 1.7 Remove clamps (223) and take out cylinder cover (204).
- 1.8 Hold valve disk (15) at wrench area (C) and separate drive spindle (203) from the valve disk (15) by turning the hexagon (E) to the left.
Caution: Do not pull out drive spindle (203), thrust washer (211) may fall out!
- 1.9 The double seat disk (16) is separated from the drive spindle using a round rod (inserted in bore F) turning at wrench area (G) and then withdrawn from the bottom.
- 1.10 Remove the hinged clamp (46a) and separate the lifting actuator (L) from the lantern (9).
- 1.11 Remove the hinged clamp (43b) and take out the component parts (5, 65, 66 and 92).

2.0 Replacement of seals

Remove the seals marked with blue in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order.

4.0 Function check

After assembly check the valve function and the total stroke. For this purpose actuate valve with compressed air at (B).

4.1 Check the lifting stroke:

On actuation of the valve via (X) the stroke of the double seat disk (16) must be 1 to 2 mm.

On actuation via (Y) the stroke of the valve disk (15) must be 0,9 to 1,4 mm.

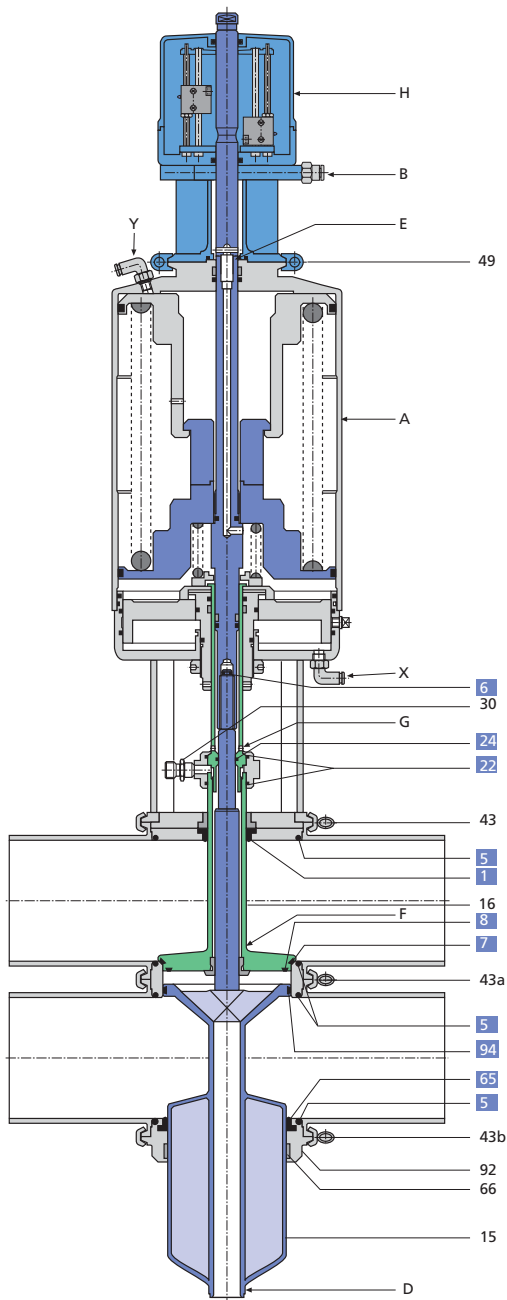
Seals for VARIVENT® Mixproof Valve Type B.C

Item	Qty	Designation	Material	2"	3"	4"	6"
1	1	Seal ring	Ø	28	28	28	35
			EPDM	924-085	924-085	924-085	924-088
5	2	O-ring	Ø	60x3	85x4	113x4	158x5
			EPDM	930-144	930-150	930-156	930-260
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-007
7	1	V-ring	Ø	52-6	76-6	104-6	148-6
			EPDM	932-021	932-024	932-028	932-042
8	2	V-ring	Ø	44-6	68-6	96-6	140-6
			EPDM	932-019	932-023	932-027	932-045
22	2	O-ring	Ø	28x3	28x3	28x3	35x3
			EPDM	930-243	930-243	930-243	930-356
24	2	O-ring	Ø	16x3	16x3	16x3	22x3
			EPDM	930-235	930-235	930-235	930-268
29	1	O-ring	Ø	20x3	20x3	20x3	25x3
			NBR	930-026	930-026	930-026	930-035
65	1	Seal ring	Ø	46	69	97	142
			EPDM	924-305	924-296	924-254	924-261
93	1	O-ring	Ø	16x3	20x3	20x3	26x3
			EPDM	930-235	930-270	930-270	930-252

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	2"	3"	4"	6"
	EPDM	221-519.87	221-519.88	221-519.89	221-519.90

Original Spare Parts – VARIVENT® Mixproof Valve Type R.L - Maintenance



1.0 Dismantling

- 1.1 Remove CIP connection (30).
- 1.2 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.3 Remove hinged clamp (43).
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.5 After removal of the clamps (49) draw off control module (H).
- 1.6 Withdraw valve insert from the top, complete with actuator (A).
- 1.7 Hold the piston rod at (E) and unscrew the valve disk (15) by inserting a pin \varnothing 5 mm into bore (C).
- 1.8 The double seat disk (16) is separated from the drive spindle using a round rod (inserted in bore G) and by turning at wrench area (G) and then to be withdrawn from the bottom.
- 1.9 Remove the hinged clamp (43b) and take out the component parts (5, 65, 66 and 92).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing.

Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7, 8 and 94). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function and the total stroke. For this purpose actuate valve with compressed air at (B).

- 4.1 Check the lifting stroke: On actuation of the valve via (X) the stroke of the double seat disk (16) must be 1 to 2 mm.
On actuation via (Y) the stroke of the valve disk (15) must be 6 to 7 mm.

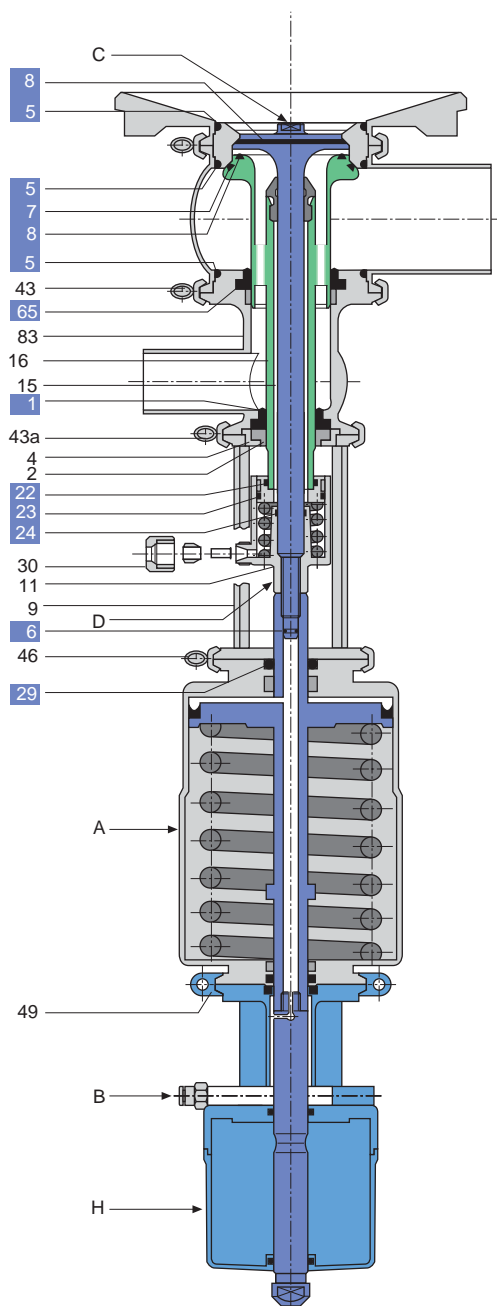
Seals for VARIVENT® Mixproof Valve Type R.L

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
1	1	Seal ring	\varnothing	22	28	28	28	35
			EPDM	924-084	924-085	924-085	924-085	924-088
			FPM		924-083	924-083	924-083	924-087
5	4	O-Ring	\varnothing	42x3	60x3	85x4	113x4	158x5
			EPDM	930-309	930-144	930-150	930-156	930-260
			FPM		930-171	930-176	930-178	930-259
6	1	O-Ring	\varnothing	8x1,6	8x1,6	8x1,6	8x1,6	9x3
			NBR	930-004	930-004	930-004	930-004	930-007
7	1	V-Ring	\varnothing	35-5	52-6	76-6	104-6	148-6
			EPDM	932-046	932-021	932-024	932-028	932-042
			FPM		932-033	932-035	932-039	932-041
8	1	V-Ring	\varnothing	28-5	44-6	68-6	96-6	140-6
			EPDM	932-017	932-019	932-023	932-027	932-045
			FPM		932-032	932-034	932-038	932-044
22	2	O-Ring	\varnothing	22x3	28x3	28x3	28x3	35x3
			EPDM	930-268	930-243	930-243	930-243	930-356
			FPM		930-244	930-244	930-244	930-357
24	1	O-Ring	\varnothing	10x2,5	16x3	16x3	16x3	22x3
			EPDM	930-368	930-235	930-235	930-235	930-268
			FPM		930-162	930-162	930-162	930-164
65	1	Seal ring	\varnothing	22	46	69	97	142
			EPDM	924-084	924-305	924-296	924-254	924-261
			FPM		924-307	924-308	924-309	924-320
94	1	V-Ring (R)	\varnothing	36-7	54-7	78-7	106-7	151-7
			EPDM	221-365.13	221-365.07	221-365.08	221-365.09	221-265.16
			FPM		221-365.10	221-365.11	221-365.12	221-365.17

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"	6"
	EPDM	221-528.75	221-528.19	221-528.20	221-528.21	221-528.23
	FPM		221-528.24	221-528.25	221-528.26	221-528.37

Original Spare Parts – VARIVENT® Mixproof Bottom Valve Type T - Maintenance



1.0 Dismantling

- 1.1 Remove CIP connection (30).
- 1.2 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.3 Remove hinged clamp (43).
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.5 After removal of the clamps (49) draw-off control module (H).
- 1.6 Withdraw valve insert complete with actuator (A) and lantern (9).
- 1.7 Remove hinged clamp (46). Hold actuator (A) using a belt wrench wrench and separate valve disk (15) from actuator (A) at wrench area C
- 1.8 Hold valve disk (15) at wrench area (C) and remove CIP bonnet (11) at wrench area (D).
- 1.9 Remove the hinged clamp (43a) and take out the component parts (1, 2, 4 and 83).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-rings (7 and 8). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function.

For this purpose actuate valve with compressed air at (B).

In closed valve position, the bearing plug and CIP bonnet must at flush level.

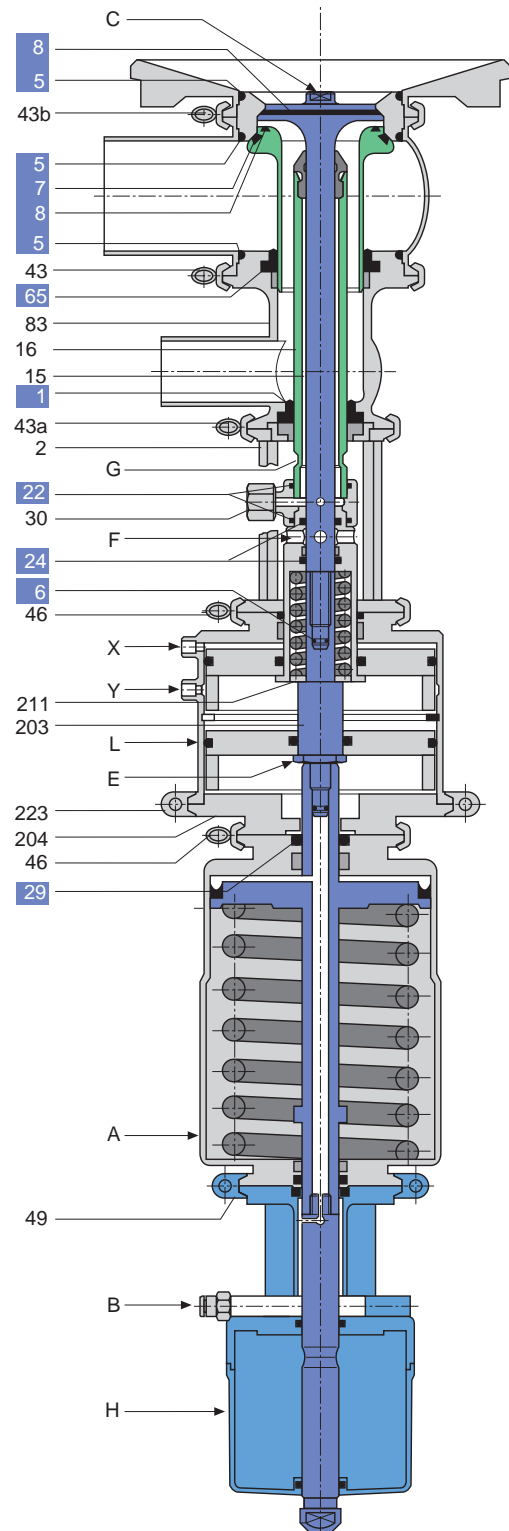
Seals for VARIVENT® Mixproof Bottom Valve Type T

Item	Qty	Designation	Material	1 1/2"/2"	2 1/2"/3"	4"
1	1	Seal ring	Ø	28	28	28
			EPDM	924-085	924-085	924-085
			FPM	924-083	924-083	924-083
5	4	O-ring	Ø	60x3	85x4	113x4
			EPDM	930-144	930-150	930-156
			FPM	930-171	930-176	930-178
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6
			NBR	930-004	930-004	930-004
			Ø	52-6	76-6	104-6
7	1	V-ring	EPDM	932-021	932-024	932-028
			FPM	932-033	932-035	932-039
			Ø	44-6	68-6	96-6
8	2	V-ring	EPDM	932-019	932-023	932-027
			FPM	932-032	932-034	932-038
			Ø	28x3	28x3	28x3
22	1	O-ring	EPDM	930-243	930-243	930-243
			FPM	930-244	930-244	930-244
			Ø	38x3	38x3	38x3
23	1	O-ring	EPDM	930-246	930-246	930-246
			FPM	930-247	930-247	930-247
			Ø	16x3	16x3	16x3
24	1	O-ring	EPDM	930-235	930-235	930-235
			FPM	930-162	930-162	930-162
			Ø	20x3	20x3	20x3
29	1	O-ring	NBR	930-026	930-026	930-026
			Ø	48	48	48
			EPDM	924-298	924-298	924-298
65	1	Seal ring	Ø	48	48	48
			EPDM	924-298	924-298	924-298
			FPM	924-310	924-310	924-310

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1 1/2"/2"	2 1/2"/3"	4"
	EPDM	221-511.47	221-511.48	221-511.49
	FPM	221-519.26	221-519.27	221-519.28

Original Spare Parts – VARIVENT® Mixproof Bottom Valve Type T.L - Maintenance



1.0 Dismantling

- 1.1 Remove CIP connection (30).
- 1.2 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.3 Remove hinged clamp (43).
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.5 After removal of the clamps (49) draw off control module (H).
- 1.6 Withdraw valve insert complete with actuator (A) and liftin actuator (L).
- 1.7 Remove hinged clamp (46). Hold valve disk (15) at wrench area (C) and separate actuator (A) from lifting actuator using (L) using a belt wrench.
- 1.8 Remove clamps (223) and take out cylindre cover (204).
- 1.9 Hold drive spindle (203) at hexagon (E), by turning the valve disk (15) at wrench area (C) to the left, unscrew the the valve disk (15).
CAUTION: Do not pull out drive spindle (203), thrust washer (211) may fall out !
- 1.10 The double seat disk (16) is separated from the drive spindle using a round rod (inserted in bore F) and by turning at wrench area (G) and then withdrawn.
- 1.11 Remove the hinged clamp (46a) and separate the lifting actuator (L) from the lantern (9).
- 1.12 Remove the hinged clamp (43b) and take out the seat ring (34).
- 1.13 Remove the hinged clamp (43) and separate the leaking housing (73) from the lantern (9).

2.0 Replacement of seals

Remove the seals marked with blue in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V rings (7 and 8). For inserting the V ring, use the insertion tool and steadily press the V ring at opposite spots for several times all over the circumference.

V ring installation, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the total stroke.

For this purpose actuate valve with compressed air and check whether the valve stroke is correct. If necessary, adjust the feedback switch or the proximity switch.

Check the lifting stroke:

On actuation of the valve via (X), the stroke of the double seat disk (16) must be 1 to 2 mm.

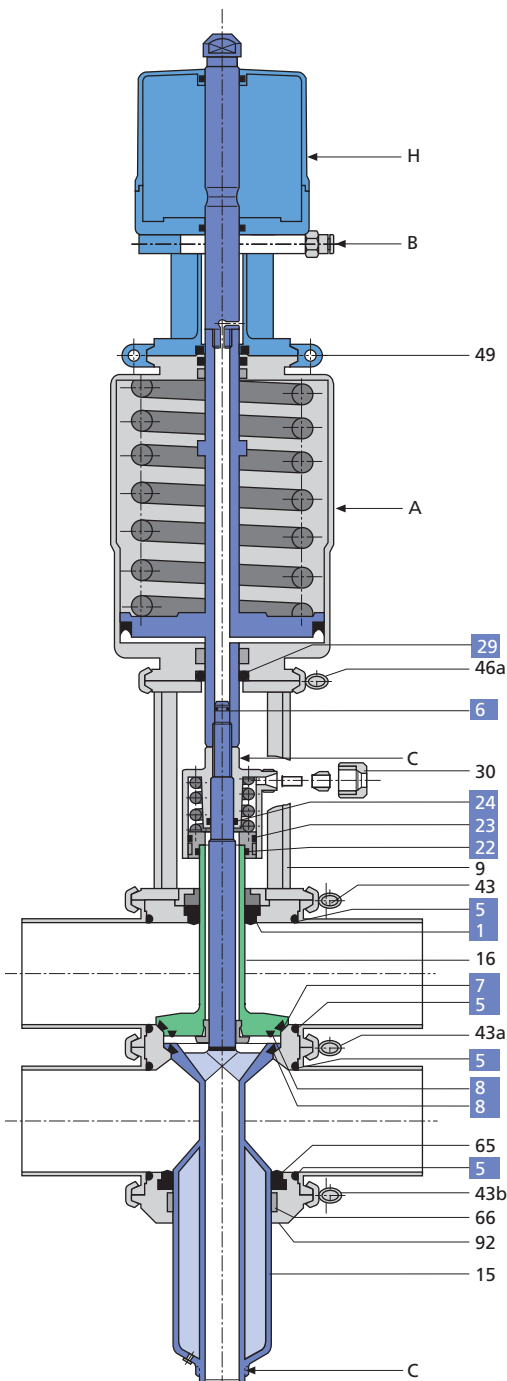
On actuation via (Y), the stroke of the valve disk (15) must be 0,9 to 1,4 mm.

Seals for VARIVENT® Mixproof Bottom Valve Type T.L

Item	Qty	Designation	Material	1 1/2"/2"	2 1/2"/3"	4"
1	1	Seal ring	Ø	28	28	28
			EPDM	924-085	924-085	924-085
			FPM	924-083	924-083	924-083
5	4	O-ring	Ø	60x3	85x4	113x4
			EPDM	930-144	930-150	930-156
			FPM	930-171	930-176	930-178
6	1	O-ring	Ø	8x1,6	8x1,6	8x1,6
			NBR	930-004	930-004	930-004
			Ø	52-6	76-6	104-6
7	1	V-ring	EPDM	932-021	932-024	932-028
			FPM	932-033	932-035	932-039
			Ø	44-6	68-6	96-6
8	2	V-ring	EPDM	932-019	932-023	932-027
			FPM	932-032	932-034	932-038
			Ø	28x3	28x3	28x3
22	2	O-ring	EPDM	930-243	930-243	930-243
			FPM	930-244	930-244	930-244
			Ø	16x3	16x3	16x3
24	2	O-ring	EPDM	930-235	930-235	930-235
			FPM	930-162	930-162	930-162
			Ø	20x3	20x3	20x3
29	1	O-ring	NBR	930-026	930-026	930-026
			Ø	48	48	48
			EPDM	924-298	924-298	924-298
65	1	Seal ring	FPM	924-310	924-310	924-310
			Ø	48	48	48
			EPDM	924-298	924-298	924-298
Seal set cpl.			Material	1 1/2"/2"	2 1/2"/3"	4"
			EPDM	221-511.50	221-511.51	221-511.52
			FPM	221-519.29	221-519.30	221-519.31

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Original Spare Parts – VARIVENT® Mixproof Valve Type B - Maintenance



1.0 Dismantling

- 1.1 Remove hinged clamp (43) and locking device (35) at the lower valve housing (40).
- 1.2 In the non-actuated position, the valve disk (15) is in the closed position. Lift the valve disk (15) by actuating the valve with compressed air at connection (B) or using the emergency.
- 1.3 Loosen valve disk (15) at wrench area (C) by approx. 5 – 6 mm.
- 1.4 Interrupt compressed air supply at connection (B), or remove emergency device. Separate valve disk from actuator
- 1.5 After removal of the clamps (49) draw off control module (H).
- 1.6 Remove hinged clamp (43) between lantern (9) and the upper valve housing.
- 1.7 Remove actuator (A) from the top.

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-ring (7). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function. For this purpose actuate valve with compressed air at (B).

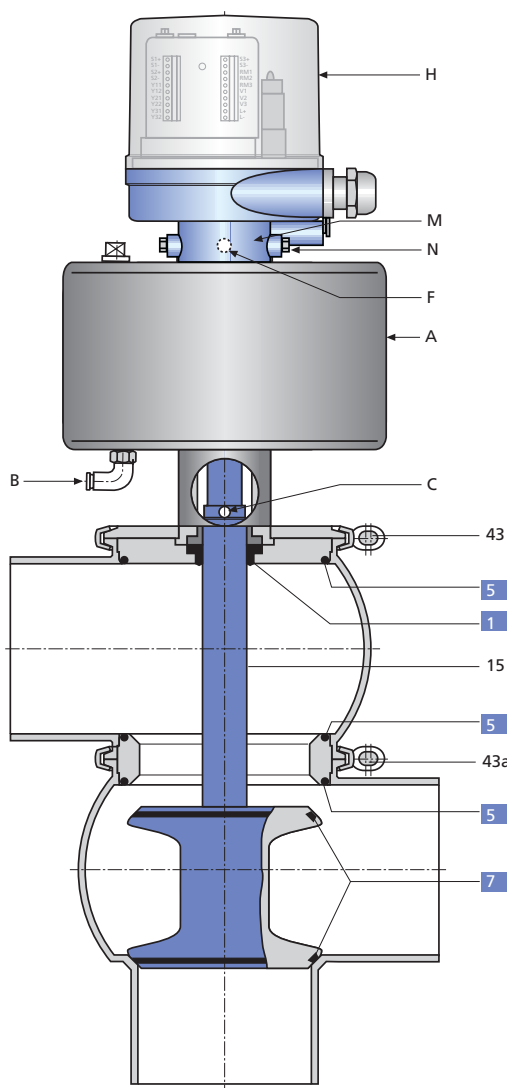
Seals for VARIVENT® Mixproof Valve Type B

Item	Qty	Designation	Material	2"	21/2"/3"	4"	6"
1	1	Seal ring	Ø	22	28	35	35
			EPDM	924-084	924-085	924-088	924-088
5	4	O-ring	Ø	60x3	85x4	138x4	158x5
			EPDM	930-144	930-150	930-372	930-260
6	1	O-ring	Ø	8x1,6	8x1,6	9x3	9x3
			NBR	930-004	930-004	930-007	930-007
7	1	V-ring	Ø	52-6	76-6	128-6	148-6
			EPDM	932-021	932-024	932-060	932-042
			FPM	932-033	932-035	932-062	932-041
8	2	V-ring	Ø	44-6	68-6	120-6	140-6
			EPDM	932-019	932-023	932-059	932-045
			FPM	932-032	932-034	932-063	932-044
22	1	O-ring	Ø	22x3	28x3	35x3	35x3
			EPDM	930-268	930-243	930-356	930-356
			FPM	930-164	930-244	930-357	930-357
23	1	O-ring	Ø	38x3	38x3	56x3	56x3
			EPDM	930-246	930-246	930-266	930-266
			FPM	930-247	930-247	930-265	930-265
24	1	O-ring	Ø	16x3	16x3	22x3	22x3
			EPDM	930-235	930-235	930-268	930-268
			FPM	930-162	930-162	930-164	930-164
29	1	O-ring	Ø	20x3	20x3	25x3	25x3
			NBR	930-026	930-026	930-035	930-035
65	1	Seal ring	Ø	46	69	122	142
			EPDM	924-305	924-296	924-262	924-261
			FPM	924-307	924-308	924-319	924-320

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	2"	21/2"/3"	4"	6"
	EPDM	221-511.37	221-511.38	221-511.39	221-511.41
	FPM	221-519.16	221-519.17	221-519.18	221-519.20

Original Spare Parts – ECOVENT® Shuttle Valve Type W.S - Maintenance



1.0 Dismantling

- 1.1 In the non-actuated position, the valve disk (15) is in the closed position. Lift the valve disk (15) by actuating the valve with compressed air at connection (B).
- 1.2 Remove hinged clamps (43 and 43a).
- 1.3 Interrupt compressed air supply at connection (B).
- 1.4 Slacken screws (N) at installation base (M) and draw off control module (H).
- 1.5 Withdraw valve insert from the top, complete with actuator (A)
- 1.6 Hold valve disk (15) by inserting a pin \varnothing 5 mm into bore (C) and separate switch bar from valve disk (15) by turning a pin into bore (F).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-ring (7). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function. For this purpose actuate valve with compressed air at (B).

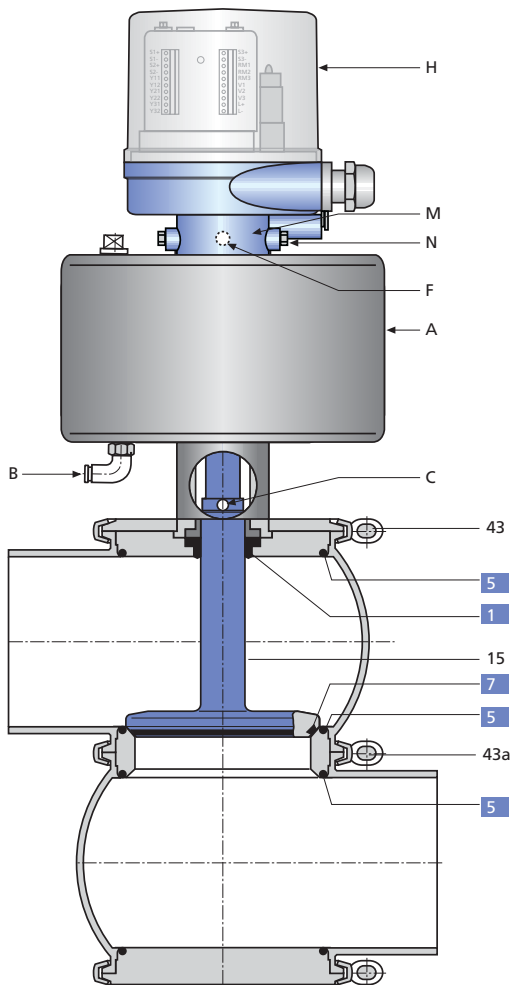
Seals for ECOVENT® Shuttle Valve Type W.S

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"
1	1	Seal ring	\varnothing	28	28	28	28
			EPDM	924-085	924-085	924-085	924-085
			FPM	924-083	924-083	924-083	924-083
5	3	O-ring	\varnothing	42x3	60x3	85x4	113x4
			EPDM	930-309	930-144	930-150	930-156
			FPM	930-168	930-171	930-176	930-178
7	2	V-ring	\varnothing	35-5	52-6	76-6	104-6
			EPDM	932-046	932-021	932-024	932-028
			FPM	932-030	932-033	932-035	932-039
29	1	O-ring	\varnothing	20x3	20x3	20x3	20x3
			NBR	930-029	930-029	930-029	930-029
98	1	O-ring	\varnothing	34x3	34x3	34x3	34x3
			NBR	930-046	930-046	930-046	930-046

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"
	EPDM	221-489.01	221-489.03	221-489.05	221-489.07
	FPM	221-489.02	221-489.04	221-489.06	221-489.08

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Original Spare Parts – ECOVENT® Shut-Off Valve Type N.S - Maintenance



1.0 Dismantling

- 1.1 In the non-actuated position, the valve disk (15) is in the closed position. Lift the valve disk (15) by actuating the valve with compressed air at connection (B).
- 1.2 Remove hinged clamp (43).
- 1.3 Interrupt compressed air supply at connection (B).
- 1.4 Slacken screws (N) at installation base (M) and draw off control module (H).
- 1.5 Withdraw valve insert from the top, complete with actuator (A)
- 1.6 Hold valve disk (15) by inserting a pin \varnothing 5 mm into bore (C) and separate switch bar from valve disk (15) by turning a pin into bore (F).

2.0 Replacement of seals

Remove the seals marked with **blue** in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V-ring (7). For inserting the V-ring, use the insertion tool and steadily press the V-ring at opposite spots for several times all over the circumference.

V-ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the valve function. For this purpose actuate valve with compressed air at (B).

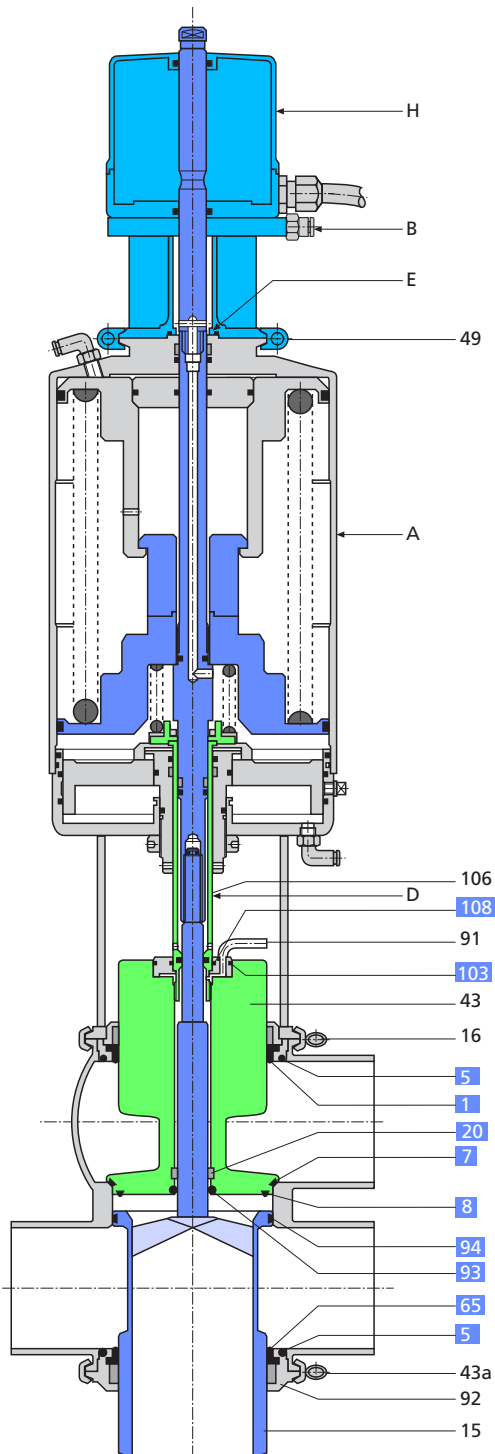
Seals for ECOVENT® Shut-Off Valve Type N.S

Item	Qty	Designation	Material	1"	1 1/2"/2"	2 1/2"/3"	4"
1	1	Seal ring	\varnothing	28	28	28	28
			EPDM	924-085	924-085	924-085	924-085
			FPM	924-083	924-083	924-083	924-083
5	1	O-ring	\varnothing	42x3	60x3	85x4	113x4
			EPDM	930-309	930-144	930-150	930-156
			FPM	930-168	930-171	930-176	930-178
7	1	V-ring	\varnothing	35-5	52-6	76-6	104-6
			EPDM	932-046	932-021	932-024	932-028
			FPM	932-030	932-033	932-035	932-039
29	1	O-ring	\varnothing	20x3	20x3	20x3	20x3
			NBR	930-029	930-029	930-029	930-029
			NBR	930-029	930-029	930-029	930-029
98	1	O-ring	\varnothing	34x3	34x3	34x3	34x3
			NBR	930-046	930-046	930-046	930-046
			NBR	930-046	930-046	930-046	930-046

Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

Seal set cpl.	Material	1"	1 1/2"/2"	2 1/2"/3"	4"
	EPDM	221-304.92	221-304.94	221-304.96	221-304.98
	FPM	221-304.93	221-304.95	221-304.97	221-304.99

Original Spare Parts – VARIVENT® Mixproof Valve Type M.O - Maintenance



Storage Instruction: Storage acc. DIN 7719, relative humidity of air approx. ca. 65%, temperature between 15-25° C (59-77° F), storage to be light protected

1.0 Dismantling

- 1.1 In the non-actuated position, the valve disks (15 and 16) are in the closed position. Lift the valve disks (15 and 16) by actuating the valve with compressed air at connection (B) or using the emergency device.
- 1.2 Remove hinged clamp (43).
- 1.3 Interrupt compressed air supply at connection (B), or remove emergency device.
- 1.4 After removal of the clamps (49) draw off control module (H).
- 1.5 Withdraw valve insert from the top, complete with actuator (A)
- 1.6 Hold piston rod at wrench area (E) and unscrew valve disk (15) using a face socket wrench.
- 1.7 Hold drive sleeve (106) at wrench area (D) and unscrew double seat disk (16) using a pin punch.
- 1.8 Remove leakage detector (91) off the double seat disk (16).
- 1.9 Remove the hinged clamp (43a) and take out the component parts (5; 65; 92).

2.0 Replacement of seals

Remove the seals marked with * in the spare parts drawing. Clean the single parts. Insert new seals. Do not use oils and grease for the V rings (7 and 8). For inserting the V ring, use the insertion tool and steadily press the V ring at opposite spots for several times all over the circumference.

V ring installation position, see illustration



3.0 Assembly

Assembly is carried out in reverse order

4.0 Function check

After assembly check the total stroke.

Seals for VARIVENT® Mixproof Valve Type M.O

Item	Qty	Designation	Material	2"	2 1/2"	3"	4"
1	1	Sealing ring	FPM	924-308	924-309	924-319	924-320
5	2	O-ring	EPDM	930-150	930-156	930-372	930-260
			FPM	930-176	930-178	930-409	930-259
7	1	V-ring	EPDM	932-024	932-028	932-060	932-042
			FPM	932-035	932-039	932-062	932-041
8	1	V-ring	EPDM	932-023	932-027	932-059	932-045
			FPM	932-034	932-038	932-063	932-044
			Turcite	935-018	935-018	935-025	935-025
20	1	Rod guide ring	Turcite	935-018	935-018	935-025	935-025
65	1	Sealing ring RA	FPM	221-367.08	221-367.09	221-367.10	221-367.11
92	1	Balancer locking	1.4404	221-538.01	221-538.02	221-538.03	221-538.04
93	1	O-ring	FPM	930-163	930-163	930-165	930-165
94	1	V-ring RA	EPDM	221-365.08	221-365.09	221-365.14	221-365.16
			FKF 80	221-365.11	221-365.12	221-365.15	221-365.17
108	1	O-ring	EPDM	930-243	930-243	930-356	930-356
			FPM	930-244	930-244	930-357	930-357
109	1	O-ring	EPDM	930-701	930-701	930-701	930-701
			FPM	930-606	930-606	930-606	930-606